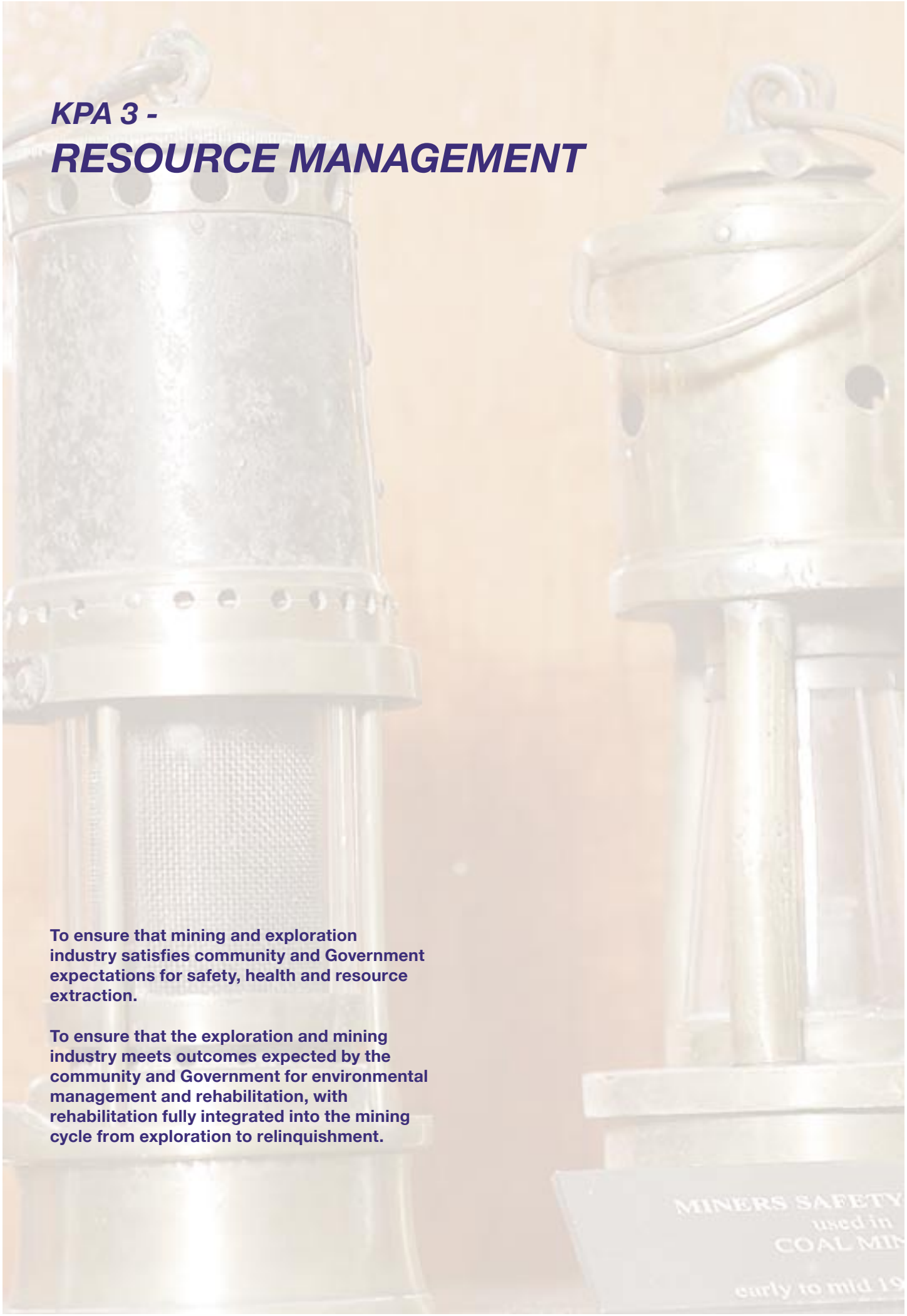

KPA 3 -
RESOURCE MANAGEMENT

To ensure that mining and exploration industry satisfies community and Government expectations for safety, health and resource extraction.

To ensure that the exploration and mining industry meets outcomes expected by the community and Government for environmental management and rehabilitation, with rehabilitation fully integrated into the mining cycle from exploration to relinquishment.

KPA 3 - RESOURCE MANAGEMENT

Objective 1 - Mine Safety

Key Outcomes

- Industry understands Government's expectation of safety, health and resource extraction performance.
- Industry performance is evaluated against these expectations and achieves continuous improvements as a consequence.
- Industry performance is improved as a result of evaluation and communication, and measures of performance are used to inform possible, continuous improvements in the regulatory framework.
- The Department is recognised as positively contributing to safety, health and resource extraction improvements.

Introduction

Improving the safety and health of the NSW mining industry has continued to be a major priority for the Government. Over the past six years $17.4 million in additional funding has been provided to improve the safety culture and performance of the industry.

The aim of the Department's Mine Safety programs is to make significant change to the safety performance and culture of the mining industry. Trends in safety performance data have shown considerable improvement in recent years and industry is showing strong support for the change agenda.

One mining related fatality was recorded in NSW during the year compared to an average of around five per year over the last ten years. One other fatality is currently being investigated and is yet to be confirmed as mining related. The Fatal Injury Frequency Rate, which measures the rate of occurrences of fatal injuries per million hours worked, is now at its lowest ever in all of the three sectors of the industry. This improved safety performance trend has also seen a drop in serious injuries and reportable incidents.

The two major areas of focus are:
- the completion of legislative reform and the implementation of the change program; and
- the continuation of campaigns to ensure risks and hazards are managed at the minesite level.

Those campaigns already undertaken are showing positive results are now being stepped up.

Safety Reform

Legislation

Legislative reform has continued as a major strategy to improve safety performance and to support a change in safety culture in the NSW mining industry.

A wide-reaching review of the Coal Mines Regulation Act 1982 resulted in the passage of new legislation for health and safety in coal mines. The review included a comprehensive program of consultation with industry parties, including the circulation of discussion and position papers. The Coal Mine Health and Safety Act 2002 was passed, unamended, by Parliament in December 2002. When commenced, the Act will repeal and replace the Coal Mines Regulation Act 1982. The Act will not be proclaimed until supporting regulations have been developed.

The new legislation caters for the particular risks arising from coal mining, such as underground fires, explosions and roof collapses. A key feature of the legislation is the creation of obligations that supplement the duties of care in the Occupational Health and Safety Act 2000. The legislation is intended to be read as part of the Occupational Health and Safety Act. Employee, employer and Government representatives were involved in all stages of the preparation of the new legislation.

CFMEU Check Inspectors, Ron Stothard and Nick Simpson discuss mine safety with the Minister for Mineral Resources, The Hon. Kerry Hickey, at an industry information session on the Coal Mine Health and Safety Act 2002. The session was part of an intensive and ongoing education campaign on the new legislation

A similar process was undertaken for replacement of the Mines Inspection Act 1901, which governs the metalliferous mining and quarrying sectors. The Mine Health and Safety Bill 2002 was introduced in the Parliament in December 2002. However, the legislation did not proceed, with Parliament dissolving prior to the March 2003 election. The Bill was released for public review and became a Scoping Bill. This provided a valuable opportunity for increased public review and it is intended that an amended version be re-introduced in 2003.

National Approach to Safety

The Department is active in supporting the work of the Ministerial Council on Minerals and Petroleum Resources and the development of a National Mine Safety Framework.

The Council has Ministerial and Departmental representation from all Australian States and Territories and New Zealand and Papua New Guinea. It recognises that each state, territory and country implements its own mining safety regulations. At the same time, it supports a nationally consistent legislative framework as part of its contribution to realising a safe and healthy mining industry.

The Council has given the Department the responsibility for the 'compliance support' and 'research' components of the National Mine Safety Framework. Compliance support initially aims to provide national guidance information. During the year a National Minerals Industry Safety Handbook was published by NSW on behalf of the industry and regulators across Australia. First actions in a national research strategy are to track what research is currently underway and to find a suitable mechanism for translating the findings of the research into improvements in standards.

In 2002-03, each member produced summary pages for the implementation strategies for the National Mine Safety Framework. These outlines have been expanded to promote further discussion and are currently being compiled into a single volume for limited stakeholder comment in the first instance. The Department will coordinate a review of the composite document to identify any further issues for discussion, areas of concern, a process for industry consultation and implementation of each strategy. A refined discussion paper will then be presented to the Ministerial Council, seeking its endorsement for further consultation with stakeholders.

Mine Safety Advisory Council

The Mine Safety Advisory Council is a tripartite forum made up of owners/employers, unions and Government. Its principal role is to improve safety across the mining industry in NSW. It also provides strategic advice to the Minister on industry safety matters, and facilitates consultation and the exchange of information across industry.

The Council meets quarterly and works from a regulatory and compliance framework, which encourages the adoption of practices to improve safety performance. It focuses its work on five strategic areas:

- Effective leadership
- Improved safety performance
- Innovative and safe technology and processes
- Competent people
- Regulatory reform.

These strategic areas have been developed to support and achieve the desired outcomes of the National Mine Safety Framework, being coordinated through the Ministerial Council on Minerals and Petroleum Resources.

Three industry sector Safety Advisory Committees (coal, metalliferous and extractive industries) report to the Council, providing advice on sector specific, technical and practical safety issues.

A Performance Measures Committee, established by the Council in 2001-02, provides advice and recommendations on trends in mine safety performance and identifies areas for further analysis. This information is also provided to the sector Safety Advisory Committees for industry deliberation and to help identify priorities for further research.

During the year the Council considered the analysis of the results of the electrical shocks project and approved implementation strategies.

In addition, the Mine Safety Advisory Council:

- Developed the Council's strategic direction based on the National Mine Safety Framework, and the National Occupational Health and Safety Commission's long term national OHS Strategy 2002-2012, in light of the Council's strengthening views on making improvements based on facts.
- Developed improved industry safety performance measures and reporting.
- Endorsed the regulatory reform agenda and contributed to the development of new safety legislation.
- Monitored and directed the work of the training committee for competent people and drafted the strategic direction and audit assessment tool for mine safety training systems.
- Worked with NSW Mining Industry Training Advisory Body on strategic issues for competency.
- Referred matters to, and sought advice from, the three sector Safety Advisory Committees on technical issues and sector specific matters.
- Generated awareness of health issues and developments in health surveillance in the industry.
- Established a working party to address fatigue management in industry (a guideline will be published by a MSAC member (NSW Minerals Council) in 2003-04.
- Commenced the development of a website to inform industry parties on the work of the Council and to communicate safety and health matters to industry.

Communication and Information

As part of the change program the Department's Communication Unit plays a vital role in providing industry with safety information. The aim is to promote communication between all stakeholders through publications, conferences, seminars and workshops.

During 2002-03 an extensive program of industry conferences and seminars helped to increase safety awareness across different industry audiences. These events are highly successful and provide safety and health information to all levels of the mining industry. More than 2000 mine safety representatives attended the following seminars and conferences during the year.

- Mining Industry OHS Conference
- DMR Electrical Approvals Certification

- Mobile and fixed plant safety workshops
- Local Check Inspectors Conference
- Electrical Engineering Safety Seminar
- Mechanical Engineering Safety Seminar
- Regional mine mechanical engineering seminars
- Small Mines Campaign workshops

Mine Safety Update, the Department's safety newsletter, was distributed to more than 3000 industry stakeholders during the year. It provides up-to-date information on developments in mine safety and the activities of the Mine Safety Division.

The Division distributed 19 safety alerts to inform mines of particular dangers or risks. Guidelines, handbooks and codes of practice, along with a comprehensive guideline for metalliferous and extractive industries, were published.

During risk assessment prior to purchasing a new drill rig, Boral Metropolitan Quarries took into consideration Safety Alert No: SA02-05 issued by the Department. The alert described a fatality caused by a driller becoming entangled in the drill. To eliminate this risk, the function of a seat pressure switch was extended to cut power to the drill mechanism when the operator stands up from the seat.

During 2002-03 the Communications Unit conducted a survey of industry information needs, to better equip itself to target publications to particular audiences. More than 400 responses were received from mine managers, deputies, operators, engineers, contractors and tradespeople. During the year, the development of a more user-friendly website to improve communication of safety issues to industry and the community continued.

Database System (COMET)

The Mine Safety computerised information system COMET (COmmon Mines EnvironmenT), underpins the development of targeted safety strategies within the NSW mining industry.

Data on Mine Safety and Environment core business processes, including assessments, accidents, incidents, approvals and authorisations are stored in COMET. The data, collected over a period of more than four years, has allowed in-depth analysis and research to be undertaken and a range of comprehensive reports on incidents and trends to be produced.

The NSW Injury Risk Management Research Centre was engaged to undertake an analysis of quarterly and annual performance reports produced from COMET data. These reports are provided to the Mine Safety Advisory Council and sector Safety Advisory Committees to assist in the identification of problem or improvement areas in mine safety and in planning new prevention initiatives.

The key achievements relating to the COMET system, during the year are listed below.

- The development of a range of industry performance measures identified by the Mine Safety Advisory Council Performance Measures Committee. Five areas, for further investigation, were identified:
  - electrical energy;
  - mechanical equipment;
  - work environment;
  - hours of work prior to the accident; and
  - injuries to contractors.

  The first area of investigation, electrical energy, was completed during 2002-03. An interim report has been prepared and presented to the Mine Safety Advisory Council. The recommendations will be communicated to industry in 2003 to enable prevention strategies to be developed.

  The findings of the investigation revealed the majority of electrical shock incidents involved equipment design and installation problems, and were almost always due to a pre-existing equipment problem rather than the equipment breaking or malfunctioning before the incident.

- Completion of a plan for the enhancement for the COMET information system through the Department's Process and Systems Improvement Project. These enhancements will include COMET being accessed via the Internet and tighter integration of mining related data and document management across the core information systems. This will enable operational field staff to more freely access information away from the office, leading to more effective management, analysis and interpretation of information underpinning the Mine Safety Division's business plans and strategies.

Safety Operations

The Department's Safety Operations program works to satisfy industry, community and Government expectations for health and safety and resource extraction. It supports the development of appropriate standards of performance and assessment, investigates and verifies that appropriate safety systems, processes and standards are in place, and are being followed, on New South Wales minesites. It then follows through to effect lasting improvements in performance, on specific sites and where relevant, across the industry. It does this through a range of enforcement actions, which are outlined in the Government's Enforcement Strategy for mine safety and health.

During the year the Department's safety officers conducted 1174 minesite assessments. One quarter of these were unannounced. They included safety reviews, audits, inspections and the detailed Electrical Safety Campaign, and other campaigns as outlined below. Of these assessments, 431 were conducted on underground coal mining operations, 95 on above-ground coal mines and the remainder on metalliferous and extractive mining operations.

Considerable attention continues to be given to improving risk management and systematic management of general risks.

Over 300 written notices were issued regarding a wide range of safety concerns that required improvements to be made.

All Departmental safety officers have now been trained in formal safety audit techniques (following completion of courses during the year) and have developed a range of protocols to assess mining activities, including ventilation, inspections and contract management.

Local safety staff investigated over 50 serious incidents. These investigations were separate to the major investigations conducted by the Investigation Unit. The Investigation Unit conducted training for field staff in investigation techniques to determine events and conditions leading up to incidents. Incidents varied from the detonation of explosives in the back of a transport vehicle to near hits from rock falls. These serious incidents covered the range of work from the working environment to equipment, personnel and process issues.

Formal 'audits' of mine ventilation were conducted. Other areas for auditing will be determined and receive attention during the coming year.

Electrical Engineering Safety

In 2002-03 every coal mine and major metalliferous mine in NSW was assessed and data collected regarding electric shock incidents and risks. Once analysed, the data led to some clear findings in relation to the conditions surrounding an electric shock incident within a typical mine. These findings were supported by an independent review of the data using a different methodology, commissioned by the Mine Safety Advisory Council and referred to earlier in this report. Each mine was given a site report, with a follow-up visit to determine if required improvements had been made. A report was compiled and several workshops conducted to explain the findings and the solutions. Further work is planned for the coming year for follow-up and action.

Effort has also been put into developing an assessment protocol for Standards of Engineering Practice. This followed an analysis of previous incidents from the COMET database, which indicated that 'fit for purpose' equipment was a factor in a significant number of incidents. It was also clear that many mine operators were having difficulty understanding the requirements of legislation with regard to Standards of Engineering Practises.

The assessments have been a very useful education process and a desk audit of all coal mines has almost been completed in the first year of the project. It is planned to follow this up in 2003-04 with a full round of job observations and verification.

The Department's Inspectors of Electrical Engineering have refined a strategic and operational plan to protect miners from electrical injury. The goals of the plan are to:

- prevent ignition of explosive gas and dust atmospheres;
- prevent electric shock and burns;
- prevent unplanned/unintended movement caused by electrical control systems;
- prevent electrically ignited fires; and
- provide electrical safeguards for non-electrical hazards.

In 2002-03 there was a 33% reduction in electric shocks in the coal industry. This is attributable to the electric shock prevention campaign, which involved a visit by the Department's inspectors to every coal mine. They identified that 63% of coal mines had significant scope for improving electrical installations.

There was a 61% reduction in the number of unplanned movements reported to the Department this year. This can be attributed to the Department's policy on upgrading remote-controlled mining machines to a standard compliant to AS/NZS4240, and to the joint efforts of the Department, BHP Billiton and Joy Manufacturing in reducing unplanned movements of longwall chocks.

The theme of the Department's annual Electrical Engineering Safety Seminar in November 2002 was 'Software Safety of Mining Machines' and was directly related to unplanned movements of mining machinery. With the increase of complex electrically programmed machinery, the importance of systematic and structured design, operation and maintenance must be understood by industry.

The in-service failure of explosive environment (electrical) equipment remains a priority for Safety Operations. The Department is continuing to work with industry and manufacturers to determine the causal factors in the failure of lights. The vast majority of failures involve the most vulnerable components, cable glands and light fittings. Some mines are improving guarding of glands to minimise the risk of damage. Current Australian Standards adequately cover these matters.

In the metalliferous and extractives sectors there was an 87% increase in the number of reported fires and an 85% increase in the number of electric shocks reported. This can be attributed to the extensive electrical awareness campaign conducted by the Department.

During the year the Department continued to participate in the development and application of Australian, New Zealand and International Standards for the design, application and safe use of electrical equipment in mining. The standards provide guidance on electrical engineering safety for NSW mines.

A plan was developed during the year to streamline the Department's process of electrical approvals. This resulted in a gazette notice being published which provided for the use of electrical equipment in coal mine hazardous zones that had a Certificate of Conformity as explosion protected; this precluded the need for further DMR approval. The gazette notice came into effect on 1 January 2003. The IECEx-certification scheme procedures were reviewed and published.

Isolation project

Isolation is the method of preventing the release of energy that could kill or injure miners.

The isolation project, which began in 1999 in response to two fatal accidents involving miners engaged in maintenance of continuous mining machines, was brought to completion during the year.

A guideline for the Control of Hazardous Energy was published and provided to industry for reference. There is already evidence that mine safety management plans are being based on the information in the document. Regular reviews will help to ensure a more consistent and practical approach to isolation.

Mechanical Engineering Safety

During the year the Department's Inspectors of Mechanical Engineering focussed on maintenance and mechanical safety standards for winders, fixed plant, mobile equipment, diesel engine systems and vehicle braking systems in metalliferous and coal mines. Involvement in the progression, completion and revision of Australian Standards and Guidelines in coal mines also continued.

Audits of flameproof diesel engines were extended state-wide in the underground coal mine sector and assessments of standards of engineering practice in the coal and metalliferous sectors were carried out.

Renae Coleman and Warwick Schofield, Mine Safety Officer and Environment Officers at Lightning Ridge, assessing mechanical safety standards, maintenance and guarding on an agitator used to wash opals from mullock dug from opal mining

The annual Mechanical Engineering Safety Seminar was well-attended by engineers from the metalliferous and coal industries. The focus of the seminar was 'Competence and Engineering Standards', which is becoming increasingly important with the rise in the numbers of contractors on mine-sites.

Regional mine engineers shared information on potential hazards and control methods at ten meetings and seminars held around the State during the year. Presentations were also given in regional areas to provide safety information with respect to fixed plant and mobile equipment.

A strategy for managing unplanned movements with respect to heavy mining equipment was developed, following industry and Departmental concerns. This included the instigation of a guideline covering mobile drilling and support equipment, employment of statistical experts to provide directional advice and the use of field assessments on relevant equipment.

Concern has also developed over the health effects of diesel particulate matter. The Department has started a program researching international health and safety requirements, developing an information package for mines, participating in seminars and establishing overseas contacts to inform on legislative change resulting from technological developments of diesel engines.

Small Mines Campaign

In the past three years the Department has devoted significant resources to advising operators of small mines how to develop, and put in place, effective safety management plans.

The Department completed the current phase of the Small Mines Campaign this year, conducting programs for 308 mines with 407 participants at Balranald, Broken Hill, Cobar, Lismore, Nyngan, Orange, Raymond Terrace, Tamworth, Wagga Wagga and Wollongong.

This intensive campaign has continued to improve the safety of small mining ventures across NSW by ensuring that operators understand and meet their legislative safety obligations.

To progress this activity the Department developed the Small Mines Safety Management Kit which, with education from mine safety officers, helps small operators who have not attended the workshops to develop a mine safety management plan for their operation.

Opal Mining Safety

A significant improvement in opal mining safety continues to be made. In the past six years there have not been any fatalities in opal mining, compared with one fatality per year for the preceding ten years.

The Department's Lightning Ridge miners' safety course is considered a major factor in this steadily improving safety performance. In 2002-03, the 3500th participant completed the course, which became compulsory for all claimholders in 1995. Since 1995, more than 140 courses have been conducted.

Rachel Holloway, 3000th Opal Mining Safety Course participant, was presented with a plaque to mark the event by Mine Safety officer David Howell. Assisting were Maxine O'Brien (left), Secretary Manager of the Lightning Ridge Miners' Association, Bruce Kremmer (centre), course presenter, Wolfgang Johansson (second from right) course presenter and Pat Ellis, President of the Grawin Glengarry Sheepyards Miners' Association. Photo courtesy of Laura Demankoe, The Ridge News

This year saw the first course held at White Cliffs and the program rolled out interstate to a group of opal miners and government officers at Coober Pedy in South Australia. The course notes have also been updated and will be known as the New South Wales Opal Miners' Safety Guidelines.

All new claimholders must complete a safety course before having their claims registered by the Department. Existing claimholders must complete a course to have their claims re-registered in their names.

The Department has published a third edition of the Lightning Ridge Miners' Handbook under a new name, Lightning Ridge Opal Mining Safety Guidelines. Miners, the Lightning Ridge Miners' Association and the Grawin Glengarry Sheepyard Miners' Association contributed to this revised edition. A similar publication is being prepared for the White Cliffs opal mining field in consultation with the White Cliffs Miners' Association.

Technical Services

The Department's Safety Technical Services program provides specialist technical advice to support regulation and the enhancement of safety systems in the industry. The Program coordinates the development of safety guidelines and assessment documents and undertakes testing, certification and statutory approvals.

Various materials, chemicals, and diesel exhaust emissions were tested during the year as well as escape breathing apparatus; and gas monitoring systems used in NSW mines. Theses tests help to ensure that materials and equipment used in New South Wales's mines are safe. The Program also provided technical support to the Investigation Unit in the investigation of major incidents and accidents.

Work commenced on the $290 000 Joint Coal Board Health and Safety Trust project to develop a method of measuring diesel particulates in raw exhaust emissions in underground coalmines. Work included a five-day program testing measuring devices on diesel engines attached to a dynamometer. Installation and calibration of a dilution tunnel and the establishment of a data collection system were major milestones achieved during the year.

The Diesel Particulate Matter (DPM) methods trialled were based on light-scattering instruments and a prototype differential pressure device developed by the National Institute for Occupational Safety and Health (NIOSH) in Pittsburgh, USA. The NIOSH researcher involved was invited to Australia and assisted with the testing of the instruments. The next phase of the project is to process and analyse the data prior to field trials being undertaken at several mines. This work will enable the selection of reliable measurement methods that will help the coal industry establish monitoring, management and ventilation standards for mines in which diesel engines are operated.

Officers gave various presentations during the year including to a meeting of New South Wales Fire Brigade staff at Maitland, covering the hazards of explosions of gases and dusts. This was requested following the report of an inquest into an explosion at a grain silo, which killed three men.

The Department is preparing a protocol for auditing the performance of gas monitoring systems in underground coal mines, which will be followed by a survey to assess the performance of gas monitoring systems.

Work is progressing for the detailed planning of the new Mine Safety Technical Centre to be built at Thornton as part of the Department's relocation. As technology continues to advance rapidly, the design has sought to allow for future developments in a wide range of mine safety areas.

Grahame Fawcett, Manager of Mine Safety Technical Services, and Phan Phi Hong discuss the gas analysis program that is available free of charge to NSW coal mines

Subsidence

The focus of the Department's mine subsidence activities is to ensure that the subsidence impacts of mining proposals on the community is minimal, and to contribute to the Department's efforts to minimise coal sterilisation due to alternative land-uses.

Reviews were undertaken during 2002-03 included the following.

- Assessment of 28 mining applications for pillar extraction or longwall mining. The applications were approved with conditions to manage potential subsidence impacts.
- Agreement to 31 surveys to monitor the development of surface subsidence due to proposed mining operations. This information will be used in relation to future mining under sensitive or important surface features.
- Completion of 38 site inspections as part of mining approval assessments, risk management or investigations of subsidence issues arising from community and Government concerns. The inspections covered 75% of the operating underground coal mines in New South Wales.
- Input to the development of the DMR Subsidence Management Plan (SMP) Policies and completion of the first draft SMP Guidance Notes.

In addition, the Department provided specialist advice to the Mine Subsidence Board on predictions for subsidence and the Department of Sustainable Natural Resources on proposed mine workings under an aquifer at United Colliery, as well as on subsidence due to extraction of groundwater in New South Wales.

Specific risk management projects included:

- major gas and liquid fuel pipelines near the F3 Freeway at West Wallsend Colliery (project completed and no subsidence impacts);
- major telecommunication optical fibre cables at West Wallsend and West Cliff Collieries (project completed and no subsidence impacts);
- TransGrid 330kV transmission towers and at Newstan Colliery (project completed and no subsidence impacts);
- foreshores of Lake Macquarie at Myuna Colliery (project on-going); and
- the development and implementation of major mitigation measures along a section of the Upper Georges River (Marnhyes Hole) to West Cliff Colliery (these measures substantially reduced the subsidence impacts).

The Department presented a risk-based approach to subsidence management at the Coal 2003 Conference and a Subsidence Technological Society seminar and completed a paper entitled 'Applying Risk Principles to the Management of Mining Subsidence'.

Subsidence officers represented the Department on the Development Application Rezoning Committee, Australian Coal Association Research Program Project Committees (Mining under Streams), Georges River Technical Group, River Remediation Committee and the NSW Subsidence Technological Society. The Department's participation in the work of these bodies help ensure effective planning, management and mitigation of subsidence impacts.

Investigation Unit

The Department's Investigation Unit investigates all fatal accidents and select serious mine incidents in NSW. During an investigation, officers gather quality information for identifying systems failures, inadequate management of risks, contributing human factors and potential non-compliance with legislation. All reports prepared by the Investigation Unit are submitted to the Director-General.

Investigations

The conduct of investigations is a major activity of the Unit. Three investigations were continued from the previous financial year involving fatalities and serious injury of persons at the Bellambi West Colliery and Baal Bone Colliery. Two new fatal accident investigations were commenced in November 2002 at the Perilya Mine, Broken Hill - one involving a miner travelling in a cage underground and the other relating to the electrocution of a member of the public on mine land.

The Unit completed the investigation of two earlier fatal underground accidents, which occurred at the Bellambi West Colliery, and Baal Bone Colliery and a serious incident involving the release of mine fill underground at the CSA Mine. With the approval of the Director-General, copies of the fatal accident reports were submitted to the Coroner's Office. Copies of the reports were distributed to interested parties.

Coronial Inquests

The findings and recommendations into the death of four people fatally injured underground at the Northparkes Mine on 24 November 1999 were delivered by the Coroner in Parkes in March 2003. The Coroner recommended the identification and management of risks associated with block caving, design and operational issues, as well as improved education, research and the dissemination of information about potential accidents. These recommendations are being implemented.

The Inquest into the fatal accident at Bellambi West Colliery was conducted in June 2003 and findings are anticipated in late 2003.

Legal Proceedings

Eighteen cases with multiple defendants were carried over from the previous year. Three new cases were commenced during the year. The Court delivered seven convictions and one acquittal on a range of cases. Two matters are subject to appeal, initiated by the Department.

Pleadings for all cases were lodged with the Industrial Relations Commission of New South Wales. Penalties ranged from $7 500 to $140 000 with moiety to the Prosecutor and costs being granted to the prosecution.

Assessment and Review Committee

The Assessment and Review Committee considers investigations and legal advice and makes recommendations to the Director-General on legal proceedings. The Committee consists of five members including a part time independent chairperson and representatives from the Investigations Unit, the Department's Mine Safety Division and Workcover.

In June 2002, Susan Kemp was appointed to the position of Part Time Chair of the Assessment and Review Committee and took charge in July 2002. Four meetings were held during the year.

In addition to her role as Chair, Susan Kemp was requested to undertake a full review of the Committee's guidelines and terms of reference. The Director-General has approved all recommendations of her report for implementation.

Specialist Training

During the year the Investigation Unit provided specialist training to enhance the knowledge and skills of Departmental safety officers required to investigate incidents and accidents, enforce legislation and maybe required to give evidence in legal proceedings. Safety officers assisted the Unit with six investigations, including the accidental explosion at the rear of a shotfirer's vehicle.

Specialist training included:

- application of an investigation and analysis methodology (ICAM);
- application of legislation for regulating drugs and alcohol in mines;
- protection from infectious diseases or dealing with hygiene issues; and
- understanding the legal system, such as the roles of the defending solicitor, prosecutor and advising counsel.

Major Presentation

The Investigation Unit organised and coordinated a major presentation at the NSW Minerals Council Occupational Health and Safety Conference in September 2002. The topic of the 'hypothetical' presentation was 'Coping with a Mine Fatality'. A panel of 12 professionals (including solicitors, mine managers, district check inspectors, inspectors, investigators, a Coroner and a Judge) role-played a fatal accident through the investigation, coronial inquest and legal proceedings. The purpose of the presentation was to convey the impact an investigation has on people employed at a mine during an investigation.

Statistics for 2002-03

Investigations commenced	2
Investigations completed	3
Investigations in progress	2
Reports submitted to Coroner	1
Coronial Inquests commenced	2
New cases	3
Convictions	7
Cases in progress	18

Objective 2 - Environment

Key Outcomes

An appropriate legislative and administrative framework to achieve environmental objectives.

The Department's rehabilitation role is understood and accepted by industry, government agencies and the community.

Exploration and mining meet contemporary environmental standards, at industry expense.

No rehabilitation liability from current operations is borne by the State.

Progressive reduction in environmental impacts from derelict mines.

Community acceptance of mining and exploration.

Introduction

The Department's primary environmental role is to ensure that impacts from exploration and mining are minimised and consistent with approval conditions. Land disturbed by mining is to be rehabilitated to a high standard and returned to an appropriate, community-acceptable, post-mining land use. Environmental management systems are required on all mine sites to allow rehabilitation to occur.

Environmental Management of Mines

Environmental and rehabilitation performance is enforced and regulated through conditions of titles granted under the Mining Act 1992. The Department and other affected Government agencies issue mining titles, and other approvals to operate, only after full consideration of environmental impacts. The Department's Environmental Officers review all Environmental Impact Statements and the Reviews of Environmental Factors prepared by exploration and mining proponents. This ensures potential environmental impacts have been identified and that appropriate measures are in place to prevent or mitigate any adverse impacts. This assessment is then considered when drafting lease, licence and other approval conditions.

The Environmental Planning and Assessment (EP&A) Act 1979 requires consideration to be given to potential impacts on the environment before granting any approvals. During the year, the Department reviewed 59 proposed exploration activities and lease renewals under the EP&A Act. Approval was given to all proposals, although in some cases the original proposals were modified to ensure potential environmental impacts were addressed.

Under Part 4 of the EP&A Act, authorities considering whether to grant development consent forward environmental impact assessments to the Department for review. This year, 29 environmental impact assessments were reviewed and information submitted to consent authorities.

Applications for approval of second workings or longwall coal mining under Section 138 of the Coal Mines Regulation Act 1982 were reviewed to assess the environmental impacts of surface subsidence. While it is not always possible to completely avoid surface impacts, approval conditions are framed to minimise their impact. Impacts of longwall mining have been carefully monitored to improve understanding of subsidence and to inform decisions on current and future rehabilitation methods. This has led to proposals for major revisions to the subsidence approval and management regimes.

All mines under mining leases are required to prepare, and comply with, a Mining Operations Plan (MOP). This describes how they will meet the conditions imposed on their operation, minimise their environmental impacts and rehabilitate any disturbance. The MOP outlines the proposed mining operations, land and environmental management strategies and details progressive rehabilitation works. This year, 279 mines have prepared MOPs, and are conducting their operations accordingly.

Leaseholders must also submit an Annual Environmental Management Report (AEMR) detailing mine progress and implementation of the environmental strategies and rehabilitation objectives of the MOP. The AEMR is carefully reviewed by the Department, and other involved agencies, to ensure that the MOP is being complied with and that rehabilitation is progressing satisfactorily.

The Director-General's guidelines for the preparation of MOPs and AEMRs have been strengthened to require mines to include environmental management strategies and incorporate closure planning into mine environmental management reports at an early stage of operations. The added emphasis on early planning for closure, including consultation with stakeholders, will result in improved rehabilitation outcomes.

During 2002-03:

- 279 Mining Operations Plans (MOPs), or amendments to existing MOPs, were reviewed and accepted;
- 139 Annual Environmental Management Reports (AEMRs) were processed;
- 473 site reviews and inspections were completed;
- 4 formal audits were carried out; and
- 9 complaint investigations were conducted.

There were six environmental incidents reported and investigated by the Department during 2002-03. These incidents were contained within the lease boundaries. All incidents were investigated promptly and leaseholders required to implement measures to rectify the incident, rehabilitate any damage, and institute control measures to ensure that there would be no repetition.

Enforcing Environmental Regulation

Where a titleholder fails to comply with the conditions of their title, the Department must take further action. During the year, five notices were issued under Section 240 of the Mining Act 1992 requiring titleholders to comply with title conditions. A further nine directions to improve operating practices were issued by Environmental Officers.

Interagency Liaison

In order to ensure a whole-of-government approach to resolve issues and better align agency operating practices, regular meetings are held with the Environmental Protection Authority (EPA), Department of Infrastructure, Planning & Natural Resources (DIPNR) and National Parks and Wildlife Service (NPWS). Similar meetings are held at regional and individual officer level to effectively manage mine sites where there is more than one Government agency involved.

It is standard practice to involve all relevant Government agencies and Local Government in reviews of AEMRs and environmental and rehabilitation performance. This ensures that all agencies and Local Government are fully informed of mining proposals and the progress of mining operations, and are able to effectively integrate their respective regulatory requirements.

Environmental Securities

To ensure that rehabilitation of a minesite under a current lease is entirely funded by the mine operator and not by the community, the New South Wales Government requires leaseholders to lodge a security deposit either in the form of a banker's certificate or cash. In the event of the leaseholder being unable to meet its rehabilitation obligations, the Department will call in the security and engage a third party to rehabilitate the site.

As at 30 June 2003, securities held by the Department to cover the rehabilitation of ongoing mining activities amounted to $375.4 million.

To ensure that the amount of security for each site remains commensurate with the estimated cost of rehabilitation throughout a mine's life, the Department regularly reviews the security deposits of all mines. Departmental policy is that not more than three years should elapse between reviews of each site. This year, 114 reviews were conducted, with most leading to increases in security deposits to reflect either change in the area of disturbance, variations in rehabilitation costs or revisions to the proposed post-mining land use.

An independent external review of the Department's security deposit procedure has been completed and submitted to the Department. The recommendations in the review are presently being considered.

Improving Environmental Performance

Mining Operation Plans

The Mining Operation Plan (MOP) guidelines have been revised to take into account objectives and principles given in "The Strategic Framework for Mine Closure" which has been endorsed by the Australian and New Zealand Minerals and Energy Council (ANZMEC) and the Minerals Council of Australia (MCA). The revised MOP guidelines give more direct focus to the development of comprehensive Mine Closure Plans that prevent or minimise adverse long-term environmental impacts, and creates a self-sustaining natural ecosystem or alternate land use based on an agreed set of objectives.

Lightning Ridge

The Department has carried out an ongoing inspection and advisory environmental rehabilitation campaign in the Lightning Ridge Opal Mining region. The initiative began in August 2002 and, after seven sweeps, 1 017 claims have been inspected and reports furnished to the claimholders. About 60% of claims have been found to be in breach of one or more licence conditions, which included: excess mullock stored on claims; stored mullock likely to kill trees or block natural drainage channels; unsafe shafts; dumped vehicles on claims; failure to maintain boundary markings; and to fill in old shafts and exploratory holes. A high level of cooperation has been received from the two miners' associations and individual miners. Following the inspection campaign, planning is now under way to create extra mullock dumpsites to alleviate identified mullock handling problems.

Warwick Schofield, a Mine Safety and Environment Office, at Lightning Ridge, checking environmental rehabilitation at a site that was formerly used to wash opals from mullock dug from opal mining claims

Subsidence Management Plans

A review of the Department's approval process for underground mining that may cause subsidence has been conducted. The review has been conducted over the past 18 months in close consultation with all affected agencies, including the Environment Protection Authority, the National Parks Service and the Sydney Catchment Authority. Consultation has also taken place with the coal mining industry and with representatives of the peak environment groups.

The key proposals within the revised process are that an approved Subsidence Management Plan (Plan) be required wherever underground mining is likely to lead to subsidence, and that broader public and interagency consultation processes will apply to approval of these Plans. The requirement for a Plan will arise as a condition of all existing coal Mining Leases, and therefore management of the approved Plan will come under the enforcement powers of the Mining Act 1992.

Draft Subsidence Management Plans will be reviewed by a new interagency committee established to advise on conditions for their approval and to participate in ongoing monitoring of subsidence management.

The review has been overseen by the Water CEOs Committee. The Department made presentations to the Water CEOs in February and June 2002 and in February 2003, at which time the revised approvals process was accepted. The proposed new process will be submitted to Cabinet for approval early in the next financial year.

Remediation of River Bed Cracking

The Southern Coalfields River Remediation Steering Committee was formed in June 2003. The Committee is assessing impacts of mining on waterways, near-surface aquifers, upland swamps and groundwater regimes in affected catchment areas from previous mining. Its objective is to develop a common understanding of subsidence impacts and to develop and oversee implementation of preferred options to remediate subsidence impacts.

A Technical Committee, which will provide advice on remediation options, information on the extent of subsidence impacts and control of remediation activities on watercourses, supports the Steering Committee. To date, the Steering Committee has held a field inspection of affected sites, identified and collated issues of concern to agencies and companies and is developing a spatial database of mining and impacts in the Southern Coalfield.

Review of Environmental Provisions of the Mining Act 1992
The Department completed an internal review of the environmental provisions of the Mining Act 1992.

Southern Coalfields River Remediation Steering Committee inspect Impacts of cracking on Wongawilli Creek.

The review is aimed at ensuring that the provisions reflect contemporary standards and meet the current requirements and expectations of both Government and the community. The review identified some proposals for change. The next stage of the review will involve consultation with affected stakeholders on proposed changes.

Derelict Mines Program

The Department administers the Derelict Mines Program through an inter-departmental consultative committee of representatives from the Environment Protection Authority, the Department of Lands and the NSW Mineral Council. The

committee's role is to set the strategic priorities of the Program, agree on individual projects for each year and monitor and evaluate the success of projects. The budget allocation for the program is $1.6 million per year.

Projects to rehabilitate more than 60 derelict minesites across the State were funded during the 2002-03. Major rehabilitation works was undertaken on 14 sites and minor rehabilitation works carried out on a further 23 sites. Environmental site assessments, including bat surveys, heritage inspections and soil and water investigations, were carried out on 24 sites.

Some of the major projects undertaken include the following.

- Lake George Mine, Captains Flat: Fencing around safety hazards, such as high walls, was upgraded and repaired. Exposed contaminants and dangerous overhangs on the southern tailings dump were reworked and capped with clay. Slag material was removed and capped to prevent further acid mine drainage.
- Mount Hope Copper Mine: Backfilling of the open cut took place with material from waste heaps and leach pad. Erosion and sediment control structures were contracted and shafts capped.
- Sunny Corner Mine: Fauna surveys took place and construction of fences and grids at hazardous shafts were undertaken to prevent visitor access. A remediation action plan was developed for contaminated soil at the local community hall.
- Glen Davis Oil Shale Mine: Burning oil shale waste stockpiles were extinguished to reduce the potential for bushfires. Erosion control works were undertaken to minimise sedimentation of the local river.
- Uralla Goldfield: Sediment and water management structures were built to control erosion and prevent further gully development of the goldfield.
- Iron Duke Mine: Remediation of acid mine drainage material was undertaken by disposal and capping. Erosion and sediment-control structures and fencing of open shafts were constructed.
- Lightning Ridge: Backfilling of many open shafts and removal of mullock material was implemented. Erosion and sediment-control structures in areas of subsidence were constructed.

The Department has also been granted $2.8 million through the Environmental Trust to undertake work on four major derelict mine-sites in New South Wales.

- Conrad Mine ($1.15M): Stabilise contaminated tailings dump, install sediment and water management structures and reduce safety hazards. Expenditure at Conrad was $665 569 this year.
- CSA Excised Areas ($850 000): Stabilise contaminated waste dumps and tailings dam and reduce safety hazards at a subsided area. Expenditure at CSA was $221 818 this year.
- Woodsreef Asbestos Mine ($200 000): Construct and maintain sediment and water management structures around the tailings and waste dumps.
- Yerranderie Silver Mines ($631 320): Investigate acid mine drainage sources, reduce safety hazards and trial remedial options. Expenditure at Yerranderie was $277 676 this year.

Rehabilitation works on these Environmental Trust projects will continue over the next financial year.

Derelict Mines Program Expenditure 2002-03

Mine Site	Details	Expenditure
Major Rehabilitation Projects	14 Sites	
Broken Hill South Ltd tailings dam	Capping of tailings dump with a layer of rocks to prevent erosion.	$84 545
Gilgunnia Goldfield	Safety works.	$40 636
Peak Hill crown stopes	Safety works and visitor structures.	$21 611
Mount Hope Copper Mine	Erosion controls and remediation of open cut, leach pads and waste heaps.	$172 727
West Wyalong	Erosion controls and safety works.	$65 909
Glen Davis	Extinguish burning oil shale waste.	$38 182
Grenfell/Victory Reef	Erosion controls and safety works.	$129 682
Lake George Mine, Captains Flat	Safety fences, remediation of slag and southern tailings dump.	$145 106
Uralla Goldfield	Erosion controls.	$83 091
Ottery Arsenic Mine	Safety fencing and erosion controls.	$60 065
Iron Duke Mine	Safety fencing, erosion controls and remediation waste heaps.	$68 182
Sunny Corner	Safety fencing.	$68 473
Valla	Disposal of waste and sediment controls.	$31 381
Lightning Ridge	Safety works and erosion controls.	$22 012
Minor Rehabilitation Projects	23 Sites	$131 952
Major Site Assessments	6 Projects	
CSA Excised Areas	Project management and assessment	$47 932
Hillgrove	Safety investigation and assessment	$24,279
Tallebung	Environmental site assessment	$22 450
Cowarra	Assessment of tailings dam	$28 370
Captains Flat	Environmental and geo-technical assessments	$54 609
Sunny Corner	Fauna assessments and remedial plan	$28 472
Minor Site Assessments	18 Projects	$171 855
Laboratory Costs & Miscellaneous Expenses	Sample Analysis, Equipment Maintenance	$19 970
TOTAL		$1 561 491

RESOURCE MANAGEMENT \ SAFETY: MEASURE OF PERFORMANCE

Key Indicator	Target	Comment
Evaluation of, and continuous improvement in effective management of risks in mines.	• Continuation of the small minesí campaign. • Aggregated results of assessments and investigations are reviewed quarterly by the Mine Safety Council and Safety Advisory Committees.	• The Small Mines Campaign approach has been applied to communicating the requirements of DMR guidelines for surface mobile and transportable equipment for use in mines. 300 flyers sent to Central West mines inviting them to attend a Mechanical Design Guideline 15 workshop. 5 workshops organised to date. The first White Cliffs Opal Mining Safety Course was held on 17 and 18 June with over 100 people in attendance. • Safety Operations and Technical Services undertook an Electrical Safety Campaign as a result of increased frequency of reporting of electrical shocks in coalmines. All coalmines and major metalliferous mines were assessed for electrical safety standards and a report prepared. All mines were either advised of improvements required to meet Australian Standards or directed by statutory notice to effect immediate action to ensure safety at the mine.
Improved Departmental communication processes and enforcement actions have industry and community support, and improvements in industry performance are tracked.	• Implementation of the tripartite consultative groupís communications strategy, including the provision of a range of information products/ processes • Improve the suite of agreed performance measures during 2002-03. • Provide quarterly reports of Departmental interventions and prosecution actions to the Mine Safety Council and Safety Advisory Committees, together with a range of industry performance measures.	• Website mapping / development undertaken and progressed in line with other KPA3 programs and ITS strategic direction. • Development of positive performance measures undertaken. • Reports provided to MSC and discussed at sector SAC meetings. Information also provided in Mine Safety Updates.
Departmental performance results in positive feedback and continuous improvements.	• Feedback mechanisms are progressively introduced for Departmental actions. • Departmental functions are evaluated from stakeholder responses, staff are developed, functions are improved, performed to plans, are on time and are within budget.	• Process review teams developed standard means as part of process improvement. • Industry surveys conducted of selected stakeholders ie attendees Electrical Engineering Safety Seminar, Check Inspectors and the Terrigal OHS Conference. An industry information needs survey was also conducted with the assistance of Safety Operations field staff. Survey results have been processed. The external communication strategic plan will take into consideration these survey results.
Authorisation processes (incl approvals, certifications, exemptions, notifications) reviewed and refined.	• For 2002-03: - Certificates of competency/ permits Issued = 200 - Reviews of applications for secondary workings in coal mines = 50	• YTD = 220. • YTD = 46, Pending = 5.
Mine site assessments (planned site inspections).	• Mine site assessment targets: - Coal U/G = 440 - Coal O/C = 84 - Non coal U/G = 70 - Non coal O/C = 200 - Non coal (surface intermittent) = 50 Total = 844 • Unannounced at least 10% of total • 3 MOPs reviewed and accepted for resource utilisation and health and safety management.	• Coal U/G = 1174. Assessments remain above target levels due to Small Mines Campaign contacts and the Electrical Safety Campaign. • Coal O/C = 95. • Non coal U/G = 59. Reduction due to secondment of Regional Inspector of Mines Cobar to Investigation Unit for three months. • Non coal O/C = 393. • YTD = 188 (includes Small Mines Campaign Assessments). • Total for the year = 1909. • 25.0% of sites assessments were unannounced. • Trial assessments conducted on Cadia Open Cut, Ridgeway and North Parkes. Regular assessments to be incorporated in 2003-04.

Subsidence reviews.	• 50 conducted.	• Section 138/139 application assessments = 28. • EIS Assessments = 1. • Site Assessments = 38. • Subsidence Monitoring Agreements = 31.
Investigations of fatal/ serious accidents and incidents.	• About 220 significant, serious and fatal investigations are expected, based on experience, with expedited reports. Inspectorate = 45 Investigations Unit = 5 • Investigations of non-fatal serious incidents by Inspectorate = 220.	• YTD = 28, Reduced number of incidents and accidents due to improved safety performance. • YTD = 2. • YTD = 258.
Enforcement of breaches of Acts.	• Based on experience, about 300 enforcement actions for compliance reasons are expected. Prosecutions = 5 Notices/Directions = 300	• YTD = 3. • YTD = 312.

KEY PERFORMANCE AREA 3 - Resource Management - Environment

Key Indicator	Target	Comment
Percentage of mines that have mining operation plans (MOP).	• More than 90% of operating mines on Mining Act titles to have acceptable MOPs.	• There are 308 operating mines of which 279 mines have submitted and operated to acceptable MOPs. This relates to 91%.
Appropriate level of security deposits to ensure government does not have any liabilities for future mine site rehabilitation.	• All security recommendations are accepted by leaseholder, or an alternative rehabilitation estimate negotiated. • Less than 10% of sites to have a security deposit below 80% of the estimated rehabilitation cost by 30 June 2003.	• All security assessments have been accepted by leaseholders. • 91% of mines now have a security deposit greater than 80% of estimated rehabilitation cost. All securities are calculated as the total cost of anticipated rehabilitation.
Progressive reduction in derelict mine sites.	• The derelict mines rehabilitation program is implemented in accordance with the inter-Departmental committee priorities.	• The Derelict Mines program was implemented on budget and substantially to schedule as determined by the Interdepartmental Derelict Mines Committee.
Environmental assessment of exploration and mining activities.	• Environmental audits, reviews, investigations and assessment = 450 • Proposed major mining approvals = 5 • Security deposit reviews = 100 • Recommendations under part 5 of the Environmental Planning and Assessment Act = 50 • MOPs reviewed and accepted = 300 • AEMRs reviewed and accepted = 140	• 473 inspections have been conducted on mining sites. In addition to these, 998 inspections of claims and mining purposes leases at Lightning Ridge have been inspected during 9 field sweeps under the Lightning Ridge Rehabilitation Initiative. • 29 environmental impact assessment documents have been reviewed in order to provide information to consent authorities under part 4 of the EP&A Act. • 114 security deposit reviews were conducted during 2002 -03. • 59 Part 5 assessments have been completed. 36 of these are part 5 assessments for renewal of Mining Purpose Leases at Lightning Ridge. • A total of 279 MOPs were reviewed and accepted. • 149 AEMRs were reviewed and accepted.
Review and assessment of rehabilitation requirements for derelict mines.	• Derelict mines rehabilitation commenced and monitored - 8 • Derelict Mine Sites rehabilitated - Sites =16 Area = 80 hectares	• 14 significant rehabilitation projects (> $20,000) were undertaken. In addition, another 15 smaller projects were completed. • At least 16 sites were completed. Other sites require additional work and further stages to be completed before they can be classed as rehabilitate. • The rehabilitated area is in excess of 85 hectares.