LOY YANG power

72AB7001
D98/2003

30 October 1996

ATTENTION: Mr Ken Gardner

Resources Manager
Department of Agriculture, Energy and Minerals
115 Victoria Parade
Fitzroy 3065

Dear Sir

LOY YANG POWER LTD
MINING LICENCE APPLICATION

Please find attached a copy of the final submission for the 1996 Work Plan associated with the Mining Licence application by Loy Yang Power Ltd.

The document has been issued following submission of a Draft Work Plan in August 1996 and ensuing discussions with your senior Departmental Officers. Comments from these discussions have been incorporated in the final submission.

Yours faithfully

for R Patterson
CHIEF EXECUTIVE OFFICER

att.

COPY

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LOY YANG power

LOY YANG POWER LTD

GENERATING SUCCESS

MINING LICENCE APPLICATION

WORK PLAN SUBMISSION

OCTOBER 1996

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LOY YANG MINE
MINING LICENCE APPLICATION - WORK PLAN SUBMISSION

The Work Plan Submission has been divided into 3 parts. In summary the Work Plan Submission details the following:

PART 1 - MINE OVERVIEW

Part 1 includes information on the general background of Loy Yang Mine, land ownership, operations, geology and planning and development issues, plant maintenance, infrastructure works, groundwater, health and safety, heritage site and a summary of environmental and rehabilitation works.

PART 2 - REHABILITATION PLAN

Part 2 describes the rehabilitation policy and rehabilitation techniques used in the mine, land management, erosion control and the buffer zones.

PART 3 - ENVIRONMENTAL MONITORING PLAN

Part 3 describes the discharge licences held, aquifer depressurisation, ground movement, batter stability and their monitoring systems, ash system and disposal, fire protection, monitoring of air and dust and noise, plus the Government and Community environment consultative processes.

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MINING LICENCE APPLICATION - WORK PLAN SUBMISSION

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PART 1 - MINE OVERVIEW

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MINING LICENCE APPLICATION - WORK PLAN SUBMISSION

PART 1 - MINE OVERVIEW

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PART 1 - MINE OVERVIEW

1 HISTORY AND BACKGROUND OF MINE OPERATIONS

1.1 Background

Mining operations commenced at Loy Yang in 1982 with the removal of overburden using Bucketwheel Excavators. The first coal production began in 1984, providing brown coal for the first 500 MW unit of the Loy Yang A Power Station. All 4 of the planned Loy Yang A and the 2 Loy Yang B 500 MW units are now in operation. The Loy Yang A units are operated by Loy Yang Power Ltd while the Loy Yang B units are operated by Edison Mission.

Loy Yang Mine was initially opened up around the outlet area in the southern area of the mine, with excavation developing in a northerly direction (Block 1). Excavation is now in the process of transferring and developing in an easterly direction (Block 2). The overburden disposal area is located to the south of the mine. Operations have been continuous to the present day using bucket wheel excavators and conveyor systems.

To 30 June 1996, 198 Million tonnes (Mt) of coal had been excavated from the Loy Yang Mine. A further 61 Mm^3 of overburden, interseam and waste product has also been extracted.

Approvals for the operation of the Loy Yang Project were made at Government level in the SEC Act. The approval for the Project was based on a report of the State Electricity Commission, Victoria, "Report on Proposed Extension of the State Generating System, Loy Yang Project, 1976". Loy Yang Mine operated under the SEC Act until 1993. It then came under the Electricity Industry Act 1993, which enabled Loy Yang Power to mine and transport coal, and produce electricity. Since mid 1995, the mine has operated under the Mineral Resources Development Act, 1995.

1.2 Loy Yang Power Ltd.

Loy Yang Power Ltd. was created in February 1995 and incorporates Loy Yang Mine and Loy Yang A Power Station. The coal supply arm of the Company, Loy Yang Mine, provides coal to Loy Yang A Power Station, (the generating arm of the Company), Edison Mission (Loy Yang B Power Station) and Auschar (who supply dried brown coal for the auxiliary firing of the Loy Yang B units). Loy Yang Power Ltd is a major electricity generating/coal supplying Company for the State of Victoria. Coal production from Loy Yang Mine results in electricity generation representing approximately 45% of the total Victorian market or about 55% of the State's base load generating capacity.

The power stations are the major customers of the mine, and will utilise approximately 28 Mt of coal per year, with only small quantities of coal required by Auschar (approx. 0.2 Mt/a).

Loy Yang Power Ltd operates under a number of Acts which regulate such issues as emergency procedures and discharges to the environment. The Planning Act details the classification of land. Loy Yang Mine has integrated its planning and works procedures to minimise the impact of its activities on the environment.

1.3 Operations and Plant

Loy Yang Mine utilises 4 Bucket Wheel Excavators (BWE's), all loading to 2.0 metre wide conveyor transport systems. The conveyor systems deliver coal to a 75,000 tonne raw coal bunker located to the north of Loy Yang A Power Station. Coal from the raw coal bunker is transported via. a series of 1.4 metre wide conveyors, through crushers, to the power stations. Loy Yang Mine has responsibility for the coal up to the conveyor transfer points prior to entering the power stations.

A schematic plant layout is shown on Figure 20.

The mine operates continuously 24 hours per day, 365 days per year.

Loy Yang Mine operates on 'just in time' production principles. With a capacity in the bunker less of than 24 hours, the "stockpile" is maintained at the coal face and is called "operational reserves". Operational reserve is the quantity of coal exposed following the removal of overburden and which is available to be excavated by the BWE's without the need for a major conveyor relocation.

Loy Yang coal seams are separated by interseam clays and sands of varying thickness. During the excavation of a coal face, any interseam material or inferior coal is excavated separately from the clean coal and conveyed to the overburden dump.

The BWE's in order of descending depth below the surface are D16, D15, D14 and D27. The first three machines have a nominal coal excavation capacity of 60,000t/day while D27 capacity is nominally 30,000t/day. D16 excavates overburden, coal and some interseam while the other machines excavate coal and interseam.

Overburden together with interseam and inferior coal is dumped to form an external overburden dump to the south of the mine using two overburden conveyor systems and associated tripper/stacker machines (TS4 and TS5). The external dump will consist of a series of levels.

One of the major hazards to the mining operation is the possibility of a fire within the mine. To minimise this risk, a fire mitigation program is implemented within the mine to manage the risks from bushfires and operational hazards. Fire protection includes a Fire Service Reservoir and gravity feed reticulated fire service pipeline system (refer Part 3 Item 9). Water used within the fire service system utilises the dirty water run off from within the mine forming a closed loop system. This maximises the water usage within the fire system and minimises the requirement for make-up water and discharge of excess dirty water from within the system.

1.4 Planning Outlook

Access to the coal reserves at Loy Yang originally provided for a 30 year life for 8 units of the Loy Yang Power Station at 72% available capacity factor. The plan was to mine 1000 Mt (nominal) of coal. The original plan was for the mine to develop to the north in Block 1, then develop to east in Block 2, before retreating towards the west through Block 3 to the outlet area by excavating the coal south of Block 2 and north of the raw coal bunker.

Even with only 6 Power Station units, extended operation of the power stations to 40 year life, the potential for additional generating units to be developed at Loy Yang B and the possible supply of coal to other industries, require additional reserves to be mined. There are sufficient coal reserves, approximately 2000 Mt, available at Loy Yang with extensions of the original field to the north and east and mine plans are being develop to utilise this coal (refer Figure 1 and 9). The Mining Licence Boundary has been set to accommodate these planned extensions.

2 LOCATION PLANS

Loy Yang Mine is located in the Latrobe Valley some 180 km east of Melbourne and approximately 4 km south east of Traralgon. Loy Yang Mine is situated between Traralgon and Flynn's Creeks on undulating land which is used primarily for grazing.

Figure 1 shows the locality plan of the Mining Licence Boundary set in the Loy Yang area.

3 LAND OWNERSHIP PLAN

Figure 2 shows land ownership is relation to the Mining Licence Boundary.

The total area within the Loy Yang Power Ltd Mining Licence Boundary is 4840 Ha. However, the power stations and associated works areas are exclusion zones, resulting in a mining licence area of 4561.4 Ha.

Within the Mining Licence area Loy Yang Power Ltd is responsible for 3932.6 Ha (2013.4 Ha Loy Yang Power Ltd Freehold and 1919.2 Ha SECV Freehold). The remaining area is private property or road reservations.

Some private land holdings are located within the Mining Licence Boundary. This land will be purchased, in due course, to allow the planned mine and overburden dump developments. Figure 2 shows land ownership in relation to the Mining Licence Boundary.

4 GENERAL GEOLOGICAL INFORMATION

The Latrobe Valley brown coal deposits lie within the Latrobe Valley Depression, an on-shore extension of the Gippsland Basin. The deposits are of Tertiary age and the coal bearing sediments consist of clays, brown coal and semi-consolidated silts and sands. Generally, thick clay and sandy sediments separate the major coal seams.

The regional coal deposits are folded into an elongated syncline, dipping south west to north east. The western limit to the coal deposits is created by the monocline-fault near Yallourn. The Loy Yang Dome structure has uplifted the sediments in the south east. Away from the major features a series of gentle synclines and anticlines have resulted in relatively flat lying coal deposits. Overlying the coal deposits is the Haunted Hill Formation, a relatively recent deposit of clays, silt and sands, which forms the overburden at the mines. Confined sand aquifers exist in the interseam sediments between the coal seams.

At Loy Yang the stratigraphy is dominated by the Loy Yang Dome, on which the Power Stations are sited. The coal seams dip to the north, south and west. The dip to the north is about 6-8 degrees within the mine but much steeper beyond the mine, where the Morwell 1 and 2 Seams become overlain by the Yallourn Seam, a factor determining the northern boundary of the mine. Geological cross sections through Loy Yang Mine are shown on Figure 3. The northern coals have a higher than average salt content and the northern boundary of the Loy Yang Mine is governed by this factor. The Morwell 1 and 2 Seams are divided into the M1A, M1B, M2A, M2B Seams by interseam sediments up to 5 m thick but thickening to the east. Beneath the M2B coal is the M2C Seam. This seam is relatively thin, non continuous and significantly interbedded with clays and sands. Therefore, extraction of the M2C is not economical. Underlying the area at significant depth is the Traralgon Seam.

The coal reserve within the potential mine development (refer Figure 9) is approximately 2000 Mt, of which 198 Mt have been excavated to the 30 June 1996.

Major aquifers exist below the M2B, M2C and Traralgon Seams and the M1B Seam to the east. The aquifers require depressurisation to maintain mine stability.

The overburden is typically 12 m thick and the coal 160 m thick towards the northern boundary of the mine.

5 MINE DEVELOPMENT

5.1 Mining Plans for the Next Three Years

Loy Yang Mine prepares an annual 5 Year Mine Plan which sets out the methodology by which the mine will meet the coal supply requirements of each of its customers, within the practices and regulations established by Government agencies.

The current plan projects the following total coal demand for the next three years of:

	1996/97	1997/98	1998/99
Nominal Totals	**28.8 Mt**	**28.7 Mt**	**29.1 Mt**

The mine development at 27 September 1996 is shown in Figure 4. The proposed mine development in June 1997, 1998 and 1999 is shown in Figures 5 to 7, respectively. The mine development plans must ensure flexibility of operations and reliability of supply by balancing coal reserves to each BWE/conveyor system, and at the same time enable progressive development of the mine both in depth and into Block 2. BWE's D16 and D15 are both operating in Block 2. D16 is at its designed depth excavating on two levels, generally in block operation mode. D16 excavates a mixed overburden/coal front side face and primarily coal in the backside face. The D15 system will undertake a gradual lowering of 12 m over the next 3 years to increase the vertical reach of its operating faces. This will increase the planned overall depth of the mine and consequently allow the recovery of more coal from the mine. D15 will operate on three levels, generally in block operation mode. D15 excavates coal and interseam. D14 and D27 are both developing to depth in Block 1 before they turn into Block 2 at their designed depth. During the next 3 years D14 and D27 will operate primarily in pivot mode on either one or two levels. Both machine will excavate coal and interseam. A typical cross section through the mine of the planned BWE configuration in Block 2 is shown in Figure 8.

Coal quality is a major factor influencing the performance of the power stations. The more significant properties being sodium, calcium, moisture, ash and soluble aluminium. The supplied coal qualities must be blended to meet a tight coal specification. This requires careful scheduling of mine operations from the long term plans down to the day to day shift operation. The excavation scheduling of the BWE's must take into account the quality of coal excavated by each machine, the placement of the coal in the raw coal bunker and the method of coal withdrawal from the bunker to the power station. Complex computerised geological and coal quality models plus specialist mine scheduling programs are used to achieve the required product. The northern boundary of the mine is optimised taking into account the need to meet the coal specification, maximising coal recovery and power station unit run life between boiler cleans, and minimising mine and power station costs.

The development of the mine is accompanied by a program of infrastructure works, (refer Part 1 Section 8). Fire service and power reticulation systems are installed ahead of mining operations. A drainage and dewatering pump system is also progressively developed at the bottom of the mine to maintain dry working levels. The water from the drainage dewatering, which is dirty water, is pumped to the fire service reservoir where it is held for reuse within the fire service/drainage dewatering system.

An extensive geotechnical monitoring program is on-going with particular attention being devoted to aquifer depressurisation, batter stability works, settlement and ground movements around the mine (refer Part 3). The aquifer depressurisation system, consisting of pump bores, monitoring bores and the ground water collection pipelines, is progressively developed to match the mine development (refer Part 1, Section 11).

5.2 Long Term Development

The long term mine development plans must have sufficient flexibility to allow for changes in the generation requirements. The potential mine development contained within the Mining Licence Boundary is shown on Figure 9.

The current Loy Yang Power Ltd Business Plan incorporates a 40 year life of Loy Yang A Power Station and a 30 year life of Loy Yang B Power Station, with a total coal demand (from start of operations) of approximately 1030 Mt at nominated power station capacity factors. The extent of the Mine in 2028 is shown on Figure 9. The potential mine development (refer Figure 9) allows for increased power station coal demands and can provide some 2000 Mt of coal. The Loy Yang B Power Station life could be extended to 40 years, additional power station units could be developed and coal supplied to other industries. The Loy Yang B - Edison Mission sale process included such possible events.

The northern boundary of the mine will continue to be optimised based on the result of further coal quality investigations. Planning activities are programmed to determine methods to maximise the recovery of coal from Block 2, taking into account power station performance and economic factors.

The extent to which Blocks 2 and 3 are developed is dependent upon future coal resource requirements. Appropriately timed reviews of coal demand will result in firm mine developments for incorporation with future 5 Year Mine Plans.

6 OVERBURDEN DUMP DEVELOPMENT

6.1 Overburden Dump Operation

6.1.1 Original Development

The Governments original approval of the Loy Yang Project development, obtained in 1976, was based on a 30 year life power station development of 8 units at 72% available capacity factor and a nominal coal demand of 1000 Mt. The conceptual design indicated approximately 100 Mm^3 (plus bulking) of waste material was to be placed in a 3 level external overburden dump with a further 115 Mm3 (plus bulking) placed into an internal dump.

Changes to the size and timing of the power station development has necessitated modifications to the development of the mine and overburden dump.

6.1.2 Current Development

Waste material from the mine, primarily overburden but including interseam and inferior coal, is transported from the open cut via two separate conveyor systems to an external overburden dump (within the Mining Licence Boundary). Each conveyor system has a dedicated Travelling Stacker which spreads the material in the external overburden dump. Level 1 was completed in 1986 by Travelling Stacker TS4 which is now dumping on Level 2 West. TS5 commenced operation in 1991 and is currently creating Level 3 East. The proposed dump development from July 1996 to mid 1999 is shown in Figure 10.

The Loy Yang Power Business Plan has a 40 year life for Loy Yang A Power Station and a 30 year life for Loy Yang B. Under this case the waste requirements will be approximately 280 Mm^3. For a potential mine development involving the total 2000 Mt coal reserve, the waste disposal requirement would be at least 570 Mm^3. Disposal of leached ash into the external dump would be additional to these volumes (refer Part 1, Section 6.4).

6.2 Dump Development Options

6.2.1 Current Generating Plan

Under the current generation development, all waste material could be placed into an external dump.

Storage of the overburden and waste in a single external dump requires a 6 or 7 level dump to be built within the current Mining Licence Boundary (refer Figure 11). The dump would incorporate an easterly extension of Levels 4 and above. The total capacity of this dump is approximately 319 Mm^3. This would require the purchase of up to 335 Ha of privately owned land within the Mining Licence Boundary, of which about 149 Ha is currently owned by Amcor (APM).

6.2.2 Extended Generation Scenario

Where a generation plan involved the total 2000 Mt coal reserve, a 7 level external dump and an internal overburden dump would need to be constructed. The internal overburden dump would contain approximately 250 Mm^3.

6.3 Issues Impacting on Overburden Disposal at Loy Yang

The overburden disposal strategy at Loy Yang Mine has been developed to provide a cost effective and environmentally acceptable solution to the disposal of waste from the mining operations. The strategy provides sufficient flexibility to deal with waste generated from a potential mine development of approximately 2000 Mt of coal.

A significant impact on the development of the overburden dump is the Loy Yang Power Ltd ash disposal strategy, which requires the long term placement of up to 15 Mm^3 of leached ash within the confines of the external dump. An initial site has been selected downstream of the Loy Yang Ash Pond embankment into which leached ash from the ash pond will be placed and covered with overburden. With EPA Approval, a trial leached ash dump was constructed on the overburden dump, in early 1996. Surface water, ground water and leachate produced from the site is being monitored and the data will be submitted to the EPA as part of assessing the impact the leached ash has on the groundwater and surface water at the site. A number of future sites within the confines of the external overburden dump will be established to place leached ash. Loy Yang Power Ltd will continue to involve the EPA in all investigations of future leached ash dump sites.

Maximising the external dump capacity is directly affected by the batter slopes required to maintain adequate dump stability. The current safe maximum overall batter slopes up to the fifth level of the external dump is 1 in 10. To achieve the 7 level dump the 1 in 10 can be maintained provided a wider berm is incorporated on Level 5 for Levels 6 and 7 on the permanent Western flank of the dump. These slopes are consistent with the maximum slopes required under the rehabilitation policy. Details relating to the long term rehabilitation guidelines of the overburden dump sites are contained in Part 2.

The proposed external dump is contained within the existing mine watershed. Therefore, all rainfall run off from the dump will be treated within the existing water management facilities prior to discharge to Traralgon Creek.

6.4 Overburden Dump Disposal Strategy

The overburden dump strategy for the current generation scenario involves the construction of an external dump up to 7 levels within the Mining Licence Boundary.

Table 1 shows the major activities and dates that occur during the life of the project based on the current generation scenario. Timely reviews of the issues impacting on the dump development will be undertaken to ensure the most cost and environmentally effective dump is constructed. This will be achieved through continued consultation with relevant Government authorities and local community groups.

TABLE 1 - DUMP DEVELOPMENT STRATEGY
TIMING OF MAJOR ACTIVITIES

MAJOR EVENT/DECISION	DATE
* TS5 operates on Level 3 East taking into account the leached ash dumping operation.	Late 1996
* TS4 completes Level 2 West and transfers to Level 3 West.	Early 1997
* TS4 commences operation on Level 3 West.	Mid 1997
* Construct Level 4 perimeter drain.	2001
* Commence detailed review of 7 level external dump development.	2001
* TS5 completes Level 3 East and transfers to Level 4.	2001
* TS4 completes Level 3 West and transfers to Level 4 West.	2006-2007
* TS5 completes Level 4 West and transfers to Level 5 East.	2010
* TS4 completes Level 4 West and transfers to Level 5 West.	2015
* TS5 completes Level 5 East and transfers to Level 6.	2019
* Overburden operations cease and TS4 completes Level 5.	2024
* Possible transfer of TS5 to Level 7.	2026
* Mine operations cease and TS5 completes the external dump.	2028

7 PLANT MAINTENANCE

The Loy Yang Mine maintenance strategy is based on several key strategies to ensure that maintenance delivers requisite plant safety, capacity, availability and longevity targets. The work is carried out by the Mine's own resources and those of a number of Contractors providing maintenance support activities.

The two key maintenance strategies implemented by the Mine are Condition Based Maintenance and Routine Maintenance. These two strategies are complemented by Failure Analysis directed at minimising the probability, extent and consequences of Breakdown Maintenance.

The condition based maintenance activities are supported by comprehensive, routine Independent Structural Inspections, Safety Device Testing, Vibration Analysis, Lubrication Sampling and Analysis and both Static and Running Visual Inspections.

Routine maintenance is achieved during scheduled maintenance windows to all major plant items. Standard single shift maintenance outages are scheduled to occur at weekly intervals and major maintenance outages (five days) occur on a two monthly cycle. Outside of these windows, opportunity maintenance can be carried out when plant is not scheduled for production. Breakdown activities are generally directed at returning the plant item to service with minimum delay and consequently the capacity to achieve other maintenance activities during these events is limited.

Any redundant plant items are either sold for scrap and removed from the mine or properly stored in a safe manner in the storage yard located in Block 3 adjacent to the mine outlet area.

8 INFRASTRUCTURE

8.1 Fencing and Security

The Loy Yang Mine and Power Station sites are enclosed within a continuously fenced boundary which is appropriately signed to prohibit unauthorised access. Fencing around the Power Station site, where it is adjacent to public access areas is generally chain wire security fencing, while fencing around the Mine site and other areas of the Power Station is generally post and wire farm fencing (refer Figure 12). Vehicle access to the site is via a single controlled access gate on Barton's Lane. An electronic card system is used by Loy Yang Power personnel and Contractors at the site who regularly require access into the Power Station and Mine sites. All other visitors and Contractors requiring access to the site must obtain authorisation from appropriate Loy Yang Power personnel and will be issued with a Visitors Permit at the access gate.

8.2 Parking

To limit the number of vehicles requiring access to the Power Station and Mine sites, parking areas for workers are provided adjacent to the Mine and Power Station sites and external to the security fencing. Access to the parking areas is from Barton's Lane, and access into the Power Station and Mine sites is via pedestrian gates. These gates have after hours security facilities.

8.3 Roads

Road access to the Loy Yang site is obtained from Barton's Lane. Barton's Lane was originally a private road constructed for the Loy Yang site. It was recently converted to a public road as part of a general resolution of titles within the Loy Yang site. In 2001/2, the easterly development of the mine will cut the existing Hyland Highway (Gormandale Road) and deviation of this highway will be required. The proposed Hyland Highway Deviation will utilise the existing Traralgon Creek Road and Barton's Lane and an eastern extension of Barton's Lane will be constructed to join up to the existing Hyland Highway (refer Figure 9).

Road access within the Loy Yang site is provided by a number of different classes of roads:

* Permanent sealed roads are provided around the power station and mine building and facility complexes.

* A crushed rock perimeter road is provided around the mine. The eastern section of this road is relocated on approximately a three year cycle to keep ahead of the mine development.

* Permanent roads are constructed along the trunk conveyors of the outlet area. These provide one of the main access points into the various levels of the mine. While most of these roads are quite step and suitable for small vehicle access only, one route utilising conveyor cross overs is provided with a maximum grade of 1 in 15. This route is for major transport and earthmoving haulage plant. Further 1 in 15 grade roads are provided on the western and northern batters.

* Crushed rock roads of a semi permanent nature are provided along the worked out benches of the mine. These roads provide access to the working faces, to various infrastructure facilities and for fire service works.

* Other transitory roads are used within the mine to provide access to the working faces. These may be on coal, clay covered coal or with crushed rock cover, depending on the conditions and length of use.

All crushed rock roads are regularly graded and repaired to maintain the standard of access and watered to minimise dust.

Refer Figure 13 for the layout of major roads within the mine environment.

8.4 Water Management

There are a number of different components of the water systems at Loy Yang Mine. These are detailed below.

8.4.1 Fire Service System

Dry coal is flammable and therefore fire prevention is a major activity for Loy Yang Mine. The primary potential sources of fire are bush fires spreading into the mine and faulty plant and equipment, or vehicle exhausts, within the mine. The major preventative measure is keeping the coal surface damp. Protection for plant and coal surfaces is based on the requirements of the "Latrobe Valley Open Cut Mines Fire Service Policy and Code of Practice".

Fire protection for the mine is provided from a fire service reservoir and distributed to sprays through a pipe reticulation system (refer Figure 14). The fire service system within the mine is gravity fed with two booster pump systems used to feed the outlet area, rising conveyors, raw coal bunker and the above grass level overburden system. Within the mine the fire service system is divided into a number of pressure levels which maintain operating pressures below an upper safety limit. The upper pressure system is gravity fed, with the pressure of the lower systems maintained using pressure reduction valves.

Protection on plant is via rotary sprays, birdsmouth sprays on conveyor belting and hydrants and hose reals throughout the machines. Protection on coal is provided by rotary sprays and hydrant.

The sprays are also used to keep the coal damp to minimise dust emissions.

Conveyor wash down water and rainfall and spray runoff from within the mine is pumped back into the fire service reservoir. The fire service piping system and fire service reservoir capacity are based on the requirements of the Fire Service Policy. The fire service reservoir also has additional storage capacity to accommodate the pumping of excess flood runoff from within the mine.

Loy Yang Power maintain and operate a number of fire mitigation systems and procedures.

* The requirements of the Country Fire Authority are adhered to, in particular the declaration of total fire ban periods. The mine may also declare additional fire ban days, based on local conditions.

* A permit system is used for all "hot" work performed within the mine.

* All vehicles operating on coal surfaces must have appropriately modified exhausts and brakes and other vehicles operating on grassed areas surrounding the mine must have spark arresters and extinguishers.

* Loy Yang Power operate and maintain fire suppression equipment, including tankers, for use within and adjacent to the site.

* All employees receive training on the fire service systems as part of the induction process and undertake regular refresher courses.

* Fire breaks are established and maintained around the mine and vegetation managed within the operating buffer.

* Automatic detection systems are used in perceived high risk areas, for example, the Raw Coal Bunker.

8.4.2 Drainage Dewatering and Washdown Systems

Drainage dewatering and washdown systems handle the dirty water from within the mine. The dewatering system comprises the pump stations and pipelines used to pump dirty water from the bottom of the mine to the Fire Service Reservoir (refer Figure 14). The pumping effort is provided using a three stage pumping system:

* First Stage - floating pumps in sumps at the bottom of the mine. These cater for the variable depth of water resulting from rainfall runoff etc. and pump to the semi-permanent staging sumps at higher levels.

* Second Stage - sled mounted pumps which pump from the staging sump to a permanent sump near the outlet area via a dewatering main.

* Final Stage - high capacity pumps on a permanent concrete sump which pump to the Fire Service Reservoir.

As the mine develops, the first and second stage pumps will be progressively moved to match the mine development.

Part of the mine dewatering system is the washdown facilities for the outlet area. Spillage from the outlet area conveyors is washed into a drainage system and directed to the permanent concrete sump. On route to the sump, water passes through a corral/rotary screen system to remove the larger coal and clay particles.

8.4.3 Overburden Runoff System

Rainfall runoff and washdown water from the overburden dump is collected and treated to meet EPA requirements prior to discharge into Traralgon Creek (refer Section 3). The water may be high in suspended solids particularly during heavy rain. This water is treated through a three stage settlement system. The first stage being a retention pond which enables the larger particles time to settle out, with the second stage including the injection of liquid polymer to assist settlement of the suspended clay and coal particles in either of two flocculation ponds. The third stage pond provides additional settlement time before final discharge.

8.4.4 Aquifer Depressurisation Collection System

Groundwater is pumped from aquifers to maintain stability of the lower levels of the mine (refer Part 1 Section 11). This water is of good quality and is collected separately, wherever practicable (approximately 90% of volume), and pumped into the power stations low quality water system for use as cooling tower make up water (refer Figure 14), thereby reducing the use of Latrobe River water.

8.5 Power Distribution

All of the major conveying plant, coal excavation plant and pump stations are electrically driven. A 22 kV electrical distribution network extends around the perimeter of the mine, with regular spur lines feeding down to plant items (refer Figure 13).

9 ENVIRONMENTAL & REHABILITATION PLANS

The Environmental Protection Act licences and controls waste water discharges and emissions from the mine to the environment. There is one major water discharge point into the Traralgon Creek with two other minor discharge points from the mine perimeter. All waste water discharged through these points is treated to enable compliance with the EPA licence (refer Part 3).

Loy Yang Power Ltd operates under the Water Act in relation to the Traralgon Creek and groundwater activities.

The Loy Yang Mine policy for land rehabilitation is to progressively and at the earliest opportunity appropriately shape, landscape, revegetate and return disturbed land to appropriate uses such as agricultural or silvicultural. Design is undertaken within the parameters of a Rehabilitation Master Plan (refer Part 2).

The policy is implemented through a works program integrated with the mine development plan. The program is developed on 5 Year Rolling Plans and is in line with the long term master rehabilitation program.

An annual works program incorporates both the rehabilitation of recently disturbed land and maintenance programs of completed areas. Funds are allocated annually for new works and land maintenance works and provision is made for final rehabilitation works. This funding is based on a whole of life rehabilitation cost model.

The preferred long term option for rehabilitation of the mine is flooding to the stable groundwater level. A study is currently in progress to determine the environmental and engineering requirements of this option.

10 HERITAGE SITES

An assessment was undertaken, as part of the original project approval process, of heritage sites in the Loy Yang area. Additional data gathering is currently in progress from which an appropriate Action Plan will be produced consistent with the policies of the Aboriginal Affairs Victoria, Department of Health and Community Service and the Department of Conservation and Natural Resources.

11 GROUNDWATER

Major aquifers exist below the M2B, M2C and Traralgon Seams and the M1B Seam to the east. The aquifers require depressurisation to maintain mine stability. The hydrogeology of the Loy Yang area is complex. Although most of the sand bodies are readily identified and traced, the system is complicated by the number of small and large throw faults which disrupt the general stratigraphic sequence. The aquifers extend on a regional basis and aquifer depressurisation operations at Hazelwood Power have to date, assisted in reducing the aquifer pressures at Loy Yang.

The aquifer depressurisation system consists of an extensive series of pump bores which are used to maintain the ground water pressures at acceptable levels in order to achieve batter stability and prevent heaving of the mine floor. Additional bores are regularly installed to enable the mine to safely develop both in depth and extent. The ground water pumped from the mine is directed to the power station for use as cooling water make-up. An extensive network of bores within and beyond the mine has been established, and is extended as an ongoing operation, to monitor the aquifer pressures and water quality (refer Part 3, Section 7). Significant effort is expended to monitor the groundwater and minimise the water extraction so as to limit any environmental impacts.

The mine's operations do not adversely impact on the groundwater conditions of the in situ overburden surrounding the mine, as the overburden is recharged from rainfall infiltration.

Loy Yang Power Ltd supports its groundwater activities with the services of a geotechnical Contractor for technical advice on groundwater, aquifer depressurisation and groundwater monitoring issues.

Loy Yang Power Ltd aquifer depressurisation works operate under the Water Act (1989). The Business is currently in the process of applying for a Groundwater Extraction Licence from Southern Rural Water. Legislative issues relating to the proposed Groundwater Licence have been discussed with the Water Bureau.

A Bore Data Base Management Group, consisting of representatives of the three Latrobe Valley mining businesses, the Department of Natural Resources and Environment and the geotechnical Contractor, has been established, under the "Borehole Databases Services Agreement" dated 1 March 1996, to manage the regional bore data, groundwater and ground movement issues. This group establishes the programs and priorities for the maintenance and enhancement of the regional data, plus reviews the regional monitoring information. Currently programs for regional groundwater observation, bore rehabilitation and bore sealing, plus regional subsidence monitoring, are in progress.

12 HEALTH & SAFETY

The Loy Yang Mine achieved 1.25 million hours free of Lost Time Injuries up to 30 June 1996. The mine has reached this significant achievement through the management of Health & Safety issues at all employee levels and the use of early intervention strategies.

Loy Yang Mine has an overarching Health and Safety Policy and more detailed Health & Safety Policies and procedures on relevant specific topics. These are consistent with the Mineral Resources Development Act and the Mineral Resources (Health and Safety in Large Open Cut Mines) Regulations 1995.

In October 1995 Loy Yang Mine adopted the National Safety Council of Australia 5 Star Safety Management System as a quality management approach to safety. This system includes a Risk Management System. Loy Yang Mine is progressing towards achieving 5 Star accreditation which is based on an implemented health and safety system.

13 ROYALTY

Loy Yang Power Ltd will pay the Minister the prescribed Royalty. The predicted net wet specific energy of the coal to be mined, as determined annually from the coal quality model and 5 Year Mine Plan, will form the basis of the payment.

LOY YANG POWER LTD

GENERATING SUCCESS

MINING LICENCE APPLICATION

WORK PLAN SUBMISSION

PART 2 - REHABILITATION PLAN

OCTOBER 1996

LOY YANG POWER LIMITED
LOY YANG MINE
MINING LICENCE APPLICATION - WORK PLAN SUBMISSION

PART 2 - REHABILITATION PLAN

CONTENTS

PART 2 - REHABILITATION PLAN

1 INTRODUCTION

The Loy Yang Mining Licence Boundary is a 4840 Ha site of which Loy Yang Mine is responsible for 3932.6 Ha, the remaining area is occupied by the power stations and infrastructure services (278.5 Ha) and private land. Current mining and overburden operations cover 1460 Ha. An operational buffer zone, generally 250 metres wide, is provided around the mine excavation. This buffer is incorporated into the Mining Licence Boundary.

Land not required for current operations is leased for private use such as farming or forestry purposes.

Tree screening of the initial mine and overburden dump areas was undertaken prior to mining operations commencing. Progressive rehabilitation began on the overburden dump after permanent batters were established. In the mine permanent batters are progressively being rehabilitated. The total area rehabilitated to date is approximately 220 Ha. A further 15 Ha per year (approximately) is programmed.

The mine has produced a Rehabilitation Policy document and Rehabilitation Practices Manual. The aim of rehabilitation at the mine is to progressively and at the earliest opportunity shape, landscape, revegetate and return disturbed land to appropriate uses such as, agricultural and silvicultural. Design is undertaken within the parameters of a Rehabilitation Master Plan.

2 REHABILITATION MASTER PLAN

The Rehabilitation Master Plan comprises concept plans, for the open cut and external overburden dump. These plans contain landscape, land-use, and rehabilitation concepts for the project with enough information to guide the preparation of detail plans on an ongoing basis. The general aim of the Rehabilitation Master Plan and associated 5 Year Rolling Plans are detailed in the Rehabilitation Policy document.

The Rehabilitation Master Plan was developed following a Land Capability Assessment (LCA) for the entire site which was carried out for Loy Yang Power by an environmental Consultant. It also comprises Whole of Life rehabilitation concept plans, for the open cut and external overburden dump at the end of operation (refer Figures 15, 16 and 17).

It is currently proposed the mine be gradually flooded at the end of operations to form a lake for community recreational purposes. The overburden dump would be reverted to grazing land and recreational areas.

The Rehabilitation Master Plan is implemented through a Works Program integrated with the mine development plans and a Rehabilitation Strategy document. The Program is developed through 5 Year Rolling Plans that contain detail of proposed rehabilitation works for the next financial year and an outline of rehabilitation for the following four years (refer Figure 18). The works are currently up to date. The proposed areas to be rehabilitated over the five year period are given in Table 2. A summary of the planned rehabilitation works for 1996/97 is given in Table 3.

TABLE 2 - PROPOSED REHABILITATION SCHEDULE

Year	Planned Area	Hectares	Responsibility
1996/97	Mine	4.1	Prod Mgr/Civil & Env Mgr
	Overburden Dump	11.5	Prod Mgr/Civil & Env Mgr
	Total	15.6	
1997/98	Mine	5.0	Prod Mgr/Civil & Env Mgr
	Overburden Dump	13.0	Prod Mgr/Civil & Env Mgr
	Other	3.0	Civil & Env Mgr
	Total	21.0	
1998/99	Mine	3.0	Prod Mgr/Civil & Env Mgr
	Overburden Dump	11.0	Prod Mgr/Civil & Env Mgr
	Other	1.5	Civil & Env Mgr
	Total	15.5	
1999/2000	Mine	4.0	Prod Mgr/Civil & Env Mgr
	Overburden Dump	7.0	Prod Mgr/Civil & Env Mgr
	Total	11.0	
2000/01	Mine	3.0	Prod Mgr/Civil & Env Mgr
	Overburden Dump	14.0	Prod Mgr/Civil & Env Mgr
	Total	17.0	

TABLE 3 - PLANNED REHABILITATION WORKS 1996/97

Work Description	Area (Ha)
1. Overburden dump level 2 West Batter. - shape batter (600m length), improve drainage, prepare and sow area, prepare area for tree planting	5.0
2. Overburden dump Level 1 West, Northern Berm. - soil test, modify drains, top dress, fertilise and sow.	6.5
3. Mine Block 2 Northern Batter. - doze and shape batter (250m length), improve drainage, prepare and sow area.	2.5
4. Mine Block 1- 2 Intersection Southern Batter. - doze and shape batter (300m length), improve drainage, prepare and sow area.	1.6
Total Area	15.6

3 REHABILITATION TECHNIQUES

Implementation of the works is carried out in strict accordance with the Rehabilitation Practices Manual for Open Cuts and Overburden Dumps. This document contains the procedures to be followed in the design and planning of mine rehabilitation in addition to detailed information for on-ground implementation procedures. The latter provides enough detail for rehabilitation workers in the field to implement works to a high standard.

The rehabilitation works are carried out by contractors trained in rehabilitation techniques with on going refinement of these techniques providing continual improvement.

An initiative to maximise the results achieved from the rehabilitation of the overburden dump is the collection of seeds from local indigenous plant species to be direct seeded on raw clay. A series of overburden dump trial rehabilitation plots are currently being developed to review current practices, assess alternative soil conditioners, including leached ash, and assess various planting treatments. It is expected the trial will provide data to further improve the current rehabilitation procedures.

4 LAND MANAGEMENT

Land subject to disturbance is kept to a minimum. Disturbed areas are returned to pasture or forest as soon as practicable with the overall aim of land management to continually improve the mine lands and maximise their economic return. Land not required for current operations is leased for private use such as farming or forestry purposes. Farmers are required to provide a land management plan with their offers to lease, and these are assessed in the selection of leases. Notices are issued to leasees to ensure fire protection requirements are maintained, including works to reduce available fuel load.

Appropriate actions are taken to prevent the introduction of vegetation species which are inconsistent with those currently existing within the Mining Licence Boundary. In addition, weed control measures are in place.

Prior to mining or overburden operations being carried out in a new area, the topsoil is stripped from the area and stockpiled for use on rehabilitation works. The top soil stripping requirements are detailed in the 5 Year Rolling Plans to ensure the stockpiles are developed correctly and soil erosion is minimised.

5 EROSION CONTROL

All works are implemented to minimise soil erosion and are undertaken to the Department of Natural Resources and Environmental land protection guidelines to meet

EPA standards. Where erosion does occur, works are undertaken at an early stage to minimise the impact and restore the site.

6 BUFFER ZONES

A nominal 250 metre wide works buffer is provided between the mine and the Mining Licence Boundary. An additional 750 metres urban buffer is provided adjacent to Traralgon township.

Operational items located within the works buffer include the mine perimeter road, power distribution lines, fire protection water supply pipelines, drainage dewatering pipelines, catchdrains, water treatment works, groundwater observation bores and aquifer depressurisation pump bores. The works buffer is also used for visual screening of the operations through landscaping and tree and shrub planting, taking into account the fire protection policy requirements. The urban buffer provides sufficient space to minimise the impact of the mines operation on the Traralgon township (refer Part 3, Sections 7 and 8).

LOY YANG POWER LTD

GENERATING SUCCESS

MINING LICENCE APPLICATION

WORK PLAN SUBMISSION

PART 3 - ENVIRONMENTAL MONITORING PLAN

OCTOBER 1996

LOY YANG POWER LIMITED
LOY YANG MINE
MINING LICENCE APPLICATION - WORK PLAN SUBMISSION

PART 3 -ENVIRONMENTAL MONITORING PLAN

CONTENTS

PART 3 -ENVIRONMENTAL MONITORING PLAN

1 BACKGROUND

The environmental effects of the mine were first outlined in the 1976 Parliamentary Public Works Committee (PPWC) Document for the Loy Yang Project and have been continually reviewed and addressed since, with most issues addressed under Environmental Protection Authority (EPA) licences. As an environmentally aware and responsible business, Loy Yang Power Ltd actively addresses its responsibilities through comprehensive strategies and actions. Loy Yang Power Ltd has regular liaison meetings EPA and a community based Environmental Consultative Group.

Loy Yang Mine produces an annual Environmental Report that details its environmental activities relating to the mines operations. This report is in two parts, the first is an assessment of the past years performance and the second details the targets and strategies set for the coming year.

2 LICENCES

EPA Licences are in place for the following:

- 3 waste and stormwater runoff points,
- A hard rubbish dump,
- dust extractors on 2 crusher houses.

Refer to Figure 19, for locations and Appendix 1 for a summary of EPA parameters of the Licenses. This Appendix includes licence limits and monitoring and reporting frequencies. An annual Loy Yang Mine Environmental Report details the performance of the licence points against these criteria.

3 WASTE AND STORMWATER RUNOFF DISCHARGES

All waste and stormwater runoff discharges are checked daily by Environmental Officers from Loy Yang Mine as to their effectiveness. Chemists from Loy Yang Power Ltd test water samples twice weekly and once a week a NATA registered laboratory undertake the testing.

3.1 Overburden Runoff System (L170) Part of LX000011/0

This system collects waste and stormwater runoffs from the overburden dump and surrounding area. It is divided into 2 zones and each utilises a dam for primary settlement and regulation. The water flows to a common treatment station were a liquid polymer is added to assist in settling out impurities. The dosed water flows into 1 of 2 flocculation ponds where sediments are deposited prior to flowing into a secondary settlement pond before discharge through a combined Licence Point on Traralgon Creek. This combined point is held with Infrastructure Services Group of Loy Yang Power Ltd. Infrastructure Services also manage the Main Drain Dosing Station and Settlement Pond which are used to treat the Power Stations waste and stormwater.

3.2 Dredger Erection Site (L150) LX000040/8

This system collects runoff water from the southern side of the mine. It consists of a flood plain for primary settlement and regulation. Excess water is diverted to L160 in times of heavy rain. Water flows to a solar powered treatment station were a liquid polymer is added to settle out impurities in a settlement pond prior to discharge to Traralgon Creek.

3.3 North West Corner (L160) LX000040/8

It consists of a dam for primary settlement and regulation. Water flows to a solar powered treatment station were a liquid polymer is added to settle out impurities in a primary settlement pond prior to a secondary settlement pond and discharge to Traralgon Creek.

4 HARD RUBBISH DUMP LS000269/7

A small dump is maintained in the overburden dump for the use of Loy Yang Power Ltd and its Contractors for the disposal of inert materials. A management plan has been introduced following an independent audit and includes regular inspections and clay capping to ensure materials are disposed of correctly.

5 DUST EXTRACTION LA000119/3

This Licence is for the use of extraction fans at Bunker Crusher Houses controlled by Loy Yang Mine. These fans discharge dust to the atmosphere when the plant is operating.

6 HYDROCARBONS STORAGE

Storage of hydrocarbons is undertaken in general accordance with AS1940.

7 AQUIFER DEPRESSURISATION

Bores are drilled into the aquifers below the mine area and water is pumped out to reduce the pressure in these aquifers and therefore minimise movement and maintain stability in the mine floor and permanent batters.

Loy Yang Power Ltd supports its activities with the services of a geotechnical Contractor for technical advise on groundwater, aquifer depressurisation and groundwater monitoring issues.

The groundwater is pumped via a reticulation system to a storage tank on the southern side of the mine (refer Figure 14). From the tank it is pumped to the Low Quality Pipeline to be used as make up water in the Loy Yang Power Station cooling towers.

A groundwater model is used to determine the acceptable pressures in the aquifers. The groundwater observation bores are checked daily. Monthly and annual reports on aquifer depressurisation conditions are produced.

The groundwater is tested by a NATA Laboratory weekly with the results used to address any potential adverse issues, such as high water temperature or carbon dioxide levels, to maximise the water use in the Power Station.

The drawdown of aquifer pressures for mine stability extends for some kilometres from the mine area. An extensive groundwater monitoring system has been established to monitor the aquifer pressures (refer Part 1, Section 11). The aquifer depressurisation has resulted in subsidence of the region which is monitored and assessed on a regular basis. The subsidence is relatively uniform, reducing with distance from the mine and does not cause structural damage. The Hazelwood Power Mine is located immediately adjacent to Morwell township and no adverse ground movement effects have occurred. With the wide buffer zones between Loy Yang Mine and Traralgon township no problems are expected. Subsidence modelling along the Traralgon Creek indicate regional subsidence will not adversely impact the grade of the creek.

The Draft Schedule F5 for the Latrobe and Thompson River Basins and Merriman Creek Catchment to State Environment Protection Policy (SEPP) - Waters of Victoria, is used for the development of water strategies and policy development. Discussions of the draft SEPP on groundwater have been completed and the final release of the document is awaited.

8 GEOTECHNICAL STABILITY

Mine stability encompasses stability of the mine floor, usually governed by aquifer pressures as described in the previous section, and batter stability (both individual batters and overall pit slope) as described below. Loy Yang Power Ltd supports its activities with the services of a geotechnical Contractor for advise in this area.

Surface movement surveys are made routinely both as a survey of pin line networks in the Loy Yang area and the Mine.

Operating faces and permanent batters in overburden and coal are designed to meet stability criteria established through consideration of a range of factors as defined below.

Jointing of coal, orientation of batters, width of benches, height of faces, etc are considered when determining safe batter slopes in coal. Operational activities such as diverting runoff from coal joints, and installation of horizontal bores to relieve water pressure in coal joints are undertaken to maintain batter stability in worked out areas.

Bench and face geometry, and material quality are considered when determining safe batter slopes in overburden.

A network of observation bores located around the Mine are monitored regularly. This information is checked against forecast results from a groundwater model which has been produced to predict geotechnical stability.

Mine development and batter stability are checked daily by Mine operations personnel and weekly by a geotechnical expert. Recommendation and reports on possible problems areas are addressed in the day to day operations of Loy Yang Mine.

9 ASH SYSTEM AND DISPOSAL

Ash is produced when coal is burnt in the boilers of the power stations and it is pumped via pipelines to the Ash Pond where the solids settle out. The saline water is recirculated through the ash system until the salinity increases to a level where it is pumped to the ocean for disposal via the Saline Waste Outfall Pipeline (refer Figure 14).

The storage capacity of the Ash Pond has recently been increased to provide flexibility in the operation of the Ash Pond. It is proposed to place up to 15 Mm^3 of leached ash over the remaining life of the power station, at approximately 0.3 Mm^3 per annum in the overburden dump (refer Part 1, Section 6). The EPA have been consulted regarding the leached ash disposal and have approved a trial dump, which is currently being monitored. It is proposed the leached ash will be placed in "pockets" within the overburden dump and covered with overburden. Loy Yang Power Ltd will continue to involve the EPA in all investigations of future leached ash dump sites.

Trials are currently being initiated to determine the suitability of using leached ash as a soil conditioner to aid in the rehabilitation of the overburden dump (refer Part 2, Section 3).

10 FIRE PROTECTION

The fire service water system is used for not only fire fighting, in the event of a fire, but also for wetting down of exposed coal to minimise the danger of fire and minimising dust, plus as washdown water to clean spill from around the plant.

Washdown water and rainfall runoff from within the mine and its immediate surrounds is collected in ponds within the mine. The primary settled water is pumped to the Fire Service Reservoir for further settlement of particles. The Reservoir provides a gravity fed water supply, boosted by pumps where appropriate, to both the mine and overburden dump. The Reservoir water level of the Fire Service Reservoir is checked daily by Environmental Officers from the mine and managed to maintain a balanced system. The Reservoir has sufficient capacity to meet the requirement of the Fire Service Policy and hold drainage water from significant storms. In the event the Reservoir reaches capacity, excess water can be treated via the overburden dump treatment pond system before discharge to Traralgon Creek.

Grassed areas within the mine are mown on a regular basis and leased lands adjacent to the mine must also be adequately maintained to minimise the risk of grass fires.

Fire Protection requirements of exposed coal wetting and clay capping of worked out benches are detailed in Fire Service Policy and Code of Practice. In addition a Bushfire Mitigation Action Plan is in place.

11 AIR AND DUST MONITORING

An extensive air monitoring system was installed prior to construction of Loy Yang. This Latrobe Valley Air Shed Monitoring Program is still maintained. Results are published in the local newspaper and an annual report is published.

Although on a regional basis the major effect on the air quality is seen as a Power Station issue, coal dust is minimised by wetting down of the exposed coal surfaces using water sprays on the Fire Service System. Roads within the mine environs are constructed to a good standard, appropriate speed limits for vehicles are set and water carts are used to wet down the road surface during dry periods.

12 NOISE MONITORING

Loy Yang Mine actively pursue measures to minimise noise emissions, in addition to the works undertaken by the Power Station. An external Contractor has been engaged to investigate and monitor any community based complaints and recommend solutions. A 750 metre development buffer zone is incorporated between the mine and Traralgon township to minimise the effect of noise and mine development. This buffer zone is included within the proposed Mining Licence Boundary. The State Environmental Protection Policy No. N1 is used by Loy Yang Power Ltd to determine acceptable noise emissions. The Health and Safety Policy details the standards to be achieved in relation to employee working conditions. Plant and equipment within the mine is designed to minimise noise emissions. Appropriate noise protection actions are undertaken and noise warning signs are posted near the operating plant.

13 EPA LIAISON FORUM

As part of the management of the environment an EPA - Loy Yang Power Ltd Liaison Forum has been instigated. The purpose of the Forum is to keep the EPA fully informed on the environmental issues, monitoring and proposed works within the Loy Yang complex. Meetings are held at least 3 monthly.

14 COMMUNITY ENVIRONMENTAL CONSULTATIVE GROUP

A community based Environmental Consultative Group has been established to pro-actively manage and minimise, through community consultation, the impact upon the local environment of Loy Yang Power Ltd operations. In addition the purpose of the Group is to continuously improve environmental performance so that community expectations are exceeded. The Group includes representatives from Loy Yang Power Ltd management, Department of Natural Resources and Environment, Latrobe Shire Council, three community representatives and one employee representative. Meetings are held at least 3 monthly.

APPENDIX 1

LOY YANG MINE
WASTE DISCHARGE LICENCES
SUMMARY SHEET

LX000011/0 WASTE WATER DISCHARGE TO TRARALGON CREEK (Part)
OVERBURDEN RUNOFF SYSTEM DISCHARGE (L170)
Date of Issue 09 November 1979 Revision Date 06 August 1992

Conditions

Discharge of treated waste water to Traralgon Creek from stormwater runoff and overburden dump washdown activities.

Discharge Rate - Limit 60 Ml/day as an annual average.

Flocculant dosing utilising suitable equipment to achieve discharge limits.

Measuring equipment to measure and record ;
instantaneous discharge rate of flow.
continuous temperature, turbidity and electrical conductivity.
rainfall in the vicinity.

Maintain and correctly calibrate all dosing and monitoring equipment and maintain logs of these activities.

Water Quality Parameters

Discharge quality objectives - Overburden Runoff Ponds

Limits

Total dissolved solids (TDS)	1000 milligrams per litre (mg/l)
Colour	60 Pt-Co Units
Suspended Solids (SS)	60 mg/l
Turbidity	80 Nephelometric Turbidity Units (NTU)
pH Range	6.0 to 8.5 pH Units

Annual Medians

Total dissolved solids (TDS)	650 milligrams per litre (mg/l)
Colour	40 Pt-Co Units
Suspended Solids (SS)	30 mg/l
Turbidity	25 Nephelometric Turbidity Units (NTU)

No objectionable floating matter on discharge (oil, grease, scum, litter, foam etc)

Monitoring and Reporting

Measure and record daily rainfall

Continuously monitor;

instantaneous discharge flow rate.
temperature and turbidity and record occasions of exceedence.

Weekly monitoring via grab sample;

Total dissolved solids
colour
suspended solids
pH
turbidity
electrical conductivity
and temperature at time of sample.

Three monthly monitoring;

sodium
magnesium
calcium
bicarbonate alkalinity (as $CaCO_3$)
calculate the adjusted sodium absorption ratio.

Report and log all emergency discharges via overburden runoff ponds bypass channels

Report in writing within 28 days results contravening the licence conditions.

Notify immediately (or by 10.00 am if occurring over night) by facsimile of any discharge via overburden runoff pond bypass channels.

Annual reporting in the month of February;

summary of rainfall data
summary of daily flows
summary of turbidity breaches

By 31 March report summary of emergency discharges for pervious calendar year.

LOY YANG MINE
WASTE DISCHARGE LICENCES
SUMMARY SHEET

LX000040/8 WASTE WATER DISCHARGE TO TRARALGON CREEK
MINE WESTERN PERIMETER RUNOFF
DREDGER ERECTION SITE DISCHARGE (L150)
NORTH WEST CORNER DISCHARGE (L160)
Date of Issue 30 July 1992 Revision Date 25 June 1993

Conditions

Discharge of treated stormwater runoff to Traralgon Creek from the Dredger Erection Site and mine perimeter in the south west and the mine perimeter in the north west.

Flocculant dosing utilising suitable equipment to achieve discharge limits.

Maintain and correctly calibrate all dosing and monitoring equipment and maintain logs of these activities.

Abrasive Blast Cleaning

500 metres to any residence or public open place.

Control of noise emissions which may be objectionable to adjoining properties.

Use, handling and transport of abrasive not to cause any visual emissions.

All runoff to be discharged into the mine.

Water Quality Parameters

Discharge quality objectives - Overburden Runoff Ponds

Limits

Total dissolved solids (TDS)		900 milligrams per litre (mg/l)
Colour	D E Site	60 Pt-Co Units
	NW Corner	100 Pt-Co Units
Turbidity		80 Nephelometric Turbidity Units (NTU)
Suspended Solids (SS)		60 mg/l
pH Range		6.0 to 8.5 pH Units

For storms with an average recurrence interval of more than 1 in 10 years, no limit applies for suspended solids and turbidity.

Annual Medians

Total dissolved solids (TDS)	600 milligrams per litre (mg/l)
Turbidity	30 Nephelometric Turbidity Units (NTU)
Suspended Solids (SS)	40 mg/l

No objectionable floating matter on discharge (oil, grease, scum, litter, foam etc)

Monitoring and Reporting

Weekly monitoring via grab sample;

Total dissolved solids
colour
turbidity
suspended solids

Annual test in line with three monthly monitoring including the following;

sodium
magnesium
calcium
bicarbonate alkalinity (as $CaCO_3$)
calculate the adjusted sodium absorption ratio.

Not a condition of the licence, done in good faith and now a general expectation.

Report in writing within 28 days results contravening the licence conditions.

LOY YANG MINE
WASTE DISCHARGE LICENCES
SUMMARY SHEET

LA000119/3 WASTE DISCHARGE TO ATMOSPHERIC ENVIRONMENT
BUNKER HOUSE / CRUSHER HOUSE
LOY YANG MINE
Date of Issue 07 January 1983 Date of Amendment 26 August 1992

Conditions

Discharge of particulate matter from point numbers 5,6,7,8 & 9.

Discharge must be vertically from a stack

Parameters

Discharge rate	110 g/min (points 5,6 & 7) 158 g/min (points 8 & 9)
Concentration	0.25 g/m3 (all points)
Discharge height	41 metres (points 5,6 & 7) 26 metres (points 8 & 9)
Temperature	ambient (all points)

Monitoring and Reporting

Equipment logs must be kept to record failures for a minimum of 12 months

Annual report to be supplied by end of January for all 5 discharge points

Alarms to be fitted to wet scrubber to warn of low flow rates and pressure drops

LOY YANG MINE
WASTE DISCHARGE LICENCES
SUMMARY SHEET

LS000269/7 WASTE DISCHARGE TO LAND
HARD RUBBISH DUMP
LOY YANG MINE
Date of Issue 04 December 1990

Conditions

Discharge onto or into land solid inert materials from the Loy Yang site and Loy Yang Construction site.

No prescribed, putrescible or liquid waste allowed.

Operations

Waste to be deposited in layers not to exceed 2 metres.

Not less than once per week waste to be consolidated and covered by at least 0.15 metres of impermeable material.

Waste not to be deposited into water.

Drainage to be directed away from fill operations and treated via the overburden runoff ponds before discharge to Traralgon Creek.

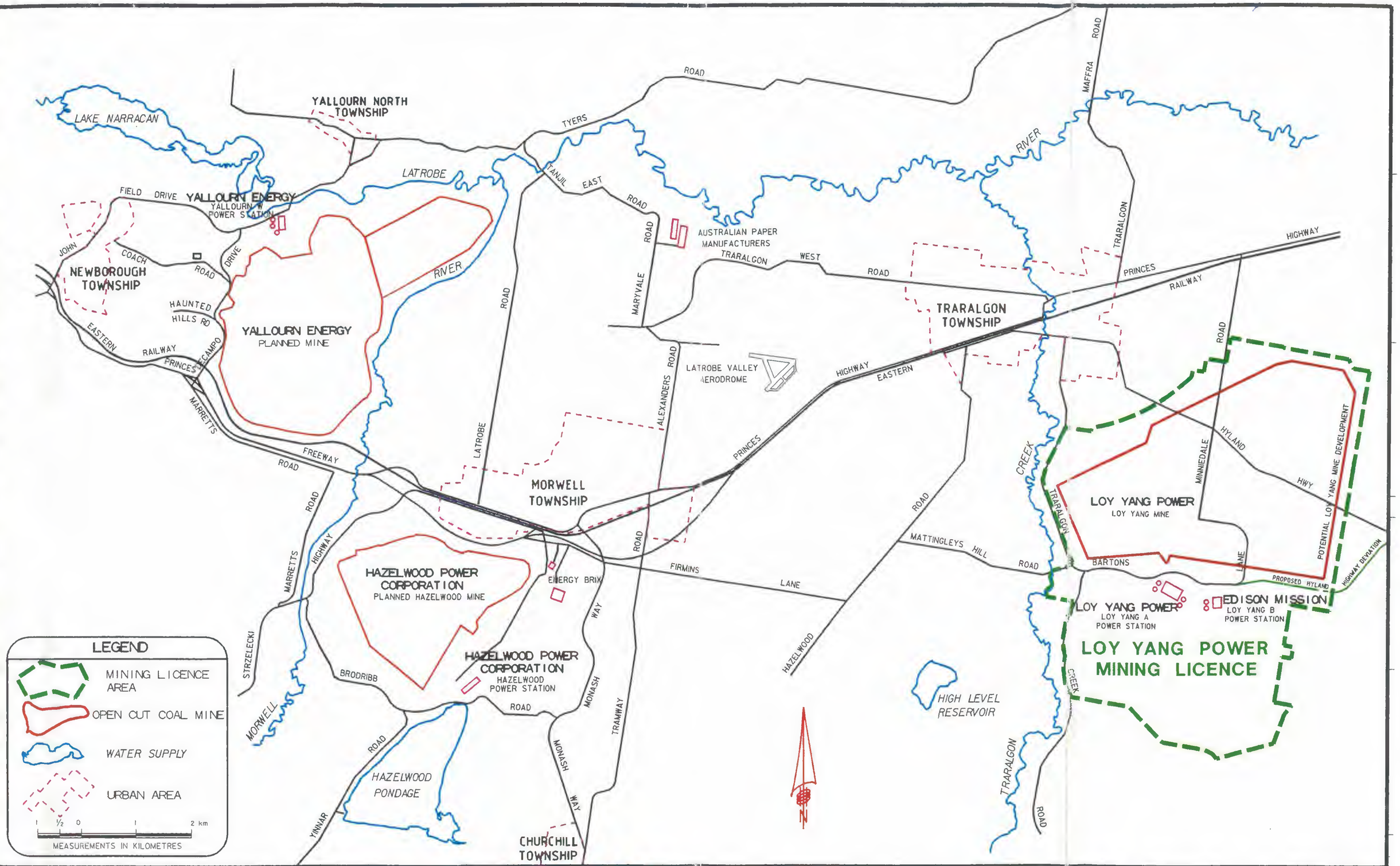
Windborne litter not to be caused or allowed to escape from the premises.

Signs indicating allowable wastes and dumping directions to be prominently displayed.

Not wastes to be burnt on site, prompt action required to extinguish any outbreak of fire.

Site Restoration

Final surface to be graded topsoiled and vegetated to minimise erosion and water ponding.



REVISION

GEO-ENG
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DRAWN	SCALE	DATE	APPROVED
S. VERHELLEN	N.T.S	AUG 1996	PROGRAM MANAGER GEO-ENG
CHECKED	REF. No	5-1177-19	

APPROVED MANAGER

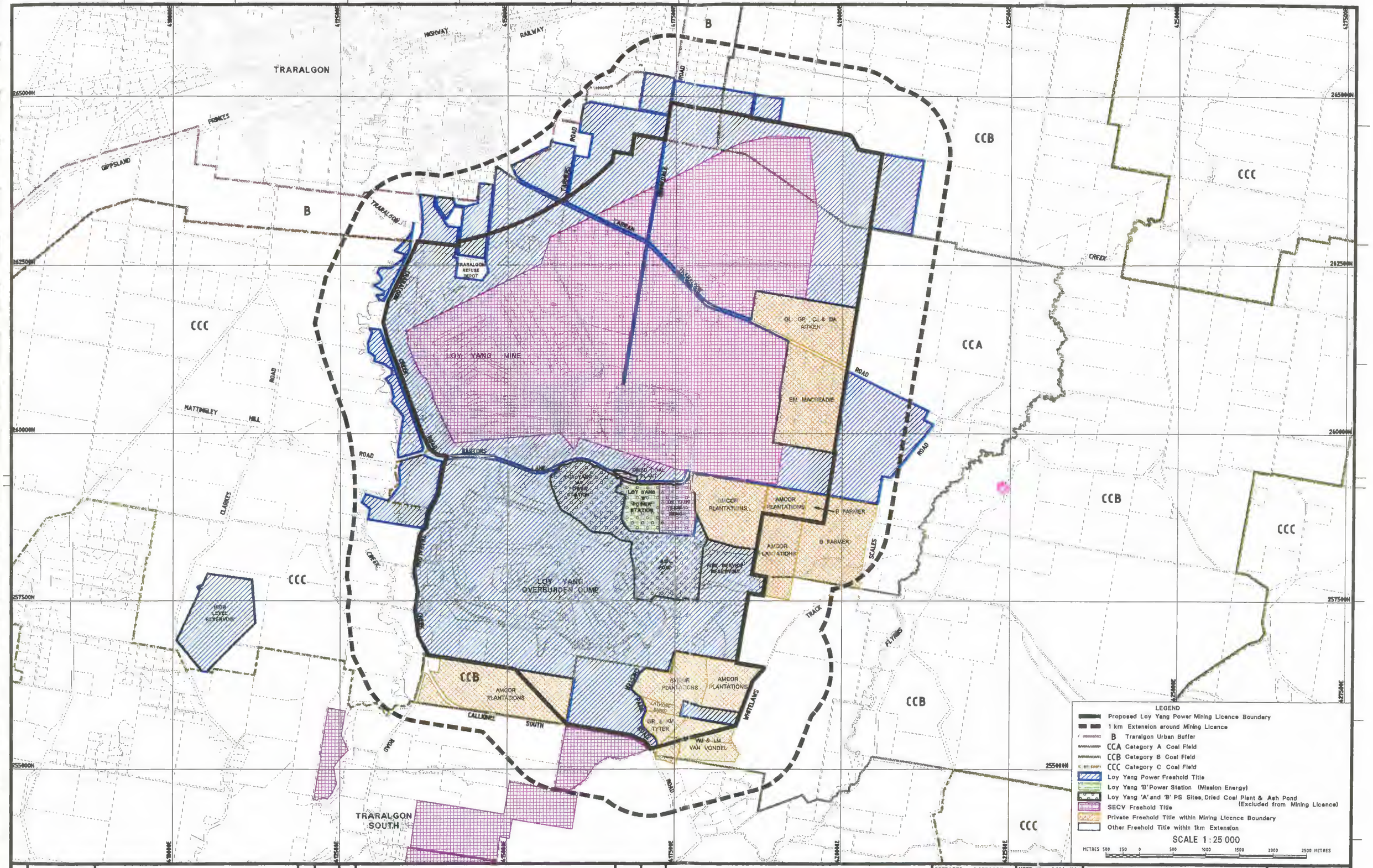
APPROVED GENERAL MANAGER MINE

LOY YANG POWER LTD

FIGURE 1
LV65/1-5/005

LOY YANG POWER MINING LICENCE APPLICATION WORK PLAN SUBMISSION GENERAL LOCATION PLAN

LOY YANG power



LEGEND

- Proposed Loy Yang Power Mining Licence Boundary
- 1 km Extension around Mining Licence
- B Traralgon Urban Buffer
- CCA Category A Coal Field
- CCB Category B Coal Field
- CCC Category C Coal Field
- Loy Yang Power Freehold Title
- Loy Yang 'B' Power Station (Mission Energy)
- Loy Yang 'A' and 'B' PS Sites, Dried Coal Plant & Ash Pond (Excluded from Mining Licence)
- SECV Freehold Title
- Private Freehold Title within Mining Licence Boundary
- Other Freehold Title within 1km Extension

SCALE 1 : 25 000

METRES 500 250 0 500 1000 1500 2000 2500 METRES

REFERENCE	REVISION				
	3-10-96	C	PROPOSED MINING LICENCE BOUNDARY & 1KM EXTENSION AMENDED	SCG	BCN
	14-8-96	B	LAND OWNERSHIP AMENDED	SCG	BCN
	2-8-96	A	CURRENT OWNERSHIP UPDATED	SCG	BCN

566x901mm

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- Environmental Consultants -
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Tel: (051) 740066, Fax: (051) 740088
Offices also at Alice Springs, Bairnsdale, Brisbane, Canberra, Echuca, Geelong, Hamilton, Melbourne and Shepparton.

Fisher Stewart

Drg No	1582/261C
Sheet	of

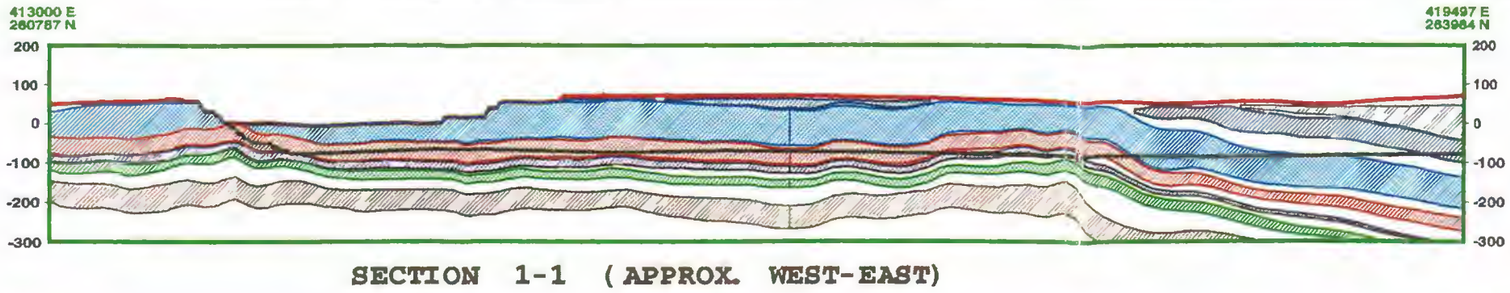
PREPARED	S.GREGORY
CHECKED	S.C.NAPIER
DATE	22-8-96
APPROVED	S.C.NAPIER
AUTHORISED FOR ISSUE	
Project No	1582
APPROVED (L.Y.Power)	

LOY YANG POWER

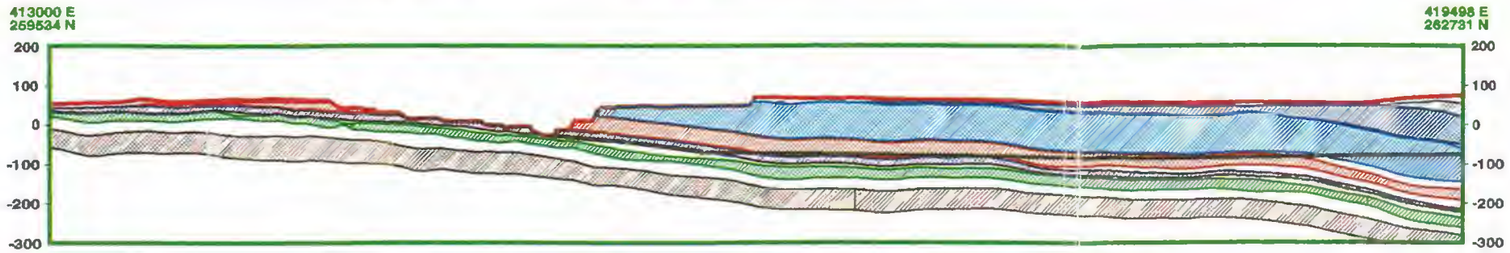
FIGURE 2
LV65/1-5/006

LOY YANG POWER
WORK PLAN SUBMISSION
MINING LICENCE AREA
LAND OWNERSHIP WITHIN 1KM

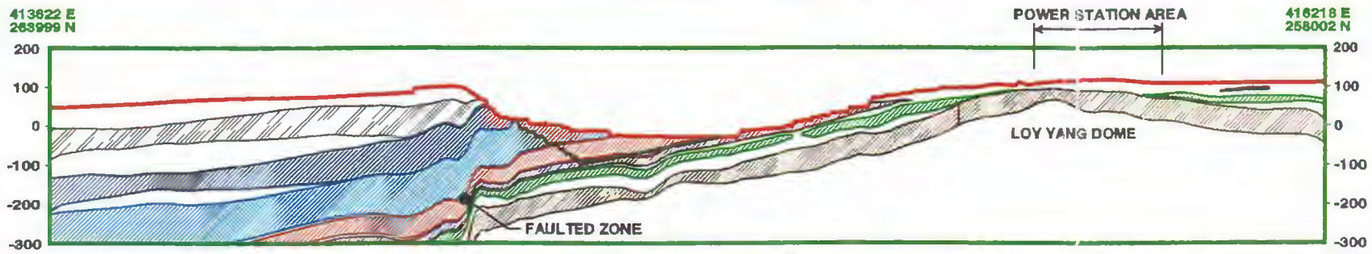
A1



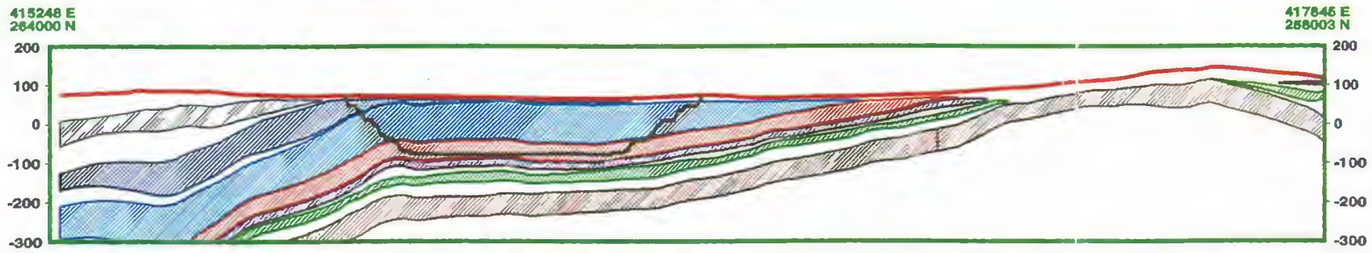
SECTION 1-1 (APPROX. WEST-EAST)



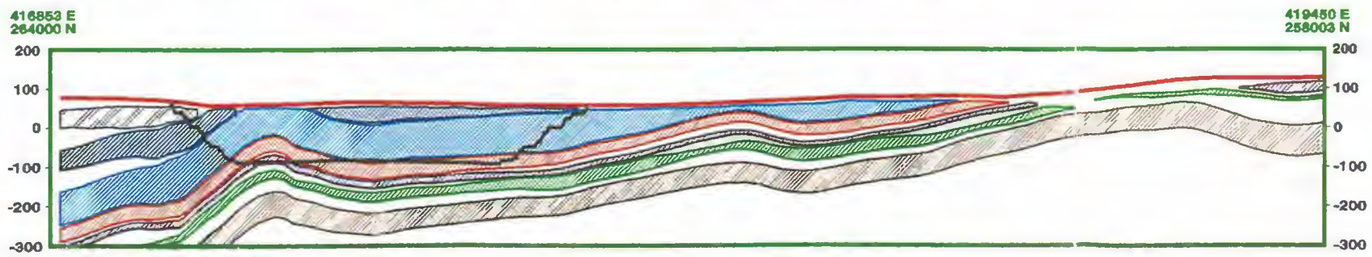
SECTION 2-2 (APPROX. WEST-EAST)



SECTION 3-3 (APPROX. NORTH-SOUTH)



SECTION 4-4 (APPROX. NORTH-SOUTH)

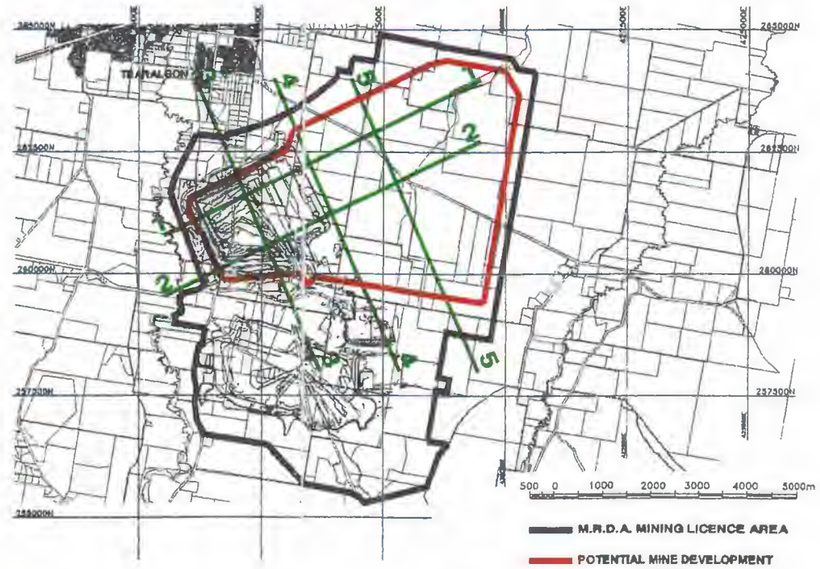


SECTION 5-5 (APPROX. NORTH-SOUTH)

FINAL BATTERS SHOWN ARE APPROX. ONLY

LEGEND

- YALLOURN SEAM
- M1A SEAM
- M1B SEAM
- M2A SEAM
- M2B SEAM
- M2C SEAM & PARTINGS
- TRARALGON SEAM & PARTINGS



LOCALITY PLAN

200 100 0 200 400 600 800 1000 METRES
HORIZONTAL SCALE
VERTICAL EXAGGERATION 2:1

REVISION

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APPROVED PROGRAM MANAGER GEO-ENG
APPROVED MANAGER
APPROVED GENERAL MANAGER MINING

LOY YANG POWER LTD

FIGURE 3
LV65/1-5/007

LOY YANG POWER WORK PLAN SUBMISSION GEOLOGICAL CROSS SECTIONS

LOY YANG power

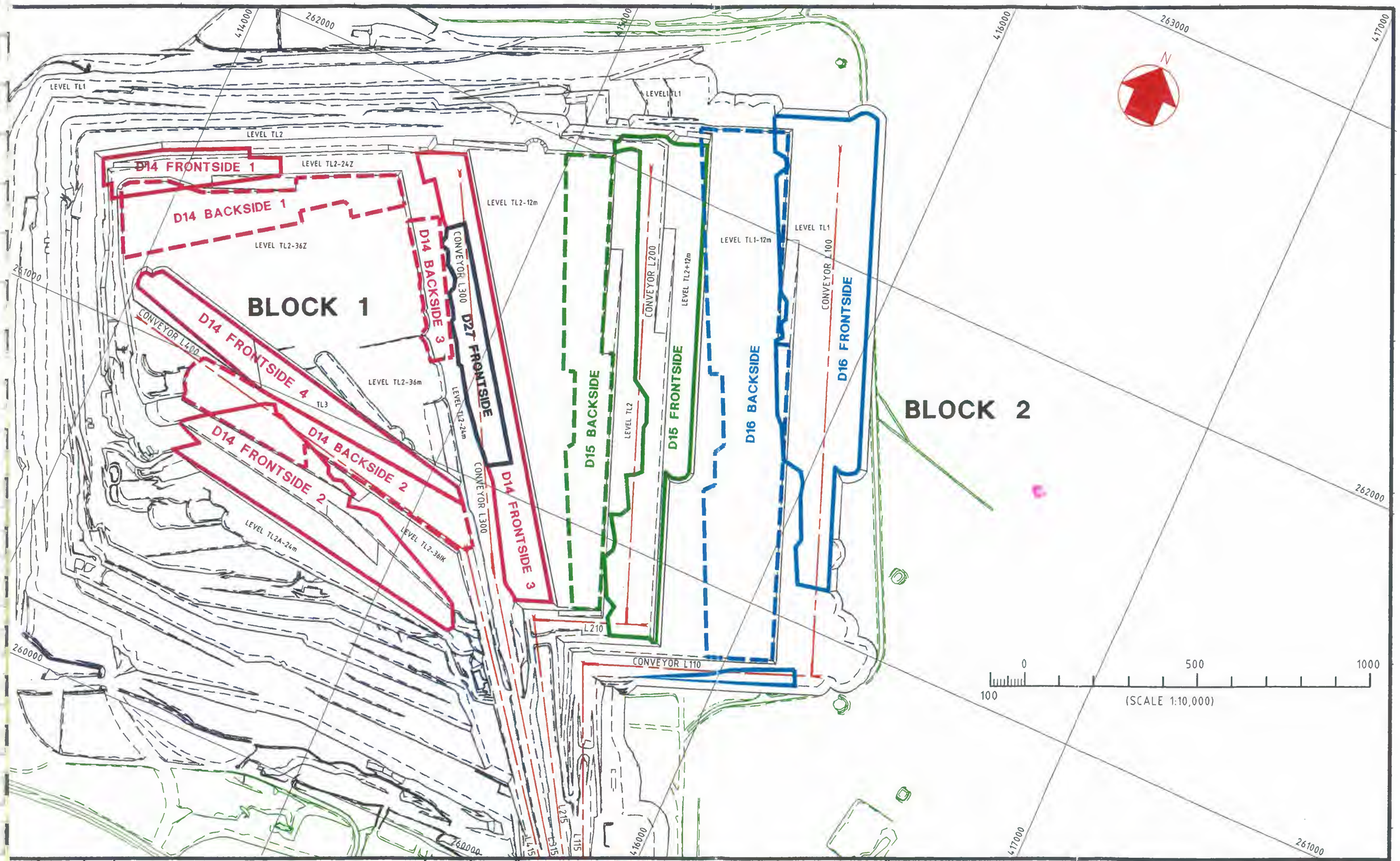

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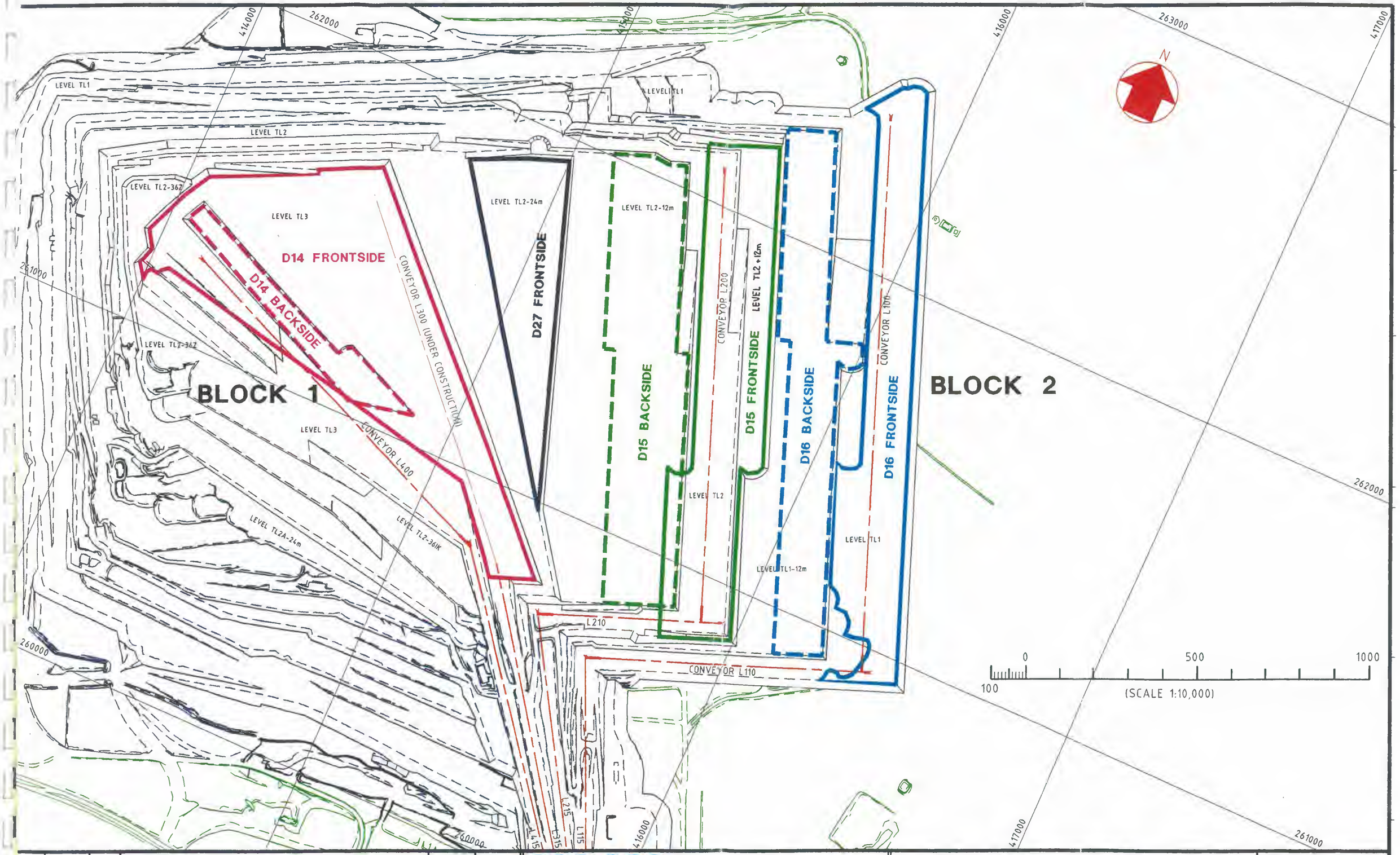
FIGURE 5
LV65/1-8/002

APPROVED MANAGER
APPROVED GENERAL MANAGER MINE

LOY YANG POWER
WORK PLAN SUBMISSION
PLANNED EXCAVATION AREAS
JULY 1996 TO JULY 1997

LOYYANG power



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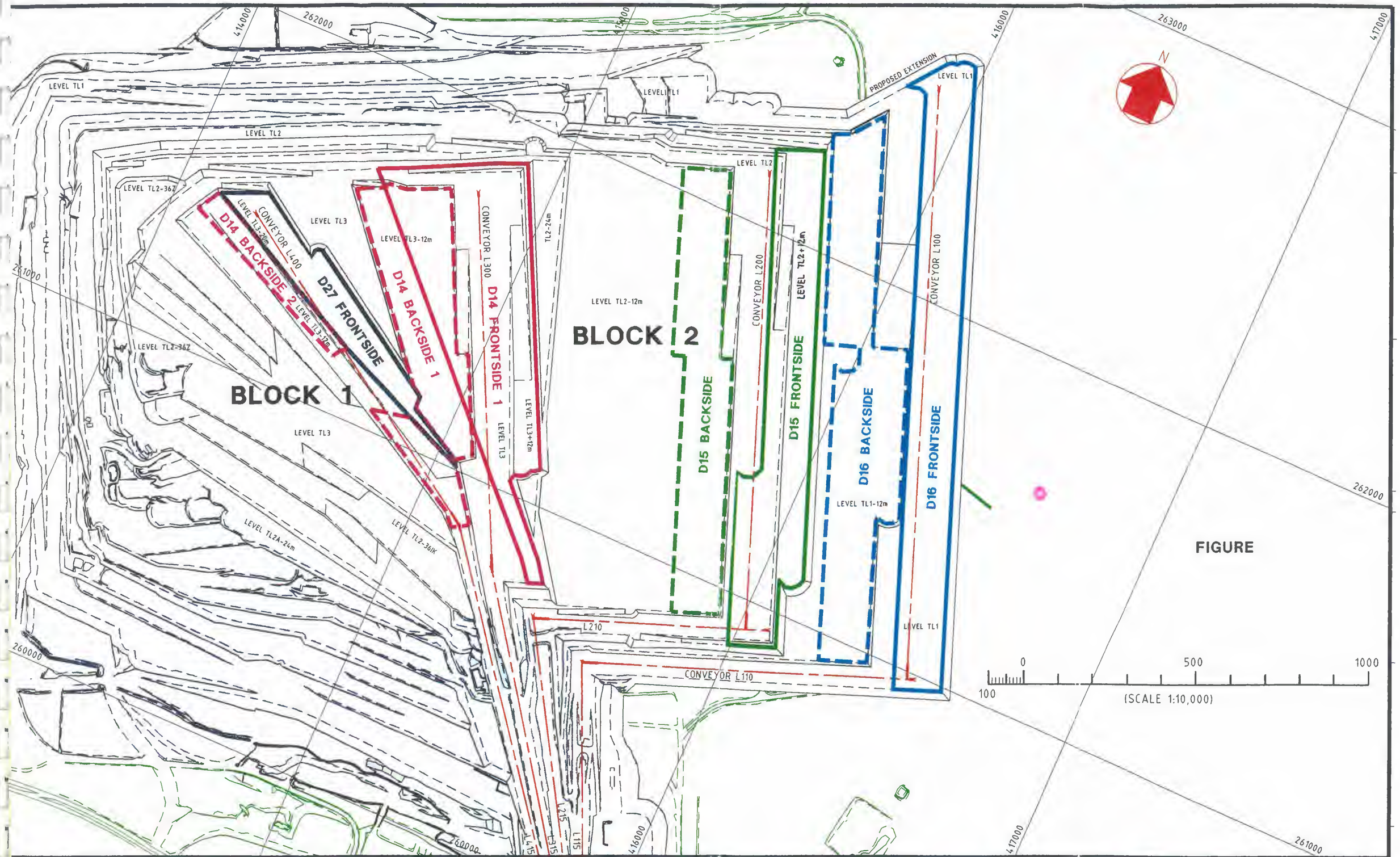
DRAWN: S. Verhellen
SCALE: 1:10000
DATE: JULY 1996
CHECKED:
REF. No: 5-147-24
APPROVED: PROGRAM MANAGER GEO-ENG
APPROVED: MANAGER
APPROVED: GENERAL MANAGER MINE

LOY YANG POWER LTD

FIGURE 6
LV65/1-8/003

LOY YANG POWER
WORK PLAN SUBMISSION
PLANNED EXCAVATION AREAS
JULY 1997 TO JULY 1998

LOY YANG power



FIGURE

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CHECKED	REF. No		
	5-147-25		

APPROVED MANAGER

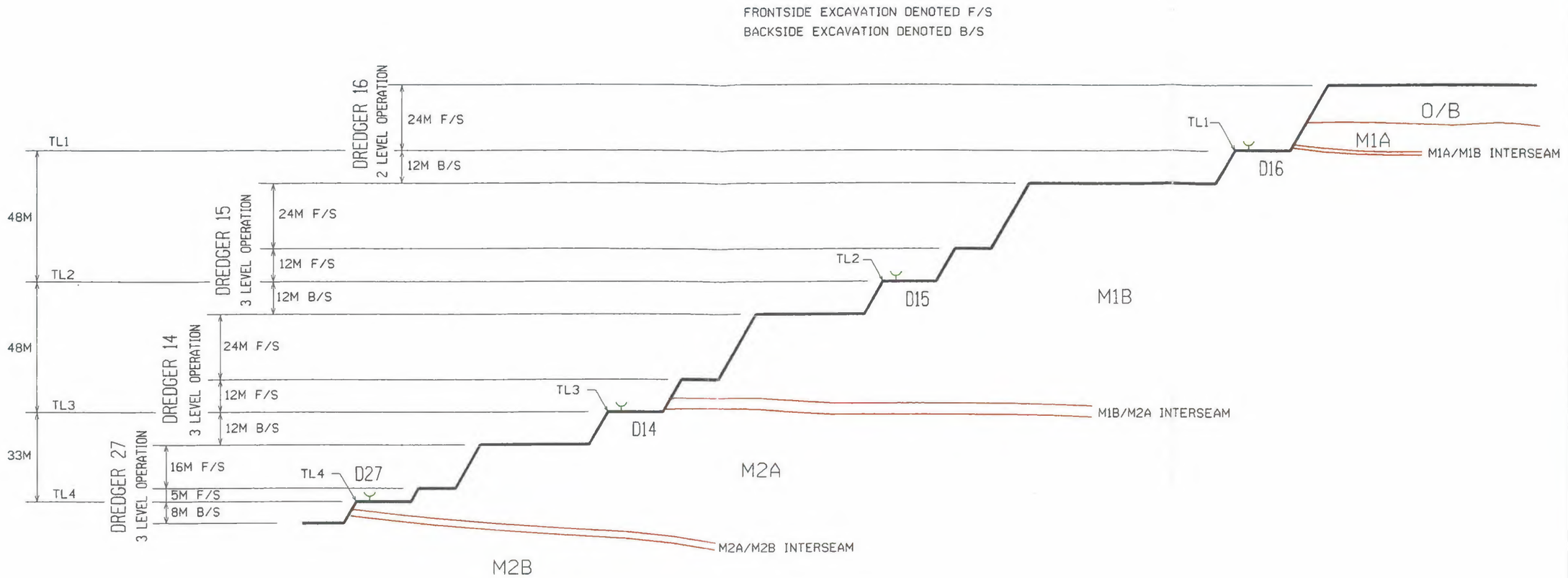
APPROVED GENERAL MANAGER MINE

LOY YANG POWER LTD

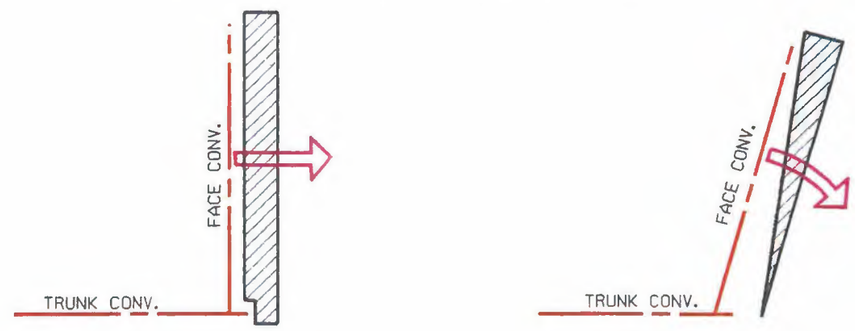
FIGURE 7
LV65/1-8/004

LOY YANG POWER
WORK PLAN SUBMISSION
PLANNED EXCAVATION AREAS
JULY 1998 TO JULY 1999

LOYYANG power



TYPICAL SECTION - BLOCK 2 OPERATING FACES



BLOCK OPERATION

PIVOT OPERATION

TYPICAL OPERATIONAL MODES

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APPROVED MANAGER
APPROVED GENERAL MANAGER MINE

LOY YANG POWER LTD

FIGURE 8
LV65/1-8/005

LOY YANG POWER
WORK PLAN SUBMISSION
TYPICAL OPERATING DETAILS

LOY YANG power

AGL.0001.003.0050

TRARALGON

MELROSSA ROAD

MINNIEDALE ROAD

SHIELDS ROAD

EXTENT OF MINE AT 2028

POTENTIAL MINE DEVELOPMENT

BROOMFIELDS LANE

BLOCK 2

BLOCK 1

BLOCK 3

LOY YANG MINE

TRARALGON CREEK ROAD

HYLAND HIGHWAY

MINING LICENCE BOUNDARY

HIGHWAY DEVIATION

SCALES ROAD

PROPOSED HYLAND

MATTINGLEY SHILL ROAD

BARTONS LANE

L Y A POWER STATION

EDISON MISSION

LOY YANG OVERBURDEN DUMP

250m 0 500 1000 1500m

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PROGRAM MANAGER GEO-ENG

APPROVED
MANAGER

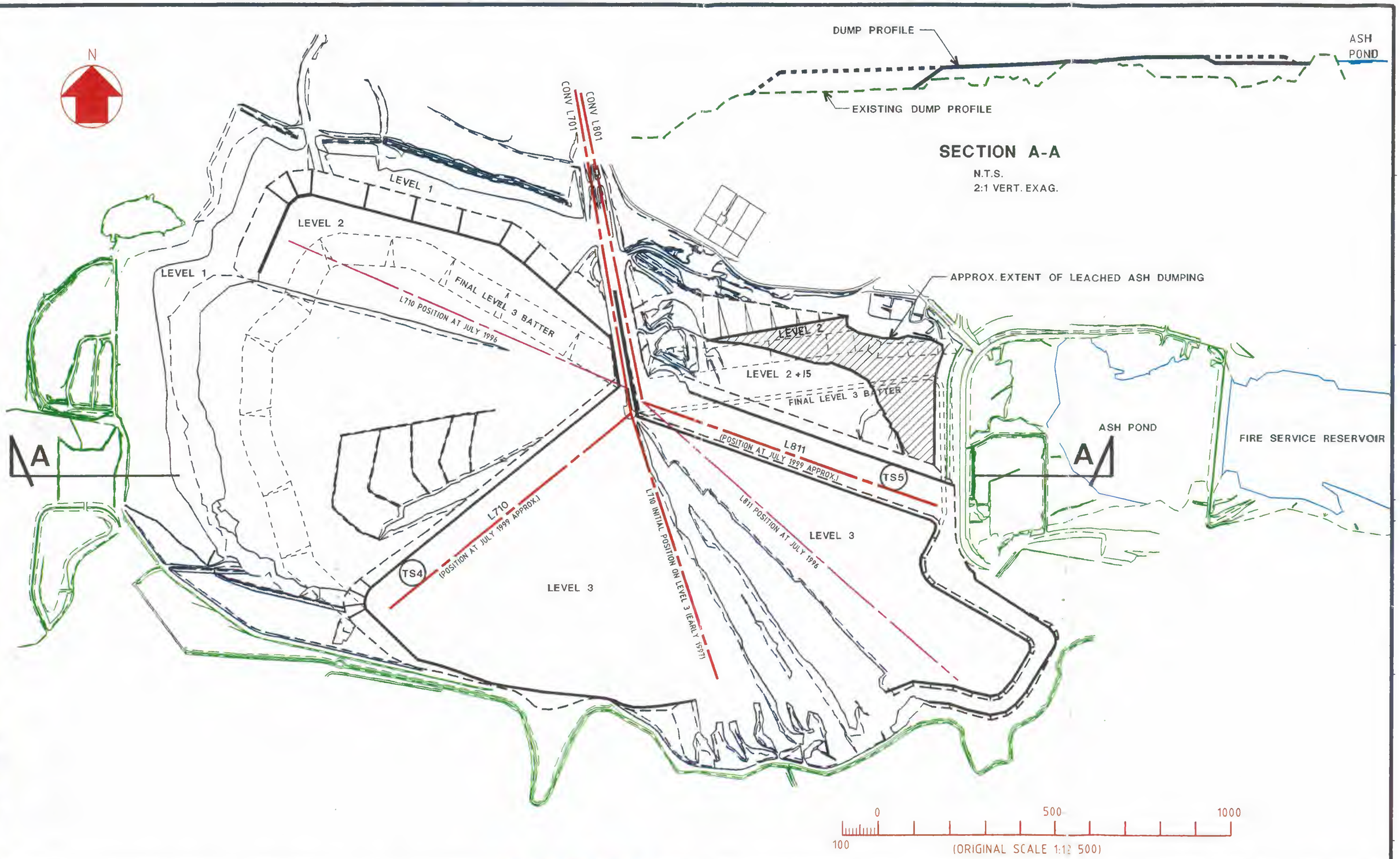
APPROVED
GENERAL MANAGER MINE

LOY YANG POWER LTD

FIGURE 9
LV65/1-8/006

LOY YANG POWER WORK PLAN SUBMISSION WHOLE OF LIFE - POTENTIAL MINE DEVELOPMENT

LOYYANG power



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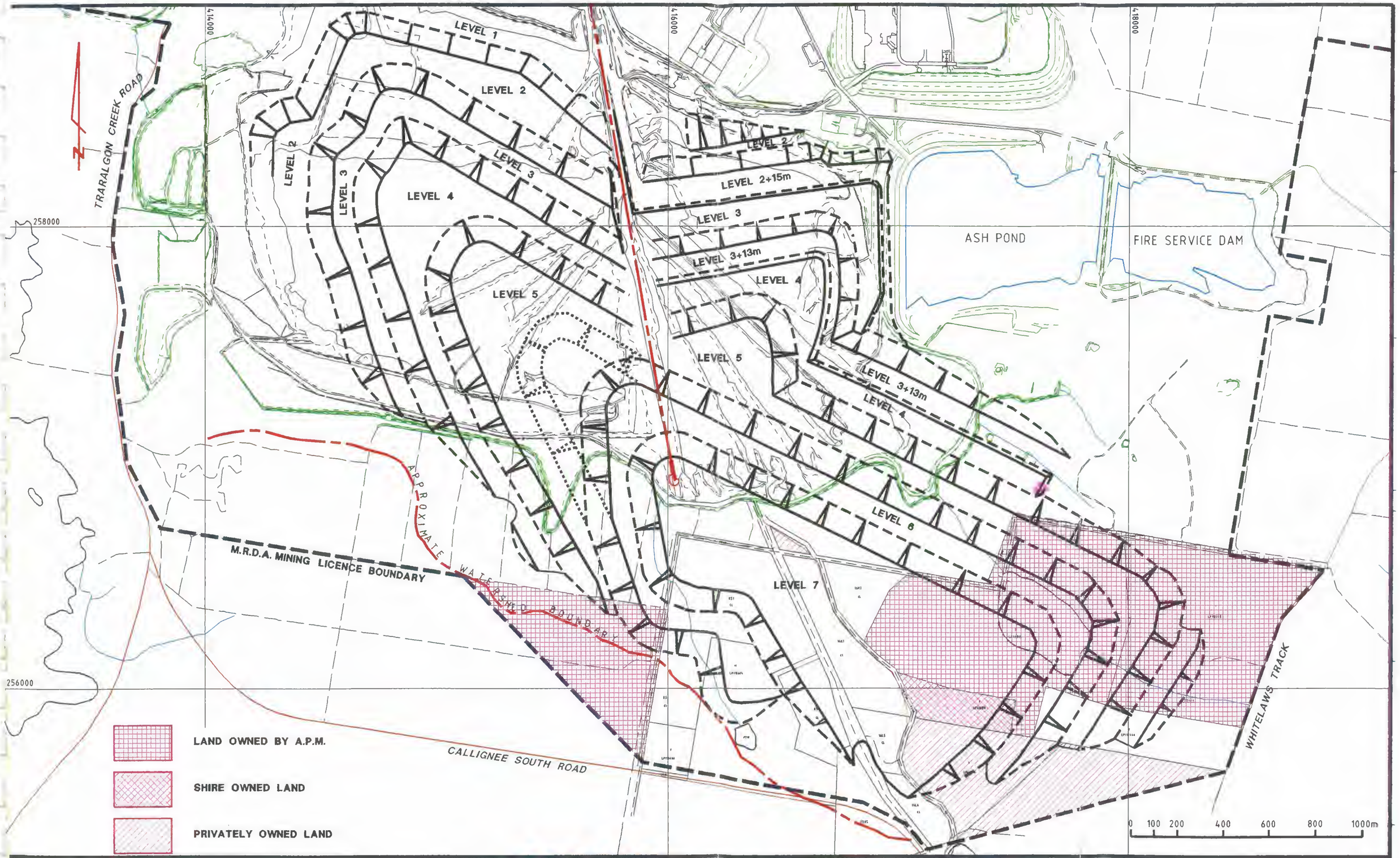
APPROVED MANAGER
APPROVED GENERAL MANAGER MINE

LOY YANG POWER LTD

FIGURE 10
LV65/7-8/001

LOY YANG POWER WORK PLAN SUBMISSION EXTERNAL OVERBURDEN DUMP DEVELOPMENT TO JULY 1999

LOY YANG power



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LOY YANG POWER LTD

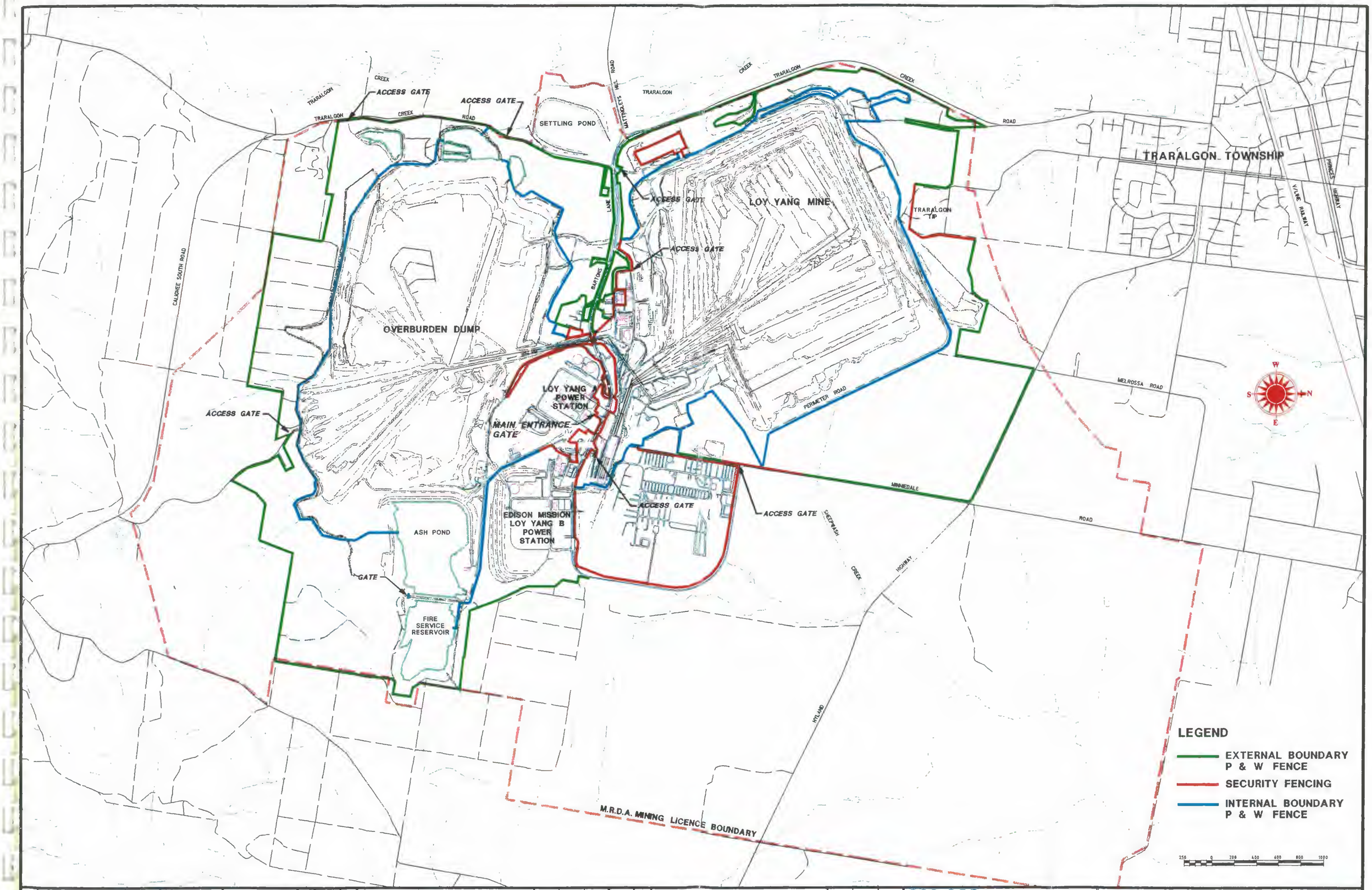
FIGURE 11
LV65/7-8/002

APPROVED MANAGER

APPROVED GENERAL MANAGER MINE

LOY YANG POWER
WORK PLAN SUBMISSION
EXTERNAL OVERBURDEN DUMP
POTENTIAL 7 LEVEL DUMP DEVELOPMENT

LOY YANG power



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REF. No 5-147-30
DATE JULY 1996
APPROVED PROGRAM MANAGER GEO-ENG

LOY YANG POWER LTD

FIGURE 12
LV65/1-13/010

APPROVED MANAGER
APPROVED GENERAL MANAGER MPC

LOY YANG POWER
WORK PLAN SUBMISSION
INFRASTRUCTURE & SERVICES
FENCING AND ACCESS

LOY YANG

TRARALGON CREEK
TRARALGON CREEK
TRARALGON CREEK
TRARALGON CREEK
ROAD
SETTLING POND
O/B SETTLING POND
SOUTHERN RETENTION POND
FLOCCULATION POND
NORTHERN RETENTION POND
DREDGER ERECTION STORAGE SITE
LOY YANG MINE
TRARALGON TOWNSHIP
PRINCES HIGHWAY
V/LINE RAILWAY
LANE
BARTONS
OVERBURDEN DUMP
LY SUB
SWYARD
LYS SUB
CLARIFICATION PLANT
LOY YANG A POWER STATION
RAW COAL BUNKER
LOY YANG PROJECT CONSTRUCTION STORAGE YARD
LOY YANG B POWER STATION
ASH POND
FIRE SERVICE RESERVOIR
PERIMETER ROAD
MELROSSA ROAD
MINNEDALE ROAD
SHEEPWASH CREEK
HIGHWAY
CUMMINGS LANE
MYLAND
OVERFLOW
FLYNNS CREEK
M.R.D.A. MINING LICENCE BOUNDARY
W
S
N
E

LEGEND

- BUILDINGS
- MAJOR ROADS & CARPARKS
- MAJOR POWER LINES (22kV UNLESS NOTED)

250 0 200 400 600 800 1000

REFERENCE DRAWINGS

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REF. No 5-147-31
APPROVED PROGRAM MANAGER GLO-ENG

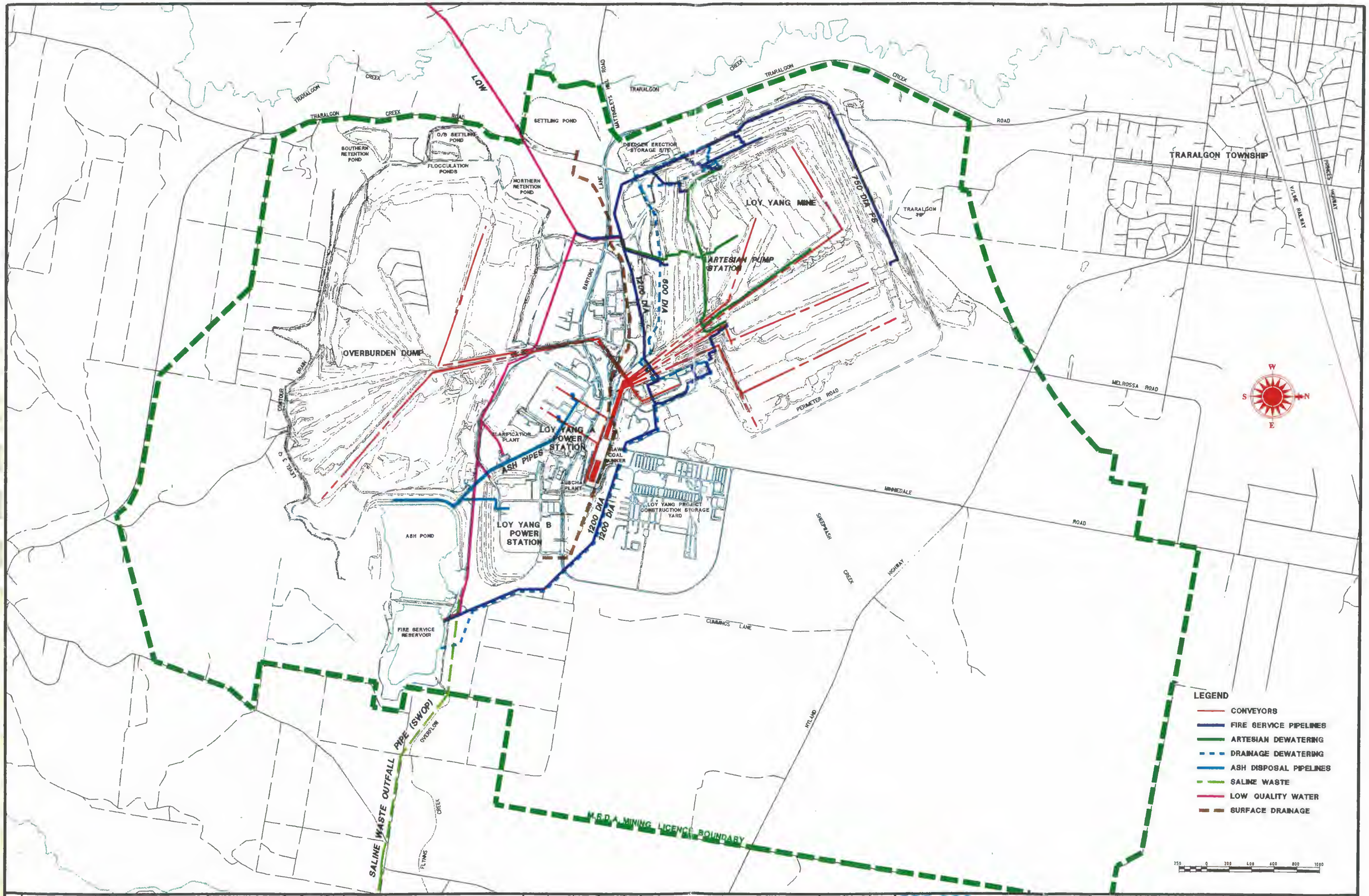
LOY YANG POWER LTD

FIGURE 13
LV65/1-13/011

APPROVED MANAGER
APPROVED GENERAL MANAGER MINE

LOY YANG POWER
WORK PLAN SUBMISSION
INFRASTRUCTURE AND SERVICES
POWER, ROADS AND BUILDINGS

LOYYANG



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APPROVED PROJECT MANAGER GEO-ENG

APPROVED MANAGER

APPROVED GENERAL MANAGER MINE

LOY YANG POWER LTD

FIGURE 14
LV64/1-13/012

LOY YANG POWER
WORK PLAN SUBMISSION
INFRASTRUCTURE AND SERVICES
CONVEYORS AND WATER SERVICES

LOY YANG


LEGEND
PROJECT BOUNDARY
BICYCLE / WALKING TRACK
NATURE WALK
POWER STATION AREA BOUNDARY
WATER COURSE
EXISTING VEGETATION (AS OF 1994)
EXISTING PLANTATIONS (AS OF 1994)
PROPOSED CONCEPTUAL LANDSCAPING (POST 1994)
PROPOSED AREAS FOR PICNIC TABLES ETC.
FACILITIES - TOILETS, SHELTER, WATER
COAL EXCAVATION AREA
N
TRARALGON - YARRAM ROAD
HYLAND HIGHWAY
MELROSSA ROAD
PASTURE OPEN WOODLAND (GRAZING)
PERIMETER PLANTINGS OF WETLAND SPECIES
STODDARDS ROAD
INGLES ROAD
RECREATION CORRIDOR AROUND PERIMETER OF LAKE
PICNIC PASSIVE PASSIVE RECREATION
BROOKFIELDS ROAD
NATURE CONSERVATION
PICNIC AREA
PROJECT BOUNDARY
PERIMETER PLANTINGS OF WETLAND SPECIES AROUND WATER BODIES
POSSIBLE LAKE
HYLAND HIGHWAY
CHANNEL OVERFLOW
RECREATION WETLANDS NATURE WALK
INLET CHANNEL
TRARALGON CREEK
PASSIVE RECREATION VISITORS LAKE VIEWING AREA
RECREATION BOATING ACCESS & CAR PARKING
MATTINGLEYS HILL ROAD
BARTONS LANE
BICYCLE WALKING TRACK
SITE ORIENTATION CENTRE
GUIDED TOURS, DISPLAYS, VISITOR INFORMATION ETC.
HYLAND WAY DIVERSION
SCALES ROAD
PERIMETER PLANTINGS OF WETLAND SPECIES AROUND WETLANDS
LOY YANG 'A'
LOY YANG 'B'
LOY YANG POWER STATION
FOLLOWING POWER STATION OPERATIONS REMNANTS OF GENERATING PLANT TO BE LEFT FOR 'ELECTRICITY GENERATION DISCOVERY WALK' TO INCLUDE INTERACTIVE SIGNAGE INFORMING VISITORS OF THE METHOD OF GENERATION AND PICTORIAL REPRESENTATION OF THE FORMER POWER STATION WITH ITS OPEN CUT AND OVERBURDEN DISPOSAL OPERATION
POWER STATION VIEWING AREA
BICYCLE/WALKING TRACK
0 500 1000M
ORIGINAL SCALE
LOY YANG POWER
DRG.No. LV65/1-14/006
DPS Pty.Ltd.
CIVIL ENGINEERS & ENVIRONMENTAL DESIGNERS
LOY YANG POWER
COAL EXTRACTION AREA
EXTENDED BLOCK 2 OPTION
REHABILITATION CONCEPT PLAN

FIGURE 15

FIGURE 16

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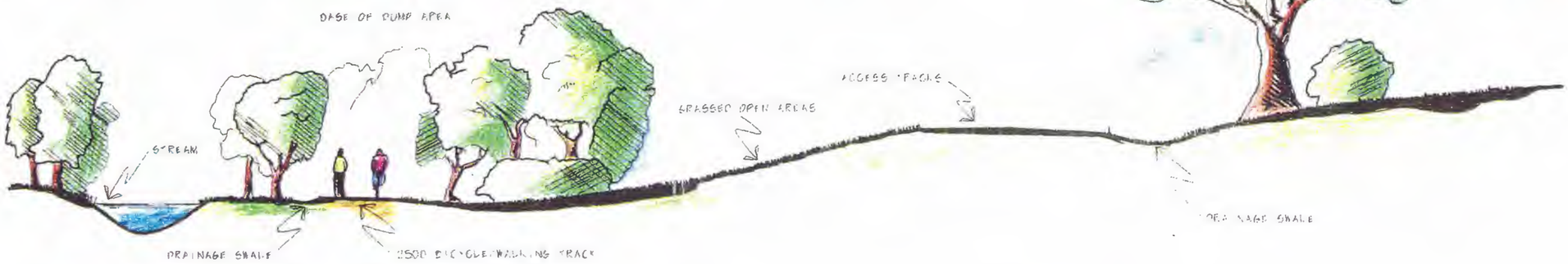
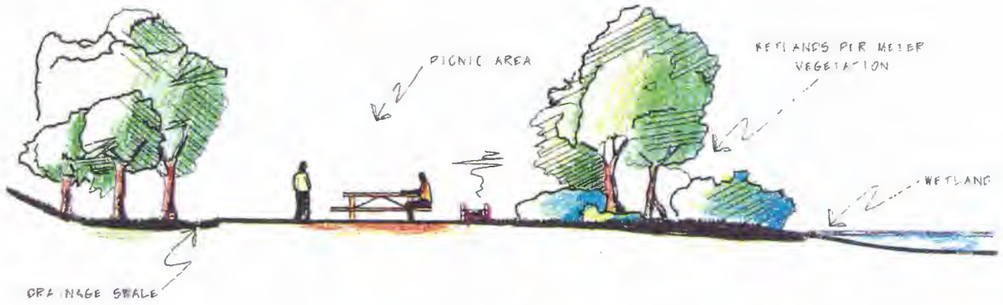
DRG.No. LV65/7-14/005

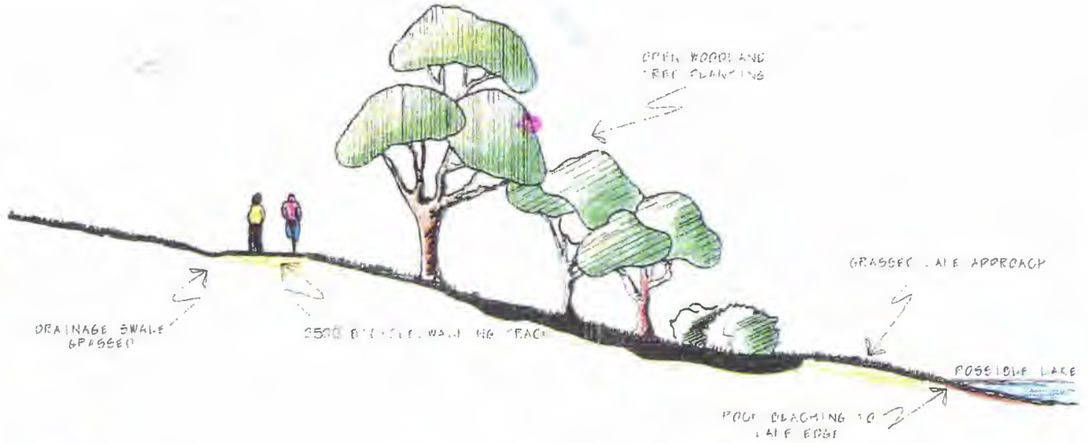
LOY YANG POWER
OVERBURDEN DISPOSAL AREA
7 LEVEL DUMP OPTION
REHABILITATION CONCEPT PLAN



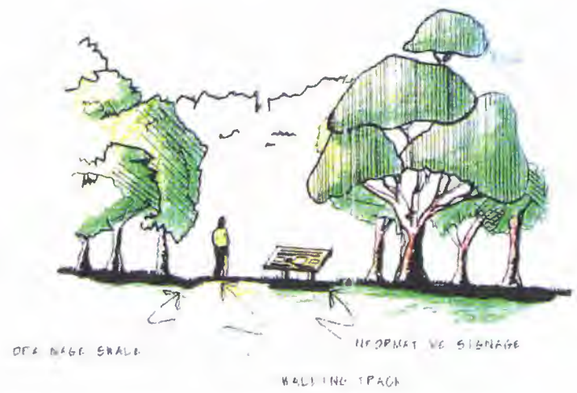
TYPICAL SECTION REHABILITATED OVERBURDEN DUMP



TYPICAL POND PASSIVE RECREATION AREA



TYPICAL SECTION OF POSSIBLE LAKE APPROACH



TYPICAL SECTION NATURE WALK

FIGURE 17

D P S PTY LTD
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Ph.(03) 639 3088 Fax (03) 639 2161

PRODUCTION TECHNOLOGY BUSINESS CENTRE
MINE PLANNING AND GEOTECHNICAL SECTION

LV65/1-14/007

LOY YANG MINE
REHABILITATION CONCEPT PLAN
TYPICAL DETAILS

SCALE N.T.S
DATE JUNE 1994
REF NO. T1970C30

LEGEND

- OPERATIONAL AREA BOUNDARY
- MINING LICENSE BOUNDARY
- PROJECT BOUNDARY
- UNDISTURBED LANDS / FOREST
- PLANTATIONS
- AREA REHABILITATED TO DATE
- 1996/97
- 1997/98
- 1998/99
- 1999/2000
- 2000/01
- 2001/02

MINE

OVERBURDEN DUMP

TOPSOIL STRIPPING

CURRENT EXTENT OF MINE

POWER STATION AND CONSTRUCTION STORAGE AREA CURRENTLY EXCLUDED FROM REHABILITATION PLAN

'A' STATION

'B' STATION

FOREST

ASH POND

FIRE SERVICE RESERVOIR

COAL PRODUCTION COMPLEX

CONTRACTORS AREA

TRARALGON TIP

MOTO-X TRACK

SOUTH RETENTION POND

NATURAL FILTER

OVERBURDEN RUNOFF POND

CHEMICAL TREATMENT

NORTH RETENTION POND

TOWER STATION SETTLING POND

DREDGER EJECTION SITE

TRARALGON CREEK ROAD

NORTHWEST LINE

WATERHOUSES TRAIL ROAD

KENNEDYS CREEK ROAD

KENNEDYS CREEK

KENNEDALE ROAD

HYLAND WAY

SHEEPWASH CREEK

WETLAND

PROJECT BOUNDARY

OPERATIONAL BOUNDARY

COAL RESERVE

414 000 E.

415 000 E.

416 000 E.

417 000 E.

418 000 E.

257 000 N.

258 000 N.

259 000 N.

260 000 N.

261 000 N.

262 000 N.

263 000 N.

264 000 N.

0 500M 1000M 1500M

ORIGINAL SCALE

FIGURE 18

LOY YANG POWER

Drg.No. LV65/1-14/005

PAGE No.

REF.No.

SCALE 1:25000

APPROVED ENVIRONMENTAL OFFICER

APPROVED MINE MANAGER

DATE AUGUST 1998

LOY YANG MINE REHABILITATION MASTER PLAN FIVE YEAR PROGRAM 1996/7 - 2001/2

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REVISION	DATE	No.	DESCRIPTION	APPR'D

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CIVIL ENGINEERS & ENVIRONMENTAL DESIGNERS
6th. Floor 6 Market Street Melbourne 3000 Ph.(03) 9629 3099 Fax. (03) 9629 3151
Suite 6c 1st Floor 2-8 Church St. Morwell Ph.(051) 330823

DRAWN	R. MONKHOUSE DPS
CHECKED	DPS
DESIGNED	DPS
APPROVED	DPS

WASTE WATER DISCHARGE
OVERBURDEN RUNOFF SYSTEM DISCHARGE (L170)
PART LICENCE No LX000011/0
CHECK DAILY MONITORED CONTINUOUSLY
TESTING INTERNALLY - TWICE WEEKLY
TESTING EXTERNALLY - WEEKLY

WASTE WATER DISCHARGE
COMBINED OVERBURDEN RUNOFF
DISCHARGE & MAIN DRAIN DISCHARGE
LICENCE No LX000011/0
MONITORED CONTINUOUSLY
TESTING EXTERNALLY - WEEKLY

WASTE WATER DISCHARGE
DREDGER ERECTION SITE (L150)
PART LICENCE No LX000040/8
CHECK DAILY
TESTING INTERNALLY - TWICE WEEKLY
TESTING EXTERNALLY - WEEKLY

WASTE WATER DISCHARGE
NORTH WEST CORNER SOLAR TREATMENT
STATION (L160) PART LICENCE No LX000040/8
CHECK DAILY
TESTING INTERNALLY - TWICE WEEKLY
TESTING EXTERNALLY - WEEKLY

OVERBURDEN DUMP
LAND MANAGEMENT AND
REHABILITATION PROGRAM

LOY YANG A POWER STATION
WASTE TO ATMOSPHERE
STACK EMMISSIONS
LICENCE No LA 119/3

WASTE DISCHARGE TO LAND
HARD CORE RUBBISH DUMP
LICENCE No LS 269/7

ASH POND
WASTE TO LAND
LICENCE No LS 25401

BUNKER HOUSE & CRUSHER HOUSE
WASTE DISCHARGE TO ATMOSPHERE
LICENCE No LA 000119/3

WASTE WATER DISCHARGE
OCEAN OUTFALL
SALINE WASTE OUTFALL PIPELINE (SWOP)
LICENCE No EW449/1

TRARALGON CREEK
SETTLING POND
SOUTHERN RETENTION POND
FLOCCULATION PONDS
NORTHERN RETENTION POND
TRARALGON SOUTH FLORA & FAUNA RESERVE
DREDGER ERECTION SITE
LOY YANG MINE
TRARALGON TOWNSHIP
TRARALGON TIP
PRINCES HIGHWAY
V/LINE RAILWAY
NORTHERN O/B WASHDOWN SETTLEMENT POND
OVERBURDEN DUMP
CONTOUR DRAIN
SOUTHERN O/B WASHDOWN SETTLEMENT POND
CLARIFICATION PLANT
LOY YANG A POWER STATION
RAW COAL BUNKER
LOY YANG B POWER STATION
LOY YANG PROJECT CONSTRUCTION ACCOMMODATION YARD
ASH POND
FIRE SERVICE RESERVOIR
SALINE WASTE OUTFALL PIPELINE (GIPPSLAND WATER)
OVERFLOW
SWOP
FLYNNS CREEK
M.R.D.A. MINING LICENCE BOUNDARY
MELROSSA ROAD
PERIMETER ROAD
MANNIEDALE ROAD
SHEEPWASH CREEK
HIGHWAY
HYLAND
BARTONS LANE
BALTRACKS ROAD
LEVEL 3

W S N E

250 0 200 400 600 800 1000

REFERENCE DRAWINGS

REVISION

GEO-ENG
Grotechnical, Environmental, Groundwater, Geological, Civil and Mine Engineering

Morwell Office: Locked Bag 5 Morwell 3840 Australia
Ph. 61-51-33 908 Fax. 61-51-33 9679

Melbourne Office: 20 Business Park Drive Notting Hill 3168 Australia
Ph. 61-3-9558 8333 Fax. 61-3-9558 8444

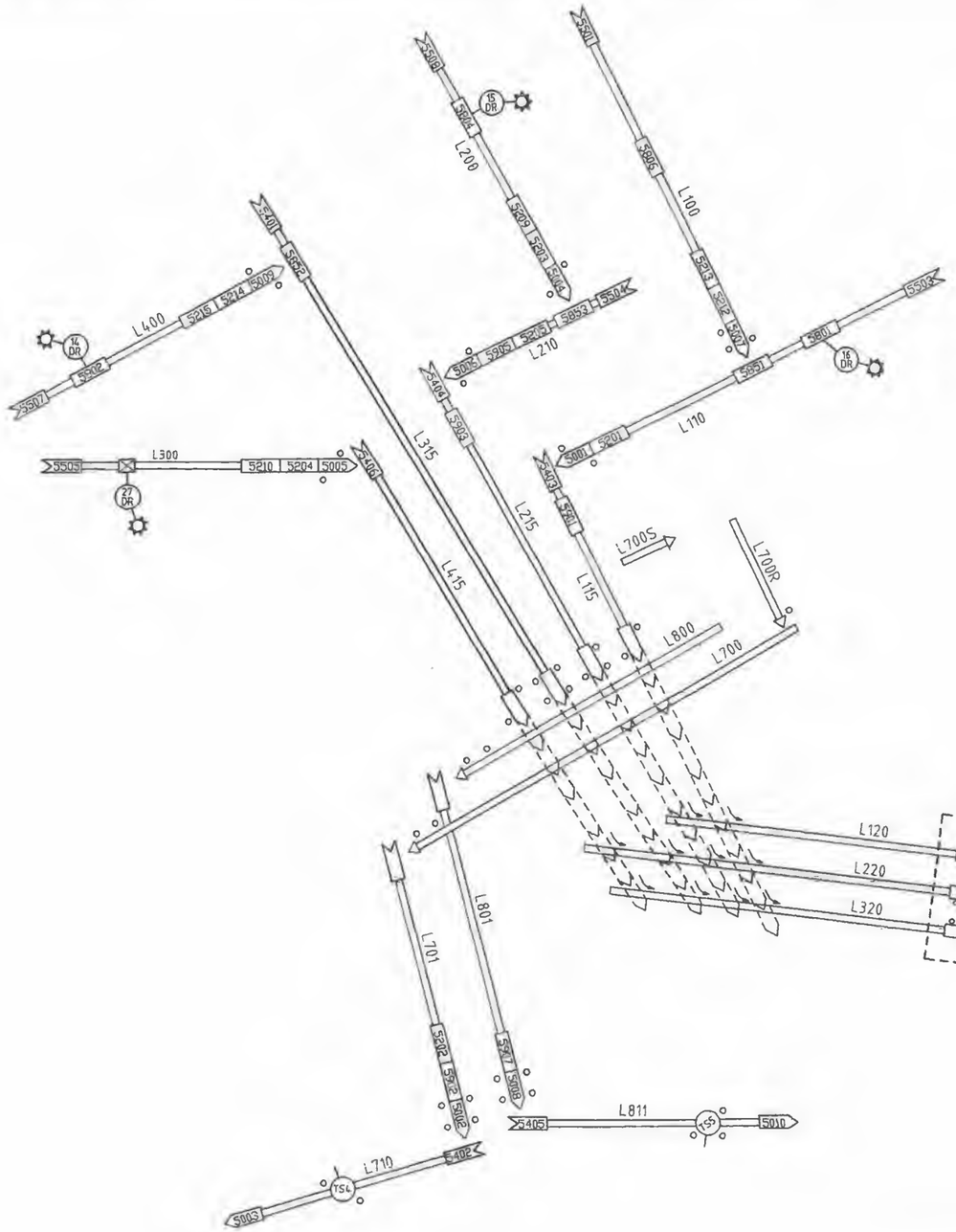
DRAWN S. VERHELLEN
CHECKED
SCALE
REF. No
DATE JULY 1996
5-147-27
APPROVED (PROGRAM MANAGER GEO-ENG)
APPROVED (GENERAL MANAGER MINE)

LOY YANG POWER LTD

FIGURE 19
LV65/1-13/013

LOY YANG POWER
WORK PLAN SUBMISSION
ENVIRONMENTAL MONITORING
WATER, ASH, LAND & AIR PROGRAMS

LOYYANG



CONVEYOR	MOVABLE UNITS: DRIVE HEAD	TRAILING FRAME	SECONDARY TRLG FRAME	TURNOVER FRAME	HOPPER TRAVELING	HOPPER MOVABLE	TAIL END	LOADING BOOT (TAIL END)
L100	5007	5212	5213		5806		5501	
L110	5001	5201			5801	5851	5503	
L115				5901				5403
L120								
L200	5004	5203	5209		5804		5508	
L210	5006		5205	5905		5853	5504	
L215				5903				5404
L220								
L300	5005	5204	5210				5505	
L315						5852		5401
L320								
L400	5009	5214	5215		5802		5507	
L415								5406
L700								
L700R								
L701	5002	5202		5902				
L710	5003							5402
L800								
L801	5008			5907				
L811	5010							5405
SPARE		5206	5211	5904	5803		5502	
		5207		5906	5805		5506	
							5509	

FIGURE 20

REVISION	DATE	REV	W/O NO.	REMARKS	CHECKED	APPROVED
	8/8/96	M	96003811	UPDATED	CB	
	16/5/95	L		UPDATED		
	15/8/94	K		UPDATED		

ACTIVE SCALE	1:1	W/O	310890/169
DRAWN	I.KAIK	CHECK	-
DRAFTING CHECK	CB	DATE	8/8/96
DESIGNED	-		
DESIGN APPROVAL		CAT	3
MANAGER			
CLIENT/ENG. LYM APPROVAL			
LYM MANAGER			

LOYYANG power

CONTRACTOR DRG. NO.	-
SHEET NO.	-

LOY YANG MINE

LV49/1-5/008 REV M

LOY YANG MINE
COAL & OVERBURDEN CONVEYOR SYSTEM

LYP STD A2

400 X 566

A2