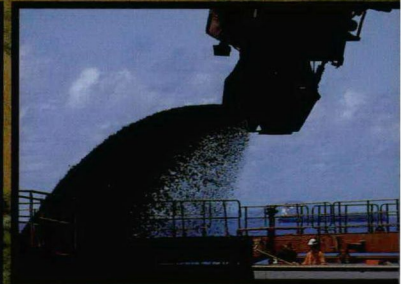
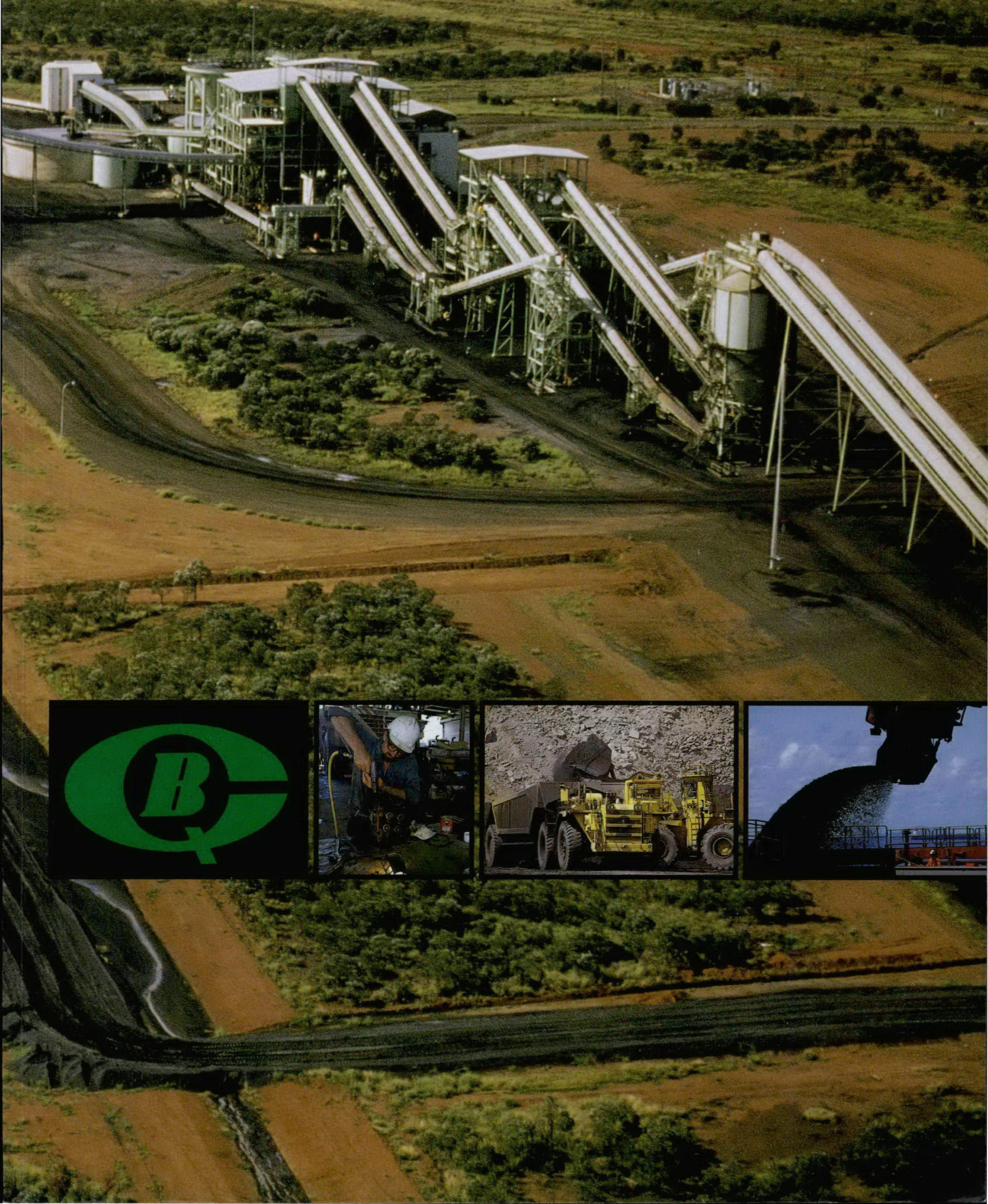


Queensland Coal Board

41st Annual Review 1991/92



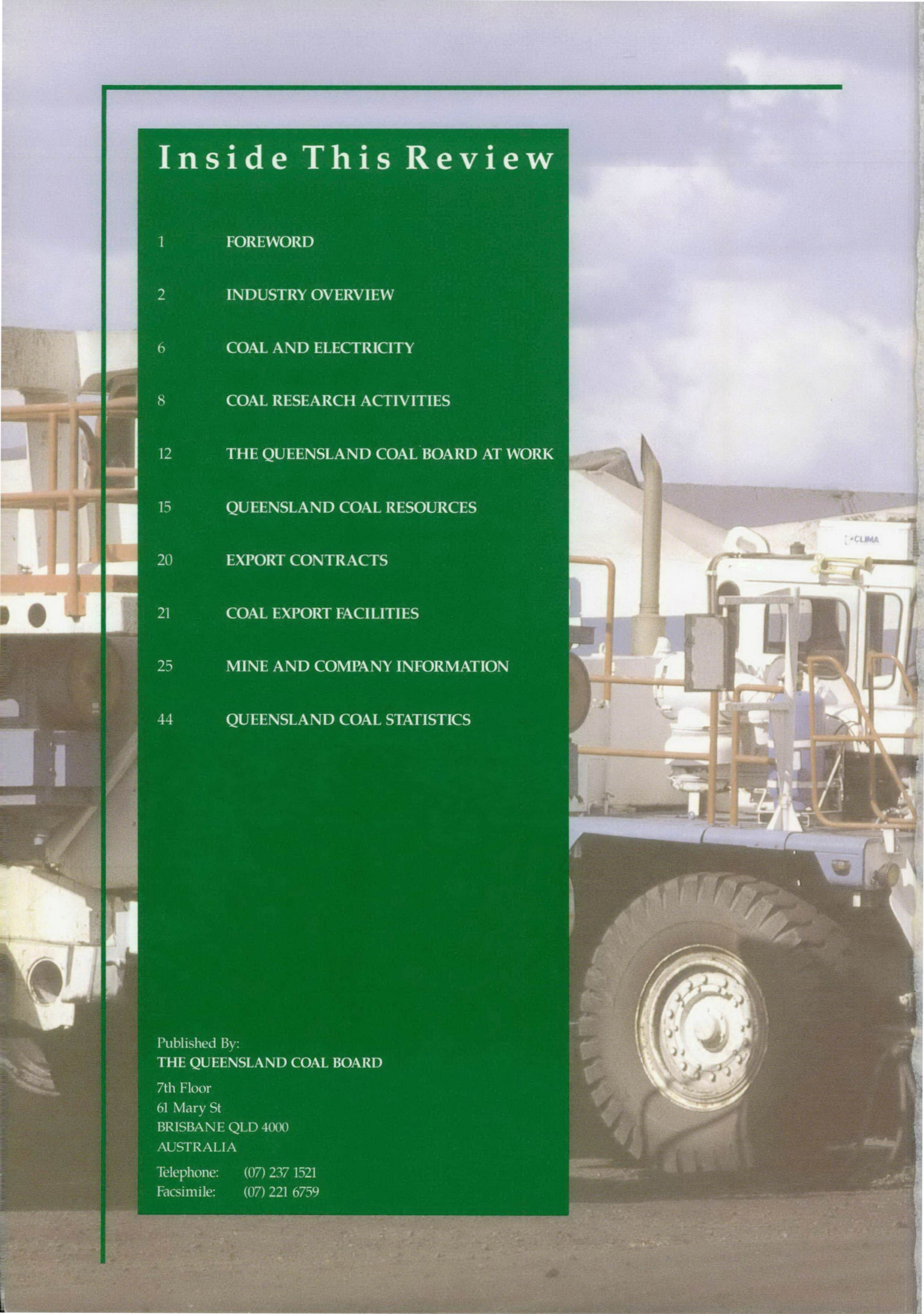
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Foreword

The Queensland Coal Board Annual Review is a comprehensive report on the performance of the State's coal industry. In this, the 41st Annual Review, the Board details the nature and extent of coal resources, infrastructure, and the output of all Queensland coal mining operations.

Particular attention has been paid to an expanded section on coal-related research being carried out to improve productivity and expand resource utilisation. This is significant since our continuing performance in this highly competitive industry depends largely on Queensland's ability, in an Australian industry context, to improve its understanding and use of coal.

The report also notes improved labour relations performances and the attendant restructuring of unions representing coal miners.

In recent years, the Annual Review has been sought after and well received by consumers and potential buyers and investors around the world. The publication is both a source of up-to-date information and a valuable reference document.

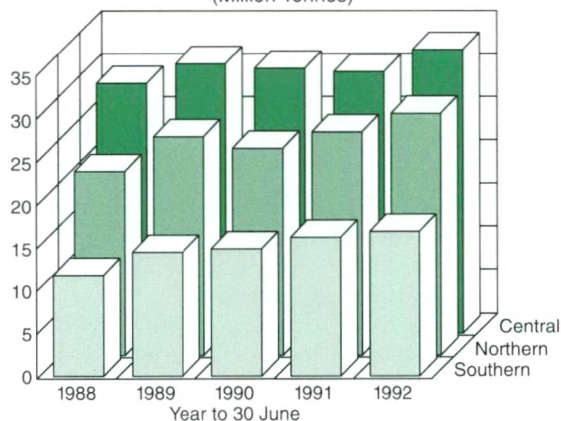
The 41st Annual Review also represents a continuing commitment to bring to the attention of the widest possible audience the quality of the Queensland coal industry, its people, and our resource.

Tony McGrady

Minister for Minerals and Energy
17th Floor
61 Mary St
BRISBANE QLD 4000
AUSTRALIA

Industry Overview

SALEABLE PRODUCTION – OPENCUT
(Million Tonnes)

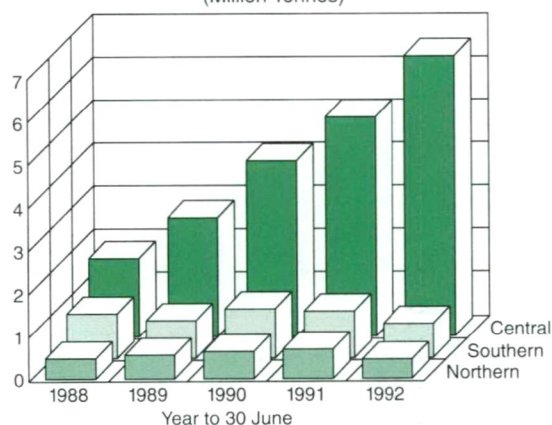


The Queensland coal sector continued to perform well during the 1991/92 financial year, a year during which new records were established in all major statistical categories of the Queensland coal industry. The most notable were records for coal production and coal exports.

Total saleable production in the State's three statistical coal mining areas of the Northern, Central and Southern districts was 84 085 042 tonnes. This was an increase of 7.3% or 5.72 million tonnes over the saleable production of 78 363 193 tonnes during the 1990/91 financial year.

During the year under review, the opencut production increases in Queensland were distributed across all districts. The Northern District showed the largest increase in 1991/92 of 28 200 986 tonnes up from the 1990/91 tonnage of 25 801 761, the Central District 1991/92 tonnage was 32 177 738 compared with 30 324 817 during 1990/91, and the Southern District increased from 15 560 057 in 1990/91 to 16 054 698 in 1991/92.

SALEABLE PRODUCTION – UNDERGROUND
(Million Tonnes)

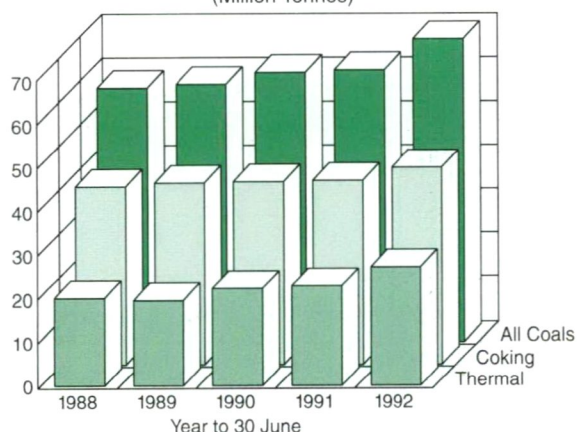


The total underground production tonnage for 1991/92 with 1990/91 figures indicated in brackets was 7 651 620 (6 676 558), and on a district basis production was, Northern District 500 652 (649 443), Central District 6 374 960 (5 104 813) and Southern District 776 008 (922 302).

An analysis of total sales shows that from the saleable coal production, 69 655 810 tonnes were exported.

This export tonnage was an increase of 12.5% or 7 738 094 tonnes over the 61 917 716 tonnes exported during 1990/91. Of this amount, coking coal exports comprised 44 858 950 tonnes and thermal coal exports was 24 796 860 tonnes. Export figures for coking and thermal coal for the last corresponding financial year were 21 099 967 and 40 817 749 respectively.

COAL EXPORTS
(Million Tonnes)



Thus, during 1991/92 Queensland coking coal exports increased by 9.90% and thermal coal exports rose by 17.52% over exports in the 1990/91 period. Queensland coal exports were destined for consumers in 32 countries with Japan again being Queensland's major export destination with 31 028 224 tonnes, followed by India 5 530 034 tonnes, Korea 4 776 609 tonnes, France 3 094 873 tonnes, United Kingdom 2 816 492 tonnes, Netherlands 2 666 722 tonnes and Hong Kong 2 451 037 tonnes. Coal landed in the Netherlands is generally re-exported throughout Europe.

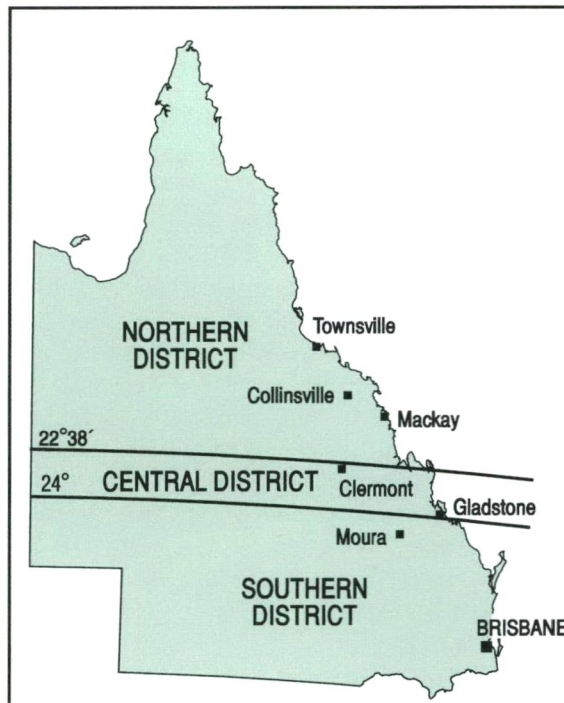
Consequently, all the five major State coal ports exported record tonnage during the year under review. Coal export tonnages through these ports with the 1990/91 year indicated in brackets were Abbot Point 5 926 118 (5 549 827), Brisbane

3 467 881 (2 672 487), Dalrymple Bay 18 364 771 (16 446 202), Gladstone 19 580 410 (18 195 249) and Hay Point 22 316 630 (19 053 951).

Within Queensland 14 889 078 tonnes were utilised in 1991/92 compared with 13 874 324 tonnes in 1990/91. On a utilisation by industry basis with 1990/91 figures indicated in brackets, Electricity was 12 417 251 (11 516 601) tonnes, Basic Non-Ferrous Metals was 1 674 399 (1 574 120) tonnes, Cement/Concrete Products was 215 501 (224 203) tonnes and Miscellaneous was 581 927 (559 400) tonnes.

Employment in the Queensland coal industry rose from 10 646 employees as at June 30, 1991 to 10 950 employees as at June 30, 1992. Opencut operations continued to be the major employer although there was a steady growth in underground employment. This growth is a consequence of the increased attractiveness of establishing new longwall mines to maintain production in the longterm. This trend will continue with the further development of longwall mines in Queensland.

On an employment by district basis, the Central District had the largest employment figure as at June 30, 1992 of 5 053, followed by Northern 3 645 and Southern 2 252.



Queensland Mining Districts



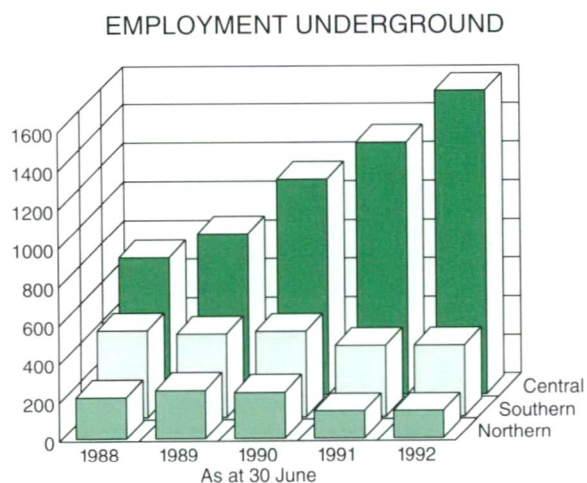
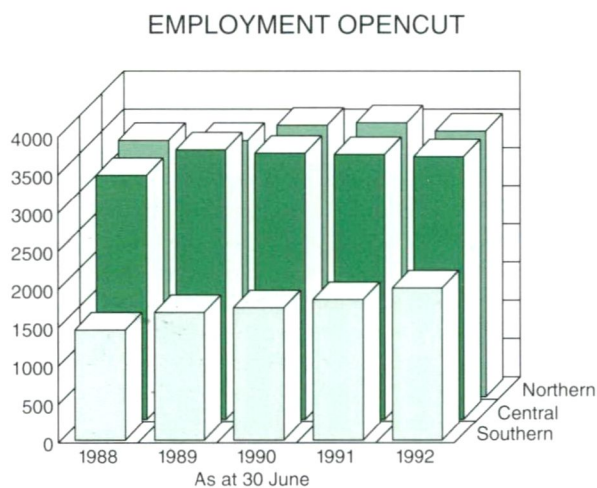
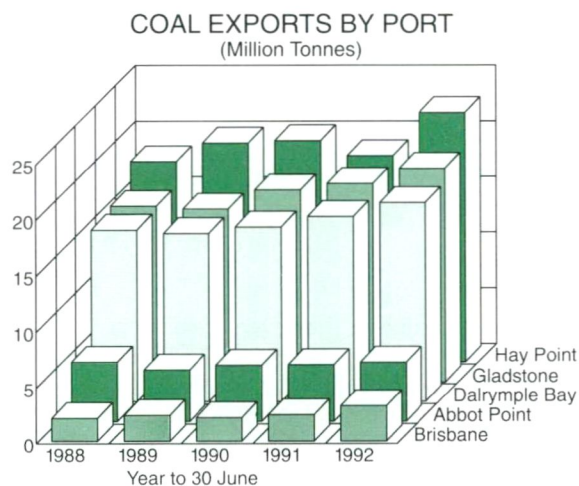
Queensland has world class coal loading facilities.

Concurrent with the small rise in employment of 304 in the coal industry in Queensland, there was a pleasing contribution of upward trends in productivity indicators. Average output per employee shift for the 1991/92 financial year was 28.99 tonnes. This represented a 5.73% increase on the previous corresponding period which reported an average output of 27.42 tonnes per employee shift. The average output of saleable coal per employee in 1991/92 was 7 758 tonnes compared with 7 341 tonnes in 1990/91.

An employee shift for statistical purposes is seven hours. This length of shift recognises the 35 hour week in the mining industry awards. However, Queensland employees work 8 hour to 9.25 hour shifts over five day or seven day weekly rosters. Additionally, under employment arrangements Queensland coal industry employees may be required to work on a roster basis on 363 days of a year.

Total opencut output on a district basis per employee shift was Northern 31.03 tonnes, Central 33.29 tonnes and Southern 31.14 tonnes. Whilst underground production by district was Northern 13.30 tonnes, Central 16.81 tonnes and Southern 8.38 tonnes.

Improvements in productivity owe much to increasing professionalism and maturity in the conduct of day-to-day industrial relations in the State's coal sector. A direct result of this attitude was an agreement signed during 1991/92 between various mining unions and the major coal employer



in Queensland. This agreement made provision for greater security of employment, a comprehensive review of dispute procedures and a commitment to changes which promote efficiency.

The strong performance of the Queensland coal mining industry during 1991/92 was notable particularly in view of the international oversupply of a marketable range of steaming and coking coals.

Looking to the future, it is reasonable to assume that this oversupply will continue in the short to medium period and is likely to be a contributing factor in coal contract price negotiations during 1992/93.

Notwithstanding the current excess of coal supply over coal demand, there is a need for new Queensland steaming coal production capacity to be progressively developed. This is necessary if Queensland producers are to be involved in meeting new power generation needs, particularly in the Asia-Pacific region, in the medium to longer term. It is also necessary for future development to have continuing co-operation between the public and private sectors in Queensland. This will facilitate the planning for, and provision of, appropriate road, rail, port, urban and educational infrastructure required by a competitive coal sector up to and well beyond the year 2000.

Competition to the marketing of Queensland's steaming coal in Europe will continue to be strongest from the United States, South Africa and New South Wales producers. Colombia and Venezuela, new entrants to this marketplace, will continue to steadily increase sales as short term difficulties in relation to those countries' transport infrastructure are overcome. No threat to Queensland sales into Europe in the foreseeable future is expected from Canadian export steaming coals as those coals are not competitively priced.

Overall, despite strong competition and Queensland's geographical disadvantages, there is very great potential for the State's mines to benefit from increased European demand for low sulphur steaming coal during a time of steadily decreasing European coal production. A contributing factor to that decreasing production is the reduction or removal of industry tariff protection.

The Asia-Pacific region will remain the strongest market for Queensland's steaming coal with growing demand from its long established trading partner Japan, and the newer markets in Taiwan, Hong Kong, Korea and India. While Japan continues to diversify its sources of supply, in accordance with its stated energy policy, it is still a growth market and will be the major customer for Queensland steaming coal in the foreseeable future.

With the anticipated strong growth in demand for electricity for industrial development, it is expected that Queensland producers will establish stronger

coal trade links with utilities in Pacific Rim countries, notably Korea, China, India, Taiwan and Thailand. Not unexpectedly, there will be vigorous competition to Queensland sales in this region notably from producers in Indonesia and South Africa. Furthermore, producers in New South Wales will continue, at least in the medium term, to remain highly successful in sales to this region. In the longer term, there is a potential for considerable sales into the Pacific Rim region from the former Soviet Union. However, Queensland, as part of an Australian coal industry, will remain highly regarded as a major supplier because of its political stability and its record as the most reliable international supplier of quality coals.

However, competing with coal to meet those energy demands will be, in certain regions, natural gas, oil and nuclear energy sources. In addition, the environmental debate involving greenhouse gases has the potential to decrease or inhibit, in some countries, the use of coal as an energy source. This merits both informed and constructive debate and continuing international research and implementation of clean coal technologies. The more efficient use of coal at a time of growing global advocacy of various carbon taxes is also essential.

The Queensland Coal Board while recently investigating the potential for mine expansions and greenfield developments up to 2001 considered that the annualised growth rate for all Queensland thermal coal exports could be seven percent. For Queensland's high volatile thermal coals the growth is likely to be much larger at 12 percent, albeit from a lower base. The Board considers there will be an increase of five percent in the export of medium volatile coals. The predicted growth in high volatile coal exports presumes that at least one major deposit will be developed in the Surat Basin around the year 2000. The Surat Basin contains reserves of about five billion tonnes, the largest concentration of high volatile thermal coal in Queensland. About 60% of these reserves would be suited to opencut mining methods.

A constraint to the development of a mine in the Surat Basin is the current absence of suitable transport infrastructure. This, together with the fact that the Surat coals have not been used extensively outside Queensland to fire power stations, has resulted in these vast reserves being undeveloped. Some Walloon coals in the Moreton Basin are known as Surat type coals e.g. Ebenezer.

However, with the forecast increased demand for thermal coal and the matching of demand and supply internationally after 1995, the development of the Surat Basin should prove attractive to potential investors. Surat Basin coal could be exported through the port of Gladstone with an upgrade and extension of the existing

Moura/Gladstone coal rail line.

The Bowen Basin has limited accessible resources of high volatile thermal coal, with only the Moura Mine currently producing an export product. The new Gordonstone Underground Mine will soon commence full production of a similar high volatile export quality thermal coal to that currently supplied by the Moura Mine. Undeveloped deposits which could also produce a high volatile thermal coal are Theodore, Kenco, King, Humboldt, Rolleston and Valeria (formerly known as Capella).

The Bowen Basin does, however, contain large tonnages of low and medium volatile thermal coals some of which are currently produced for export at Newlands, Blair Athol, Blackwater and South Blackwater. Three other significant, but as yet undeveloped, deposits of high volatile coals are Clermont, Ensham and Togara. The development of the Ensham and Clermont deposits is most likely to occur towards the middle of this decade, as new export markets are established.

Turning to coking coal, the international growth in demand for such coal, while not being dramatic will be steady. Queensland's share of this growth is expected to be annualised at two percent at least until the next century, as a consequence of the quality of this State's coking coal being in demand by a large number of international steel producers. The price for Queensland's coking coal should therefore remain steady. However, a major concern to the coking coal industry in the longer term is the rapid development of changing technologies, particularly those relating to the substitution of thermal coals for coking coals in blast furnaces using the pulverised coal injection (PCI) process.

In concluding this overview, the Board notes the constructive attitude of the Federal Government in announcing that from the commencement of the 1991/92 financial year the coal export levy of \$3.50 on each tonne of export coal would be removed. This discriminatory and inequitable levy was introduced in 1975 on certain coking coal export mining operations. In 1982 changes to the procedures for determining the payment of the export levy resulted in only opencut coking coal operations in Queensland paying the levy. A condition for the removal of the levy, is the requirement to undertake company-specific initiatives, particularly in relation to research and development.

Coal and Electricity

The public electricity supply industry in Queensland is the State's largest domestic user of coal.

More than 98% of electricity is generated by coal-fired steam turbines operated mainly by the Queensland Electricity Commission (QEC). Mount Isa Mines also operates coal-fired generating plant at Mica Creek which supplies part of its output to the public electricity grid.

QEC consumed 11 974 924 tonnes of coal and Mica Creek consumed 442 327 tonnes of coal in 1991/92. This was 83.4% of domestic consumption and 14.8% of total State production for the year.

DEVELOPMENT CATALYST

As the major domestic consumer of thermal coal, Queensland's electricity supply industry has been and will continue to be the catalyst for development of some of the State's coal mines.

Despite being the major domestic coal consumer, QEC does not own or operate any coal mines. The Commission relies on commercial pressure provided by open competitive tendering from private enterprise mines to achieve a reliable, flexible and cost-effective coal supply. As coal purchases represent around 60% of QEC's operating costs, the price of coal is the most significant determinant of electricity prices.

Power stations have been specifically designed to burn lower quality coal that would be uneconomical or unsuitable to export. This has assisted the mines supplying QEC to maximise its coal and capital resources and optimise Queensland's returns from the export of high grade coals.

The QEC uses pulverised coal fired boilers and steam driven turbines to generate its electricity. Availability at its base load stations is of the order of 95% which compares more than favourably with interstate and overseas coal fired plants. This high availability has a major bearing on QEC's ability to contain electricity costs.

The low sulphur content of Queensland coals ensures that acid rain is not a concern for our environment. The high conversion efficiency of the State's power stations is an additional benefit for the local environment.

Ash is produced as a consequence of burning coal in the power stations. The fine ash collected by the gas cleaning precipitators at the end of the combustion process is used commercially in the cement industry. In some instances, another byproduct is used as a lightweight filler in a number of industries such as paint manufacture.

The QEC monitors various alternatives to coal as a fuel for electricity generation. Of particular interest is the potential of coal bed methane as a future fuel source.

The following table details the typical coal quality supplied to Queensland's power stations.

Table - TYPICAL COAL QUALITY SUPPLIED TO QUEENSLAND POWER STATIONS

	S.E. GJ/t	Volatile Matter %	Moisture %	Sulphur %	Ash %
Power Stations					
Gladstone	20-28	18-25	2-12	0.3-0.5	10-17
Stanwell	26	18	10	0.3	16
Tarong	20	28	5	0.3	28
Callide	20	25	10	0.3	16
Swanbank	22	36	5	0.5	23
Mica Creek*	28	20	2	1.0	15

* Mica Creek is owned by MIM Holdings Ltd and supplies power to the public grid.

S.E. = Specific Energy

GJ/t = Gigajoules per tonne.

ELECTRICITY DEMAND

Increases in energy requirements over the next decade will average 5% per year with fuel needs directly related to this growth.

Electricity sales growth is determined largely by the strength, diversity and economic stability of the Queensland economy, and improvements in the efficient use of energy by the industry's customers.

The strength of the Queensland economy, particularly in the labour intensive tourism and services sectors, has led to high levels of migration to Queensland. Population density, mainly in the State's south-east, is maintaining strong growth in electricity demand in the wholesale, retail and tourism sectors of the economy. This expansion of the Queensland economy is expected to support further diversification of the State's manufacturing base.

To meet electricity demand in the near term, construction of the 4 x 350 megawatt unit Stanwell Power Station near Rockhampton is well advanced

and a further 204 megawatts is presently being refurbished.

First coal was railed to the Power Station in June 1992 to test coal handling facilities and unit 1 is scheduled to begin commercial operation in March 1993. When completed in 1996, Stanwell will burn some 3.5 million tonnes of Curragh coal.

As part of its consideration of optimally meeting Queensland's electricity needs in the longer term, the QEC called tenders in January 1992 for the supply of coal for new power stations. The tender calls for quantities of 20, 40, 80 and 160 million tonnes of coal from anywhere in Queensland to be reserved for delivery starting some time between 1997 and 2004. The tenders close on 29th October, 1992 and have a validity period of 27 months.

The table below illustrates the capacity and consumption of Queensland's power stations.

DEMAND SIDE MANAGEMENT IN QUEENSLAND

The Queensland Electricity Supply Industry is continuing to pursue demand side management as a strategy for increasing customer satisfaction and for delaying the need for new generating capacity.

Demand management includes the planning, implementation and monitoring of initiatives that encourage customers to modify their pattern

(including the timing and level of electricity demand) and efficiency of electricity usage.

In Queensland, demand side management has been practised since the early 1950's when water heating load control was first introduced in Brisbane. In the early 1980's water heating load control was extended throughout the State and time-of-use tariffs were introduced.

Recent demand side management initiatives include:

- ◆ the introduction of legislation for compulsory domestic appliance efficiency labelling to encourage the use of more efficient appliances;
- ◆ a program of subsidised energy audits and incentives in the commercial market sector to encourage customers to implement energy efficiency measures; and
- ◆ continued promotion of off-peak (night rate) water heating.

The Queensland Electricity Supply Industry continues to provide advisory services to customers to encourage wise and efficient use of energy. The Queensland Electricity Technology Centre in Brisbane is funded by the electricity industry and provides information and advice to commercial, industrial and farming customers on new and efficient electric technologies.

This material has been provided by the Queensland Electricity Commission.

Table - CAPACITY AND CONSUMPTION OF POWER STATIONS

Power Stations	Installed Capacity (MW)	Coal Consumed		Coal Source
		1990/91	1991/92	
Tarong	1 400	5 223 526	5 531 933	Meandu
Gladstone	1 680	2 906 768	3 474 392	Curragh/Blackwater/Callide
Callide	700	2 603 819	2 620 812	Callide
Swanbank	908	349 559	347 787	* Ebenezer
Mica Creek** (Mt Isa)	165	432 929	442 327	Collinsville

* Present consumption from stocks; deliveries from Ebenezer will begin in early 1992/93.

** Mica Creek is owned by MIM Holdings Ltd and supplies power to the North Queensland Electricity Board.

Coal Research Activities

INTRODUCTION

Queensland coal producers operate in a changing international market environment. New factors confronting coal companies include increased competition, changing requirements of coal consumers, social and industrial pressures, and increasing environmental responsibilities. These influences dictate that the industry be actively researching ways to lower costs of production, improve coal quality and enhance the general working environment.

The environment in which the industry operates is also changing. In particular, mining companies are moving towards the establishment of more flexible operating structures within changing legislative requirements.

While the Federal Government still prescribes that a research levy be applied to all coal sales by producers, the disbursement of these funds has recently come under the control of the Australian Coal Association (ACA). A new research structure, the Australian Coal Association Research Program (ACARP), is an important agent in achieving an industry focus for coal research and development in Australia.

Changes to the structure of the Joint Coal Board and the abolition of the Federal Excise Duty by the Federal Government have been effected in such a way as to direct additional funds into mining research.

The Federal Government's semi-autonomous research arm, the Commonwealth Scientific and Industrial Research Organisation (CSIRO) is relocating most of its mining related sections to Queensland, with assistance from the Queensland Government, to provide a more effective research service to the mining industry. Funding of the soon to be completed CSIRO's research facilities, at Pinjarra Hills in Brisbane, is an example of the commitment of the Queensland Government to support coal research. The increased presence of CSIRO in Queensland will expand opportunities for collaborative research between the Australian Coal Industry Research Laboratories (ACIRL), Julius Kruttschnitt Mineral Research Centre (JKMRC), Safety in Mines Testing and Research Station (SIMTARS) and Queensland universities in the areas of geomechanics, instrumentation, mining equipment and coal preparation.

In addition, the Queensland Government is supporting coal research through its operation of the Safety in Mines Testing & Research Station (SIMTARS) and its 10% shareholding in ACIRL

In a less direct manner, government funding of tertiary institutions is showing increasing returns as these respond to the educational and research challenges of the coal industry.

Apart from government and normal corporate research and development funding, the coal industry is also seeking to establish co-operative or jointly funded projects in the areas of health, safety, training and environmental issues.

AUSTRALIAN COAL ASSOCIATION RESEARCH PROGRAM

Coal industry research priorities and funding mechanisms in Australia are undergoing a major change following the transfer of funding from the Federal Government's National Energy Research, Development and Demonstration Program (NERDDP) to the ACA via ACARP.

Federal legislation is now in place that will give the ACA responsibility and accountability for the levy of five cents on each tonne of coal sold. This levy funds coal research. The first round of research grants under the new arrangements will be awarded in late 1992.

Under ACARP, policy decisions are made by the Australian Coal Research Council, while the administration of the research projects has been contracted to the Australian Mineral Industries Research Association (AMIRA). The process of establishing priorities, calling expressions of interest, negotiating projects and monitoring them is undertaken by committees of specialists from both the coal industry and the research institutions.

The commercial vehicle formed to handle funds and to co-ordinate research work is Australian Coal Research Ltd. The Australian Coal Journal has been selected as the media vehicle to advertise for expressions of interest in research and to publish reports on progress of research work.

The total budget available for research will be reduced because administration costs will now be deducted from the levy. These costs were previously absorbed by the Federal Government's Department of Primary Industries and Energy. Some overhang from previously initiated projects will further limit the availability of funds in the short term.

The philosophy of ACARP is to give the coal industry more control over the direction and effectiveness of its research levy funds. It will allow

mine operators to have a greater input into research directions to meet their current and future needs. In addition, the scheme should facilitate improved technology transfer as operators establish closer links with researchers.

An additional benefit of the ACARP scheme has been the bringing together of people from across the industry to discuss common technical problems. In conjunction with the diminishing research budget, this will stimulate greater co-operative research. In time, this co-operation will enhance the impact of research on productivity and management.

Two of the ACARP sub-committees, the Opencut Sub-committee and the Coal Preparation and Utilisation Sub-committee, have identified a number of priority research areas. The key opencut topics identified for investigation are:

- ◆ rehabilitation;
- ◆ dragline productivity;
- ◆ coal recovery;
- ◆ equipment systems; and
- ◆ mining without blasting.

A second group of topics was identified that may qualify for partial ACARP funding. These include:

- ◆ highwall mining;
- ◆ endwall mining;
- ◆ extending the use of draglines; and
- ◆ innovative large mining trucks.

The Coal Preparation and Utilisation Committees identified the following areas for research:

- ◆ fine coal generation;
- ◆ fine coal cleaning and dewatering;
- ◆ tailings disposal and utilisation;
- ◆ on-line assessment;
- ◆ control strategies;
- ◆ dense medium separation;
- ◆ moisture control;
- ◆ coal handleability;
- ◆ blending for coking properties; and
- ◆ trace element emissions from combustion.

Projects in these areas are more likely to proceed where co-operative funding is arranged. Partners in such projects are likely to include the public power authorities.

Some ten specialist groups have been established to set priorities because of the complexities of underground coal mining. These priorities are to be collated and evaluated before being advertised in late 1992. The process of seeking expressions of

interest, calling for firm proposals, and negotiating and letting contracts is expected to take six months.

BHP AUSTRALIA COAL SPECIAL RESEARCH PROGRAM

Another source for short term research funding has resulted from negotiations between the Commonwealth Government and BHP Australia Coal Limited. In return for dispensing with the special export excise levy applying to its Queensland mines, BHP Australia Coal Limited agreed to make a substantial mining investment in new plant as well as a \$65 million research effort. An amount of \$20 million is to be committed in the first year with at least \$5 million to be spent on each of the areas of mining and mining equipment, coal preparation and utilisation, environmental matters, and occupational health and safety.

This research, to be spread over five years, will investigate several issues confronting opencut operators in central Queensland. These include dragline productivity, deep highwalls, rehabilitation, slope stability and highwall mining. The results of the research are expected to be publicly available.

JCB RESEARCH ACTIVITIES

The third major source of research funding is the Joint Coal Board (JCB) of New South Wales. After a major review, its operations have been refocussed to primarily target workers compensation, coal miners occupational health, rehabilitation, welfare, and accident and other statistics. The Board also administers a newly formed Health and Safety Research Trust of \$14 million. Trust funds will be additional to research initiated by the JCB such as the recently announced dust respirator research project.

RESEARCH ESTABLISHMENTS

ACIRL

The Australian Coal Industry Research Laboratories (ACIRL) continued to provide numerous research and consulting services in the areas of coal mining, preparation, analysis and utilisation. Offices are maintained in Ipswich, Sydney, Rockhampton, Collie, Maitland, Wollongong and a new satellite laboratory at Emerald in central Queensland.

In 1991/92, ACIRL undertook coal mining research and consulting work through its Surface Mining, Underground Mining, and Geotechnical Groups. Significant projects undertaken were:

- ◆ mine safety and design, including risk analysis of new equipment and systems;

- ◆ longwall mining feasibility, including roadway development, shearers and powered support design, and performance;
- ◆ optimisation of continuous miner and longwall layouts using computer simulation;
- ◆ safe design of pillar extraction systems based on extensive geotechnical investigations;
- ◆ early detection of coal heatings by advanced gas analysis techniques;
- ◆ applications of computer based training; and
- ◆ rehabilitation using computer based land surface planning systems.

ACIRL's recent new initiative, the Australian Dragline Performance Centre has brought together several dragline specialists who are assisting dragline operators in raising their productivity.

ACIRL has created "INBYE ENGINEERING" to develop and market high technology products. At present a new portable radio system and a cheap roof displacement, monitoring and warning system, specifically for pillar extraction, are in the final development and mines' approval phases.

Among the projects conducted at ACIRL's Australian Combustion Technology Centre (ACTC), at Ipswich, is the continuation of joint CSIRO-ACIRL research in the combustion behaviour of low volatile coals. This is an area of interest to some Queensland producers. Its current research is evaluating NO_x formation from low volatile coals. Pulverised coal injection into blast furnaces used for pig iron production is a rapidly growing export market. The ACTC, in conjunction with Wollongong University, is currently conducting research to improve the handleability of pulverised coals.

The Australian Coking Research Centre, also located at Ipswich, is using a unique approach in evaluating the effects of coking coal properties on blast furnace operation. With the assistance of BHP, ACIRL is examining the operation of a blast furnace using statistical methods to analyse the coal properties that influenced its operation. The technique could ultimately replace the usual method of relating coal properties to coke properties and then coke properties to the blast furnace operation. ACIRL's facilities are also used for a variety of applied research and consulting activities to support the Australian coal industry.

SIMTARS

The Safety in Mines Testing and Research Station (SIMTARS) is a semi-autonomous operation of the Department of Resource Industries. SIMTARS was formed to investigate and to devise systems to prevent major mine disasters. It has maintained a leading role in this area. Activities are divided into:

- ◆ occupational hygiene and laboratory services;
- ◆ research and technical services; and
- ◆ electrical testing and general services.

Research projects include the following:

- ◆ frictional ignition of coal dust/air mixtures;
- ◆ coal dust evaluation;
- ◆ hybrid explosions;
- ◆ mine fire gas analysis investigation of Bowen Basin coals;
- ◆ in situ ground stress measurement; and
- ◆ arc fault containment in flame proof enclosures.

SIMTARS' suite of gas analysis systems designed to assess mine atmospheres after mine fires and explosions is recognised as being a world leader in its technology. SIMTARS' testing facilities for electrical equipment for use in explosive atmospheres is unique in Australia. This is crucial to the underground coal mining industry as increasingly larger and higher powered electrical systems are being introduced into coal mines.

CSIRO

The services provided to the Queensland coal industry by the Commonwealth Scientific and Industrial Research Organisation (CSIRO) will be enhanced when the Centre of Advanced Technology being constructed at Pinjarra Hills is completed in the latter half of 1992. At this centre, over 100 people will serve the coal industry in the areas of geomechanics, manufacturing technology, mineral and process engineering, and coal and energy technology.

The Geomechanics Division services the oil and gas metalliferous mining and coal mining industries. The Division's strength lies in the broad area of applied instrumentation. Not only can a selection for a job be made from the wide range of specialist instruments but, where necessary, new instrumentation can be developed.

One example is development of an analysis system for breakerline supports used in pillar extraction. After further testing, the monitoring equipment should be able to assist in defining the fundamental behaviour of roof caving during pillar extraction using continuous miners. The strength of the Organisation lies in the combination of developmental instrumentation engineering and fundamental, and applied analytical methods.

JKMRC

Research and development work at the Julius Kruttschnitt Mineral Research Centre (JKMRC) include the activities of its Coal Preparation Group

and the Mining Group. The work of the Mining Group is focussed on explosives research and utilisation. This includes assessment of the reliability of explosives and blast modelling studies for opencut operations and muck pile characterisation. This is an important link between blast design and excavation performance.

The Coal Preparation Group is focussed on crushing and separation of coal from waste and the generation of fines. Its speciality is the monitoring and control of jigs, cyclones, flotation cells and spirals. Its experience in on-line monitoring and control is used to undertake computer simulation of circuits for design purposes.

The Queensland Coal Board acknowledges the contribution by the various Research Establishments to this section of the Annual Review.

The State's large opencut mines are major suppliers to a growing international market.



The Queensland Coal Board at Work

A PERIOD OF PROGRESS - 1991/92

Improved delineation and delivery of services characterised the work of the Queensland Coal Board (QCB) during the 1991/92 financial year.

These improvements were generally reflected in the findings of an exhaustive review of the Board and its operations by the Public Sector Management Commission (PSMC). These findings noted the Board was "an effective means of providing independent policy advice to the Minister on how best to manage the public resource of coal", that "coal industry statistics produced by the Board met industry and government needs" and that the Board has provided liaison in a number of critical matters to the satisfaction of all stakeholders. In addition, the PSMC reviewers recognised the Board had established various co-operative and information networks within Australia and overseas.

The comprehensive PSMC scrutiny of the QCB was underscored in the reviewers' written observation that "the Board plays an important policy role. Its mission is to foster and maintain the coal industry in the interests of all stakeholders, particularly the State. It is essential that the Queensland Government, through the Minister for Resource Industries, be sufficiently well informed in order to allow intelligent resource management decisions and policies to be made".

In addition, the Board was encouraged by the PSMC view that "staff seem able to respond quickly to issues affecting the coal industry. Staff have been involved in the development of the strategic plan and, as a result, have a clear idea of the role and direction of the Board, as well as high morale".

From this sound base, the Board and its small staff in the year under review provided advice on international coal developments, encouraged the continuing restructuring of the Australian coal industry and improved training of employees, promoted Queensland as a reliable supplier of a range of coals and as a secure option for investors, participated in a number of specialist gatherings and research activities, and upgraded its scientific and technical information services in consultation with users within Australia and overseas.

In relation to these specialist coal information services, the Board introduced a "user-pays" subscription facility for its upgraded monthly and quarterly statistical reports. The Board is now in the process of establishing whether or not there is a demand for those reports to be provided by facsimile. Board statistics enjoy a high and much-deserved reputation for their timeliness and accuracy. This material circulates throughout the coal industry within Australia and is also utilised by

several Queensland and national agencies. In recent times Board statistical material has drawn numerous subscriptions from off-shore financial institutions, existing investors, buyers and potential buyers, and foreign governments. Once again the Annual Review of the Queensland coal sector was well received by mining companies, analysts, finance and investment houses, and various international agencies. Similarly, the publication "Queensland Coals - Physical and Chemical Properties, Colliery and Company Information" remained in demand. This publication was substantially revised and upgraded during the year.

As part of its obligation to engender greater awareness of Queensland coals, within an Australian context, and the State's modern coal ports, railways system, research facilities and highly-trained workforce, the Board and its staff met with a number of overseas industry and government representatives. As in previous years, a significant proportion of these contacts were with Japanese, North Asian and South-East Asian buyers and potential buyers of Queensland coals, particularly thermal coals. In addition to this level of contact, the Board retained its involvement with visiting Japanese coal industry trainees sponsored by Japan's New Energy and Industrial Technology Development Organisation. This involvement, which includes facilitation of site visits and technical presentations, helps foster a better understanding between Australian and Japanese coal industry professionals.

Detailed briefings were also provided to visitors from several European Community countries and various eastern European states. Concurrently, the Board maintained strong informational links with various Australian diplomatic and trade missions overseas. One result of this contact has been an improved understanding, by some Australian agencies in Europe, of the quality and reliability of Queensland's coal sector and of the nature of this State's decision-making processes. The Board has encouraged that understanding with a view to strengthening existing and potential employment and training opportunities across the State.

In the 12 months to June 30, 1992 the Chairman and two members of the Board as well as specialist staff continued their active involvement with numerous industry bodies. These included the Queensland Mining Industry Training Council - Coal Project Team, Australian Institute of Energy, Australasian Institute of Mining and Metallurgy, Bowen Basin Coal Geologists' Group, Geological Society of Australia, Australian Coal Trade and Technology Committee, Coal and Coke and Mining Equipment Sub-committees of the Standards Association,

Queensland Coal Organisation Underground Research Sub-committee, the United Nations Economic Commission for Europe Working Party on Coal (Expert Group on Coal Trade, Statistics and Transport), Australian Coal Industry Council, BHP Australia Coal Limited Special Research Program and Advisory Council, Joint Underground Mining Research Committee of Queensland and New South Wales, Australian Coal Industry Research Laboratories Limited, the Records Management Association of Australia and the Geoscience Information Society. Here, the Board notes the commendable personal involvement of a number of staff members with various professional associations and training activities.

During the year, the Executive Chairman participated in meetings of the Australian Coal Trade and Technology Committee. These meetings evaluated the potential opportunities for sales of Australian coals and technology and equipment and for a joint seminar, with regional interests, on Asia/Pacific coal trade and technology. The Australian Coal Trade and Technology Committee draws its expert members from individual companies, employer groups, State and Federal agencies, and research organisations.

As a Director of Australian Coal Industry Research Laboratories Limited the Executive Chairman has reported the company is now operating smoothly, is marketing its numerous services in Australia and overseas, and is moving towards reasonable profitability.

During the year under review, the Commonwealth Government and BHP signed a Memorandum of Understanding which facilitated the establishment of the BHP Australia Coal Limited Special Research Program and Advisory Council. Following this agreement, the Executive Chairman, as representative for the Honourable the Premier of Queensland, accepted an invitation to serve with the Advisory Council. This body convened its inaugural meeting during June, 1992. Board service with the Advisory Council is indicative of increasingly constructive relationships between the Board and industry. Indeed, on a day-to-day basis, Board staff involved in the collection and evaluation of information are encouraged by the levels of co-operation from site personnel.

A measure of the Board's constructive participation in coal sector activities during the year has been the preparation and delivery, by Board Members and staff, of a number of specialist presentations.

During June, 1992, the Executive Chairman, attending the Second Coal Technology Conference of the Australian Institute of Energy, delivered an extensive paper which offered a Queensland perspective on prospects for thermal coals. Some weeks earlier, the Board Fuel Technologist provided an extensive specialist presentation to the New

Energy and Industrial Technology Development Organisation prior to participating in the Japan/Australia Joint Technical Meeting on Coal in Tokyo. Also during his visit to Japan there was a number of discussions with coal users in Japan, particularly those involved in the steel industry, and with coal scientists. Earlier in the year under review the Board's Mining Engineer contributed to the Underground Coal Mining Exploration Techniques Workshop in Brisbane and attended, in Wollongong, an international gathering on Reliability, Production and Control in Coal Mines. By invitation, Board specialists were also involved in the Second Australian Flame Days Seminar, the Flame and Fuel Evaluation Workshop, and the German/Australian Coal Workshops. The Board was pleased, too, to participate in the Australian Coal Conference held in Queensland.

Given its continuing interest in and obligations on worker health and welfare, the Board was pleased to finalise an extensive internal report on employee assistance programmes in various sections of industry. Attention was paid to means used to identify and reduce impaired individual performance in the workplace. Concurrent with the Board's collection of information on factors affecting minesite health and safety, an Executive Member participated in the symposium "Shiftwork and Rosters and their Effect on Workers' Health". Internationally, there is considerable and continuing research on extended hours and shiftwork, and any attendant long-term effects.

A further Board contribution in the industrial welfare area has been the full revision of provisions relating to health screening and monitoring for coal mining employees. This has been a complex task involving co-ordination of inputs by employee and employer representatives, and health professionals. In general, the Board has been impressed by the quality of those inputs and believes an improved screening and industrial health monitoring programme will be implemented in the Queensland coal sector. The program will be in place during the 1992/93 year.

Board expertise in the industrial sphere was recognised and drawn on through the involvement of an Executive Member on the Coal Project Team of the Queensland Mining Industry Training Council. This body has played a key role in ensuring training has kept pace with the continuing and exhaustive restructuring of the coal industry. This restructuring has seen the development and introduction of new career paths and work models for coal mining employees. One consequence of the introduction has been a more productive, flexible and broadly skilled workforce.

This flexibility and openness to rational change is clearly evident in newer coal mining ventures in Queensland. For example, the development of the

Gordonstone underground operation has, in several senses, broken new ground, particularly in relation to the fostering of a workplace culture based on safety. Certainly, there are encouraging signs that improved communications, more relevant training and clearer career options are delivering greater security of employment and production within the State's coal sector. The Board has been pleased to contribute to these improvements during the year.

The work of the Board and its staff centres on its two programs, the Coal Industry Development Program and the Policy Advisory Program. The former area of operation has seen Board specialists continue to monitor the quality and supply of domestic coal as well as to provide a technical advisory service to existing and potential domestic industrial users. In addition, the Board has acted as a focus for government planners, equipment manufacturers and investment interests, particularly from the Republic of Korea, wishing to evaluate the potential for growth in the Queensland coal mining industry. Activities within the Policy Advisory Program have contributed to the successful development of a coal industry data base and the review and assessment of relevant emerging technologies, training and accreditation, and land use planning.

As in the 1990/91 year, the Queensland Coal Board has continued to increase the quality and distribution of its information to coal producers, buyers, potential buyers and agencies of overseas governments. Again, the Board was particularly pleased to respond to a growing level of external enquiries. In the main these enquiries related to Statewide production and export statistics by district and destination.

In the period under review the QCB Annual Review was released and circulated extensively throughout Asia, North America, Europe and within Australia. The Review, with its comprehensive coverage of infrastructure, operating collieries and reserves, remained a valuable document of first reference for overseas consumers and potential consumers of Queensland coal.

Throughout the year the Board, which held a total of 16 formal meetings, maintained appropriate working relationships with the Coal and Minerals Division of the Department of Primary Industries and Energy in Canberra, and several overseas Austrade missions as well as with relevant State Government agencies.

In keeping with its commitment to training, the Board encouraged staff members to upgrade and broaden skills and to improve, wherever possible, cost-effective delivery of services. The Board here records its appreciation of the efforts of its small, well-managed group of employees.

The Board also records its appreciation of the interest shown and support offered by the current Minister for Resource Industries and by his immediate predecessor.

FURTHER INFORMATION

Detailed information on the Queensland coal industry is available from:

The Queensland Coal Board

GPO Box 384
BRISBANE QLD 4001
AUSTRALIA

Telephone: (07) 237 1521
Facsimile: (07) 221 6759

There is considerable investment in maintenance and equipment.



Queensland Coal Resources

EXPLORATION

Ground held in Queensland under Exploration Permits for coal (EPCs) dropped slightly during the year from 10 000 km² to 9 800 km² with 58 EPCs current as at June 30, 1992.

Tonnage estimates of in situ coal resources¹ for Queensland's operating mines and undeveloped coal deposits are reproduced in the following tables from the latest Department of Resource Industries figures published in the September 1992 edition of the Queensland Government Mining Journal. Title holders to the tenements are listed in that Journal.

Resources quoted are in millions of tonnes of raw coal in situ with no allowance made for potential losses from mining or beneficiation. Adjustments have been made, where applicable, for depletion due to mining operations up to the June 30, 1992.

The division between coking and non-coking coal is placed at a Crucible Swelling Number (CSN) of 4 for raw coal in accordance with criteria used by the Department of Resource Industries. It is possible

that some coals categorised as non-coking can be beneficiated to produce a saleable coking fraction and vice versa. Market demand will ultimately determine the end use for such coals.

Nominal limits of 60 metres of overburden for opencut resources and a 1.5 metres minimum seam thickness have normally been used except where mining practice indicates other criteria such as overburden to coal ratios are more appropriate to determine resource categories.

Queensland's operating coal mines appear in bold capitals in the tables except for New Hope and Rhondda which are incorporated in the Ipswich Central, West and South leases.

1 Galligan, A.G., and Mengel, D.C., 1986: Code for reporting of Identified Coal Resources and Reserves. Queensland Government Mining Journal, 1987, 201-203.

The Queensland Coal Board gratefully acknowledges the contribution of the Department of Resource Industries to this section of the Review.

Table - PERMIAN COAL RESOURCES (MILLION TONNES)

		Coking Coal						Non-Coking Coal								
		Opencut			Underground			Opencut			Underground					
Mine/Deposit	Title	M	I	M+I	M	I	M+I	M	I	M+I	M	I	M+I	Total	Notes	
Bowen Basin																
Baralaba	MLs, EPC257	0	0	0	0	0	0	12	2	14	65	55	120	134	T	
Bee Creek	ML4751	0	0	0	0	0	0	21	0	21	56	54	110	131	S	
BLACKWATER	MLs	291	20	311	166	220	386	41	4	45	19	85	104	846	DT	
	ML1800															
BLAIR ATHOL	ML1804	0	0	0	0	0	0	257	0	257	0	0	0	257	P	
	ML1881															
Bluff	MLs	0	0	0	0	0	0	0	0	0	0	10	10	10		
	EPC190	0	0	0	0	0	0	0	9	9	0	0	0	9		
Burton Downs	EPC497	0	45	45	0	70	70	0	0	0	0	0	0	115		
Caledonia	EPC369	0	0	0	0	0	0	0	0	0	0	690	690	690	C	
Clermont	ML1884	0	0	0	0	0	0	250	0	250	0	0	0	250	DPR	
COLLINSVILLE	MLs	24	0	24	68	13	81	28	0	28	62	36	98	232	P	
COOK	MLs	0	0	0	200	530	730	0	0	0	0	0	0	730		
Cullin-la-ringo	—	0	0	0	0	0	0	0	0	0	0	120	120	120	P	
CURRAGH	MLs	47	0	47	13	0	13	71	0	71	14	0	14	145	S	
Curragh East	EPC369	20	0	20	17	0	17	27	0	27	18	0	18	82	S	
Curragh North	EPC369	0	0	0	0	0	0	40	0	40	0	100	100	140	CS	
Daunia	ML1781	137	0	137	28	0	28	0	0	0	0	0	0	165	D	
Eastern Creek	ML4754	0	0	0	0	0	0	15	0	15	0	0	0	15	P	
	ML4755															
Ensham	EPC 505,	0	0	0	0	0	0	90	55	145	330	1030	1360	1505	CPT	
	MLs															
GERMAN CREEK	ML1831	60	3	63	207	280	487	0	25	25	0	0	0	575	PT	
GERMAN CREEK EAST	EPC414	0	0	0	0	0	0	50	5	55	60	305	365	420	CP	
GOONYELLA	ML1763	237	54	291	1100	189	1289	0	0	0	0	0	0	1580	DT	
GORDONSTONE	ML1978	0	0	0	360	50	410	0	0	0	35	135	170	580	P	
	EPC389															

(Continued)

Table - PERMIAN COAL RESOURCES (MILLION TONNES)

		Coking Coal						Non-Coking Coal							
		Opencut			Underground			Opencut			Underground				
														Total	
Mine/Deposit	Title	M	I	M+I	M	I	M+I	M	I	M+I	M	I	M+I		Notes
GREGORY	ML1789	47	0	51	73	12	85	0	0	0	0	0	0	132	DT
Lilyvale	ML1923	2	2	4	124	29	153	0	0	0	0	0	0	157	DT
Liskeard	EPC501, ML 7007 ML4738	13	0	13	0	0	0	0	0	0	0	0	0	13	PT
Hail Creek - Lake Elphinstone		160	15	175	0	635	635	0	0	0	0	0	0	810	
Havilah	EPC253	0	0	0	0	0	0	0	30	30	0	0	0	30	P
JELLINBAH EAST	EPC449	0	0	0	0	0	0	91	32	123	64	31	95	218	
Jellinbah Station	EPC369	0	0	0	0	0	0	0	20	20	0	415	415	435	C
Kemmis -Walker	ML4750	0	0	0	0	0	0	133	0	133	0	272	272	405	D
Lake Lindsay	EPC472	27	8	35	55	55	110	40	30	70	55	0	55	270	C
Lake Vermont	—	0	0	0	0	0	0	110	0	110	165	0	165	275	C
Lancewood	ML4752	0	0	0	0	78	78	0	0	0	0	0	0	78	
Mavis Downs	ML4762	0	0	0	0	0	0	4	0	4	0	5	5	9	S
Middlemount		4	3	7	5	4	9	20	0	20	95	30	125	161	P
Minyango		0	0	0	0	265	265	0	0	0	0	15	15	280	
Moranbah	ML4773	0	0	0	0	0	0	6	0	6	7	0	7	13	S
Moranbah - Peak Downs	—	0	40	40	0	2960	2960	0	0	0	0	0	0	3000	T
MOURA	SCMLs	39	0	39	739	0	739	68	0	68	172	0	172	1018	PS
Moura West	—	0	0	0	0	365	365	0	0	0	0	0	0	365	
NEWLANDS	ML4748	0	0	0	0	0	0	66	0	66	83	95	178	244	P
NORWICH PARK - SARAJI	ML1782	266	192	458	120	209	329	0	0	0	0	0	0	787	DT
North Goonyella	ML 6949	0	0	0	0	196	196	0	0	0	0	0	0	196	
OAKY CREEK	MLA2004 ML1832 EPC476	80	0	80	307	146	453	0	0	0	0	0	0	533	PT
PEAK DOWNS - Isaac River - SARAJI	ML1775	574	105	679	854	344	1198	0	0	0	0	0	0	1877	DT
Poitrel	ML4749	22	0	22	0	0	0	86	0	86	0	0	0	108	D
RIVERSIDE	ML1764 ML1802	66	0	66	0	0	0	0	0	0	0	0	0	66	D
Rolleston	EPC466	0	0	0	0	0	0	275	0	275	0	0	0	275	DT
Rugby	—	0	0	0	0	0	0	0	0	0	0	180	180	180	
Sirius Creek	MLs	0	0	0	105	385	490	0	0	0	0	0	0	490	
SOUTH BLACKWATER	MLs	103	29	132	144	200	344	121	34	155	267	372	639	1270	DT
	EPC461 EPC261														
Suttor Creek	ML4761	8	0	8	0	0	0	38	0	38	91	67	158	204	S
Taraborah	—	0	0	0	0	0	0	0	15	15	0	110	110	125	
Theodore North	EPC202	0	0	0	0	0	0	71	0	71	260	253	513	584	
Theodore South	EPC202	0	0	0	0	0	0	64	20	84	313	340	653	737	T
Togara	—	0	0	0	0	0	0	0	0	0	0	2295	2295	2295	
Valeria	EPC418	0	0	0	0	0	0	206	14	220	0	0	0	220	CDP
Wards Well	ML1790	0	0	0	340	0	340	0	0	0	0	0	0	340	
West Nebo	EPC446	0	0	0	0	0	0	3	29	32	0	15	15	47	PD
Winchester	ML1791	9	2	11	0	0	0	11	0	11	0	0	0	22	
Winchester South	EPC486	0	0	0	0	0	0	78	0	78	63	0	63	141	C
Wotonga	MLA4760	0	0	0	0	0	0	9	0	9	0	0	0	9	S
YARRABEE	ML1770 EPC123	0	0	0	0	0	0	23	0	23	0	0	0	23	
		0	0	0	0	0	0	0	15	15	0	0	0	15	
TOTAL		2236	518	2754	5024	7235	12259	2426	339	2765	2293	7115	9408	27186	
Galilee Basin															
Alpha	EPC484	0	0	0	0	0	0	1015	105	1120	0	0	0	1120	DP
Kevins Corner	EPC244	0	0	0	0	0	0	280	630	910	0	0	0	910	D
Pentland		0	0	0	0	0	0	380	175	555	0	0	0	555	DR
TOTAL		0	0	0	0	0	0	1675	910	2585	0	0	0	2585	
TOTAL - PERMIAN BASINS		2236	518	2754	5024	7235	12259	4101	1249	5350	2293	7115	9408	29771	

Table - MESOZOIC COAL RESOURCES (MILLION TONNES)

		Opencut			Underground			Total	Notes	
Area	Title	M	I	M+I	M	I	M+I			
Moreton Basin										
Bringalily	EPC467	0	235	235	0	0	0	235	DPRT	
Commodore	EPC467	175	15	190	0	0	0	190	DP	
EBENEZER	ML4712	42	0	42	0	0	0	42	RT	
	EPC424									
Felton East	EPC485	0	465	465	0	0	0	465	DPT	
Felton West	EPC485	337	131	468	0	0	0	468	DPRT	
Glen Roslyn	EPC513	120	175	295	0	0	0	295	DT	
JEEBROPILLY	MLs	39	5	44	0	0	0	44	DTP	
	EPC437									
Lochbar	EPC467	50	0	50	0	0	0	50	DPS	
Manningvale East	EPC513	0	110	110	0	0	0	110	T	
Manningvale West	EPC513	0	30	30	0	0	0	30	T	
Mount Mort	EPC424	21	0	21	0	0	0	21	T	
OAKLEIGH	MLs	1	1	2	7	0	7	9	TO	
Ownaview	EPC502	0	112	112	0	0	0	112	T	
Rosewood	MLs	13	15	28	0	0	0	28	DT	
	EPC437									
Sabine	EPC513	0	75	75	0	0	0	75	T	
Total		797	1 369	2 166	7	0	7	2 173		
Surat Basin										
Austinvale	EPC157	110	45	155	0	0	0	155	T	
Boxvale	EPC450	0	10	10	0	0	0	10	T	
Braemar	EPC465	95	20	115	0	0	0	115		
Brigalow	EPC464	115	100	215	0	0	0	215	RT	
Bymount	—	0	20	20	0	0	0	20		
Cameby Downs	—	0	55	55	0	0	0	55		
Collingwood	—	85	30	115	0	0	0	115	RT	
Elimatta	EPC450	0	115	115	0	0	0	115	T	
Frank Creek	EPC450	65	10	75	0	0	0	75	T	
Glen Arden	—	0	45	45	0	0	0	45	RT	
Glen Laurel	EPC450	20	0	20	0	0	0	20	T	
Glen Wilga-Haystack Road	EPC468	120	80	200	0	0	0	200	P	
Horse Creek	EPC465	0	295	295	0	0	0	295	T	
Kogan	EPC465	90	35	125	0	0	0	125		
Orazabah	EPC450	0	45	45	0	0	0	45	T	
Pony Plains	EPC450	0	55	55	0	0	0	55	T	
Rywung	EPC450	30	45	75	0	0	0	75		
Sefton Park	EPC450	25	5	30	0	0	0	30		
Summer Hill	EPC157	0	120	120	0	0	0	120	T	
Tarcoola	EPC465	80	65	145	0	0	0	145		
Taroom	EPC189	115	55	170	0	0	0	170	DRT	
Two Up	—	0	85	85	0	0	0	85	DT	
Woleebee	EPC157	250	45	295	0	0	0	295	T	
Wubagul	EPC450	45	25	70	0	0	0	70	T	
TOTAL		1 245	1 405	2 650	7	0	7	2 650		
Callide Basin										
BOUNDARY HILL	MLs	22	2	24	23	21	44	68	DP	
CALLIDE	EPC188	163	30	193	447	62	509	702	DP	
TOTAL		185	32	217	470	83	553	770		
Ipswich Basin										
Ipswich North	MLs	0	0	0	18	0	18	18		
Ipswich East	MLs	0	3	3	42	5	47	50		
Ipswich Central	MLs	2	0	2	42	0	42	44		
	MLs	1	0	1	49	0	49	50		
	MLs	0	0	0	32	43	75	75		
Ipswich West	MLs	0	0	0	62	4	66	66		
	MLs	0	0	0	156	0	156	156		
Ipswich South	MLs	0	0	0	73	45	118	118		
	EPC221									
TOTAL		3	3	6	474	97	571	577		

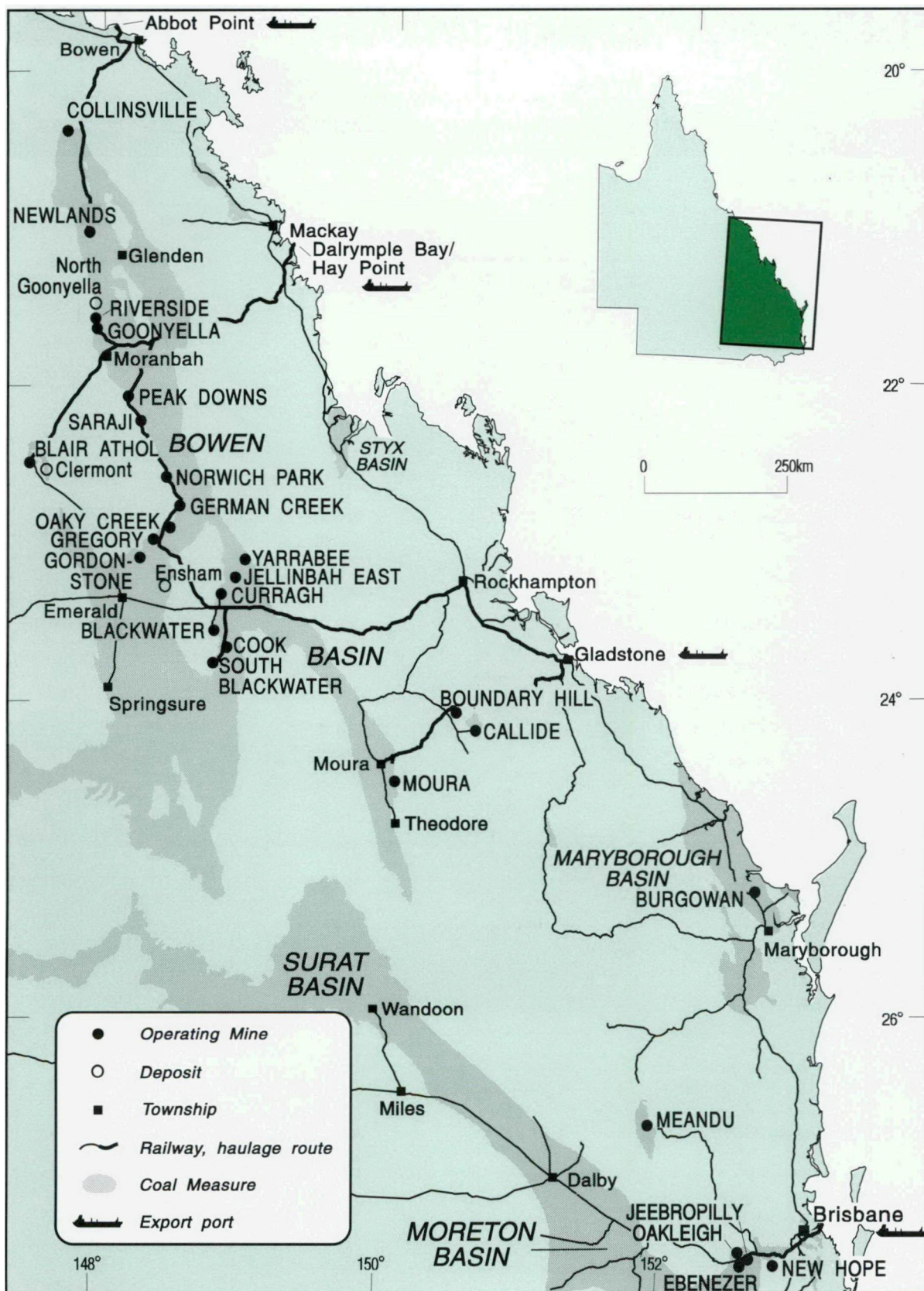
(Continued)

Table - MESOZOIC COAL RESOURCES (MILLION TONNES)

		Opencut			Underground			Total	Notes
Area	Title	M	I	M+I	M	I	M+I		
Mulgildie Basin									
Monto	—	55	55	110	0	0	0	110	DT
TOTAL		55	55	110	0	0	0	110	
Styx Basin									
Styx	—	0	0	0	4	0	4	4	
TOTAL		0	0	0	4	0	4	4	
Tarong Basin									
Kunioon	EPC235	100	90	190	0	0	0	190	DR
MEANDU	ML6674	139	10	149	0	0	0	149	
Taabinga	EPC242	59	33	92	0	0	0	92	DR
TOTAL		298	133	431	0	0	0	431	
TOTAL - NON-COKING COAL		2583	2997	5580	955	180	1135	6715	
Coking Coal									
Laura Basin									
Bathurst Range		0	0	0	0	157	157	157	P
TOTAL		0	0	0	0	157	157	157	
TOTAL - COKING COAL		0	0	0	0	157	157	157	
TOTAL - MESOZOIC BASINS		2583	2997	5580	955	337	1292	6872	

Legend of Abbreviations

- C = a coking fraction may be obtainable from the non-coking resource.
- D = opencut resources include some coal deeper than 60 metres.
- I = Indicated
- M = Measured
- O = some underground resources may be amenable to opencut extraction.
- P = provisional estimate
- R = opencut reserves defined by overburden ratio rather than depth limit.
- S = opencut limit less than 60 metres.
- T = includes some resources in seams less than 1.5 metres thick.



Queensland Coal Map

Export Contracts

Table - EXPORT CONTRACTS CURRENT AS AT JUNE 30, 1992

COMPANIES	Coal Type	Countries/Regions				Expiry Date
			Million Tonnes *			
				Period (Years)		
Blair Athol Coal Joint Venture	Thermal	Japan	5	17	2000	
	Thermal	Other	3	1-3	1994	
Central Queensland Coal Associates	Coking	Japan	7	1	1993	
	Coking	Europe	10	1-3	1993	
	Coking	Other	20	1-5	1996	
	Thermal	Various	1	1	1993	
Coal Resources of Qld Ltd	Coking	Other	1.0	5	1992-96	
	Thermal	Other	0.6	3	1994	
Collinsville Coal Company Pty Ltd	Coking	Japan	15	15	1999	
Curragh Queensland Mining Ltd	Coking/Thermal	Japan	2.3	1	1993	
	Coking/Thermal	Europe	0.5	1-4	1993	
	Coking/Thermal	Other	0.8	1-4	1992-95	
FAI Mining Limited	Thermal	Japan	0.5	1-4	1996	
Gregory Joint Venture	Coking	Japan	13	1-13	1995	
	Coking	Others	1	1	1993	
Newlands Coal Pty Ltd	Thermal	Japan	12	1-15	1998	
		Asia	18.4	10	2002	
		Europe	8.8	1-15	1998	
Oaky Creek Joint Venture	Coking	Japan	1.1	1	1993	
	Coking	Europe	19.2	15	1998	
	Coking	India	1.3	2	1992	
	Coking	Algeria	1.1	5	1994	
	Coking	Iran	0.4	1	1993	
BHP Mitsui Coal Pty Ltd	Coking	Japan	0.6	1	1993	
	Coking	Others	1.5	1	1993	
	Thermal	Various	1.2	1	1993	
New Hope Corporation Ltd	Thermal	Japan	1.1	1-5	1993	
Capricorn Coal Development Joint Venture	Coking	Japan	1.0	1	1993	
		Other Asia	2.0	3-5	1996-8	
		Other	1.5	1-3	1995	

* This information has been supplied by coal companies. Export tonnages, depending on the nature of the contract, relate to either tonnes per year or tonnes in total over the life of a contract.

Coal Export Facilities

PORTS

ABBOT POINT

Ownership: The facility is owned by the Harbours Corporation of Queensland, a Queensland statutory agency.

Operator: Abbot Point Bulkcoal Pty Ltd, a wholly-owned subsidiary of MIM Holdings Pty Ltd, operates the facility.

Berths: One.

Vessel Size: 35 000 - 165 000 dead weight tonnes (d.w.t.).

Loading Rate: 4 600 tonnes/hour (t/hr).

Loading: Around the clock.

Stockpile Capacity: 0.5 million tonne (mt) live, 0.75 mt dead.

Expansion Plans: The facility is designed to be increased to 16 mt annual capacity, and further wharf construction could increase it to 24 mt.

Main Users: Newlands and Collinsville mines.

Throughput 1991/92: 5 926 118 tonnes.

BRISBANE

Ownership: The facility is owned by Queensland Bulk Handling Pty Ltd, a joint venture company owned equally by New Hope Corporation Ltd and TNT Shipping and Development.

Operator: The facility is also operated by Queensland Bulk Handling Pty Ltd.

Berths: One.

Vessel Size: 10 000 - 90 000 d.w.t.

Loading Rate: Max 3 300 t/hr.

Loading: Around the clock.

Stockpile Capacity: 280 000 tonnes.

Expansion Plans: None at present.

Main Users: Jeebropilly, Ebenezer, New Whitwood, Oakleigh and Rhonnda mines.

Throughput 1991/92: 3 467 881 tonnes.

DALRYMPLE BAY

Ownership: The facility is owned by the Harbours Corporation of Queensland.

Operator: The facility is operated by Dalrymple Bay Coal Terminal Pty Ltd, a company comprising representatives of the coal companies exporting through the terminal - Blair Athol Pty Ltd (Blair

Athol mine), Capricorn Coal Management Pty Ltd (German Creek mine), BHP Mitsui Coal Pty Ltd (Riverside mine), and Mount Isa Mines Limited (Oak Creek mine).

Berths: One.

Vessel Size: 200 000 d.w.t.

Loading Rate: Nominally 7 200 t/hr.

Loading: Around the clock.

Stockpile Capacity: 1.8 mt.

Expansion Plans: The facility is to increase its annual capacity a further 4 million tonnes to accommodate the North Goonyella mine. There is the possibility to expand to 37 million tonnes annual capacity in the future.

Main Users: Blair Athol, German Creek, Riverside, and Oak Creek mines.

Throughput 1991/92: 18 364 771 tonnes.

GLADSTONE

AUCKLAND POINT

Ownership: The facility is owned by the Port of Gladstone Authority, a Queensland statutory agency.

Operator: The facility is also operated by the Port of Gladstone Authority.

Berths: One.

Vessel Size: 65 000 d.w.t.

Loading Rate: 1 600 t/hr.

Loading: Around the clock.

Stockpile Capacity: 300 000 tonnes.

Main Users: Blackwater, Cook, Curragh, Gregory, Jellinbah East, Moura, Oak Creek, South Blackwater and Yarrabee mines.

Throughput 1991/92: 49 360 tonnes

Note: Auckland Point ceased coal loading operations on 28th August, 1991.

BARNEY POINT

Ownership: The facility is owned by BHP Mitsui Coal Ltd.

Operator: The facility is operated by Bulk Handling and General Services.

Berths: One.

Vessel Size: 90 000 d.w.t.

Loading Rate: 2 000 t/hr.

Loading: Around the clock.

Stockpile Capacity: 400 000 tonnes.

Expansion Plans: None at present.

Main Users: Moura, Blackwater and, occasionally, Gregory mines.

Throughput 1991/92: 1 888 550 tonnes.

CLINTON

Ownership: The facility is owned by the Port of Gladstone Authority.

Operator: The facility is also operated by the Port of Gladstone Authority:

Berths: Two

Vessel Size: 220 000 d.w.t.

Loading Rate: 4 000 t/hr.

Loading: Around the clock.

Stockpile Capacity: 2.7 mt (in 10 areas) with another two areas of approximately 300 000 tonnes each under construction. This will bring the total stockpile capacity to 3.3 mt.

Expansion Plans: By the end of 1992, stockpile areas 11 and 12 are to be opened so as to cater for Ensham and Gordonstone mines. A second rail unloading station (allowing two trains to be unloaded at a time) was commissioned in October 1991. Throughput capacity will be increased to 30

mt, making it the second largest coal loading facility in the world.

Main Users: As for Auckland Point.

Throughput 1991/92: 17 642 500 tonnes.

HAY POINT

Ownership: The facility is owned by Central Queensland Coal Associates Joint Venturers.

Operator: The facility is operated by Hay Point Services Pty Ltd, (owned by BHP Australia Coal Ltd).

Berths: Two, allowing simultaneous loading.

Vessel Size: 150 000 d.w.t (No. 1 berth), 200 000 d.w.t (No. 2 berth).

Loading Rate: 4 000 t/hr (No. 1 berth), 6 000 t/hr (No. 2 berth).

Loading: Around the clock.

Stockpile Capacity: 2.5 mt.

Expansion Plans: None at present.

Main Users: Goonyella, Peak Downs, Saraji and Norwich Park mines.

Throughput 1991/92: 22 316 630 tonnes of export coal and 254 081 tonnes of interstate coal, a total of 22 570 711 tonnes.

Table - QUEENSLAND COAL PORTS

PORTS	Coal Exports for 1991-92						
	mt	mt	t/hr	D.W.T.	metres	metres	metres
Abbot Point	5.93	12.00	4 600	165 000	17.2	264	19.2
Brisbane							
- Fisherman Islands	3.47	5.00	3 300	90 000	12.3	240	13.0
Dalrymple Bay	18.36	18.55	7 200	200 000	13.4	254	20.0
Gladstone	19.58						
- Auckland Point		3.00	1 600	65 000	15.8	259	11.3
- Barney Point		7.00	2 000	90 000	15.8	230	15.0
- Clinton		22.00	4 000	220 000	16.0		18.8
- No. 1						380	
- No. 2						370	
Hay Point	22.32						
- No.1		11.00	4 000	150 000	12.03	343	16.4
- No.2		14.00	6 000	200 000	12.03	366	16.7
TOTAL	69.66	92.55					

L.W.D. = Low Water Depth

RAILWAYS

During the year, Queensland Rail was restructured into specific business groups to focus on the needs of particular customer groups. These are the Coal and Minerals, Freight, and Passengers Groups. The Coal and Minerals Group is responsible for serving the Queensland coal industry.

Queensland Rail has met the demands of Queensland's coal industry through expansions to accommodate industry growth. Infrastructure and rollingstock are continually being upgraded.

World-class technological advancements, such as a \$1 billion electrification of all major coal lines, state of the art signalling, automated track maintenance and computerised driver simulation training have enabled increases in average train speeds. The reduction in turn-around cycles means that more tonnes are hauled by the same number of trains.

Major capacity upgrades include:

Goonyella Line

Ongoing upgrading has enabled increases in gross wagon capacity from 80 tonnes to 100 tonnes. This enables increases in maximum net train loads to Dalrymple Bay from 7 500 tonnes to 9 500 tonnes.

Blackwater Line

When capital works associated with the new Gordonstone mine are completed in 1992/93, gross wagon loads will increase from 71 tonnes to 80 tonnes. The maximum net train load will increase from 5 600 tonnes to an anticipated 6 000 tonnes.

ACHIEVEMENTS

In 1991/92 Queensland Rail broke many coal haulage records. Weekly haulage records set during the year included:

- ◆ Blackwater Line - 455 967 tonnes.
- ◆ Brisbane - 102 000 tonnes.
- ◆ Dalrymple Bay - 456 000 tonnes.
- ◆ Hay Point - 526 000 tonnes.
- ◆ Moura Line - 141 000 tonnes.

KEY PROJECTS

Key projects committed by Queensland Rail include:

- ◆ Construction of a spur line and upgrading of the existing infrastructure to allow for export coal haulage from the new Gordonstone underground mine. Initially Queensland Rail expects to rail up to 3.6 million tonnes per annum from the mine.
- ◆ Commencement of detailed design work for a 19 kilometre spur line to link the North

Goonyella mine with the existing coal haulage system. Approximately three million tonnes of coal are expected to be hauled from the mine each year.

- ◆ Opening of a rail link in June 1992 has enabled the new Stanwell Power Station to tap into the vast coal resources of the central Queensland coalfields.
- ◆ Rail infrastructure upgrades for the Jellinbah East coal mine at Boonal near Blackwater have enabled Queensland Rail to meet the mine's transport requirements.
- ◆ Rollingstock acquisition and infrastructure upgrades to accommodate eight million tonnes of export coal to be railed from Blair Athol mine to Dalrymple Bay near Mackay.
- ◆ New prototype 100 tonne tandem coal wagons are under construction, and 135 tonne locomotives are planned to achieve even greater efficiencies in export coal traffic.

MAIN COAL LINES

Newlands Line

This line runs 170 kms from the Newlands mine through Collinsville to Abbot Point which is north of Bowen. This non-electrified line can carry 80 tonne gross weight wagon loads.

Goonyella Line

This is the major coal hauling sub-network connecting the central Bowen Basin mines to the Dalrymple Bay and Hay Point ship loading facilities which are south of Mackay. There are three tributary lines in the system, from Goonyella/Riverside mines in the north, Blair Athol mine in the south-west and Oaky Creek, German Creek, Norwich Park, Saraji and Peak Downs mines in the south. This system is fully electrified and capable of carrying 90 tonne gross weight wagons.

Moura Line

This line enables 71 tonne gross weight wagons to be hauled by diesel locomotive from Moura, Callide and Boundary Hill mines to the port of Gladstone.

Central Line

The Gregory, Curragh, Yarrabee, South Blackwater, Cook, Blackwater and Jellinbah East mines, as well as Stanwell Power Station, are all served by this fully electrified line. The Gordonstone mine will also use this line. Coal is hauled in 71 tonne gross weight wagons to the port of Gladstone and to the QEC power station at Gladstone.

West Moreton Line

The Ipswich/West Moreton mines are serviced by loading facilities at Ebenezer and Park Head. These mines export through the port of Brisbane, Fisherman Islands loading facility. This 70 km line is not electrified and carries 63 tonne gross weight wagons.

The Ebenezer spur line west of Ipswich, servicing the Ebenezer and Jeebropilly mines, was commissioned on February 1, 1990.

This material has been provided by Queensland Rail.

QUEENSLAND RAIL KEY CONTACTS:

Group General Manager
Brisbane (07) 235 1120.

General Manager Infrastructure
Rockhampton (079) 320 436.

General Manager Rollingstock
Rockhampton (079) 320 614.

General Manager Operations
Rockhampton (079) 320 222.

General Manager Business Development
Brisbane (07) 235 1312.

The State has made substantial investment in its highly efficient rail network.



Mine and Company Information

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STATISTICAL DISTRICTS

As announced in the 40th Annual Review, previous statistical districts have been combined to form three major areas. Collieries north of latitude 22° 38' fall into the Northern District, those south of this latitude and north of 24° form the Central District while collieries south of 24° are grouped into the Southern District.

The northern demarcation, 22° 38', lies just south of the town of Dysart while the southern boundary of Central, 24°, runs through the town of Calliope.

A map illustrating these districts is on page 4 of this Annual Review.

SELECTED MINES AND PROJECTS

The majority of Queensland's mines are located in the Bowen Basin of Central Queensland and supply the bulk of Queensland's export coking and thermal coals. The remainder are located in the south-east of the State and supply thermal coal primarily for on-site electricity generation and local domestic use.

In addition to the selected operating mines, this section reviews the current status of two major greenfields projects, North Goonyella and Clermont, as examples of ongoing development of Queensland's major coal resources.

RESOURCE ESTIMATES

Minor discrepancies may occur between the resource tonnages quoted in the company derived data appearing in this section and figures quoted by the Department of Resource Industries in the Queensland Coal Resources section. Such variations generally relate to different dates when the information was collected.

The Queensland Coal Board acknowledges the contribution by coal companies to this Section of the Annual Review.

LIST OF COAL MINES OPERATING DURING 1991-92

MINE	COLLIERY	OWNER	OPERATOR	TYPE
NORTHERN DISTRICT				
Bowen Central No. 3	Collinsville	NCA Joint Venture	Collinsville Coal Co. P/L	O
Goonyella	Goonyella	Central Qld Coal Associates	BHP Australia Coal Ltd	O
Newlands	Newlands	NCA Joint Venture	Newlands Coal P/L	O
Peak Downs	Peak Downs	Central Qld Coal Associates	BHP Australia Coal Ltd	O
Riverside	Riverside	BHP Mitsui Coal P/L	BHP Australia Coal Ltd	O
Saraji	Saraji	Central Qld Coal Associates	BHP Australia Coal Ltd	O
Bocum	Collinsville	NCA Joint Venture	Collinsville Coal Co. P/L	U
Bowen No. 2	Collinsville	NCA Joint Venture	Collinsville Coal Co. P/L	U
CENTRAL DISTRICT				
Blackwater	Blackwater	Central Qld Coal Associates	BHP Australia Coal Ltd	O
Blair Athol	Blair Athol	Blair Athol Coal Project J/V	Pacific Coal P/L	O
Curragh	Curragh	Curragh Joint Venture	Curragh Qld Mining Ltd	O
German Creek	German Creek	Capricorn Coal Devl'ment J/V	Capricorn Coal M'ment P/L	O
German Creek East	German Creek	German Creek East J/V	Capricorn Coal M'ment P/L	O
Gregory	Gregory	Gregory Joint Venture	BHP Australia Coal Ltd	O
Jellinbah East	Jellinbah East	Advance Qld Resources & Mining P/L	Advance Qld Resources & Mining P/L	O
Norwich Park	Norwich Park	Central Qld Coal Associates	BHP Australia Coal Ltd	O
Oaky Creek	Oaky Creek	Oaky Creek Coal J/V	Oaky Creek Coal P/L	O
South Blackwater	South Blackwater	South Blackwater Coal Ltd	South Blackwater Coal Ltd	O
Yarrabee	Yarrabee	Yarrabee Coal Company P/L	Yarrabee Coal Company P/L	O
Cook	Cook	ARCO Coal Australia Inc.	Coal Resources of Qld P/L	U
German Creek Central	German Creek	Capricorn Coal Devl'ment J/V	Capricorn Coal M'ment P/L	U
German Creek Sthn	German Creek	Capricorn Coal Devl'ment J/V	Capricorn Coal M'ment P/L	U
Gordonstone	Gordonstone	Gordonstone Joint Venture	Gordonstone Coal M'ment P/L	U
Laleham	South Blackwater	South Blackwater Coal Ltd	South Blackwater Coal Ltd	U
Oaky Creek No. 1	Oaky Creek	Oaky Creek Coal J/V	Oaky Creek Coal P/L	U
SOUTHERN DISTRICT				
Boundary Hill	Callide	Callide Joint Venture	Callide Coalfields P/L	O
Callide	Callide	Callide Joint Venture	Callide Coalfields P/L	O
Ebenezer	Ebenezer	Idemitsu South Qld Coal P/L	Idemitsu South Qld Coal P/L	O
Jeebropilly	Jeebropilly	New Hope Corporation Ltd	Jeebropilly Collieries P/L	O
Meandu	Meandu	Pacific Coal P/L	Tarong Coal	O
Moura	Moura	BHP Mitsui Coal P/L	BHP Australia Coal Ltd	O
New Hope No. 358	New Hope	New Hope Corporation Ltd	New Hope Collieries P/L	O
New Whitwood	Aberdare	Allied Qld Coalfields Ltd	Allied Qld Coalfields Ltd	O
Oakleigh	Oakleigh	Oakleigh Colliery P/L	Oakleigh Colliery P/L	O
Wattle Glen Ext.	Rhondda	FAI Mining Ltd	FAI Mining Ltd	O
Aberdare Reclaiming	Aberdare	Allied Qld Coalfields Ltd	Allied Qld Coalfields Ltd	R
Moura Reclaiming	Moura	BHP Mitsui Coal P/L	BHP Australia Coal Ltd	R
Burgowan	Burgowan	Burgowan Collieries P/L	Burgowan Collieries P/L	U
M.W. Haenke No. 2	Rhondda	FAI Mining Ltd	FAI Mining Ltd	U
Moura No. 2	Moura	BHP Mitsui Coal P/L	BHP Australia Coal Ltd	U
*New Hope W Leases No. 1	New Hope	New Hope Corporation Ltd	New Hope Collieries P/L	U
New Hope W Leases No. 2	New Hope	New Hope Corporation Ltd	New Hope Collieries P/L	U
Oakleigh No. 3	Oakleigh	Oakleigh Colliery P/L	Oakleigh Colliery P/L	U

O - Opencut U - Underground R - Tailings Recovery
 * Ceased production during 1991/92

SELECTED MINES AND PROJECTS

BLACKWATER, GOONYELLA NORWICH PARK, PEAK DOWNS AND SARAJI

Operator

BHP AUSTRALIA COAL LIMITED

GPO Box 1389

BRISBANE QLD 4001

Phone: (07) 226 0600

Fax: (07) 229 2575

Company Information

The Blackwater, Goonyella, Norwich Park, Peak Downs and Saraji mines are owned by Central Queensland Coal Associates (CQCA) which is a joint venture between BHP Australia Coal Limited 44.72%, Queensland Coal Trust 27.78%, Mitsubishi Development Pty Ltd 13.33%, Australian Mutual Provident Society 8.61% and Pancontinental Mining Limited 5.56%.

CQCA also owns the coal terminal at Hay Point, 40 km south of Mackay. The CQCA Joint Venture is managed by BHP Australia Coal Limited.

Locations

Blackwater Mine

Blackwater mine is situated 216 km west of Rockhampton and 305 km by rail from Gladstone.

Goonyella Mine

Goonyella mine is approximately 225 km south-west of Mackay and 198 km by rail from Hay Point.

Norwich Park Mine

Norwich Park mine is approximately 110 km south-east of Goonyella and about 256 km by rail from Hay Point.

Peak Downs Mine

Peak Downs mine is located 60 km south of the Goonyella mine and about 195 km by rail from Hay Point.

Saraji Mine

Saraji mine is situated 24 km south of Peak Downs and 216 km south-west of Hay Point.

Reserves and Resources

The following table depicts the marketable reserves and the indicated and measured resources for the CQCA mines.

Table - COAL RESERVES AND RESOURCES

Mine	Resources Indicated		
	Million Tonnes	Resources Measured	
		Million Tonnes	Reserves Million Tonnes
Blackwater	240	457	243
Goonyella	243	1 335	164
Peak Downs	288	935	227
Norwich Park	263	207	154
Saraji	223	459	163
Total	1 257	3 393	951

Coal Quality

Blackwater, Goonyella and Peak Downs coals are medium volatile, while Saraji and Norwich Park are low volatile. The coals are hard coking with International Standard Classifications 434. Typical washed coal analyses are given in the table below.

Table - TYPICAL ANALYSES OF CQCA COALS

	Resources Indicated				
	Blackwater	Goonyella	Peak Downs	Norwich Park	Saraji
Total Moisture (a.r%)	10.0	10.0	10.0	10.0	10.0
Moisture (ad%)	2.0	1.3	1.0	1.0	1.0
Volatile Matter (ad%)	27.0	25.3	21.2	17.2	19.2
Fixed Carbon (ad%)	63.7	65.2	68.5	71.3	70.7
Ash (ad%)	8.4	9.0	9.8	10.0	9.8
Total Sulphur (ad%)	0.51	0.56	0.61	0.66	0.61
C.S.N.	6	8	9	9	9
Specific Energy MJ/kg	32.06	32.94	32.69	31.9	32.69

Operations

Blackwater, Goonyella, Peak Downs, Saraji and Norwich Park are opencut operations with annual coal production capacity in 1991/92 in million tonnes of 4.0, 6.0, 5.5, 5.0 and 4.5 respectively.

The Blackwater mine also has a thermal coal production capacity of 1.2 million tonnes per year for the Queensland Electricity Commission under the terms of the lease agreement.

Employees at the mines totalled 3 708 at June 30 1992, including manning for Goonyella and Riverside which, for operational purposes, are amalgamated under one management structure.

A total of 24 large draglines are used at the opencuts to strip overburden above the coal seams. Coal is extracted using electric shovels and/or front-end loaders with 110 to 200 tonnes capacity

bottom-dump coal haulers. After crushing in rotary breakers, the coal is processed to customer specifications in mine preparation plants using heavy medium cyclones for the coarse coal fractions and froth flotation for the fine coal product. Both coarse and fine coals are combined and conveyed to a radial stacker for stockpiling prior to railing.

Coal from the four northern mines is shipped from Hay Point. The Hay Point facilities have loaded ships of 200 000 tonnes capacity. The port is designed for annual loading in excess of 20 million tonnes. Blackwater coal is shipped through the Clinton loading facility at Gladstone.

General

The Goonyella, Peak Downs, Saraji and Norwich Park opencut mines are located on three of four Special Coal Mining Leases held by the original CQCA participants. The fourth lease, covering an area referred to as Daunia, is undeveloped. The development and mining of coal reserves on these four leases is governed by the terms of a franchise agreement with the State Government. The Blackwater Mine's operations, which became part of CQCA in 1984, are situated on several other leases.

Blackwater mine employees and their families live in the town of Blackwater which has a population of around 8 000 people. Employees at Goonyella and Peak Downs live in Moranbah, which also has a population of approximately 8 000. Dysart is the centre for Saraji and Norwich Park employees, and has a population exceeding 4 500.

Japan is still the major customer for coal from the CQCA mines, although marketing diversification in recent years has resulted in increased sales to Europe as well as South Korea, Taiwan, India, Brazil and others.

Capital Expenditure

Capital Expenditure for the CQCA mines and port during 1991/92 totalled \$85.5 million.

BLAIR ATHOL

Operator

PACIFIC COAL PTY LTD

GPO Box 391
BRISBANE QLD 4001
Phone: (07) 223 7200
Fax: (07) 229 5087

Company Information

Current interests in the project are - The Coal Cliff Collieries Pty Limited 57.195%, Arco Coal Australia Inc. 17.527%, ARCO Resources Limited 13.889%, EPDC (Australia) Pty Ltd 7.9723% and JCD Australia Pty Ltd 3.4167%.

Location

The Blair Athol coalfield is located 22 km from the town of Clermont and is about 280 km south-west of Mackay. It is contained within an isolated sub-basin on the western margin of the Bowen Basin.

Reserves

Recoverable reserves are estimated at 200 million tonnes of good quality thermal coal.

Coal Quality

The typical coal quality is indicated in the table below.

Table - TYPICAL ANALYSIS FOR BLAIR ATHOL

	Product Coal
Moisture (ad%)	7.5
Volatile Matter (ad%)	27.2
Fixed Carbon (ad%)	57.3
Ash (ad%)	8.0
Total Sulphur (ad%)	0.3
Specific Energy (at 7.5% moisture) MJ/kg	27.3

General

The present opencut mine was opened in 1984. The initial capacity was five million tonnes per year with the coal exported chiefly to power utilities in Japan.

Development of the project included a major mining facility, railway construction, electricity reticulation and building of houses in Clermont for the mine's workforce.

Present annual production rate is around eight million tonnes with a workforce of 370.

Capital Expenditure

Capital Expenditure during 1991/92 totalled \$18.5m. Comprising \$3.1m, \$14.4m and \$1.0m on mining equipment, rail and port infrastructure, and town infrastructure respectively.

BOUNDARY HILL AND CALLIDE

Operator

CALLIDE COALFIELDS PTY LTD

GPO Box 3109
BRISBANE QLD 4001
Phone: (07) 834 1333
Fax: (07) 832 6879

Company Information

The mines are owned by The Shell Company of Australia Limited 66.7% and Australian Mutual Provident Society 33.3%.

The managing company is Callide Coalfields Pty Limited a wholly owned subsidiary of Shell Australia Limited.

Location

The Callide coalfield is located 140 km west-south-west of the port of Gladstone, and 15 km north-east of Biloela.

Reserves and Resources

The following table depicts the coal reserves and resources of Boundary Hill and Callide:

Table - COAL RESERVES AND RESOURCES

Mine	Resources Indicated		Reserves
	Million Tonnes	Resources Measured	
		Million Tonnes	Million Tonnes
Boundary Hill	38	447	98
Callide	47	270	141
Total	85	717	239

Coal Quality

The mines produce a sub-bituminous coal with excellent combustion characteristics, which has generally been used for steam raising. Coal from Boundary Hill mine is also highly reactive to carbon dioxide and suitable for a range of metallurgical processes, such as Direct Reduction and Sirosmelt. Typical analyses are given in the table below.

Table - TYPICAL ANALYSES OF BOUNDARY HILL AND CALLIDE

	Boundary Hill	
	Callide	
Moisture (ad%)	12.5	9.6
Ash (ad%)	12.5	17.0
Volatile Matter (ad%)	25.0	25.0
Fixed Carbon (ad%)	50.4	49.7
Specific Energy MJ/kg (adb)	21.7	21.9

Operation

The current annual production rate from the Callide coalfields is approximately four million tonnes from four opencut mines. The Callide mine is based on the Dunn Creek/Trap Gully/The Hut areas in the southern end of the field and the Boundary Hill mine is located at the northern end. The mines are designed to produce 4.2 million tonnes per year. Current employment is 430 people.

Callide Coalfields will increase saleable coal production capacity to six million tonnes per annum by 1994 to meet requirements under a new QEC contract. This increased production will require the purchase of an additional dragline and support equipment for Callide mine, and the conversion of

the Boundary Hill mine to a dragline operation, using the existing BE1350W dragline.

Remarks

Callide mine uses a BE1350W dragline to remove overburden. Preparatory pre-stripping and removal of inter-bands is carried out by hydraulic excavator and dump trucks.

At the Boundary Hill mine a 24 cubic metre face shovel and a fleet of 154 tonne rear dump trucks are used to remove overburden in a series of benches down to the coal seam. A second shovel identical to the existing machine was commissioned in July, 1992.

Major customers are the Callide 'B' Power Station adjacent to the Callide mine, and the Queensland Alumina Refinery at Gladstone. Deliveries to the Gladstone Power Station will commence in 1993.

The coal is also used to bunker the coal fired ships on the Weipa/Gladstone bauxite run.

Coal is delivered FOR at loading facilities at Callide mine and Boundary Hill mine for transport to Gladstone, and onto a 1.5 km overland conveyor from the Callide mine to the Callide 'B' Power Station.

CLERMONT

Operator

CLERMONT COAL MINES LIMITED

GPO Box 34
BRISBANE QLD 4001
Phone: (07) 221 2138
Fax: (07) 221 0146

Company Information

Clermont Coal Mines Limited is a joint venture between Exxon Coal Australia Limited 55% and Mitsubishi Development Pty Ltd 45%.

Mining Titles

M.L.s 1884 and 1904.

Location

The Clermont coal deposit is located approximately ten kilometers north of the central Queensland town of Clermont.

Reserves

Drilling and core logging has defined six seams with total reserves in excess of 263 million tonnes in the Wolfgang Basin.

The deposit is readily accessible to opencut mining operations. Overburden to coal ratios, including ramps and batters, is less than 4.0 BCM overburden per tonne of saleable coal.

Of the reserves nominated in the opencut area, some 95% are contained in the main Wolfgang seam, which has an average thickness of 38 metres, in the initial

mine area. In certain areas it is greater than 50 metres thick.

Coal Quality

The coal is of remarkable consistent quality throughout the deposit. The indicated product coal specification is given in the following table.

Table - TYPICAL ANALYSIS OF CLERMONT

	Raw Coal
Moisture (ad%)	5.00
Ash (ad%)	9.5 (+/- 0.5)
Volatile Matter (ad%)	27.50
Fixed Carbon (ad%)	58.00
Total Sulphur (ad%)	0.40
Specific Energy MJ/kg	27.84

Use was made of core recovery from the thick seam to obtain sufficient coal for testing and analysis, because of the depth of overburden and the consequent cost of obtaining bulk samples.

Combustion testing and analysis has been carried out on core samples from 200 mm diameter cores located across the coalfield, giving a truly representative sample of about 30 tonnes.

The product specification can be achieved without washing.

General

Feasibility studies for the development of an opencut mine operation, employing inpit crusher, trucks and shovels for overburden and coal, have been completed and detailed design work is well advanced.

Production from the opencut operation is planned to commence in the mid 1990's at a capacity of some six million tonnes per year.

A ten kilometres spur line to connect the Clermont mine to the Blair Athol/Dalrymple Bay rail link has been designed and its construction approved by the Queensland Government. Where necessary, duplication and upgrading of the existing track will be carried out to handle the additional traffic.

It is proposed that product coal from the Clermont Coal Project will be loaded through the Dalrymple Bay Coal Terminal, and the projected fulltime workforce is 380 persons.

COLLINSVILLE

Operator

COLLINSVILLE COAL COMPANY PTY LTD

GPO Box 1433
BRISBANE QLD 4001
Phone: (07) 833 8000
Fax: (07) 832 2430

Company Information

The company is owned by Newlands Collinsville Abbott Point (NCA) Joint Venture comprising Mount Isa Mines Limited (75%) and Agipcoal Australia Pty Ltd (25%).

Mine Names

Bowen No. 2 mine - underground.
Bocum mine - underground.
Bowen Central - opencut.

Location

Collinsville is 105 km by rail south-west of the port of Abbot Point and 86 km by road from Bowen.

Resources

In situ resources and mineable reserves are given in the table below.

Table - RESOURCES OF COLLINSVILLE

	Million tonnes
Mineable Reserves	34.2
Measured Resources	90.0
Indicated Resources	110.6
Total In situ Resources	234.8

Coal Quality

Collinsville Coals are medium volatile bituminous in rank. Products range from washed high quality export coking coal to unwashed domestic thermal coal. A variety of qualities are produced from the working seams due to vertical and lateral quality variations within each seam. Product quality is controlled largely by the mining horizon within each seam, and blending and coal preparation. The Bowen seam, for instance, can produce both thermal and domestic coking quality coal. Raw sulphur contents vary from 0.6% to 2.3%. Sulphur is generally concentrated in the top of the seams.

Typical coal analyses are given in the table overleaf.

Table - TYPICAL ANALYSES OF COLLINSVILLE

	Thermal (R.O.M.)		
	Bowen Central + U/ground Mines	Blake West opencut Seam	Scott Denison + Garrick Blend
Moisture (ad%)	1.5	2.0	1.5
Volatile Matter (ad%)	23.0	20.0	26.0
Fixed Carbon (ad%)	61.7	58.5	62.5
Ash (ad%)	13.0	18.8	9.2
Total Sulphur (ad%)	0.8	0.7	0.8
C.S.N.	0-4	1	6-7
Specific Energy MJ/kg	30.2	27.8	32.0

The Scott Denison and Garrick seams are blended and washed to produce coking quality coal for export. Typical washed product qualities for a 4:1 blend of Scott Denison seam and Garrick seam are given in the aforementioned Table.

General

The Collinsville mines are part of the Newlands/Collinsville/Abbot Point (NCA) project.

Approximately 582 people are employed at the Collinsville mines.

Capital Expenditure

Capital Expenditure during 1991/92 amounted to \$0.15m, being solely for mine development.

COOK

Operator

COAL RESOURCES OF QUEENSLAND PTY LTD

PO Box 10
BLACKWATER QLD 4717
Phone: (079) 86 0311
Fax: (079) 86 0220

Company Information

The company is a subsidiary of ARCO Coal Australia Inc.

Location

The Cook underground mine is located 216 km west of Rockhampton and 29 km south of Blackwater. Mined coal is trucked 14 km to the preparation plant and rail loadout. The product coal is then railed 300 km in 5 000 tonne unit trains to the Clinton coal loading facility at Gladstone.

Resources

The measured resources are in the order of 203 million tonnes.

Coal Quality

There are two coal products as detailed in the table below.

Table - TYPICAL ANALYSES OF COOK

	Coking	Thermal
Moisture (ad%)	1.4	1.6
Volatile Matter (ad%)	27.5	24.5
Ash (ad%)	7.0	13.2
Total Sulphur (ad%)	0.4	0.35
C.S.N.	7.5	-
Specific Energy MJ/kg	32.8	29.5

Operation

From July 1992 mining will be based on bord and pillar methods using Breaker Line Supports in conjunction with radio controlled miners. At June 30 1992, 298 people were employed.

General

Coking coal has been exported to India, Korea and Japan. Thermal coal is sold into the Malaysian, Japanese and European markets plus local cement industries.

CURRAGH

Operator

CURRAGH QUEENSLAND MINING LIMITED

GPO Box 807
BRISBANE QLD 4001
Phone: (07) 867 8191
Fax: (07) 867 8283

Company Information

Curragh Queensland Mining Limited operates the Curragh mine on behalf of a co-venture comprising Arco Coal Australia Inc. 60%, R.W. Miller & Company Pty Limited 30% and Mitsui Coal Development (Australia) Pty Ltd 10%.

Location

Curragh is situated ten kilometers north of Blackwater in Central Queensland.

Reserves

Mineable coal reserves within the lease area are in the order of 90 million tonnes.

Coal Quality

Coking and thermal coals are exported to the specifications given in the table overleaf.

Table - TYPICAL ANALYSES OF CURRAGH

	Coking	Thermal
Total Moisture (a.s.%)	10 max.	10 max.
Volatile Matter (ad%)	23 max.	19 app.
Ash (ad%)	7 max.	13 max.
Total Sulphur (ad%)	0.6 max.	0.65 max.
CSN	7.5	-
Specific Energy MJ/kg	-	30.56
HGI	-	80 app.

Operations

The Curragh mine produces a number of products as follows:

- ◆ domestic thermal coal is supplied under a long term contract to the Queensland Electricity Commission. The 20 year contract is for a total of 66.4 million tonnes of coal for use at Gladstone and for the new power station being built at Stanwell near Rockhampton; and
- ◆ hard coking, other metallurgical coals and high energy export thermal coal.

The Curragh mine capacity is currently 6.7 million tonnes per annum split approximately 50% coking type coal and 50% thermal coal.

General

Export coal is shipped through the Clinton facility in the port of Gladstone where Curragh has two stockpile areas each of 300 000 tonnes capacity.

Curragh developed housing and associated infrastructure in Blackwater for the mine workforce of 500.

A contract has been signed for the supply of one million tonnes of coking coal per annum to the Japanese steel mills. The balance of the production is being sold to markets in Asia, Europe and the Middle East.

EBENEZER

Operator

IDEMITSU SOUTH QUEENSLAND COAL PTY LTD

M.S.F. 861 Coopers Road
WILLOWBANK QLD 4306
Phone: (074) 67 3355
Fax: (074) 67 3463

Company Information

Idemitsu South Queensland Coal Pty Ltd is a wholly owned subsidiary of the Idemitsu Kosan Company Limited of Japan.

Location

Ebenezer mine is located in south-east Queensland approximately 50 km and 20 km by road south-west from Brisbane and Ipswich respectively.

Resources

Measured resources at Ebenezer are 56 million tonnes.

Coal Quality

Ebenezer coal is a typical per hydrous Walloon coal and is classified as a marginal high volatile A to high volatile B bituminous coal on the ASTM System.

A typical washed product coal for export sale is a moderate ash, low sulphur, moderate calorific value coal which would be within the specification range in the table following.

Table - TYPICAL ANALYSIS OF EBENEZER

	Clean Coal
Total Moisture (a.s.%)	10.0
Moisture (ad%)	4.0
Volatile Matter (ad%)	37.9-42.2
Fixed Carbon (ad%)	39.0-45.7
Ash (ad%)	13.4-15.3
Total Sulphur (ad%)	0.41-0.60
Specific Energy MJ/kg	28.05

Operations

Ebenezer mine is a multi-seam opencut mine. Coal and overburden are currently mined on a contract basis from up to 53 discrete coal seams.

A total of six overburden and coal removal units consisting of one Hitachi EX1800 Excavator, one Komatsu PC1000 Excavator, two CAT 245ME excavators, one CAT 992C and four CAT 998B front-end loaders are used for overburden and coal removal. A fleet of 18 trucks consisting of four Terex and ten Aveling Barford rear dump trucks of 50 tonne capacity and four CAT 777 rear dump trucks of 85 tonne capacity are used to haul overburden and coal.

A fleet of three graders and five tractor/dozers consisting of two CAT D9, two CAT D10 and one CAT D7 are used extensively for ripping of thin non coal midburdens and partings, ripping of coal and top of coal, and clean up. The Ebenezer coal preparation plant consists of a Baum Jig to effect high gravity separation, and dense medium cyclones to effect low gravity separation of the coarse coal fractions and spirals for the fine coal fractions.

The workforce for the opencut, coal preparation plant and administration office consists of approximately 170 employees.

General

Coal is shipped from the port of Brisbane Fisherman Islands Terminal.

GERMAN CREEK

Operator

CAPRICORN COAL MANAGEMENT PTY LTD

Private Mail Bag
MIDDLEMOUNT QLD 4746
Phone: (079) 857 200
Fax: (079) 857 926

Company Information

German Creek is owned by the Capricorn Coal Development Joint Venture whose holders are The Shell Company of Australia Ltd 46.75%, Minproc Energy 26.06%, Coal Developments (German Creek) Pty Ltd 14.81% and Ruhrkohle Australia Pty Ltd 12.38%.

German Creek Coal Pty Ltd is responsible for marketing all coal produced by the Joint Venture.

Capricorn Coal Management Pty Limited, a wholly owned subsidiary of Shell Australia Limited, operates the mine on behalf of the Joint Venturers.

Location

The mines are located in Central Queensland 275 km by road from Mackay and 300 km from Rockhampton.

Mine Names

German Creek - opencut
German Creek Central - underground
German Creek East - opencut
German Creek South - underground.

Reserves

The main coking coal reserves are contained in three major seams. These seams are the German Creek, Tieri and Aquila.

Opencut coking coal reserves are estimated at over 12 million tonnes whilst underground reserves are in excess of 170 million tonnes.

Coal Quality

Coking coal produced from German Creek is of the quality given in the following table.

Table - TYPICAL ANALYSIS OF GERMAN CREEK

	Clean Coal
Total Moisture (as%)	9.0
Volatile Matter (ad%)	20.0-22.0
Ash (ad%)	8.5
Total Sulphur (ad%)	0.8
C.S.N.	8-9

Operations

Total clean coal production from the four operations, which comprise the German Creek mines, is now in excess of four million tonnes per year.

The two underground mines, Central Colliery and Southern Colliery, have been designed as modern longwall operations and are installed with high capacity equipment. Development at Central Colliery uses continuous miners and shuttle cars, while Southern Colliery, also uses a flexible conveyor train.

The opencut operations utilise conventional dragline stripping methods to uncover several seams in the German Creek and German Creek East areas.

All raw coal is transported to the coal handling and preparation plant by truck. The plant utilises dense medium cyclones, spirals and froth flotation equipment to produce the high quality export metallurgical coal.

General

Exports of German Creek coal are shipped through Dalrymple Bay Coal Terminal near Mackay.

The company has established the town of Middlemount, 25 km from the mine, to accommodate over 700 employees and their families. The town has been designed to accommodate a population of around 3 400.

GORDONSTONE

Operator

GORDONSTONE COAL MANAGEMENT PTY LTD

GPO Box 634
BRISBANE QLD 4001
Phone: (07) 867 8192
Fax: (07) 867 8284

Company Information

Gordonstone Joint Venture comprises - ARCO Coal Australia Inc. 50%, ARCO Resources Ltd 30%, Mitsui Gordonstone Investment Pty Ltd 15% and Lend Lease Resources Pty Ltd 5%.

Gordonstone Coal Management Pty Ltd, (Gordonstone) is a subsidiary of ARCO Coal Australia Inc. and manages the project on behalf of the Joint Venturers.

Mining Titles

E.P.C.389, M.L.1978.

The Mining Lease covers an area of 5 840 hectares.

Location

Gordonstone is situated within the Bowen Basin of central Queensland and is 365 km by rail to the major coal port at Gladstone. The mine site is about 40 km by sealed road from the towns of Emerald and Capella.

Resources and Reserves

The Mining Lease area contains in situ reserves of approximately 200 million tonnes of German Creek seam coal. The balance of the Gordonstone deposit continues to be held by the Joint Venture under an exploration permit and contains a further 380 million tonnes of in situ resources. The reserves in the Mining Lease would yield 120 million tonnes of raw coal and would be sufficient for a mine life of 20 years at an annual clean coal output in excess of four million tonnes.

The reserves are located in a physical environment that will enable the German Creek seam to be exploited by a conventional but flexible underground mine development.

The seam section and adjacent strata are amenable to the application of high capacity longwall retreat extraction systems giving high productivity operations.

Gordonstone coal properties will enable the production of a low ash premium grade coking coal together with an attendant high quality thermal coal. The preparation plant is being constructed with this inbuilt flexibility.

Coal Quality

Gordonstone coal is a high volatile, low ash, strongly caking coal ideally suited for metallurgical coke blends. Laboratory analyses of bore coal samples and pilot plant testing of a bulk sample from the exploratory drift driven to the German Creek seam have been used to predict the quality of the product coals.

Typical analyses of coals to target contract specifications are given in the following table.

Table - TYPICAL ANALYSES OF GORDONSTONE

	Coking Coal	Steaming Coal
Total Moisture (a.s.%)	9.0	8.0
Ash (ad%)	6.5-6.8	13.0
Volatile Matter (ad%)	33.0-35.0	31.0
Total Sulphur (ad%)	0.7	0.7
CSN	7-9	-
Specific Energy (MJ/kg)	-	29.31

Mine and Surface

The mine design criteria which has been adopted recognises the market requirement for a competitively priced, high quality coal product while maintaining an economically viable project. The German Creek seam is extensively worked in the Bowen Basin area of Queensland and its washability characteristics are well known and understood. Beneficiation will be carried out by dense medium baths and cyclones and by froth flotation.

Railway and Port

Product coal will be transported from the mine using electric unit trains of 5 400 tonne capacity to the Clinton Coal Facility at Gladstone. The mine will be connected to the main coal rail network via a spur and loadout loop.

Employment

The mine will have approximately 400 employees.

Remarks

Construction of the mine began in August 1990. The first railings are expected in late 1992.

GREGORY

Operator

BHP AUSTRALIA COAL LIMITED

See Blackwater etc.

Company Information

Gregory is owned by the Gregory Joint Venture comprising - BHP Minerals Limited 46.55%, Queensland Coal Trust 27.78%, Australian Mutual Provident Society 8.61%, Utah Queensland Coal Limited 8.5%, Pancontinental Mining Limited 3%, Mitsubishi Development Pty Ltd 3% and Bowen Basin Minerals Pty Ltd 2.56%

The Gregory mine is managed by BHP Australia Coal Limited.

Location

The Gregory opencut mine is located 60 km north-east of Emerald and 275 km north-west of the Clinton Coal Terminal at Gladstone.

Reserves and Resources

Resources of Gregory are indicated 12 million tonnes and measured 119 million tonnes. The marketable reserves are approximately 36 million tonnes.

Coal Quality

Typical washed coal analysis for Gregory mine is given in the following table.

Table - TYPICAL ANALYSIS OF GREGORY

	Clean Coal
Total Moisture (a.s.%)	8.0
Moisture (ad%)	2.0
Volatile Matter (ad%)	32.5
Ash (ad%)	8.2
Sulphur (ad%)	0.65
C.S.N.	9

Operation

Gregory mine has a production capacity of 3.5 million tonnes of coking and thermal coal a year. A single seam, known as the Lilyvale seam, which forms part of the German Creek Formation is currently being mined.

Employees at the mine as at June 30, 1992 totalled 435.

Capital Expenditure

Capital Expenditure for the year 1991/92 totalled \$3.3 million.

JEEBROPILLY AND NEW HOPE

Operator

NEW HOPE CORPORATION LIMITED

PO Box 47
IPSWICH QLD 4305
Phone: (07) 202 1100
Fax: (07) 202 4315

Company Information

The shareholders of New Hope Corporation Limited are: Washington Soul Pattinson & Co. Ltd 50.2%, Domer Mining Company Pty Ltd 15.3%, Farjoy Pty Ltd 15.3%, Mitsubishi Materials Corporation Ltd 12.8% and Taiheiyo Kouhatsu Inc. 6.4%.

Location

New Hope Corporation Limited operates two underground and two opencut mines in the West Moreton District of south-east Queensland in close proximity to the City of Ipswich.

Reserves and Resources

The following table depicts the coal reserves and resources of Jeebropilly and New Hope.

Table - COAL RESERVES AND RESOURCES

MINE	Resources Indicated		Reserves
	Resources Measured		
	Million Tonnes	Million Tonnes	Million Tonnes
Jeebropilly	106	57	10
New Hope	-	-	5
Total	106	57	15

Coal Quality

The typical coal quality is indicated in the table below.

Table - TYPICAL ANALYSES OF JEEBROPILLY AND NEW HOPE

	Resources Indicated		Reserves
	Resources Measured		
	Million Tonnes	Million Tonnes	Million Tonnes
Total Moisture (a.s.%)	9.0	10.0	
Moisture (ad%)	3.7	5.0	
Volatile Matter (ad%)	35.0	39.0	
Fixed Carbon (ad%)	44.8	41.0	
Ash (ad%)	16.5	15.0	
Total Sulphur (ad%)	0.5	0.65	
Specific Energy (MJ/kg)	27.21	27.21	

Operations

The mining operations employ approximately 200 people, and produce 1.4 million tonnes per annum of washed thermal coal for domestic and export markets.

The mine capacities are - Jeebropilly opencut 1.1 million tonnes per annum and New Hope underground 0.3 million tonnes per annum.

General

New Hope Corporation Limited holds a 50% equity in Queensland Bulk Handling Pty Ltd which operates the coal export terminal at Fisherman Islands in the port of Brisbane.

JELLINBAH EAST

Operator

ADVANCE QUEENSLAND RESOURCES & MINING PTY LTD

PO Box 7069
Riverside Centre
BRISBANE QLD 4001
Phone: (07) 221 7799
Fax: (07) 221 7119

Company Information

Jellinbah East is wholly owned by Queensland Coal Mine Management Pty Limited.

Advance Queensland Resources & Mining Pty Ltd is appointed to represent the owner.

Mining Titles

E.P.C.449, M.L.s 2418 & 6992.

Location

Jellinbah East deposit is located about 20 km north-west of Bluff in central Queensland and about 280 km by rail from the port of Gladstone.

Resources

The coal deposit is of Permian age and is part of the Rangal Coal Measures situated on the eastern flank of the Bowen Basin.

The principal seams of economic interest are the Aries, Castor and Pollux seams.

Significant resources are contained in the eight metre thick Pollux seam.

Opencut in situ resources are estimated and are given in the following table.

Table - COAL RESOURCES OF JELLINBAH EAST

	Measured	Indicated	Total
	Million Tonnes	Million Tonnes	Million Tonnes
To 60 m	93	32	125
60 - 90 m	63	30	94
TOTAL	156	62	219

Coal Quality

The raw coal is classified as a low volatile bituminous coal of moderate ash content suitable for general industry, blending for power utilities and potential pulverised coal injection use. A moderate ash semi-soft coking coal can also be produced. Typical coal quality is given in the following table.

Table - TYPICAL ANALYSES OF JELLINBAH EAST

	Semi-Soft Coking	Thermal
Total Moisture (a.s.%)	8.0	8.0
Moisture (ad%)	1.5	1.5
Ash (ad%)	8.5	10.0
Volatile Matter (ad%)	15.5	14.5
Fixed Carbon (ad%)	74.5	74.0
Total Sulphur (ad%)	0.5	0.6
Specific Energy MJ/kg	31.8	31.4
C.S.N	3	-

LALEHAM AND SOUTH BLACKWATER

Operator

SOUTH BLACKWATER COAL LIMITED

10th Floor
307 Queen St, BRISBANE QLD 4000
Phone: (07) 229 4544
Fax: (07) 221 3197

Company Information

The South Blackwater mines are owned and operated by South Blackwater Coal Limited, which is a wholly owned subsidiary of QCT Resources Limited, a publically listed company.

Location

The mines are located 225 km west of Rockhampton and 334 km by rail from the loading port of Gladstone.

Resources

The resources are indicated 822 million tonnes and measured 776 million tonnes.

Coal Quality

The typical analysis of South Blackwater coal is contained in the table overleaf.

Table - TYPICAL ANALYSES OF SOUTH BLACKWATER

	Coking	Thermal / PCI
Moisture (ad%)	1.5 - 2.0	1.5-2.0
Volatile Matter (ad%)	28.4 - 29.5	25.0-26.5
Fixed Carbon (ad%)	62.2 - 63.7	59.5-61.5
Ash (ad%)	6.0 - 6.5	9.5-13.5
Total Sulphur (ad%)	0.45	0.65
C.S.N.	7.5	1.0-2.5
Specific Energy MJ/kg	32.8	29.80-30.56

Operation

The operations have a production capacity currently in excess of two million tonnes per year of product coal. Approximately 60% of production is very low ash hard coking coal and 40% high energy thermal and PCI coals.

Opencut overburden is removed in a conventional strip mining operation by two Bucyrus Erie 1370W draglines, with some pre-stripping by an O & K 120C shovel and Caterpillar 785 rear dump trucks.

Approximately one third of production is from the Laleham No. 1 underground mine where coal is mined by the bord and pillar method using continuous miners and shuttle cars, and utilizing Breaker Line supports.

Following a reduction in output early in 1988, production was gradually returned to the two million tonnes production level in 1989. Studies on the expansion of operations by development of longwall operations and development of new opencut areas are underway.

Approximately 388 employees are engaged at the mines.

General

Coking coal is supplied principally to the Japanese, Turkish, European and Taiwanese markets. Thermal coal is exported principally for power generation in Asia and the Netherlands, and to the Japanese industrial market. PCI coal is supplied to the Japanese and Italian steel mills.

MEANDU

Operator

PACIFIC COAL PTY LIMITED

GPO BOX 391
BRISBANE QLD 4001
Phone: (07) 223 7200
Fax: (07) 229 5087

Company Information

Meandu is managed by Pacific Coal Pty Limited (a wholly owned subsidiary of CRA Limited) trading as Tarong Coal.

Mine Name

Meandu Opencut.

Location

Meandu is situated south of Kingaroy and about 180 km north-west of Brisbane.

Resources and Reserves

Reserves in the Meandu lease area were estimated to be 110 million tonnes at the end of 1991. In addition, coal resources in excess of 250 million tonnes are held in an adjacent exploration permit.

Coal Quality

The specification of Meandu coal after washing is given in the following table.

Table - TYPICAL ANALYSIS OF MEANDU

	Clean Coal
Total Moisture (ad%)	14.0
Ash (ad%)	28.0
Specific Energy MJ/kg	19.38

Remarks

The Meandu mine was developed to supply coal to Tarong Power Station.

A contract with the Queensland Electricity Commission provides for the supply of 66 million tonnes from July 1, 1984.

Deliveries to the Power Station during 1991/92 were approximately 5.45 million tonnes of coal. A coal preparation plant was commissioned in 1986 to ensure that coal quality meets the contract specifications of the Queensland Electricity Commission.

Coal is transported to the power station by an overland conveyor which is two kilometres in length.

Employee housing has been established in the nearby towns of Yarraman, Nanango and Kingaroy.

Capital Expenditure

Capital expenditure during 1991/92 was \$4.8 million.

MOURA

Operator

BHP AUSTRALIA COAL LIMITED

See Blackwater etc.

Company Information

Moura Mine is owned by BHP Mitsui Coal Pty Ltd which is a consortium comprising - Dampier Coal (Qld) Pty Ltd 80% (a wholly owned subsidiary of BHP) and Mitsui & Co. Ltd 20%

Moura mine is managed by BHP Australia Coal Limited.

Mine Names

Moura No. 2 - underground .

Moura - opencut.

Location

Moura Mine is located on the south-east flank of the Bowen Basin of Central Queensland, 184 km west of the port of Gladstone.

Reserves and Resources

Moura has marketable reserves of 97 million tonnes and measured resources of 1 018 million tonnes.

Coal Quality

The Moura operations produce medium volatile and high volatile coals from several locations. These coals are blended in specific proportions to produce a coking coal for the steel industry. Medium volatile hard coking coal is produced from the underground mine and opencut pits in the north of the mining area.

Opencut coals of lesser coking properties are washed to produce a thermal coal of high energy value. A low ash content variant of this blend is also marketed as non-coking coal for use for briquetting or blast furnace pulverised coal injection purposes.

The specification of Moura coal is given in the table below.

Table - TYPICAL ANALYSES OF MOURA

	Coking	Non-coking	Energy
Total Moisture (a.s.%)	9.5	10.0	10.0
Moisture (ad%)	2.0	2.0	2.5
Volatile Matter (ad%)	27.5	31.5	29.0-32.0
Ash (ad%)	8.0	8.5	10.0
Total Sulphur (ad%)	0.4	0.4	0.4
C.S.N.	8	3-5	-
Specific Energy MJ/kg	-	-	30.1

The minus 125 mm raw coal is delivered to the washplant feed stockpile via a 16 km, 2 000 tph overland conveyor system. Four dump stations/stockpiling installations are located along this conveyor to receive and crush run of mine coal to a topsize of 125 mm. Processing is via a heavy medium bath, heavy medium and water-only cyclones, and froth flotation. Nominal output is 2.8 to 3 million tonnes per annum.

Operation

The opencut coal mine operation utilises four draglines with another under construction for completion by 1993. The run of mine coal is transported by conveyor from the surface of the mine to the coal preparation plant.

Moura Underground No. 2 is situated in the northern part of the mining lease. Entry is from the high wall of previously strip-mined areas. Continuous miners are used to mine the coal which is transported by conveyor belts to the preparation plant.

Employees at the mine as at June 30, 1992 totalled 647.

General

Coal is railed 184 km to the port of Gladstone and is shipped through both the Barney Point and Clinton coal loading facilities. Barney Point is owned by BHP Mitsui Coal Pty Ltd

The majority of Moura coal is exported to Japan.

Capital Expenditure

BHP Mitsui Coal Pty Ltd capital expenditure for the year 1991/92 for the Riverside and Moura mines, port facilities and town development totalled \$11 million.

NEWLANDS

Operator

NEWLANDS COAL PTY LTD

GPO Box 1443

BRISBANE QLD 4001

Phone: (07) 833 8000

Fax: (07) 832 2430

Company Information

Newlands Coal Pty Ltd is agent for the joint venture manager Mount Isa Mines Limited. Newlands mine is owned by Mount Isa Mines Limited 75% and AGIP Coal Australia Pty Ltd 25%.

Mining Titles

M.Ls 4748, 4754 and 4755.

Location

198 km by road west of Mackay. 32 km by road north-west of the service town of Glenden.

Resources and Reserves

The quoted reserves contained in the Upper Newlands seam of 6.8 metres average thickness and M.L 4748 are given in the following table.

Table - RESOURCES AND RESERVES OF NEWLANDS

	Million Tonnes
Indicated In Situ Resources	135
Measured In Situ Resources	147
Mineable In Situ Reserves	58

Coal Quality

Typical analysis for washed coal product is given in the following table.

Table - TYPICAL ANALYSIS OF NEWLANDS

	Clean Coal
Total Moisture (a.s.%)	8.3
Ash (ad%)	14.5
Volatile Matter (ad%)	26.3
Total Sulphur (ad%)	0.5
Specific Energy MJ/kg	28.48
Ash Fusion Temperature C	+1600
Hardgrove Grindability Index	54

Operation

The mine produces thermal coal at an annual rate of 4.4 million tonnes exclusively for the export market.

The coal is railed to the port of Abbot Point, north of Bowen. The port and rail facilities were constructed by M.I.M. and are dedicated to the Newlands and Collinsville mines.

During 1991/92, 4.3 million tonnes of thermal coal were exported. The product is sold to markets in Japan, South-East Asia and Europe.

Potential exists for the development of underground mines by the mid 1990's.

Employees at the mine as at June 30, 1992 totalled 451.

General

The township of Glenden is located approximately 32 km south of the mine site and accommodates mine personnel and their families.

Capital Expenditure

Capital expenditure for the year 1991/92 amounted to \$0.9m all on mining development and equipment.

NORTH GOONYELLA

Operator

NORTH GOONYELLA COAL MINES LTD

Po Box 10217

BRISBANE QLD 4000

Phone: (07) 229 0200

Fax: (07) 221 2817

Company Information

North Goonyella Joint Venture Comprises - White Mining (Qld) Pty Ltd (51%) and Sumisho Coal Development Pty Ltd (49%). Sumisho is a fully owned subsidiary of Sumitomo Corporation of Japan. White Mining Ltd is the manager of the Joint Venture.

Mining Title

M. L. 6949. The mining lease was granted in October 1991 over an area of 3 555 hectares.

Location

North Goonyella is situated within the Bowen Basin of Central Queensland and is a distance of approximately 150 km by road west of Mackay and approximately 200 km by rail to the Dalrymple Bay Coal Terminal.

Reserves and Resources

The Mining Lease area contains three workable seams with in situ resources of 418 million tonnes. The recoverable reserves to a depth of 300 metres have been determined to be 174 million tonnes.

The reserves are adequate to sustain high production for a project life in excess of 35 years, particularly as the seams are likely to be worked eventually at depths greater than 300 metres. The three workable seams are:

Goonyella Upper seam or No. 2 Seam.

Goonyella Middle seam or No. 4 Seam.

Goonyella Lower seam or No. 5 Seam.

All seams strike at approximately north-south and dip gently to the east at grades of 3° to 5°. Dips are uniform over large distances and the seams are largely free of deformation or intrusions. The seam intervals are 100 m between the Upper and Middle seams and approximately 30 m between the Middle and Lower seams.

The Upper seam is approximately 3.3 m thick, the Middle seam is typically 6.0 m and the Lower seam consists of four splits of varying thicknesses. The mineable thickness of these seams are, 3.3 m for the Upper seam, basal 4.5 m for the Middle seam and approximately 2.5 m for the Lower seam.

Coal Quality

Typical analysis for the Goonyella Middle seam or No. 4 Seam is given in the table below.

Table - TYPICAL ANALYSIS OF NO. 4 (MIDDLE SEAM)

	Coking
Sizing (mm)	50 x 0
Total Moisture (as%)	9.0
Moisture (ad%)	1.5
Ash (ad%)	8.5 max
Volatile Matter (ad%)	23 - 24
Fixed Carbon (ad%)	66.5
Total Sulphur (as%)	0.5
Phosphorous	0.035
C.S.N.	8-9
Specific Energy MJ/kg	33

The coking coal produced by North Goonyella is a low ash medium volatile low sulphur coal with strong caking properties producing a very high strength coke.

Operations

A 19 km rail spur, a modern coal preparation plant and related facilities are under construction and will be completed by mid 1993 for export of three mtpa of coal through the Dalrymple Bay Coal Terminal south of Mackay where the port is being expanded to 28 mtpa accommodating 2 x 200 000 dwt vessels at the berth. The preparation plant consists of dense medium cyclones, spirals and froth flotation circuits, with fully automated on-line quality analysis.

General

Exploration commenced in June 1989. The mining lease was granted in October 1991. The project development commenced in April 1992 with longwall extraction to commence in late 1993.

The Joint Venturers are committed to produce a quality assured product from a long term cost competitive operation.

OAKLEIGH

Operator

OAKLEIGH COLLIERY PTY LTD

PO Box 25
ROSEWOOD QLD 4340
Phone: (074) 64 1600
Fax: (074) 64 2201

Company Information

Oakleigh Colliery Pty Ltd is a private company formed in 1948. The three working company directors own 100% of the issued capital of Oakleigh Colliery.

The company operates both an underground and opencut mine and it supplies coal to the domestic and the export markets.

Location

Oakleigh is situated at Perry's Knob siding 4.5 km north of the town of Rosewood and 60 km west of Brisbane.

Reserves and Resources

Oakleigh has recoverable reserves of two million tonnes, indicated resources of four million tonnes and measured resources of 12 million tonnes.

Coal Quality

The Rosewood-Walloon coal is used for steam generation. It is described as very high volatile bituminous, per-hydrous and weakly coking. Typical washed coal analysis for the export market is given in the table below.

Table - TYPICAL ANALYSIS OF OAKLEIGH

	Clean Coal
Total Moisture (a.s.%)	10.0
Moisture (ad%)	5.0
Volatile Matter (ad%)	38.0
Fixed Carbon (ad%)	39.0
Ash (ad%)	14.0-18.0
Total Sulphur (ad%)	0.5
CSN	1.0
Specific Energy MJ/Kg	27.2

Operations

The underground mine is worked by the bord and pillar method using continuous miners and shuttle cars. The opencut is worked by dump trucks and wheel loaders for both overburden and coal removal. Selective mining is practiced enabling very thin plies of coal to be won. Interburden and overburden are used as backfill within the cut.

The capacity of the preparation plant is presently 300 000 tonnes of saleable coal per annum.

Employees at both mines totalled 71 at June 30, 1992.

General

Export coal from Oakleigh is transported by road to Parkhead coal loading facility, then railed to the shipping facilities at Fisherman Islands terminal, port of Brisbane.

For the year ended June 30 1992, 9% of total production was exported to Japan and 91% was directed to the domestic market. The domestic market consists of a number of consumers involved in various types of industry.

At present rate of production Oakleigh colliery has sufficient reserves of coal to enable it to supply its consumers well into the next century.

OAKY CREEK

Operator

OAKY CREEK COAL PTY LTD

GPO Box 1433
BRISBANE QLD 4001
Phone: (07) 833 8000
Fax: (07) 832 2430

Company Information

The Joint Venturers in the Oaky Creek mine comprise the following - Mount Isa Mines Limited 79%, Hoogovens Delfstoffen B.V. 8.5%, Fincoal (Australia) Pty Ltd 7.5% (a wholly owned subsidiary of M.I.M. Holdings Limited) and Empresa Nacional Siderurgica (S.A.) 5%.

Oaky Creek Coal Pty Ltd, a wholly owned subsidiary of M.I.M. Holdings Limited, operates the Oaky Creek mine on behalf of the Manager of the Joint Venture, Mount Isa Mines Limited.

Mining Titles

E.P.C.476, M.L.1832, M.L.2004.

Location

Oaky Creek is located 50 km north-east of Capella, which is 366 km by road north-west of Rockhampton.

Reserves and Resources

The quoted reserves in million tonnes in the following table are contained in the German Creek, Corvus, Aquila and Tieri seams within the Mining Lease area.

Table - COAL RESERVES AND RESOURCES

	Reserves	Measured Resources
Opencut (mt)	61	91
Underground (mt)	55	214
Total	116	305

Additional resources are contained within the Exploration Permit.

Coal Quality

The coal is medium volatile coking coal with typical analysis as given in the following table.

Table - TYPICAL ANALYSIS OF OAKY CREEK

	Clean Coal
Total Moisture (a.s.%)	8.0 - 9.5%
Volatile Matter (ad%)	28 - 30%
Ash (ad%)	8.3 - 8.8%
Total Sulphur (ad%)	0.70 - 0.85%
C.S.N.	8 - 8.5
Specific Energy MJ/kg	32.82
Fluidity ddpmm	5000-7000

Operation

The mine produces hard coking coal exclusively for the export market. During 1991/92 approximately half the production was by opencut mining and the other half from an underground longwall operation which was commissioned in November, 1990.

The coal is railed to Dalrymple Bay Coal Loading Facility south of Mackay. M.I.M. is a shareholder in the facility. Alternatively coal may be railed to Gladstone.

General

The township of Tieri is located 13 km west of the mine site and accommodates personnel and their families.

Capital Expenditure

Capital Expenditure during 1991/92 was \$11.256m. Comprising \$10.811m on mine development, \$0.076m on road, rail and port facilities, and \$0.369m on town development.

RHONDDA

Operator

FAI MINING LIMITED

PO Box 505
BOOVAL QLD 4304
Phone: (07) 282 1311
Fax: (07) 282 6695

Company Information

FAI Mining Limited is a wholly owned subsidiary of the FAI Insurance Group.

Showa Coal Australia Ltd has a 20% Joint Venture interest in Rhondda's Wattle Glen Opencut and is a 50% Joint Venture partner in the Box Flat/Westfalen collieries.

Location

Rhondda is situated at Blackstone a suburb of Ipswich. Ipswich is approximately 50 km from Brisbane and 55 km from the Port of Brisbane.

Resources

In situ resources at Rhondda Collieries total 102 million tonnes.

In situ resources at Box Flat/Westfalen collieries total 110 million tonnes.

Coal Quality

A typical specification of export thermal coal is given in the table below.

Table - TYPICAL ANALYSES OF RHONDDA

	As Received	
		Air Dried
Total Moisture (%)	9.0	-
Moisture (%)	-	2.5
Volatile Matter (%)	28.9	31.0
Fixed Carbon (%)	47.1	50.5
Ash (%)	14.9	16.0
Total Sulphur (max) (%)	0.4	0.4
Hardgrove Index (%)	-	52.0
Specific Energy MJ/kg	26.17	28.05

Operations

Rhondda has both an opencut and an underground operation. The opencut mine is called the Wattle Glen North and the underground mine is the M.W. Haenke No. 2 mine.

Together they produce approximately 600 000 tonnes per year of saleable coal. Approximately 100 000 tonnes are sold to the domestic market and 500 000 tonnes are exported as 16% ash thermal coal to Japan.

Remarks

All coal is washed through a modern 300 tph Dense Medium Cyclone Preparation Plant.

Mining is undertaken by truck and shovel operation in the opencut and by bord and pillar mining operation underground using continuous miners and shuttle cars.

Rhondda is an operation that has been established since 1900 and has a range of high quality products for customers both in Australia and overseas.

RIVERSIDE

Operator

BHP AUSTRALIA COAL LIMITED

See Blackwater etc.

Company Information

Riverside is owned by BHP Mitsui Coal Pty Ltd which is a consortium comprising - Dampier Coal (Qld) Pty Ltd 80% (a wholly owned subsidiary of BHP) and Mitsui & Co. Ltd 20%.

Riverside mine is managed by BHP Australia Coal Limited.

Mine Name

Riverside Opencut.

Location

The Riverside area is immediately west of and adjacent to the Goonyella mine, 210 km south-west of the Dalrymple Bay Port Facility.

Resources and Reserves

Riverside has measured resources of 71.6 million tonnes and marketable opencut reserves of 40 million tonnes.

Coal Quality

Riverside product coal is medium volatile prime coking coal with good plastic properties and blendability characteristics. The specification of Riverside coking coal is given in the table below.

Table - TYPICAL ANALYSIS OF RIVERSIDE

	Clean Coal
Total Moisture (a.s%)	9.5
Moisture (ad%)	1.3
Volatile Matter (ad%)	23.5
Ash (ad%)	9.4
Total Sulphur (ad%)	0.50
C.S.N.	7.5
Specific Energy MJ/kg	32.21

The 1350 raw tph preparation plant washes 50 x 0.5 mm coal via 0.71 metre diameter heavy medium cyclones and minus 0.5 mm material via froth flotation. To optimise recovery of minus 0.5 mm material alternative processing via water only cyclones is available. For ease of maintenance the plant is divided into six modules of equal capacity.

Operation

Conventional opencut strip mining utilising three draglines each with 49 cubic metre buckets is used to uncover the coal. After drilling and blasting, the exposed coal is loaded by electric shovel or front-end loader into 146 tonne bottom dump trucks for haulage to the dump station. There the coal is crushed to 45 mm by rotary breaker and stacked in one of two 50 000 tonne raw coal stockpiles prior to being fed to the preparation plant.

General

The train loading facility at Riverside has a capacity of 2 500 tonnes per hour and the coal is railed to the port at Dalrymple Bay in unit trains each carrying 6 600 tonnes.

The majority of Riverside coal is sold under long term contract to Japan. During 1991/92 sales were also made to customers in Europe, India and South America.

YARRABEE

Operator

YARRABEE COAL COMPANY PTY LTD

PO Box 173

BLACKWATER QLD 4717

Phone: (079) 82 5400

Fax: (079) 82 5793

Company Information

Yarrabee Coal Company Pty Ltd, is a wholly owned subsidiary of Resource Management and Mining Pty Ltd.

Location

The mine is located approximately 40 km north-east of Blackwater and 280 km from Gladstone.

Resources

Measured resources total nine million tonnes and indicated resources total 13 million tonnes.

Coal Quality

Yarrabee coal ranges from semi-anthracite to anthracite. A high energy and carbon content makes it suitable for a wide range of processes including steam raising, briquetting and for use in the carbide cement and ferro-alloy industries and metallurgical and electrode manufacturing and calcination. It is also suitable for blending with high volatile coking coal for use in steel making. The coal is low volatile, sub-hydrous and non-coking.

Several coal qualities can be produced and typical analyses are given in the following table.

Table - TYPICAL ANALYSES OF YARRABEE

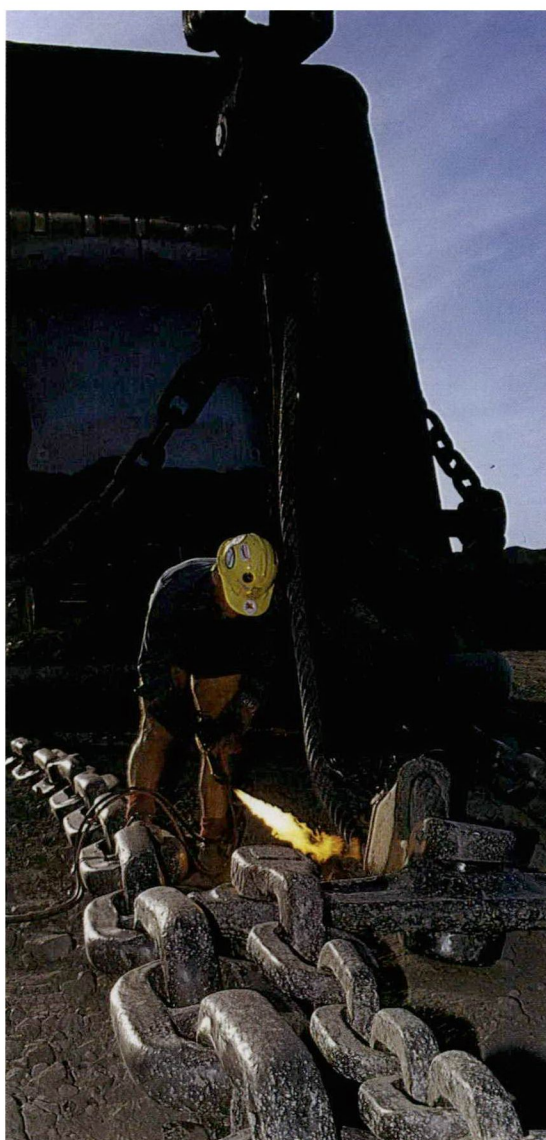
	Low Ash	Medium Ash
Moisture (ad%)	1.5	1.5
Volatile Matter (ad%)	9.5	10.0
Fixed Carbon (ad%)	78.0	69.0
Ash (ad%)	10.5	18.0
Total Sulphur (ad%)	0.7	0.7
Specific Energy MJ/kg	31.19	28.47

Operation

The mine is an opencut operation with the capacity to produce 350 000 tonnes per year. The coal is crushed and screened to specification and is sold as unwashed product.

General

Yarrabee coal is produced and exported for cement manufacture, briquetting purposes, domestic heating and a wide range of industrial uses in the Pacific Basin, South East Asia and Europe. The coal is also sold within Australia for a range of industrial uses and home heating. Export coal is shipped generally through the port of Gladstone.



A major asset is Queensland's highly skilled workforce.

Queensland Coal Statistics

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EXPLANATORY NOTES

Mine

Mine means any registered operation engaged in the production of raw coal. Tailings recovery workings are regarded as separate mines.

Colliery

Colliery means a group of mines which have a common ownership structure and usually share the same beneficiation plant and/or product coal stockpile. A colliery is also a single mine where only one mine constitutes the group.

Raw and Processed Coal

Raw coal as listed in Table 2, is the gross quantity of coal extracted from the mine, while processed coal is the quantity of raw coal from which the saleable coal is derived. This may not be equal to the raw coal mined as most mines keep buffer stocks of raw coal.

Number of Mines

Coal was produced from 43 mines during 1991/92. One of these, the New Hope Western Leases Number 1 underground mine, ceased production and no new mines commenced production during the year.

However, production statistics are reported for only 41 mines, 25 opencut, two tailings recovery operations and 14 underground. This is a consequence of Goonyella and Riverside as well as German Creek and German Creek East opencut mines not being able to separate all statistical information due to integration of workforce and equipment employed at these mines.

Tailings Recovery

In tables that do not show statistics for individual mines, Tailings Recovery is included in the opencut figures.

Standard Shifts

Seven hour statistical shifts are calculated to be consistent with national standards. Queensland employees however, work 8 - 9.25 hour shifts over 5 - 7 day weekly rosters.

Export Statistics

The Queensland Coal Board regards the vessel sailing day to be the date of the coal export. Statistics of companies who use different criteria to determine the export date may vary marginally from the information reported in this review.

Table 1 - QUEENSLAND COAL INDUSTRY 10 YEAR SUMMARY

	1982-83	1983-84	1984-85	1985-86	1986-87	1987-88	1988-89	1989-90	1990-91	1991-92
No. of Mines	50	54	52	49	41	46	39	38	43	43
No. of Employees as at 30 June	8 773	9 674	10 393	10 676	10 342	9 479	10 028	10 498	10 646	10 950
SALEABLE PRODUCTION - '000 TONNES										
DISTRICTS										
OPENCUT										
Northern	12 727	15 008	20 031	22 426	22 991	21 723	24 611	23 743	25 802	28 201
Central	12 968	17 979	23 221	27 559	29 100	28 646	31 297	30 971	30 325	32 178
Southern	6 292	7 432	7 304	9 963	12 536	12 081	14 199	14 458	15 560	16 054
TOTAL	31 987	40 419	50 556	59 948	64 627	62 450	70 107	69 172	71 687	76 433
UNDERGROUND										
Northern	636	642	648	738	611	547	591	639	649	501
Central	927	852	1 208	1 362	2 193	1 824	2 620	4 075	5 105	6 375
Southern	2 262	2 123	1 876	1 949	1 389	998	800	1 045	922	776
TOTAL	3 825	3 617	3 732	4 049	4 193	3 369	4 011	5 759	6 676	7 652
STATE TOTAL	35 812	44 036	54 288	63 997	68 820	65 819	74 118	74 931	78 363	84 085
% Change Year to Year	4.48	22.96	23.28	17.88	7.54	(4.36)	12.61	1.10	4.58	7.30
SALEABLE OUTPUT - TONNES										
Per Employee Year Total	4 082	4 552	5 224	5 994	6 654	6 944	7 391	7 138	7 371	7 745
Per Employee Shift										
Opencut Overall	18.99	21.27	24.76	28.52	28.44	29.94	32.47	31.00	30.14	31.97
Underground Face	22.70	24.45	25.18	28.32	30.25	29.42	34.61	42.24	42.23	43.12
Underground Overall	6.53	7.05	7.59	7.95	8.67	9.69	11.09	13.90	14.02	15.02
STATE AVERAGE	15.78	18.25	21.43	23.81	24.98	27.05	29.40	28.33	27.42	28.99
% Change Year to Year	(6.79)	15.65	17.42	11.11	4.91	8.29	8.69	(3.64)	(3.21)	5.73
SALES '000 TONNES*										
Interstate	91	15	18	91	421	777	1 068	524	320	363
Overseas	26 405	33 095	45 504	50 792	53 525	58 422	59 027	61 269	61 918	69 656
TOTAL	26 496	33 110	45 522	50 883	53 946	59 199	60 095	61 793	62 238	70 019
% Change Year to Year	6.03	24.96	37.49	11.79	6.02	9.74	1.51	2.83	0.72	12.50
DOMESTIC COAL CONSUMPTION - '000 TONNES										
AREAS										
Northern	1 053	1 070	1 146	975	878	924	968	1 001	985	1 027
Central	5 649	6 315	6 211	6 040	5 493	5 134	4 502	4 197	4 391	5 046
Southern	1 914	2 446	3 090	3 956	5 580	6 122	7 536	8 377	8 498	8 816
STATE TOTAL	8 616	9 831	10 447	10 971	11 951	12 180	13 006	13 575	13 874	14 889
% Change Year to Year	14.91	14.10	6.27	5.02	8.93	1.92	6.78	4.37	2.20	7.32

* Does not include domestic sales.

Table 2 - PRODUCTION OF RAW COAL, PROCESSED COAL AND DISCARD - TONNES

DISTRICTS & MINES	RAW		PROCESSED*		DISCARD		SALEABLE		DISCARD **	
	1990-91	1991-92	1990-91	1991-92	1990-91	1991-92	1990-91	1991-92	90-91	91-92
NORTHERN										
OPENCUT										
Bowen Central No. 3	1 951 428	1 918 228	1 904 993	2 202 050	452 613	546 288	1 452 380	1 655 762	23.76	24.81
Goonyella /Riverside	12 458 658	15 073 851	12 725 985	15 131 605	3 597 162	4 384 080	9 128 823	10 747 525	28.27	28.97
Newlands	5 678 835	5 191 369	5 516 811	5 133 376	794 255	525 158	4 722 556	4 608 218	14.40	10.23
Peak Downs	9 469 050	10 658 134	9 210 772	10 384 584	3 779 088	4 289 484	5 431 684	6 095 100	41.03	41.31
Saraji	7 011 662	7 124 679	6 450 079	7 131 301	1 383 761	2 036 920	5 066 318	5 094 381	21.45	28.56
TOTAL	36 569 633	39 966 261	35 808 640	39 982 916	10 006 879	11 781 930	25 801 761	28 200 986	27.95	29.47
UNDERGROUND										
Bocum	279 103	190 661	284 750	198 575	8 543	5 956	276 207	192 619	3.00	3.00
Bowen No. 2	380 245	317 560	384 778	317 560	11 542	9 527	373 236	308 033	3.00	3.00
TOTAL	659 348	508 221	669 528	516 135	20 085	15 483	649 443	500 652	3.00	3.00
CENTRAL										
OPENCUT										
Blackwater	4 929 484	6 009 912	5 121 416	6 093 927	506 581	896 436	4 614 835	5 197 491	9.89	14.71
Blair Athol	7 565 320	7 922 026	7 565 320	7 922 026	-	-	7 565 320	7 922 026	0.00	0.00
Curragh	6 098 741	5 502 410	6 098 920	5 717 472	1 054 922	1 105 098	5 043 998	4 612 374	17.30	19.33
German Creek/East	1 538 000	1 145 200	1 538 000	1 145 200	320 830	238 680	1 217 170	906 520	20.86	20.84
Gregory	4 174 934	4 329 190	4 164 843	4 221 664	583 291	586 910	3 581 552	3 634 754	14.01	13.90
Jellinbah East	789 864	1 024 178	789 864	1 024 178	-	-	789 864	1 024 178	0.00	0.00
Norwich Park	4 898 499	6 706 260	4 816 319	6 702 137	1 289 698	1 675 692	3 526 621	5 026 445	26.78	25.00
Oaky Creek	2 846 423	2 652 617	2 848 881	2 475 753	719 668	659 383	2 129 213	1 816 370	25.26	26.63
South Blackwater	1 896 690	1 936 018	2 032 132	1 926 212	396 111	320 507	1 636 021	1 605 705	19.49	16.64
Yarrabee	146 349	507 404	220 223	431 875	-	-	220 223	431 875	0.00	0.00
TOTAL	34 884 304	37 735 215	35 195 918	37 660 444	4 871 101	5 482 706	30 324 817	32 177 738	13.84	14.56
UNDERGROUND										
Cook	1 275 002	1 630 314	1 259 559	1 628 828	268 568	362 620	990 991	1 266 208	21.32	22.26
German Creek Central	1 522 000	1 686 800	1 522 000	1 686 800	312 500	350 820	1 209 500	1 335 980	20.53	20.80
German Creek Southern	1 785 000	2 346 000	1 785 000	2 346 000	348 670	475 500	1 436 330	1 870 500	19.53	20.27
Gordonstone	9 666	168 743	-	-	-	-	-	-	0.00	0.00
Oaky Creek No. 1	1 544 919	1 669 600	1 525 059	1 785 667	421 392	446 627	1 103 667	1 339 040	27.63	25.01
Laleham	412 874	673 653	455 558	673 925	91 233	110 693	364 325	563 232	20.03	16.43
TOTAL	6 549 461	8 175 110	6 547 176	8 121 220	1 442 363	1 746 260	5 104 813	6 374 960	22.03	21.50

(Continued)

Table 2 - PRODUCTION OF RAW COAL, PROCESSED COAL AND DISCARD - TONNES

DISTRICTS & MINES	RAW		PROCESSED*		DISCARD		SALEABLE		DISCARD **	
	1990-91	1991-92	1990-91	1991-92	1990-91	1991-92	1990-91	1991-92	90-91	91-92
SOUTHERN										
OPENCUT										
Boundary Hill	1 415 349	1 479 948	1 415 349	1 479 948	-	-	1 415 349	1 479 948	0.00	0.00
Callide	2 573 868	2 675 175	2 573 868	2 675 175	-	-	2 573 868	2 675 175	0.00	0.00
Ebenezer	1 608 467	2 211 985	1 657 616	2 311 825	645 968	1 008 516	1 011 648	1 303 309	38.97	43.62
Jeebropilly	1 538 814	1 835 938	1 538 814	1 835 938	705 312	878 704	833 502	957 234	45.83	47.86
Meandu	6 779 485	7 096 770	6 425 142	6 667 847	1 283 954	1 332 125	5 141 188	5 335 722	19.98	19.98
Moura	3 545 379	3 591 109	3 552 070	3 563 579	646 225	577 322	2 905 845	2 986 257	18.19	16.20
New Hope No. 358	103 723	188 050	110 355	188 050	60 727	132 880	49 628	55 170	55.03	70.66
New Whitwood	1 162 749	770 268	1 117 902	844 913	641 834	617 430	476 068	227 483	57.41	73.08
Oakleigh	170 478	184 357	165 478	168 687	39 824	43 413	125 654	125 274	24.07	25.74
Wattle Glen Ext.	918 293	760 689	918 813	761 261	430 123	362 939	488 690	398 322	46.81	47.68
TOTAL	19 816 605	20 794 289	19 475 407	20 497 223	4 453 967	4 953 329	15 021 440	15 543 894	22.87	24.17
TAILINGS RECOVERY										
Aberdare Reclaiming	-	-	118 758	84 494			118 758	84 494	0.00	0.00
Moura Reclaiming	-	-	403 195	426 310	-	-	403 195	426 310	0.00	0.00
Westfalen Reclaiming	-	-	16 664	-	-	-	16 664	-	0.00	0.00
TOTAL	-	-	538 617	510 804	-	-	538 617	510 804	0.00	0.00
UNDERGROUND										
Burgowan	16 196	25 188	16 196	25 188	3 117	4 720	13 079	20 468	19.25	18.74
M.W. Haenke No. 2	255 521	201 380	253 613	205 122	118 963	90 032	134 650	115 090	46.91	43.89
Moura No. 2	635 513	548 438	652 285	531 791	133 709	90 779	518 576	441 012	20.50	17.07
Oakleigh No. 3	120 614	136 073	120 614	136 073	53 143	66 821	67 471	69 252	44.06	49.11
New Hope W. Leases No. 1	238 512	92 491	238 512	92 491	141 696	54 329	96 816	38 162	59.41	58.74
New Hope W. Leases No. 2	148 901	140 024	148 901	140 024	57 191	48 000	91 710	92 024	38.41	34.28
TOTAL	1 415 257	1 143 594	1 430 121	1 130 689	507 819	354 681	922 302	776 008	35.51	31.37
STATE										
Opencut	91 270 542	98 495 765	90 479 965	98 140 583	19 331 947	22 217 965	71 148 018	75 922 618	21.37	22.64
Tailings Recovery	-	-	538 617	510 804	-	-	538 617	510 804	0.00	0.00
Underground	8 624 066	9 826 925	8 646 825	9 768 044	1 970 267	2 116 424	6 676 558	7 651 620	22.79	21.67
STATE TOTAL	99 894 608	108 322 690	99 665 407	108 419 431	21 302 214	24 334 389	78 363 193	84 085 042	21.37	22.44

* Includes raw coal sold without undergoing any beneficiation.

** Percentage of reject from processed coal.

Table 3 - PRODUCTION OF SALEABLE COAL BY INDIVIDUAL MINES - TONNES

	1987-88	1988-89	1989-90	1990-91	1991-92
DISTRICTS & MINES					
NORTHERN					
OPENCUT					
Bowen Central No. 3	1 454 029	1 611 253	1 390 497	1 452 380	1 655 762
Goonyella/Riverside	7 752 252	8 819 177	7 872 459	9 128 823	10 747 525
Newlands	4 191 916	4 079 461	4 158 940	4 722 556	4 608 218
Peak Downs	3 951 286	5 609 988	5 556 658	5 431 684	6 095 100
Saraji	4 373 818	4 491 528	4 764 836	5 066 318	5 094 381
TOTAL	21 723 301	24 611 407	23 743 390	25 801 761	28 200 986
UNDERGROUND					
Bocum	160 605	158 296	259 655	276 207	192 619
Bowen No. 2	370 750	433 114	379 472	373 236	308 033
Harrow Creek	15 807	-	-	-	-
TOTAL	547 162	591 410	639 127	649 443	500 652
CENTRAL					
OPENCUT					
Blackwater	4 592 030	5 584 348	4 785 676	4 614 835	5 197 491
Blair Athol	5 441 933	7 129 219	7 814 459	7 565 320	7 922 026
Curragh	4 826 851	5 323 755	4 918 863	5 043 998	4 612 374
Dawson Valley	67 322	-	-	-	-
Ensham	10 816	-	-	-	-
German Creek/East	2 038 799	2 048 702	1 148 129	1 217 170	906 520
Gregory	3 474 717	3 549 504	3 409 998	3 581 552	3 634 754
Jellinbah East	-	-	380 692	789 864	1 024 178
Norwich Park	4 164 241	4 168 744	4 179 370	3 526 621	5 026 445
Oaky Creek	2 994 504	2 490 015	2 358 525	2 129 213	1 816 370
South Blackwater	818 910	880 954	1 723 634	1 636 021	1 605 705
Yarrabee	216 413	121 661	251 069	220 223	431 875
TOTAL	28 646 536	31 296 902	30 970 415	30 324 817	32 177 738
UNDERGROUND					
Cook	542 394	1 200 375	1 336 348	990 991	1 266 208
German Creek Central	926 012	992 760	1 241 234	1 209 500	1 335 980
German Creek Southern	17 635	160 297	1 044 168	1 436 330	1 870 500
Oaky Creek No. 1	-	-	117 070	1 103 667	1 339 040
Laleham	337 679	266 753	336 002	364 325	563 232
TOTAL	1 823 720	2 620 185	4 074 822	5 104 813	6 374 960

(Continued)

Table 3 - PRODUCTION OF SALEABLE COAL BY INDIVIDUAL MINES - TONNES

	1987-88	1988-89	1989-90	1990-91	1991-92
DISTRICTS & MINES					
SOUTHERN					
OPENCUT					
Boundary Hill	1 469 839	1 385 894	1 412 961	1 415 349	1 479 948
Box Flat No. 2	4 051	152 193	24 750	-	-
Callide	1 733 599	2 055 666	2 673 418	2 573 868	2 675 175
Ebenezer	426 717	473 624	829 570	1 011 648	1 303 309
Jeebropilly	593 044	1 044 355	1 007 556	833 502	957 234
Meandu	4 803 531	4 855 090	4 733 912	5 141 188	5 335 722
Moura	2 308 951	2 964 085	2 553 359	2 905 845	2 986 257
New Hope No. 358	12 154	117 917	107 041	49 628	55 170
New Whitwood	367 367	593 217	550 989	476 068	227 483
Oakleigh	101 436	146 760	164 458	125 654	125 274
Wattle Glen Extd	258 853	410 104	400 083	488 690	398 322
Westfalen No. 1	1 164	-	-	-	-
TOTAL	12 080 706	14 198 905	14 458 097	15 021 440	15 543 894
TAILINGS RECOVERY					
Aberdare Reclaiming	-	-	-	118 758	84 494
Moura Reclaiming	-	-	-	403 195	426 310
Westfalen Reclaiming	-	-	-	16 664	-
TOTAL	-	-	-	538 617	510 804
UNDERGROUND					
Burgowan	15 591	17 111	17 300	13 079	20 468
M. W. Haenke No. 2	163 074	141 990	193 575	134 650	115 090
Moura No. 2	406 263	294 348	587 229	518 576	441 012
New Hope Nos 4A, 6 & 7	66 256	21 822	-	-	-
New Hope Western Leases No. 1	58 518	84 934	68 086	96 816	38 162
New Hope Western Leases No. 2	161 021	144 207	103 931	91 710	92 024
Oakleigh No. 3	89 511	95 215	74 767	67 471	69 252
Rhondda No. 1	35 171	-	-	-	-
Westfalen No. 3	2 429	-	-	-	-
TOTAL	997 834	799 627	1 044 888	922 302	776 008
STATE					
Opencut	62 450 543	70 107 214	69 171 902	71 148 018	75 922 618
Tailings Recovery	-	-	-	538 617	510 804
Underground	3 368 716	4 011 222	5 758 837	6 676 558	7 651 620
STATE TOTAL	65 819 259	74 118 436	74 930 739	78 363 193	84 085 042

Table 4 - PRODUCTION OF SALEABLE COAL BY DISTRICT PER MONTH - TONNES

MONTH	Northern		Central		Southern		Total	
	1990-91	1991-92	1990-91	1991-92	1990-91	1991-92	1990-91	1991-92
July	2 449 386	2 503 973	3 017 419	3 101 130	1 647 651	1 561 784	7 114 456	7 166 887
August	2 634 743	2 657 964	3 235 923	3 237 376	1 572 885	1 566 760	7 443 551	7 462 100
September	2 169 190	2 013 302	3 123 802	2 991 149	1 292 517	1 295 438	6 585 509	6 299 889
October	2 108 776	2 203 173	3 070 257	3 436 565	1 595 981	1 422 662	6 775 014	7 062 400
November	2 483 078	2 188 484	2 800 763	3 240 988	1 358 856	1 408 834	6 642 697	6 838 306
December	1 714 113	2 258 681	2 949 591	2 748 642	1 076 253	1 194 209	5 739 957	6 201 532
January	1 202 309	2 481 068	2 484 764	3 143 508	1 187 382	1 378 206	4 874 455	7 002 782
February	1 424 696	2 340 037	2 580 130	3 193 056	1 320 445	1 321 032	5 325 271	6 854 125
March	2 243 887	2 259 544	3 041 426	3 601 873	1 423 064	1 505 006	6 708 377	7 366 423
April	2 486 253	2 428 364	3 110 870	3 101 226	1 227 082	1 350 808	6 824 205	6 880 398
May	3 120 775	2 933 043	3 103 879	3 605 479	1 446 416	1 455 819	7 671 070	7 994 341
June	2 413 998	2 434 005	2 910 806	3 151 706	1 333 827	1 370 148	6 658 631	6 955 859
STATE TOTAL	26 451 204	28 701 638	35 429 630	38 552 698	16 482 359	16 830 706	78 363 193	84 085 042

Table 5 - PRODUCTION OF SALEABLE COAL BY DISTRICT AND TYPE 1991-92 - TONNES

DISTRICT	Coking		Thermal	Total
OPENCUT				
Northern		23 078 268	5 122 718	28 200 986
Central		17 300 099	14 877 639	32 177 738
Southern		2 083 532	13 971 166	16 054 698
TOTAL		42 461 899	33 971 523	76 433 422
UNDERGROUND				
Northern		-	500 652	500 652
Central		5 602 196	772 764	6 374 960
Southern		430 947	345 061	776 008
TOTAL		6 033 143	1 618 477	7 651 620
STATE TOTAL		48 495 042	35 590 000	84 085 042

Table 6 - OVERBURDEN REMOVED - BANK CUBIC METRES

	1990-91	1991-92
DISTRICTS		
OPENCUT		
Northern	230 598 533	259 032 779
Central	245 249 072	262 012 145
Southern	61 543 183	71 872 738
STATE TOTAL	537 390 788	592 917 662

Table 7 - STOCKS OF SALEABLE COAL AT QUARTER END - TONNES

	September 91	December 91	March 92	June 92
DISTRICT				
OPENCUT				
Northern	2 178 022	2 164 442	2 049 739	2 836 420
Central	2 267 134	2 631 428	2 534 747	2 313 441
Southern	1 410 739	1 192 332	1 080 184	995 570
TOTAL	5 855 895	5 988 202	5 664 670	6 145 431
UNDERGROUND				
Northern	10 951	1 539	4 715	8 471
Central	394 529	362 728	665 096	466 459
Southern	104 942	117 778	91 584	61 758
TOTAL	510 422	482 045	761 395	536 688
STATE TOTAL	6 366 317	6 470 247	6 426 065	6 682 119

Table 8 - AVERAGE YEARLY OUTPUT OF RAW COAL PER EMPLOYEE - TONNES

	1989-90	1990-91	1991-92
DISTRICTS			
OPENCUT			
Northern	9 599	9 854	11 393
Central	10 191	9 993	10 684
Southern	11 782	11 320	11 162
AVERAGE	10 245	10 199	11 063
UNDERGROUND			
Northern	3 112	3 938	3 604
Central	5 401	5 693	5 531
Southern	3 714	3 695	3 315
AVERAGE	4 655	5 066	5 004
STATE AVERAGE	9 378	9 375	9 968
% Change Year to Year	(13.57)	(0.03)	6.33

Table 9- AVERAGE YEARLY OUTPUT OF SALEABLE COAL PER EMPLOYEE - TONNES

	1989-90	1990-91	1991-92
DISTRICTS			
OPENCUT			
Northern	6 651	7 100	8 039
Central	8 722	8 610	9 110
Southern	8 684	8 801	8 618
AVERAGE	7 873	7 973	8 585
UNDERGROUND			
Northern	3 001	3 820	3 551
Central	3 735	4 439	4 313
Southern	2 561	2 383	2 249
AVERAGE	3 364	3 911	3 896
STATE AVERAGE	7 138	7 371	7 738
% Change Year to Year	(3.42)	3.26	5.07

Table 10 - AVERAGE OUTPUT SALEABLE COAL PER 7 HOUR EMPLOYEE SHIFT - TONNES

	1987-88	1988-89	1989-90	1990-91	1991-92
DISTRICTS					
OPENCUT					
Northern Overall	26.37	28.60	26.47	27.13	31.03
Central Overall	32.02	35.46	34.05	31.79	33.29
Southern Overall	32.89	34.13	34.04	32.75	31.14
TOTAL OPENCUT	29.94	32.47	31.00	30.14	31.97
UNDERGROUND					
Northern					
Face	38.56	40.10	45.84	46.25	36.68
Overall	11.33	11.37	12.13	14.34	13.30
Central					
Face	28.23	35.73	41.08	41.23	43.26
Overall	9.99	13.06	15.83	15.72	16.81
Southern					
Face	27.95	28.77	45.06	45.56	47.20
Overall	8.57	7.34	10.04	8.67	8.38
TOTAL FACE	29.42	34.61	42.24	42.23	43.12
TOTAL OVERALL	9.69	11.09	13.90	14.02	15.02
STATE TOTAL	27.05	29.40	28.33	27.42	28.99

Table 11 - NUMBER OF EMPLOYEES AS AT 30 JUNE

	1988	1989	1990	1991	1992
DISTRICTS					
OPENCUT MINES					
General					
Northern	2 615	2 722	2 776	2 912	2 838
Central	2 389	2 644	2 663	2 696	2 658
Southern	1 219	1 318	1 380	1 369	1 505
TOTAL	6 223	6 684	6 819	6 977	7 001
Administrative and Clerical					
Northern	780	672	794	678	669
Central	885	942	888	825	843
Southern	255	274	285	384	405
TOTAL	1 920	1 888	1 967	1 887	1 917

(Continued)

Table 11 - NUMBER OF EMPLOYEES AS AT 30 JUNE

	1988	1989	1990	1991	1992
DISTRICTS					
OPENCUT MINES-ALL CATEGORIES					
Northern	3 395	3 394	3 570	3 590	3 507
Central	3 274	3 586	3 551	3 521	3 501
Southern	1 474	1 592	1 665	1 753	1 910
TOTAL	8 143	8 572	8 786	8 864	8 918
UNDERGROUND MINES					
Coal Face					
Northern	49	49	49	53	55
Central	268	292	419	497	728
Southern	123	101	96	66	66
TOTAL	440	442	564	616	849
Elsewhere Below Ground					
Northern	87	105	101	45	42
Central	196	250	363	440	403
Southern	106	154	168	150	147
TOTAL	389	509	632	635	592
Above Ground					
Northern	37	37	34	23	21
Central	76	89	79	62	70
Southern	153	92	91	79	79
TOTAL	266	218	204	164	170
Administrative and Clerical					
Northern	30	30	29	21	20
Central	151	204	230	293	351
Southern	60	53	53	53	50
TOTAL	241	287	312	367	421
UNDERGROUND MINES-ALL CATEGORIES					
Northern	203	221	213	142	138
Central	691	835	1091	1 292	1 552
Southern	442	400	408	348	342
TOTAL	1 336	1 456	1 712	1 782	2 032
UNDERGROUND AND OPENCUT MINES					
Northern	3 598	3 615	3 783	3 732	3 645
Central	3 965	4 421	4 642	4 813	5 053
Southern	1 916	1 992	2 073	2 101	2 252
STATE TOTAL	9 479	10 028	10 498	10 646	10 950

Table 12 - AVERAGE NUMBER OF EMPLOYEES DURING YEAR

	1989-90	1990-91	1991-92
DISTRICTS			
OPENCUT			
Northern	3 485	3 634	3 508
Central	3 517	3 522	3 532
Southern	1 584	1 768	1 863
TOTAL	8 586	8 924	8 903
UNDERGROUND			
Northern	220	170	141
Central	958	1 150	1 478
Southern	398	387	345
TOTAL	1 576	1 707	1 964
OPENCUT AND UNDERGROUND			
Northern	3 705	3 804	3 649
Central	4 475	4 672	5 010
Southern	1 982	2 155	2 208
STATE AVERAGE	10 162	10 631	10 867

Table 13 - EMPLOYEE SHIFTS WORKED AND LOST

	Employee Shifts Possible			REASONS FOR LOSS											
	Employee Shifts Worked			Employee Shifts Lost											
				Industrial Disputes											
				Sickness											
			%		%		%		%		%		%		%
DISTRICTS															
OPENCUT MINES															
Northern															
1989-90	1 132 624	1 044 310	92.20	88 314	7.80	27 843	2.46	36 333	3.21	5 494	0.49	17 685	1.56	759	0.07
1990-91	1 010 336	950 985	94.13	59 351	5.87	12 436	1.23	33 032	3.27	4 061	0.40	9 777	0.97	45	0.00
1991-92	966 330	908 854	94.05	57 476	5.95	13 075	1.35	29 152	3.02	4 663	0.48	10 234	1.06	352	0.04
Central															
1989-90	823 836	762 140	92.51	61 696	7.49	16 066	1.95	25 903	3.14	4 504	0.55	14 835	1.80	388	0.05
1990-91	1 007 582	954 079	94.69	53 503	5.31	11 982	1.19	30 400	3.02	3 500	0.35	7 060	0.70	561	0.06
1991-92	1 014 866	966 660	95.25	48 206	4.75	10 550	1.04	27 341	2.69	4 563	0.45	5 274	0.52	478	0.05
Southern															
1989-90	455 241	424 686	93.29	30 555	6.71	8 296	1.82	11 464	2.52	2 773	0.61	5 066	1.11	2 956	0.65
1990-91	500 143	476 680	95.31	23 463	4.69	4 393	0.88	12 062	2.41	2 788	0.56	3 124	0.62	1 096	0.22
1991-92	543 728	515 599	94.83	28 129	5.17	5 456	1.00	13 695	2.52	2 816	0.52	3 131	0.58	3 031	0.56
OPENCUT TOTAL															
1989-90	2 411 701	2 231 136	92.51	180 565	7.49	52 205	2.16	73 700	3.06	12 771	0.53	37 586	1.56	4 103	0.17
1990-91	2 518 061	2 381 744	94.59	136 317	5.41	28 811	1.14	75 494	3.00	10 349	0.41	19 961	0.79	1 702	0.07
1991-92	2 524 924	2 391 113	94.70	133 811	5.30	29 081	1.15	70 188	2.78	12 042	0.48	18 639	0.74	3 861	0.15
UNDERGROUND MINES															
Northern															
1989-90	61 969	52 702	85.05	9 267	14.95	2 553	4.12	2 145	3.46	616	0.99	3 418	5.52	535	0.86
1990-91	49 661	45 289	91.20	4 372	8.80	327	0.66	1 970	3.97	462	0.93	1 604	3.23	9	0.02
1991-92	42 761	37 632	88.01	5 129	11.99	1 508	3.53	1 918	4.49	513	1.20	1 060	2.48	130	0.30
Central															
1989-90	281 707	257 414	91.38	24 293	8.62	7 203	2.56	8 582	3.04	3 737	1.33	4 771	1.69	-	-
1990-91	346 157	324 664	93.79	21 493	6.21	5 675	1.64	11 840	3.42	2 244	0.65	1 705	0.49	29	0.01
1991-92	403 737	379 143	93.91	24 594	6.09	8 389	2.08	11 393	2.82	2 689	0.67	2 094	0.52	29	0.01
Southern															
1989-90	112 366	104 097	92.64	8 269	7.36	1 265	1.13	3 364	2.99	2 136	1.90	1 413	1.26	91	0.08
1990-91	113 413	106 409	93.82	7 004	6.18	991	0.87	2 578	2.27	2 832	2.50	534	0.47	69	0.06
1991-92	99 234	92 574	93.29	6 660	6.71	1 150	1.16	2 033	2.05	2 809	2.83	635	0.64	33	0.03
UNDERGROUND TOTAL															
1989-90	456 042	414 213	90.83	41 829	9.17	11 021	2.42	14 091	3.09	6 489	1.42	9 602	2.10	626	0.14
1990-91	509 231	476 362	93.55	32 869	6.45	6 993	1.37	16 388	3.22	5 538	1.09	3 843	0.75	107	0.02
1991-92	545 732	509 349	93.33	36 383	6.67	11 047	2.02	15 344	2.81	6 011	1.10	3 789	0.69	192	0.04
STATE TOTAL															
1989-90	2 867 743	2 645 349	92.24	222 394	7.76	63 226	2.20	87 791	3.06	19 260	0.67	47 188	1.65	4 729	0.16
1990-91	3 027 292	2 858 106	94.41	169 186	5.59	35 804	1.18	91 882	3.04	15 887	0.52	23 804	0.79	1 809	0.06
1991-92	3 070 656	2 900 462	94.46	170 194	5.54	40 128	1.31	85 532	2.79	18 053	0.59	22 428	0.73	4 053	0.13

% = Percentage of Employee Shifts Possible

Table 14 - AVERAGE EXPORT PRICE (FOB) PER TONNE - A\$

	1987-88	1988-89	1989-90	1990-91	1991-92
ACTUAL PRICE					
Coking	54.02	53.57	61.90	63.25	62.71
Thermal	40.17	41.59	47.88	49.52	48.05
ALL COALS	49.50	49.74	57.12	58.57	57.49
CPI ADJUSTED PRICE (1991-92 dollars) *					
Coking	66.17	61.71	66.36	64.45	62.71
Thermal	49.21	47.91	51.33	50.46	48.05
ALL COALS	60.64	57.30	61.23	59.68	57.49

Table 15 - TOTAL VALUE OF EXPORTS PER YEAR - A\$

	1987-88	1988-89	1989-90	1990-91	1991-92
ACTUAL VALUE					
Coking	2 126 656 866	2 149 543 261	2 498 790 523	2 581 822 952	2 813 151 632
Thermal	765 438 356	786 328 886	1 001 217 823	1 044 945 783	1 191 430 240
ALL COALS	2 892 095 222	2 935 872 147	3 500 008 346	3 626 768 735	4 004 581 872
CPI ADJUSTED VALUE (1991-92 dollars) *					
Coking	2 605 154 661	2 476 273 836	2 678 703 441	2 630 877 588	2 813 151 632
Thermal	937 661 986	905 850 877	1 073 305 506	1 064 799 753	1 191 430 240
ALL COALS	3 542 816 647	3 382 124 713	3 752 008 947	3 695 677 341	4 004 581 872

* CPI increase 1988-89 7.30%, 1989-90 8.00%, 1990-91 5.30%, 1991-92 1.90%.

Source: ABS weighted average of eight capital cities - all groups.

Table 16 - EXPORTS BY COLLIERIES TO OVERSEAS COUNTRIES 1991-92 - Part 1

C - COKING COAL										
COLLIERIES		Japan	India	Korea	France	UK	Netherlands	Hong Kong	Taiwan	Brazil
Blackwater	C	1 195 194	35 164		187 249				112 117	352 639
	T						332 248	180 522		
Blair Athol	C									
	T	5 272 357		194 973		417 676		1 333 357		
Collinsville	C	610 554	377 277							
	T	21 979			62 931					
Cook	C	61 201	372 746	166 066						
	T	161 747					257 561			
Curragh	C	1 695 789	133 076							152 726
	T	218 838		59 335						
Ebenezer	C									
	T	1 168 269								
German Creek	C	998 307	410 947	336 240		140 911			614 929	614 326
	T									
Goonyella/ Riverside	C	4 359 324	1 994 967	845 255	129 184	712 722	56 903		289 165	
	T	29 966								
Gregory	C	855 134		228 055	537 700	10 525			154 903	
	T	1 367 480					14 453			
Jeebropilly	C									
	T	833 369								
Jellinbah East	C	428 015								70 411
	T	163 759			145 886					
Moura	C	2 139 132	91 410	244 402						
	T	805 598					189 970	162 207		
New Hope	C									
	T	285 477								
New Whitwood	C									
	T	432 628		63 078				63 203		
Newlands	C									
	T	1 278 765		494 077	624 644	239 286	902 195	651 343	399 272	
Norwich Park	C	62 415	141 331	711 795	745 740	581 138	14 677		267 333	512 201
	T	1 253 577								
Oakleigh	C									
	T	28 967								
Oaky Creek	C	1 033 052	1 138 063	154 179		96 222			46 876	385 495
	T									
Peak Downs	C	1 662 400	835 054	1 279 154	233 957		44 996			
	T									
Rhondda	C									
	T	566 035								
Saraji	C	1 251 052			34 529	618 012	426 368		384 588	
	T									
South Blackwater	C	555 940							113 586	33 690
	T	112 762			129 139		427 351	60 405		
Yarrabee	C									
	T	119 142			263 914					
TOTAL COKING		16 907 509	5 530 035	3 965 146	1 868 359	2 159 530	542 944	—	1 983 497	2 121 488
TOTAL THERMAL		14 120 715	—	811 463	1 226 514	656 962	2 123 778	2 451 037	399 272	—
TOTAL C & T		31 028 224	5 530 035	4 776 609	3 094 873	2 816 492	2 666 722	2 451 037	2 382 769	2 121 488

T - THERMAL COAL

Italy	Turkey	Denmark	Belgium	Spain	Iran	Pakistan	Romania	Germany		COLLIERIES
341 239	172 657					201 462		121 444	C	Blackwater
								122 776	T	Blair Athol
		1 417 083							C	Collinsville
									T	Cook
	326 819					264 000		60 000	C	Curragh
									T	Ebenezer
			179 910		351 872				C	German Creek
	166 374		496 216	526 755	172 179			14 085	T	Goonyella/ Riverside
57 589	57 711							14 789	C	Gregory
									T	Jeebropilly
			80 223	62 522					C	Jellinbah East
						62 538		120 007	T	Moura
									C	New Hope
									T	New Whitwood
			137 260						C	Newlands
	69 777		60 114	58 942				56 608	T	Norwich Park
								13 430	C	Oakleigh
			110 591		195 762				T	Oaky Creek
126 898	532 160		237 817	261 244			427 837		C	Peak Downs
									T	Rhondda
1 211 188	69 438			246 005			100 042		C	Saraji
74 538	151 170								T	South Blackwater
75 827			33 055						C	Yarrabee
									T	
1 753 863	1 546 106	—	1 084 648	1 034 004	719 813	528 000	527 879	145 482		TOTAL COKING
133 416	—	1 417 083	250 538	121 464	—	—	—	377 657		TOTAL THERMAL
1 887 279	1 546 106	1 417 083	1 335 186	1 155 468	719 813	528 000	527 879	523 139		TOTAL C & T

Table 16 - EXPORTS BY COLLIERIES TO OVERSEAS COUNTRIES 1991-92 - Part 2

C - COKING COAL										
COLLIERIES		Sweden	Egypt	Algeria	Chile	China	Malaysia	Argentina	Israel	Greece
Blackwater	C T		376 689		223 888			32 336	88 238	
Blair Athol	C T				70 129					110 646
Collinsville	C T									
Cook	C T						189 428			
Curragh	C T					29 786				
Ebenezer	C T									
German Creek	C T					51 171		89 783		
Goonyella/ Riverside	C T	158 719			120 400			129 375		
Gregory	C T		7 166			55 200			58 779	
Jeebropilly	C T									
Jellinbah East	C T									
Moura	C T		76 223							
New Hope	C T									
New Whitwood	C T									
Newlands	C T						63 946			
Norwich Park	C T									
Oakleigh	C T									
Oaky Creek	C T			230 224		109 119				
Peak Downs	C T			232 000		30 320				
Rhondda	C T									
Saraji	C T	349 890								
South Blackwater	C T		45 344			27 106				
Yarrabee	C T									
TOTAL COKING		508 609	505 422	462 224	344 288	302 702	—	251 494	—	—
TOTAL THERMAL		—	—	—	70 129	—	253 374	—	147 017	110 646
TOTAL C & T		508 609	505 422	462 224	414 417	302 702	253 374	251 494	147 017	110 646

T - THERMAL COAL

Mexico	Indonesia	United States	New Caledonia	Fiji	C & T TOTALS		COLLIERY TOTALS	% OF TOTAL EXPORTS	COLLIERIES
					3 230 634	C			
					722 452	T	3 953 086	5.68	Blackwater
						C			
					8 938 997	T	8 938 997	12.83	Blair Athol
					987 831	C			
					84 910	T	1 072 741	1.54	Collinsville
					600 013	C			
					608 736	T	1 208 749	1.74	Cook
					2 662 196	C			
					278 173	T	2 940 369	4.22	Curragh
						C			
					1 168 269	T	1 168 269	1.68	Ebenezer
					3 788 396	C			
						T	3 788 396	5.44	German Creek
					10 171 623	C			
			19 969		49 935	T	10 221 558	14.67	Goonyella/ Riverside
					1 921 183	C			
					1 498 301	T	3 419 484	4.91	Gregory
						C			
		23 323			856 692	T	856 692	1.23	Jeebropilly
					498 426	C			
					452 390	T	950 816	1.37	Jellinbah East
					2 613 705	C			
					1 277 782	T	3 891 487	5.59	Moura
						C			
		3 532			289 009	T	289 009	0.41	New Hope
						C			
					558 909	T	558 909	0.80	New Whitwood
						C			
	62 589				4 853 377	T	4 853 377	6.97	Newlands
19 771					3 242 900	C			
					1 325 949	T	4 568 849	6.56	Norwich Park
						C			
					28 967	T	28 967	0.04	Oakleigh
					3 499 583	C			
						T	3 499 583	5.02	Oaky Creek
					5 903 837	C			
						T	5 903 837	8.48	Peak Downs
						C			
					566 035	T	566 035	0.81	Rhondda
46 137					4 737 249	C			
						T	4 737 249	6.80	Saraji
					1 001 374	C			
				16 382	854 921	T	1 856 295	2.66	South Blackwater
						C			
					383 056	T	383 056	0.55	Yarrabee
65 908	—	—	—	—	44 858 950		n/a	64.40	TOTAL COKING
—	62 589	26 855	19 969	16 382	24 796 860		n/a	35.60	TOTAL THERMAL
65 908	62 589	26 855	19 969	16 382	69 655 810		n/a	100.00	TOTAL C & T

Table 17 - EXPORTS BY COUNTRY - TONNES

COUNTRIES	1987-88	1988-89	1989-90	1990-91	1991-92
Algeria	454 199	459 760	291 650	444 580	462 224
Argentina	241 676	466 093	284 806	255 556	251 494
Belgium *	810 656	648 343	1 054 799	1035 311	1 335 186
Brazil	1 354 060	1 359 965	1 320 358	1525 625	2 121 488
Bulgaria	-	-	-	39 594	-
Chile	241 372	274 265	229 593	345 720	414 417
China	146 562	140 398	443 046	369 050	302 702
Denmark	1 122 437	1 292 143	1 255 404	1158 937	1 417 083
Egypt	315 942	369 857	322 634	369 711	505 422
Fiji	10 999	5 325	16 831	20 149	16 382
Finland	62 265	-	-	-	-
France	2 441 124	2 162 873	2 012 290	1 567 257	3 094 873
Germany	99 140	-	57 304	132 029	523 139
Greece	586 483	-	-	-	110 646
Hong Kong	1 170 121	1 884 292	1 590 751	1 774 228	2 451 037
India	3 193 309	4 258 604	4 319 907	4 790 632	5 530 035
Indonesia	913 306	593 690	-	-	62 589
Iran	283 725	127 975	158 005	348 788	719 813
Ireland	-	-	132 842	-	-
Israel	266 982	-	131 909	146 978	147 017
Italy	2 250 011	1 352 918	1 180 453	905 755	1 887 279
Japan	25 762 861	28 729 967	30 153 943	30 085 908	31 028 224
Korea	2 715 040	3 252 167	3 150 879	3 788 375	4 776 609
Malaysia	140 899	128 295	256 050	192 035	253 374
Mexico	-	-	-	-	65 908
Morocco	37 010	-	-	-	-
Netherlands *	2 650 896	2 111 050	2 204 220	3 530 073	2 666 722
New Caledonia	59 805	-	19 937	19 963	19 969
Pakistan	-	-	538 650	478 018	528 000
Philippines	248 127	195 822	458 655	197 488	-
Portugal	64 805	-	-	-	-
Romania	1 803 143	1 581 399	2 227 791	488 061	527 879
South Africa	-	-	-	63 526	-
Spain	1 007 567	862 653	767 296	651 562	1 155 468
Sweden	485 487	785 109	734 228	464 851	508 609
Switzerland	-	-	28 884	-	-
Taiwan	3 018 336	3 260 976	3 016 411	2 647 129	2 382 769
Thailand	218 748	145 339	-	-	-
Turkey	2 187 337	836 188	692 138	1 271 171	1 546 106
United Kingdom	1 869 883	1 425 755	2 029 737	2 742 469	2 816 492
U.S.A. (Hawaii)	25 219	-	-	21 586	26 855
Yugoslavia	162 520	315 922	187 962	45 601	-
TOTAL	58 422 052	59 027 143	61 269 363	61 917 716	69 655 810

* Point of Distribution

Table 18 - EXPORTS BY COLLIERIES - TONNES

	1987-88	1988-89	1989-90	1990-91	1991-92
COLLIERIES					
Blackwater	3 729 078	3 797 574	3 735 549	3 742 758	3 953 086
Blair Athol	6 124 847	6 741 601	7 525 843	7 131 543	8 938 997
Collinsville	1 163 277	1 025 509	1 258 568	1 194 782	1 072 741
Cook	500 986	938 400	1 253 220	1 083 965	1 208 749
Curragh	3 561 866	3 647 865	3 224 848	3 055 075	2 940 369
Dawson Valley	95 132	-	-	-	-
Ebenezer	427 788	414 463	561 386	953 215	1 168 269
Ensham	10 000	-	-	-	-
German Creek	3 740 840	3 138 733	3 258 736	3 845 553	3 788 396
Goonyella /Riverside	7 995 049	9 173 125	7 879 844	8 591 702	10 221 558
Gregory	3 601 959	3 436 379	3 366 059	3 121 988	3 419 484
Harrow Creek	26 210	-	-	-	-
Jeebropilly	567 033	766 195	793 331	742 661	856 692
Jellinbah East	-	-	309 334	753 897	950 816
Moura	3 019 186	2 928 754	3 393 596	3 705 664	3 891 487
New Hope	335 206	260 751	248 378	159 833	289 009
New Whitwood	595 756	564 993	502 156	369 094	558 909
Newlands	4 779 334	3 972 180	4 267 233	4 355 045	4 853 377
Norwich Park	3 913 232	3 905 124	3 979 726	3 397 913	4 568 849
Oakleigh	53 027	81 368	36 098	15 764	28 967
Oaky Creek	3 254 013	2 456 444	2 506 389	3 391 424	3 499 583
Peak Downs	4 276 094	5 563 782	5 854 711	5 090 180	5 903 837
Rhondda	265 543	458 128	322 546	431 920	566 035
Saraji	4 892 008	4 423 570	4 727 683	4 725 387	4 737 249
South Blackwater	1 196 109	1 105 925	2 003 481	1 801 440	1 856 295
Westfalen	132 483	-	-	-	-
Yarrabee	165 996	226 280	260 648	256 913	383 056
STATE TOTAL	58 422 052	59 027 143	61 269 363	61 917 716	69 655 810

Table 19 - EXPORTS BY PORTS - TONNES

	1987-88	1988-89	1989-90	1990-91	1991-92
PORTS					
Abbot Point	5 942 611	4 997 689	5 525 801	5 549 827	5 926 118
Brisbane	2 376 836	2 545 898	2 463 895	2 672 487	3 467 881
Dalrymple Bay	15 875 956	15 458 835	15 597 109	16 446 202	18 364 771
Gladstone	16 167 905	16 081 177	17 546 735	18 195 249	19 580 410
Hay Point	18 058 744	19 943 544	20 135 823	19 053 951	22 316 630
STATE TOTAL	58 422 052	59 027 143	61 269 363	61 917 716	69 655 810

Table 20 - EXPORTS BY TYPE - '000 TONNES

	1982-83	1983-84	1984-85	1985-86	1986-87	1987-88	1988-89	1989-90	1990-91	1991-92
COAL TYPES										
Coking	24 829	29 622	34 382	34 226	34 324	39 367	40 123	40 362	40 818	44 859
Thermal	1 576	3 473	11 122	16 566	19 201	19 055	18 904	20 907	21 100	24 797
TOTAL	26 405	33 095	45 504	50 792	53 525	58 422	59 027	61 269	61 918	69 656
% Change Year to Year	6.21	25.34	37.50	11.62	5.38	9.15	1.04	3.80	1.06	12.50

Table 21 - COAL CONSUMPTION BY DISTRICTS AND CONSUMER GROUPS - '000 TONNES

CONSUMER GROUP	1989-90				1990-91				1991-92			
	NORTHERN				NORTHERN				NORTHERN			
	CENTRAL		SOUTHERN		CENTRAL		SOUTHERN		CENTRAL		SOUTHERN	
				TOTAL				TOTAL				TOTAL
Basic Non-Ferrous Metals	413	1 174	-	1 587	391	1 183	-	1 574	418	1 257	-	1 675
Beverages and Malt	-	-	15	15	-	-	14	14	1	-	12	13
Cement and Concrete Products	53	112	99	264	45	110	69	224	53	112	50	215
Chemical, Petroleum and Coal Products	68	-	-	68	81	-	-	81	79	-	-	79
Clay Products and Refractories	-	5	16	21	-	3	14	17	-	3	14	17
Electricity	440	2 726	8 026	11 192	433	2 907	8 177	11 517	442	3 474	8 501	12 417
Fruit and Vegetable Products	-	-	12	12	-	-	14	14	-	-	13	13
Health	-	-	33	33	-	-	31	31	-	-	31	31
Margarine, Oils and Fats	-	-	11	11	-	-	12	12	-	-	13	13
Meat Products	8	7	42	57	8	6	46	60	8	7	48	63
Milk Products	-	-	6	6	-	-	5	5	-	-	5	5
Other	-	-	2	2	-	-	1	1	1	-	2	3
Other Non-Metallic Mineral Products	9	5	-	14	9	2	1	12	10	1	4	15
Paper, Paper Products, Printing and Publishing	-	-	79	79	-	-	75	75	-	-	79	79
Sugar	10	-	25	35	18	-	25	43	15	-	28	43
Tobacco Products	-	-	2	2	-	-	2	2	-	-	2	2
Transport Equipment	-	-	1	1	-	-	1	1	-	-	1	1
Water Transport	-	168	-	168	-	180	-	180	-	192	-	192
Wood, Wood Products and Furniture	-	-	8	8	-	-	11	11	-	-	13	13
STATE TOTAL	1 001	4 197	8 377	13 575	985	4 391	8 498	13 874	1 027	5 046	8 816	14 889

