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ROSEVALE COALFIELD

BRIEFING PAPER

CSR Coal Division
November 1983

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SUMMARY OF CSR PROPOSALS

- . The Rosevale deposits contain brown coal suitable for electricity generation for the nominal 30 year life of a power station.
- . Mining would be by open cut methods similar to those used at brown coal mines in Victoria.
- . A power station of up to 2 x 200 MW capacity would be constructed probably on the site to supply power to the HECT grid.
- . Construction of the mine would commence in 1987/88 and be finished in 1991/92. Operation of the mine and the power station would probably commence in 1991/2.
- . Total project construction employment would peak at 850 and remain above 600 people for 7 years. About 480 people would be permanently employed by the mine and power station.
- . All mined and disturbed areas will be rehabilitated.
- . The project will be constructed and operated in accordance with currently-accepted environmental standards and procedures.
- . CSR will negotiate suitable compensation agreements with landowners affected by the mine operation and ensure that they would be inconvenienced as little as possible.

ADVANTAGES OF ROSEVALE COAL

CSR believes that the Rosevale coalfield has the following distinct advantages:-

- . it has the potential to satisfy the coal requirements for the intended 400 MW power station without the need to import coal into Tasmania
- . it is an open cut mining operation whose mining costs should escalate more slowly than underground mining costs
- . it provides good security of supply due to ongoing access to the brown coal in the pit
- . it will be a flexible mining operation which would fit well within a hydro electric system with energy demands that vary with seasonal rainfall and longer term water yields
- . it would be managed by CSR Ltd which is an experienced domestic coal producer.

LOCATION AND COAL RESERVES

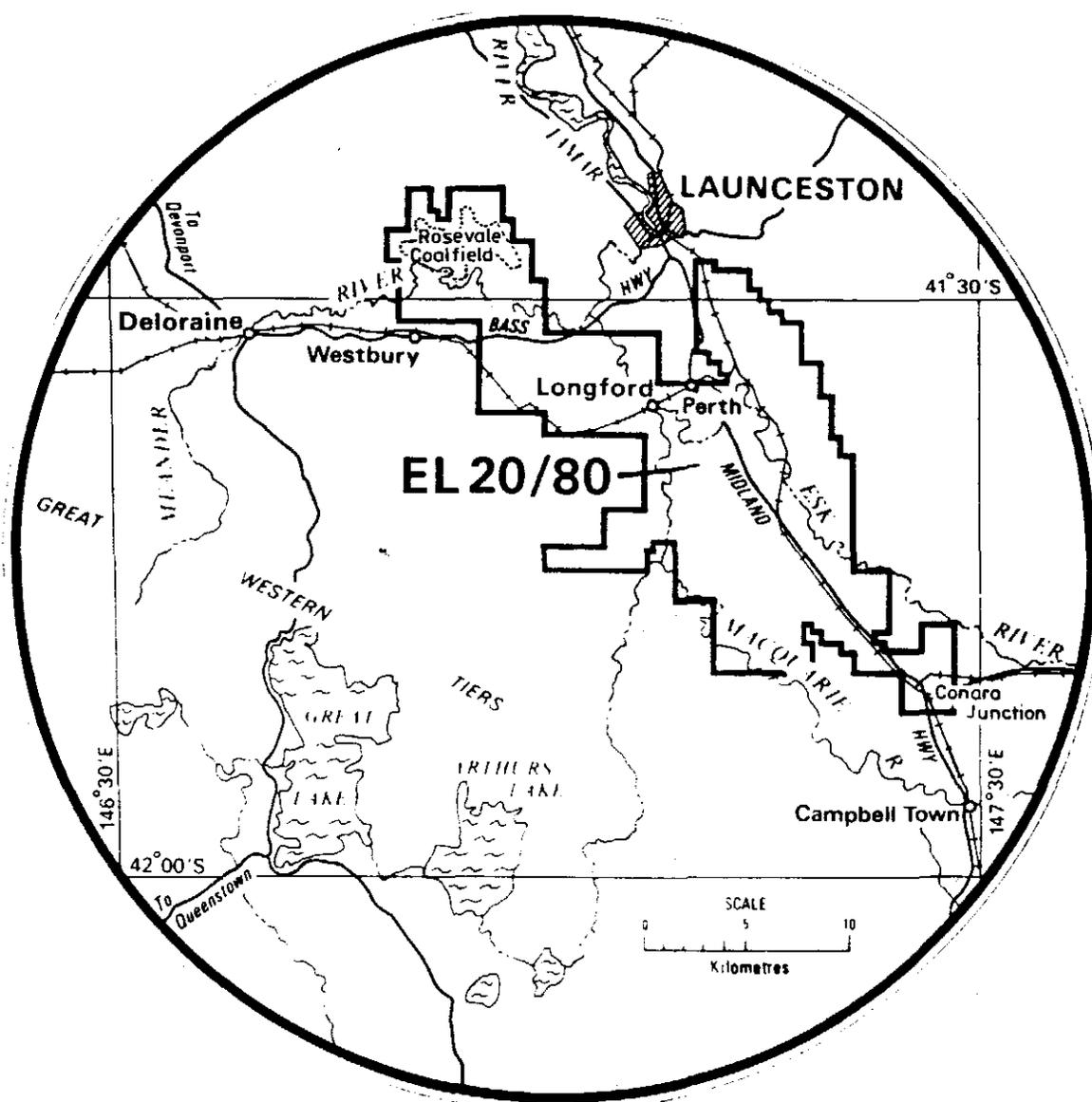
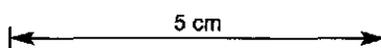
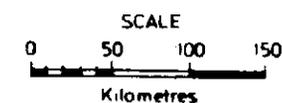
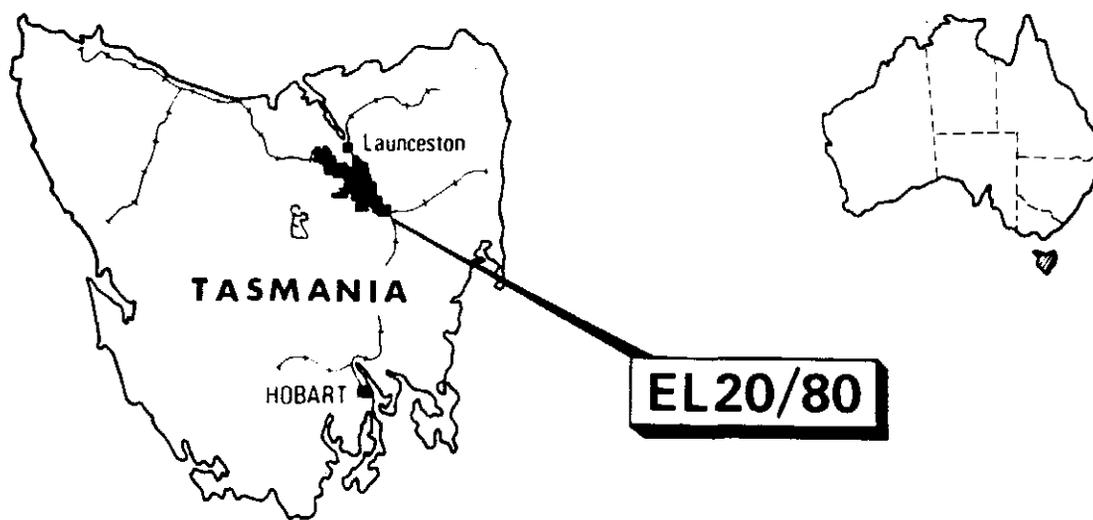
The Coalfield is centred approximately 25 km west of Launceston in an area held by CSR under Exploration Licence 20/80.

The coalfield currently consists of three separate deposits, Loatta, Pipers Lagoons and Selbourne. A number of other coal prospects have also been identified in an exploration programme that has included evaluation of gravity survey data, water bore drilling records and drilling programmes by CSR.

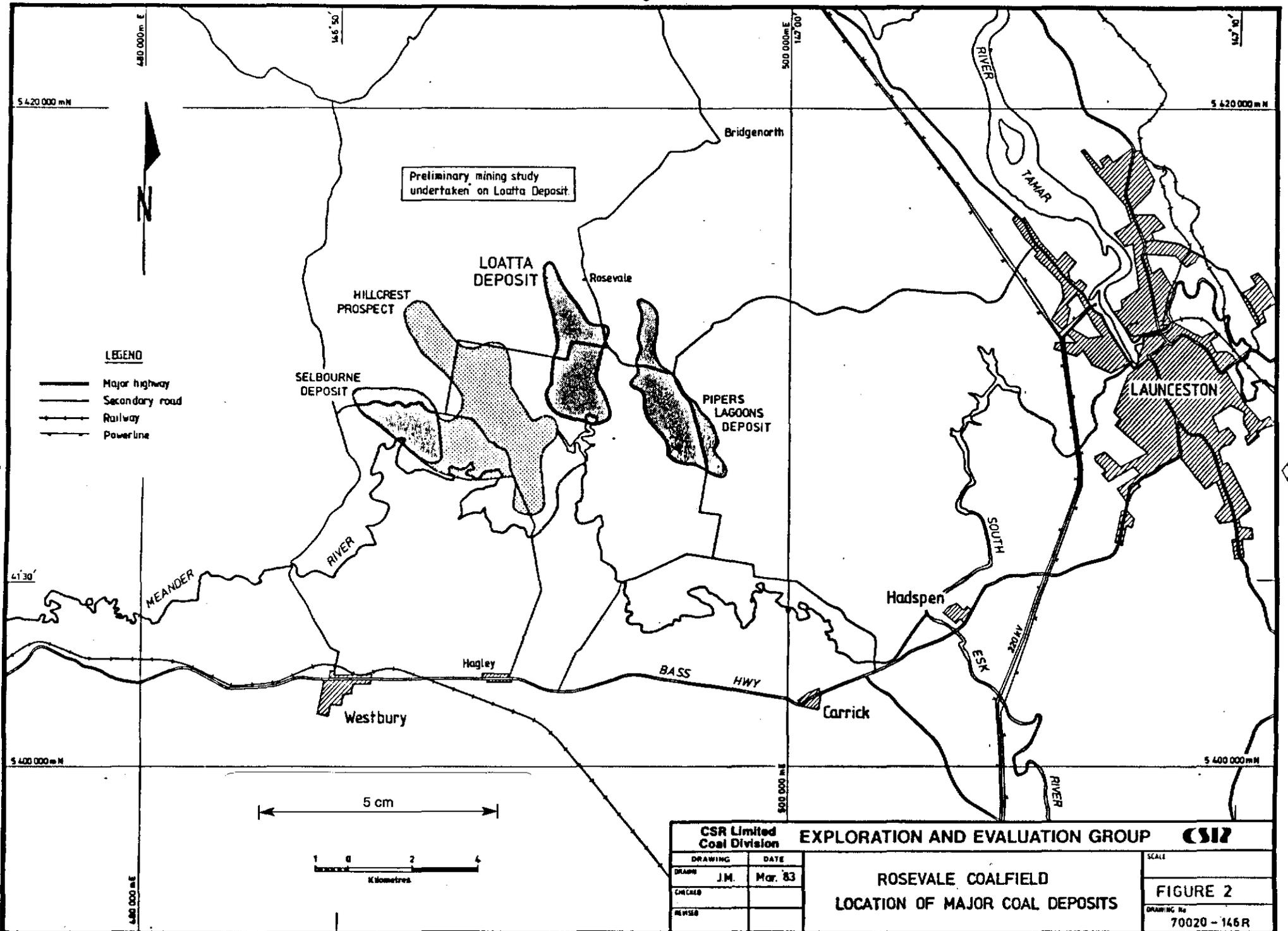
Individual coal seams range from 1.5m to 8.5m thick at depths from 4m to 74m. Most coal is covered by less than 60m of overburden and a significant amount by less than 30m of overburden. The coal seams are almost flat lying or dip gently at less than 2 degrees.

Indicated Reserves

Deposit (m)	Depth (mt)	Total
Loatta 0-60	56	56
Pipers Lagoons	0-60	43
Selbourne	0-70	19
	TOTAL	<hr/> 118



**EXPLORATION LICENCE 20/80
TASMANIA**



CSR Limited Coal Division		EXPLORATION AND EVALUATION GROUP		CSR
DRAWING		DATE		SCALE
DRAWN	J.M.	Mar. 83		FIGURE 2 DRAWING No. 70020 - 146 R
CHECKED				
REVISED				

ROSEVALE COALFIELD
LOCATION OF MAJOR COAL DEPOSITS

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In situ quality determined from analysis* of drill core samples from the 3 main brown coal deposits is:-

Total Moisture	47%
Ash	22%
Volatile Matter	18%
Fixed Carbon	13%
Specific Energy	7.5 MJ/kg
Sulphur	0.15%

* (Based on a 50% dry basis ash cut-off).

In terms of heat value the coal is similar to brown coals used for commercial power generation in Australia and overseas.

A preliminary coal quality evaluation by boiler manufacturers and consultants indicates that a plant designed for Rosevale coal would use commercially proven, modern power station technology.

DISCOVERY AND INVESTIGATION

During the three years EL20/80 has been in existence, CSR geologists have collated data from previous exploration for oil and coal in the region. The results of a gravity survey and ground water resources drilling programmes carried out by the Tasmanian Department of Mines were also used in combination with aerial photo interpretation to identify exploration targets within the tenement area.

Three exploration drilling programmes totalling 106 rotary holes and 16 partly cored holes have been drilled by CSR to test the target areas. In addition to the main deposits, scout drilling has intersected from 1.5m to 6.7m of brown coal in a further five areas at depths of 15m to 90m.

Laboratory testing and analysis of some 362 coal samples and 13 composite seam samples from the deposits have been completed to date to provide information on the quality of the coal.

Future exploration and evaluation work will concentrate initially on firming up seam boundaries, upgrading the coal reserves to the measured category and assessing the variability of coal quality.

Step out drilling will then be undertaken to test for a possible westward extension of the Loatta deposit which could connect it to the Selbourne deposit. Drilling will also be undertaken on the Pipers Lagoons deposit to upgrade reserves to the measured category.

The coal deposits occur under lands which are primarily used for grazing.

Monitoring of static ground water conditions at Rosevale has also been carried out in co-operation with officers from the Mines Department's Hydro-Geology and Regional Mapping Section to provide basic data for a geotechnical study of the area.

PROPOSED MINE OPERATION

It is proposed to mine the Rosevale Coalfield using open cut methods.

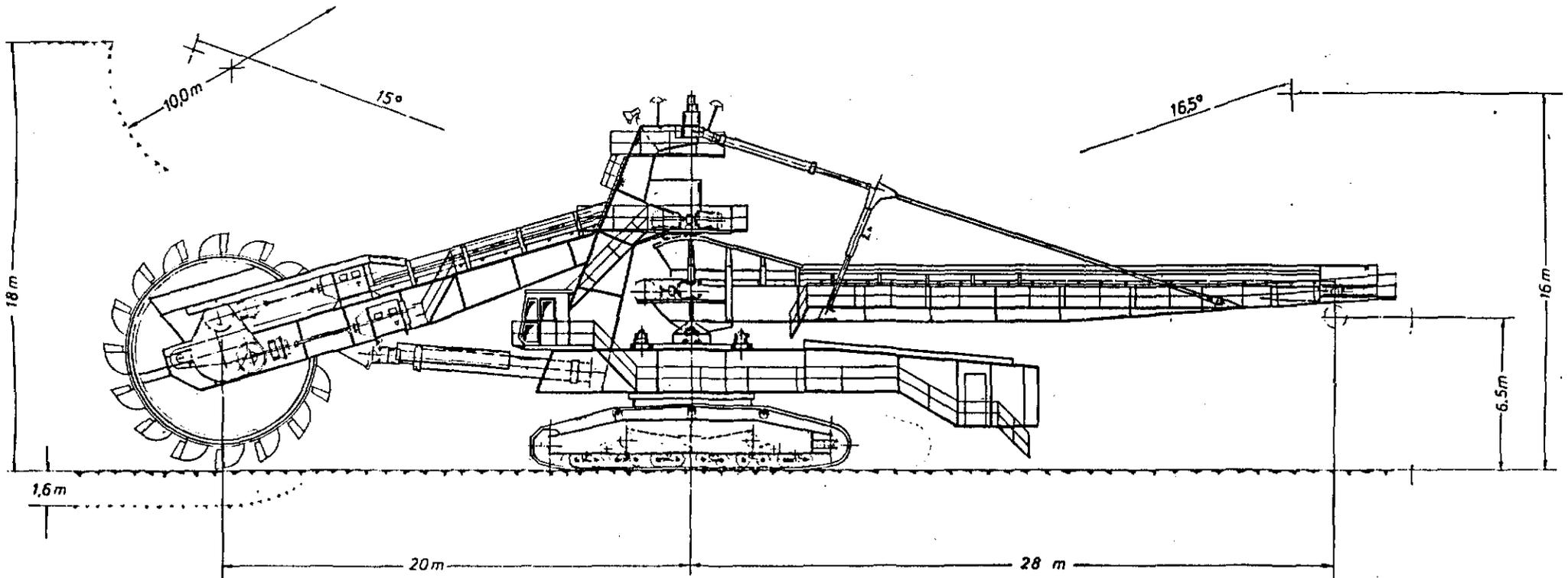
Overburden will be dug by bucket wheel excavators (BWE) and carried away from the working face by conveyors. Initially, it will be stacked out of pit, but as the mine advances, the overburden will be returned to the worked out areas.

Coal will be mined selectively by BWE and carried out of pit also by conveyor. The seams are separated by clay partings and it is envisaged that these will be removed during the mining of the coal. The conveyor system will feed the coal to a stockpile at the power station.

Excavation utilising two BWEs, each capable of mining both coal, partings, and overburden provides flexibility, continuity and reliability of coal supply.

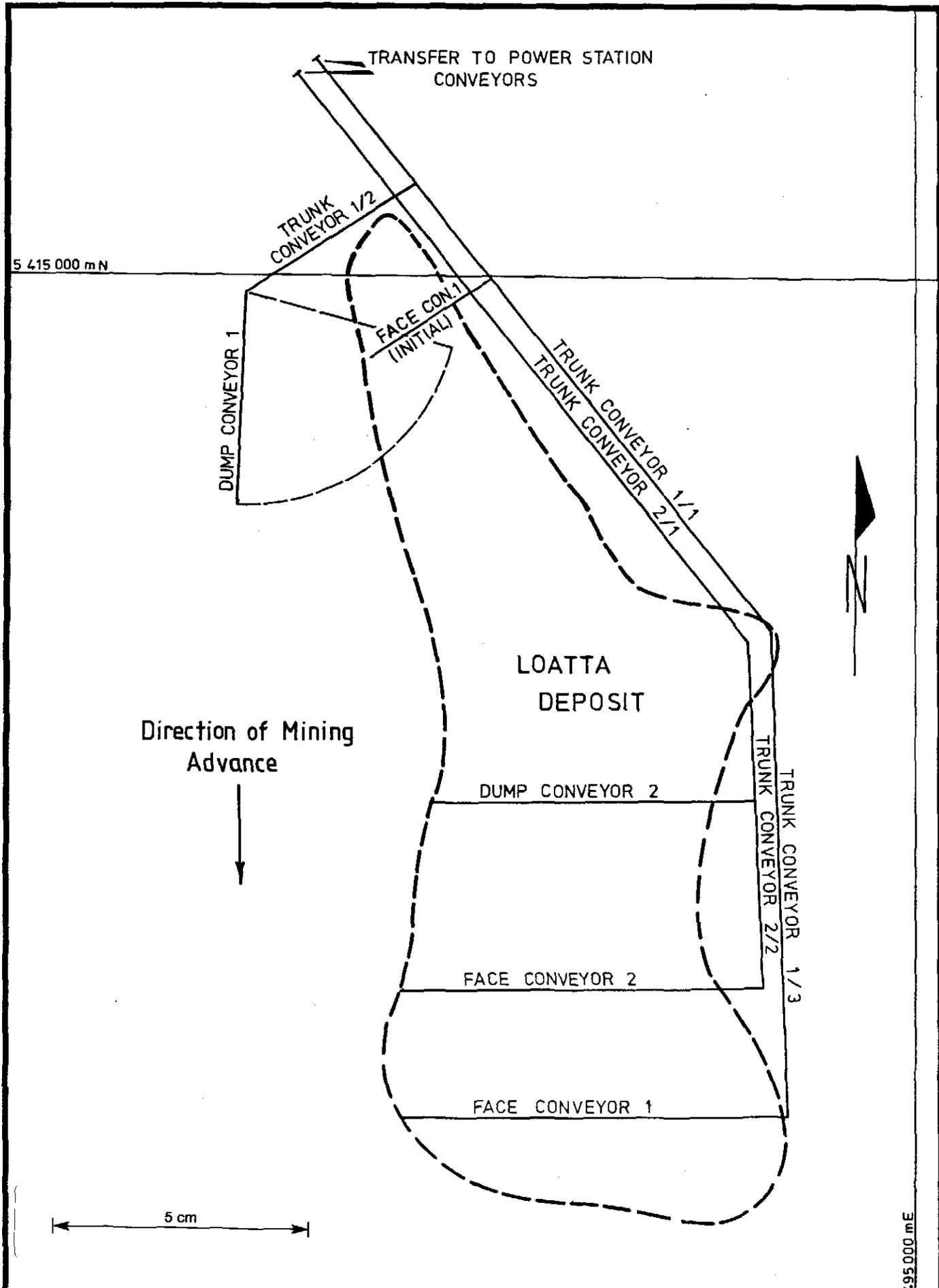
Typical as mined quality is:

Specific Energy	7.1 MJ/kg
Moisture	45.3 %
Ash	25.4 %
Volatile Matter	17.8 %
Fixed Carbon	11.5 %
Sulphur	0.13 %



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CSR Limited Coal Division		EXPLORATION AND EVALUATION GROUP		CSR
DRAWING	DATE	EL 20/80 LAUNCESTON LOATTA DEPOSIT TYPICAL BUCKETWHEEL EXCAVATOR		SCALE 1:250
DRAWN J.M.	Oct.83			FIGURE 3
DESIGNED				DRAWING NO. 70020-164
REVISED				



Direction of Mining Advance
↓

5 cm

5 410 000 mN

SCALE 1:25000

0 10
Kilometres

CSR Limited Coal Division		EXPLORATION AND EVALUATION GROUP		CSIR	
DRAWING / DATE		EL20/80 LAUNCESTON		SCALE 1:25000	
DRAWN J.M. Oct '83		LOATTA DEPOSIT		FIGURE 4	
CHECKED		CONVEYOR LAYOUT		DRAWING No 70020-140	
REVISED					

3 950 000 mE

PROPOSED POWER STATION

The conceptual power plant comprises 2 x 200 MW units. The boilers would use a pulverized coal firing system; they would be designed specifically to burn Rosevale coal and would incorporate the commercially proven features necessary for burning brown coal. In all other respects, the plant would be similar to modern power plant operating on black and brown coal, in Australia and overseas.

The final power station location would be dependent upon a detailed siting study which will consider such items as plant requirements, coal and water supply, topography and the natural and social environment. Probably a site adjacent to the mine will be the most economic.

DEVELOPMENT SCHEDULE

There are no timing constraints on the development of the mine to meet the HECT target power station commissioning dates of 1991 or 1992.

The mine development schedule is broken up into an exploration and evaluation phase (where the main activities are ongoing geological, environmental, engineering and commercial evaluation), a commitment and development phase (continuation of the ongoing studies, EIS, negotiation of a coal supply contract, government approvals and design) and a design and construction phase (where mine facilities and machinery would be designed and built).

MANNING

A total mine and power station project has a construction phase which merges with and is then replaced by an operating phase. The construction phase would last approximately 10 years and give way to the operational phase which would be at least 30 years.

The total construction workforce would probably build up to a peak of 850 men over a 5 year period, remain above 600 for 7 years and then slowly decline and give way to the operational workforce.

During construction, a high proportion of the workforce will be contractor employed and likely to be relatively mobile. It is expected that the greater proportion would be accommodated in the Launceston area, in local caravan parks or in a construction camp near the project area.

The operational workforce directly employed for the total project operational phase is estimated:

Mine	250
Power Station	230
Total	<hr/> 480

The major proportion of the operational workforce would be drawn from the inhabitants of Launceston and surrounding communities.

INFRASTRUCTURE REQUIREMENTS

Water is required for both the mine and the power station. This may be obtained from an existing major supply or by construction of a suitable reservoir. The use of mine water to supplement power station use will also be assessed.

Power supply for construction would be required for both the mine and the power station and any construction camp. Depending upon existing transmission lines this supply could be drawn locally.

In the operational phase, power for the BWEs and other equipment and general services would be drawn either from the power station itself or from the HECT transmission system.

Some upgrading and sealing of roads in the area of the mine and power station would be required to give suitable access for heavy vehicles.

ENVIRONMENTAL ASPECTS

At this point in time, it is too early in the project planning process to meaningfully undertake an in-depth environmental impact assessment of the project. It is CSR policy, however, to address environmental parameters in the planning of its projects, and to this end a start has been made on the establishment of an environmental databank and on deriving environmentally-based design standards. It is

envisaged that as the project proceeds, additional baseline data will be collected and the preparation of an Environmental Impact Assessment Study undertaken. With the commencement of construction and through the operational phase, environmental monitoring will take place to examine the effectiveness of environmental management procedures, and to ensure that compliance with statutory regulations is maintained.

From the very preliminary environmental investigations that have been carried out to date, a number of general comments can be made regarding the project's likely environmental status:

- . Reconstruction of the pre-mining landscape will not be generally possible due to an expected negative mass balance after mining. At this stage, a modified landscape consistent in character with surrounding lands is envisaged.

- . A return to pre-mining land uses is possible, but will be dependent upon the effectiveness of topsoiling operations and the nature of the post-mining landform. The proposed method of mining allows for the selective placement of overburden and topsoil, and for revegetation of reshaped areas in a progressive manner.

The principal sources of environmental contaminants associated with the operation of a coal-fired power station are stack emissions, waste water and ash. Regulatory standards set down permissible discharge levels for the contaminants involved, and it is expected that appropriate equipment and treatment processes will be used to ensure that these standards are met.

Given the low sulphur content of Rosevale coal, it is expected that emissions of sulphur oxides will be comparatively low. It is anticipated that the use of electrostatic precipitators/or bag filters will enable particulate emissions to be kept within permissible levels. It is proposed to dispose of ash by returning it to the mine.

A preliminary archaeological reconnaissance of the less disturbed parts of the site and environs has found some evidence of past aboriginal occupation. This is consistent with the known pattern of aboriginal occupation in the midlands. The importance of these sites will be established in later studies.

The relative importance of the environmental impacts of the power station will be dependent upon siting. The major considerations are expected to be stack emissions, water supply and ash disposal.

COMPARISONS OF ROSEVALE COAL

A preliminary evaluation undertaken for CSR by consultants and boiler manufacturers indicates that Rosevale coal is suitable for fueling a modern, thermal power station, similar to stations already in operation. Similar brown coal is used for electric power generation in thermal power stations in many parts of the world.

In Germany, Greece and Turkey commercial coal deposits with similar properties including high ash are used, while in Victoria, low ash but much higher moisture brown coals are used. In all these places, operating experience using these low energy coals has shown high reliability and competitiveness with other sources of energy, mainly due to the low fuel cost.

Brown Coals used for Power Generation

Comparison with Rosevale Coal

Deposit	Moisture (% As Fired)	Ash (% As Fired)	Specific Energy MJ/kg (As Fired)
Rosevale, Tasmania	43-48	21-29	6.5-7.7
Schwandorf, Germany	40-48	15-36	6.5-9.4
Megalopolis, Greece	57-63	14-18	5.0-6.0
Ptolemais, Greece	54-58	8-20	6.5-7.4
Trbovlje, Yugoslavia	21	41	8.0
Seyitomer, Turkey	30-40	30-40	5.9-8.5
Yallourn, Victoria	64-70	1-3	8.0-9.0

CSR

CSR is managed, staffed and predominantly owned by Australians and operations are based mainly in Australia.

The company, founded as a sugar refiner in 1855, was incorporated as a public company in 1887. It ranks in the top 5 companies in Australia based on market capitalisation and 144th on Fortune's 1982 list of the largest industrial corporations outside the United States of America.

Natural resources and selected industrial products and services are the lines of business chosen by CSR. The company produces coal, oil, gas, bauxite, alumina, iron ore, other minerals, sugar, rural products, chemicals and a range of building and construction materials. International interests are expanding.

CSR currently has permanently established regional offices for Building Materials Divisional activities in Tasmania at Moonah West, Launceston and Derwent Park.

The Exploration Group of the Aluminium, Minerals and Chemical Division have regional offices at West Hobart and at Zeehan.

COAL DIVISION

CSR is one of Australia's largest coal producers. It currently manages six major mining operations in Queensland, New South Wales and Western Australia and has a significant share in three others. Over half of the 10 million tonnes of coal to be produced from mines managed by CSR, this year, is being supplied under long term contracts to state owned electricity generating facilities.

The main activities of the Coal Division (plus CSR ownership) is as follows:-

New South Wales

- . Lemington Mine (100% CSR) - one open cut and two underground mines near Singleton in the Hunter Valley, producing steaming and soft coking coal for export and domestic markets.. Capacity: 2.5 mtpy
- . Drayton (44% CSR and managed by CSR) - an open cut mine near Muswellbrook in the Hunter Valley, which produces steaming coal for export.
Capacity: 3.2 mtpy (when fully operational in 1986)
- . Mt Thorley Coal Loading Ltd (44.4% CSR and managed by CSR) - a stockpiling and rapid train loading facility near Singleton in the Hunter Valley.
Capacity: 12 mtpy
- . Port Waratah Coal Services Ltd (32.8% CSR and managed by CSR) - an industry-owned coal stockpiling and ship loading facility at Newcastle.
Capacity: 28 mtpy

Western Australia

- . Western Collieries Ltd (100% CSR) - one open cut and two underground mines near Collie producing steaming coal for domestic electricity generation.
Capacity: 1.7 mtpy

Queensland

- . South Blackwater Mines (100% CSR) - one open cut and two underground mines near Blackwater in Central Queensland, producing coking and steaming coal for export.
Capacity: 1.6 mtpy
- . Callide Coalfields (55% CSR and managed by CSR) - three open cut mines near Biloela in Central Queensland, producing steaming coal for domestic electricity generation.
Capacity: 4.5 mtpy
- . Yarrabee Mine (100% CSR) - an open cut mine near Blackwater in Central Queensland, producing anthracite coal for export. Capacity: 0.3 mtpy
- . Moura/Kianga/Riverside Mines (22% CSR and operated by Thiess Dampier Mitsui) - coking and steaming coal mines near Biloela and Mackay in Central Queensland.

South Australia

- . Mannum Project (100% CSR) - a large deposit of brown coal east of Adelaide suitable for electricity generation, currently being evaluated.

Headquarters: This is located mainly in Sydney with some groups in Brisbane.

Management: The General Manager of the Division is Mr D P C Sawyer. General Manager, Technical is Mr D H Wentworth.

CSR LIMITED CONTACTS

For further information on any aspect of the Rosevale Coalfield please contact either:-

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