W. Brown

HAZELWOOD

POWER CORPORATION

FIRE SERVICE POLICY

&

CODE OF PRACTICE.

" The Fire Service Policy for H.P.C. Mine,

Bunkers and their Environs is to ensure adequate: "

Management Accountability

Preparedness and Planning

Training of Personnel

Installed Fire Protection Systems

Fire Extinguishing Capability

Emergency Proceduers.

To reduce the potential of fire initiation, to rapidly extinguish any fires and to minimise the risk to personnel and plant.

Revised 04 / 12 / 1995 Bill Brown.

HAZELWOOD POWER CORPORATION	H.P.C FIRE POLICY & CODE OF PRACTICE Quality Assurance Hazelwood Power Corporation		
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PURPOSE

The purpose of this Policy is to:

- Establish a clear strategy and standard for open cut fire protection.
- Ensure an understanding and awareness of the effects of fire and the requirements of fire protection in open cut mines.
- Provide a framework which ensures that fire protection objectives are co-ordinated, coherent and translatable into action.

INTRODUCTION

This Fire Service Policy and associated Code of Practice contains the essential requirements and operating procedures for the mine environs.

Of prime importance is the protection of fire protection services to be provided for mining operations and safety to all personnel and to ensure minimisation of risk to high capital assetts.

Recognition is given to the high risk during adverse weather conditions of fires emanating from external sources (bushfires) entering the open cut. Also, throughout the year there are many internal sources of fires from installed plant, trains, vehicles and mobile equipment, personnel and work activities within the mine, external conveyors and bunker systems. Large quantities of combustible materials such as coal, oil, conveyor belt etc. exist in the open cuts. Experience has shown that extinguishing open cut fires is difficult and time consuming and can only be successfully achieved by adequate preparation of personnel and the provision of appropriate equipment and emergency procedures.

The General Manager Operations is responsible for ensuring the policy requirements are met.

This policy fulfils the requirements of the Country Fire Authority Act 1958 for protection against fire, and the Emergency Management Act 1986 for control by the Co-ordinator in Chief, should a significant event occur.

The Policy recognises the CFA Chief Officers Standing Order relating to "CFA and Hazelwood Power Corporation joint emergency operations in the Hazelwood Mine".

The Code of Practice outlines acceptable standards for meeting the policy throughout the mine and its environs. These standards include the protection of personnel, plant and equipment exposed coal and boundaries, and the provision of resources for protection, water reticulation, mobile water supply, mobile plant and equipment, organisation, communications and Fire Instructions. The Code Of Practice also lists acceptable materials and practices and the appropriate approval procedure for extending these lists.

BACKGROUND

This policy has evolved over many years of open cut operation and draws on the experience gained from general fire service operation and from several major open cut fires. These major events include:

- Recommendations. re the Stretton Royal Commission carried out in 1944 made a number of significant recommendations relating to external forests and to internal water supply and sprays which are still a major part of this Policy today, also following the 1977 fire at Morwell Open Cut a comprehensive review of fire protection was carried out and the basis of the current Policy was laid down.

STATUTORY REQUIREMENTS

- This Policy fulfils the requirements of the relevant emergency services acts with particular reference to Section 43(1) "It shall be the duty of every municipal council and every public authority to take all practicable steps (including burning) to prevent the occurrence of fires on and to minimise the danger of the spread of fires on or from - any land vested in it or under its control or management".

Notwithstanding, Section 20 of this Act gives the Country Fire Authority "The the following:

- **Country Fire Authority Act 1958**

- duty of taking superintending and enforcing all necessary steps for the prevention and suppression of fires and for the protection of life and property in case of fire".

- Section 30 gives the Chief Officer of the Authority powers to take control and direction which may be exercised "Where the Chief Officer believes on reasonable grounds that there is danger of fire occurring or where a fire is burning or has recently been extinguished".

- **Emergency Management Act 1986**

Sections 6 and 16, gives the Coordinator in Chief of Disaster Control, or other delegated person the authority to ensure that adequate measures are taken by Government Authorities to prevent and respond to emergencies and to assume a coordinating role in the implementation of DISPLAN. (This is applicable to an actual or imminent occurrence of fire).

- **Dangerous Goods Act 1985 and regulations (1990)**

- Section 4 states objectives of the Act which among other things
"promote the safety of persons and property" in relation to dangerous goods, and "ensure that adequate precautions are taken against certain fires, explosions," etc.

- **Occupational Health and Safety Act 1958**

- Section 21. "An employer shall provide and maintain so far as is practicable for employers a working environment that is safe and without risks to health.".

POLICY PRINCIPLES AND OBJECTIVES

This Fire Service Policy and Code of Practice is based on the establishment of a system of fire protection in open cut mines, to achieve the following principles:

- protection of all personnel within the open cut;

- protection of all plant and equipment required for the maintenance of coal winning operations;

- protection of coal reserves;

The policy is to prevent or extinguish any fire which may threaten the coal winning activities, and to restore normal operating conditions as early as possible after a fire.

Different levels of protection are defined for various areas of the mine based on the risk to personnel, plant, equipment and coal reserves, and the consequences should a fire occur.

The necessarily large area of exposed coal requires an extensive water reticulation, spray network as well as an adequate water supply. The measures laid down in the Code of Practice are those considered to provide the necessary level of protection with due regard to cost and operational requirements. Fire protection in the mine is based on the following objectives:

- Define and continually evaluate mine fire safety programs, goals and objectives. Formulate and revise emergency response and recovery plans and fire instructions.

- Ensure fire prevention and suppression works are pre-planned and coordinated with neighbours and relevant agencies likely to be affected by mine activities.

- Integrate fire safety procedures into all work activities and planning in the mine.

- Provide and maintain an adequate communications system to mobilise and coordinate fire fighting facilities.

- Provide adequate water supplies, reticulation systems and spray systems, together with the trained personnel necessary for the operation of these systems, to prevent or suppress fires.

- Provide adequate training skills, facilities and exercises (Including participation with other relevant agencies) to ensure that each employee understands the appropriate techniques and mine procedures for fighting brown coal fires and undergoes refresher training sessions at regular intervals.

- Reduce excesses of loose dry coal in the open cut, conveyors and coal bunker areas, through the application of appropriate design measures,monitoring ,and regular washing down exercises.

- Effective limitations on ignition sources such as cutting and welding, mobile equipment and motor vehicles and safe storage of potentially inflammable materials.

- Effective land use planning controls and management of forested, wooded or grassed areas external to the open cut to inhibit the progress and effect of an external fire.

- Provide and maintain adequate back-up facilities to fight and control any fire.

- Continually monitor changing fire protection codes and standards, especially nationally recognised documents that set benchmarks for open cut mining.

- Monitor and evaluate all open cut fire incidents and losses, and monitor experience in other mining operations to identify and address loss potential..

In order to properly protect all parts of the mine, pipework, sprays and other facilities for fire service are to be installed as laid down in the Code of Practice.

CODE OF PRACTICE

The Fire Service Code of Practice is part of the Policy. It contains standards of fire protection to be maintained for various locations and acceptable items of equipment to be used in the open cut mines and surrounds. The Code of Practice is presented in the format of a Quality Assurance Procedures Document. It details the required procedures and practices, the responsibilities, and documentation required to ensure the procedures and practices are maintained.

Improvements in Fire Protection equipment and methods are on-going and the Code of Practice will be the vehicle through which new procedures and practices are approved for general implementation.

HAZELWOOD POWER CORPORATION MINE

FIRE SERVICE CODE OF PRACTICE

Revised September, 1995

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FIRE PROTECTION CODE OF PRACTICE

A. PURPOSE

The purpose of this Code of Practice is to achieve the Fire Protection Policy requirements by providing acceptable operating procedures for fire protection services for Mining Operations. This will be provided by:

- Establishing a clear strategy and standard of open cut fire protection, (a) to protect all personnel within the open cut, (b) to protect all plant and equipment required for the maintenance of coal winning operations, and (c) to protect coal reserves to enable continuation of coal winning activities.
- Ensuring all personnel associated with the open cut mines or the fire service systems have an understanding and awareness of the effects of fire, the requirements of fire protection, and are aware of their responsibilities.
- Providing a framework which ensures that fire protection objectives are coordinated, coherent and translatable into action and to ensure that these objectives are carried out.
- Ensuring that relevant statutory regulations are met and that a cooperative and coordinated approach is undertaken with relevant statutory authorities. ie. CFA.
- Ensuring that the equipment used for fire service activities meets relevant operational standards.
- Setting procedures for the testing of new equipment and practices before approved for general use in the open cuts.

B. SCOPE

This Code of Practice is applicable to The Hazelwood Power Corporation Mine in the Latrobe Valley.

C. DEFINITIONS

RESPONSIBLE PERSONNEL

- **Emergency Services Liaison Officer** - The person responsible to ensure proper liaison occurs between Hazelwood Power Corporation and the external emergency agencies.
- **Fire Service Officer** - The person responsible for the day to day fire service activities within the mine.
- **Hazelwood Power Corporation Emergency Commander** - The senior mine Supervisor/Officer who may take control of Hazelwood Power Corporation resources if an emergency exists.
- **Incident Controller (Or DISPLAN Coordinator)** - The senior officer of an external agency which may take control of an emergency involving the mine.
- **Mine Operations Manager** - The person responsible for all activity within the mine and who has the principal management function.
- **Shift Production Manager**- The person responsible for fire service activities within the mine outside normal day work hours until such time as the Fire Service Officer or a Senior Officer takes control.

MINE AREA

- **Batters** - The individual steeply sloping surfaces between working levels OR the overall batter from the bottom of the mine to grasslevel consisting of individual batters, benches and berms.
- **Benches** - The relatively flat surfaces created by the individual working levels.
- **Berms** - Relatively flat surfaces created in batters between working levels to stabilise the batter or intercept fretted material.
- **Bunker** - A structure used for the short term storage of mined coal prior to its use in a power station or other means.

Exposed Coal Areas - All areas of exposed coal within the mine.

- **Operating Areas** - Those areas where excavation or transport plant operate, including working and transport levels, reserve coal areas, regular travel routes for dredgers and slew conveyors, and service corridors for essential operational services.

- **Reserve Coal Areas** - Those areas of exposed coal between adjacent face conveyors but not including the conveyor corridor and the excavation plant operational Corridors.

- **Transport Level** - An individual level within the mine on which a face conveyor is located

- **Transfer Point** :- A point where two or more conveyors meet to discharge coal or overburden , normally a concreted area.

- **Worked Out Batters** - Those batters within the mine not regarded as being within operational areas.

- **Worked Out Floor** - Those floor areas within the mine not regarded as being within operational areas.

- **Working Level** - An individual level within the mine from which excavation plant operates. (NOTE: If a dredger operates on more than one level, all of these levels are defined as working levels.)

- **Fire alert** - A day of extreme fire danger in the H.P.C Mine environs where special precautions are undertaken to minimise the risk of fire outbreak

- **Tanker Filling Point** - An area where a mobile tanker can refill with water, can be a stand pipe or a 4 hydrant manifold.

- **Percolating Fire Hose** - A hose that sweats water when charged, to eliminate burning when engaged in a coal fire

- **Permanent Fire Break Zone. (Zone 1).** - An area that is not able to sustain fire

- **Fuel Reduction Zone. (Zone 2).** - An area of combustionable material that is to be reduced before the proclaimed fire season.

External Zone (Zone 3) - Areas outside the Hazelwood Power Corporation boundaries which could be considered a threat to the Hazelwood Mine.

Refer to Appendix A.1 for a diagrammatic layout of the various mine features.

PLANT

Excavation Plant - Bucket wheel excavators /dredgers.

Pipelines - For purpose of definitions, pipelines should be referred to in descending size from the reservoir as:

- Main supply lines
- Ring mains
- Feeders
- Droppers
- Header feeders
- Headers

Refer to Appendix A.2 for a diagrammatic layout of these pipes.

Transport Plant - Conveyors of various categories ie Face Conveyors, Mobile Slew Conveyors, Trunk Conveyors, Rising Conveyors, Stackers. (For both coal and overburden)

D. PROCEDURES AND PRACTICES

The detailed procedures and practices which fulfil the Fire Service requirements are contained in Sections 1 to 9 of this Code of Practice.

E. RESPONSIBILITIES

All personnel are responsible to:

- be alert and on watch for any outbreak of fire,

- take action to extinguish any fire immediately it is observed, etc.
- report the fire to the Fire Service Officer as soon as possible,
- assist other personnel already fire-fighting,
- advise the Fire Service Officer of any fire hoses, fire extinguishers or any other fire-fighting equipment that has been used so that replacement can be maintained.

Use fire-fighting equipment only for fire fighting purposes unless authorised by the Fire Service Officer, and report to the Fire Service Office any missing or incomplete fire-fighting equipment.

Fire Instructions at HAZELWOOD POWER CORPORATION MINE will detail specific responsibilities for the Mine Operations Manager,, Fire Service Officer, Shift Manager and other personnel who work at the mine. Some specific responsibilities as outlined in this Policy and Code of Practice are highlighted below and referenced to the pertinent section.

The Mine Operation's Manager is responsible for all fire protection within the Mine and the surrounding associated area as outlined in this Policy and Code of Practice. Specific responsibilities include:

- Authorisation of fire instructions and emergency procedures, (See Sections F and 7.7)
- Ensuring fire service audits are carried out and recommended corrective actions taken, (See Section F)
- Declaration of fire alert days. (See Section 7.8)
- Notification to the CFA where a fire has the potential to spread beyond the initial point of ignition or for other emergency situations. (See Section F)
- The Fire Service Officer is responsible to comply with this Policy and Code of Practice for the day to day fire service activities within the mine. Specific responsibilities include:

- Monitoring and reporting on the status of the mine in relation to this Fire Service Policy and Code of Practice. (See Sections F and 1 to 9)
- The operation and maintenance of the fire protection installations and related services in the mine. (See Sections 1 to 9)
- Fire fighting operations.
- Reporting all fires. (See Section F)
- Providing support to the CFA Incident Controller or the DISPLAN Coordinator, where required, in the event of an emergency situation.
- Inspecting all fire fighting equipment.
- Training all personnel in fire fighting methods.
- Issuing of welding and burning permits and defining precautions. (See Section F).
- Arranging approval of vehicles for access onto coal areas within the mine. (See Sections F. 4.3 and 4.4).

Shift Production Manager is responsible for the activities of the Fire Service Officer outside of normal day work hours or until relieved, and for the following:

- Reporting all fires to the Fire Service Officer or Fire Service Availability Officer.
- Ensuring all personnel follow Fire Instructions.
- All Hazelwood Power Corporation Engineers have the responsibility to ensure all work under their control meets the requirements of this Policy and Code of Practice.

Installation Engineer/s have the responsibility to ensure that all fire service installation work under their control meets the requirements of this Policy and Code of Practice

F. DOCUMENTATION

Documentation and reporting required to be carried out by the mine as part of the fire service procedures includes the following:

- Emergency Control Procedures for various situations where there is a threat to mine assets or personnel. Fire Instructions and the Fire Fighting Organisation shall form part of these procedures which will be updated by the beginning of October each year.

- An annual internal audit of all fire service facilities, systems, and procedures, to ensure compliance with both Statutory Requirements and the requirements of this Policy and Code of Practice. The General Manager Mining Operations shall arrange for a formal inspection to be carried out and a report presented to him/her in September/ October of each year regarding compliance with the Policy and Code of Practice, action to be taken where non-compliant and the status of fire protection facilities, systems and procedures. Checklists contained in Appendix D are a basis for this inspection and report.

- Reporting immediately to the Fire Service Officer or Shift Production Manager all individual occurrences of fires that occur within and in the near vicinity of the open cut mines.

- Reporting immediately to the General Manager Mining Operations Fire Service Officer, and/or the Shift Production Manager (if out of hours) all occurrences of fire that occur within and in the near vicinity of the Mine where a fire has the potential to spread beyond the initial point of ignition should be reported to the C.F.A District Officer (Refer to Mines Emergency Procedures). A written report is to be submitted to the General Manager Mining Operations subsequent to each of these fires detailing the cause, nature, damage involved, method of control, etc.

- A written report is to be submitted to the General Manager Mining Operations each month outlining the cause, nature, damage involved, method of control, etc.of all individual occurrences of fire.

- A permit must be obtained from the Fire Service Officer during normal day work hours, or Shift Production Manager at other times. before any of the following work is carried out.

- Welding, cutting or grinding;.
- Use of open flame appliances;
- Use of portable internal combustion engines;

NOTE: Before any burning & welding activities take place, a Fireman who has been trained and passed the appropriate test is to be on site. (see attachment No 10 testing of Fireman).

- Restrictions to the issue of permits on Fire Alert Days and Total Fire Ban Days should be understood.
- Approval must be obtained from the Fire Service Officer before any Motor vehicle can be driven on exposed coal areas **Note** under this policy all conveyor transfer points are classed as coal surface,and vehicles without modified exhaust systems are not to enter An inspection for compliance of the vehicles braking and exhaust systems will be required before approval is given.

A testing and acceptance procedure for new materials and methods to ensure that they meet broad compliance within the open cuts and from any other relevant bodies before inclusion in the Code of Practice. Examples of testing and acceptance procedures are contained in Appendix C. (Approval by the General Manager Mining Operations is required before inclusion in the Code of Practice.)

G. REVIEW

A committee of review will be formed as needed to assess and approve new equipment and techniques which meet the required test and acceptance procedures, before inclusion in the Fire Service Code of Practice. The committee will consist of the Mine Operation Manager and nominated representatives from the mine.
New equipment and techniques will be ratified by the General Manager Mining Operations and his committee before inclusion in the Code of Practice. The committee shall first consult with the Corporate Secretary if there is a likelihood of materially increasing Hazelwood Power Corporation's risk.

DETAILED PROCEDURES AND PRACTICES

1. INTRODUCTION

Hazelwood Power Corporation Mine has suffered a number of fires over the years. Many of these have emanated from external "Bush Fires". Following a major fire in 1944 the Stretton Royal Commission made a number of significant recommendations relating to external forests and to internal water supply and sprays which are still a major part of the Fire Prevention Policy. However, fires have also been started from within the mine due to plant malfunctions. Notable amongst these have been fires on Dredgers and belt fires damaging belt, head-ends and rising conveyors. Fires have also been caused by vehicles and mobile plant due to hot exhausts. Although many fires have started from outside, no fire has escaped the mine and entered the external environment.

Due to the methods employed for the extraction and use of Brown Coal in the Latrobe Valley operations, large areas of brown coal are generally exposed in the operating faces, permanent batters and floor of the open cuts. Whilst the coal in its raw state is a high moisture fuel and difficult to burn, it weathers, dries and readily degrades to a fine dust which ignites easily under the right conditions

Potential sources of ignition are frequently present in the form of electrical faults, faulty mechanical equipment, vehicle exhausts, train operations, metal cutting and welding activities, etc.

A fire within the mine can put all nearby machinery and equipment at risk particularly if coal spill or dust accumulates. In an open cut, fire danger to personnel is not great provided that they are not trapped by machinery, buildings, or coal batters and provided that refuge is available from both heat and smoke.

Brown coal fires are best suppressed by the application of water. Wetting of the coal lays the coal dust, and helps to extinguish the fire and prevent it spreading. Large quantities of water are required to extinguish deep seated burning, and often when burning coal is wetted, sufficient heat remains to dry out the surface again and to allow the fire to re-establish. There are special techniques required to deal successfully with brown coal fires

This Code of Practice is based on the adoption of sensible precautions as well as the establishment of a system of fire protection in open cuts, (a) to protect all personnel within the open cut. (b) to protect all plant and equipment required for the maintenance of coal winning operations. and (c) to protect coal reserves to enable continuation of coal winning activities. The aim is to prevent or extinguish any fire which may threaten the coal winning

activities, and to restore normal operating conditions as early as possible after a fire. Training of all personnel in the fire fighting methods and procedures is an integral part of preparedness for combating fires.

Different levels of protection are defined for various elements of the mine based on the risk to personnel, plant and equipment and coal reserves, and the consequences should a fire occur.
In the following procedures and practices the levels of protection to be provided are defined and acceptable materials and procedures which can be used are outlined.

2. PLAN OF PROTECTION

The necessarily large area of exposed coal requires an extensive reticulation and spray network and water supply system. The water supply and fire protection measures laid down in the body of this document are those considered to provide the necessary level of protection with due regard to cost and operational requirements. Fire protection in the open cuts is based on the following principles:

- An organised approach to prevention and suppression of fire and the formulation of emergency response plans and fire instructions.
- The use of an adequate communications system to mobilise and coordinate fire fighting facilities.
- The use of approved & tested fire fighting equipment and fittings.which are compatible with outside combat agencies.
- The provision of water supplies, reticulated water and spray systems together with the trained personnel necessary for the operation of these systems to prevent or suppress fires **Note. Whenever pipelines are to be disconnected from the water supply, all efforts must be made to have water restored back to the affected line before the end of the shift..If this is unachievable a temporary water supply is to be set up.**
- The provision of adequate training sessions and exercises to ensure that each employee understands the appropriate techniques and mine procedures for fighting brown coal fires and undergoes refresher training sessions at regular intervals.

- The reduction of loose dry coal in the open cut, conveyors and coal bunker areas, by the application of appropriate design measures in conjunction with constant monitoring and wash down exercises where coal build up could become a fire hazard.

- The control of sources of ignition such as cutting and welding, mobile equipment and motor vehicles and the safe storage of potentially inflammable materials.

- The effective limitation and management of forested, wooded or grassed areas external to the open cut to inhibit the progress and effect of an external fire.

- Provision and maintenance of back-up facilities to fight and control any fire.

In order to properly protect all parts of the open cut, pipework and sprays are to be installed as laid down by this Policy and Code of Practice. However, it must be understood that a larger water supply system would be required to run all the sprays and protection systems simultaneously. This policy provides for a diversity in the simultaneous application of the fire protection water supplies and distribution.

The maximum demand as defined in this Code of Practice is an allowance of water usage upon which the design of the water supply system is based. The maximum demand rate of water use is considered to be sufficient to meet any likely contingency within the open cut. The distribution of this allowance of water usage is reasonably flexible for any situation but the use of more water than allowed for in one area may cause a reduction in the performance of the system.

3. EXPOSED COAL

3.1. OPERATING AREA

Fire equipment such as fire hoses fire extinguishers etc to be strategically placed throughout the operating area.(*see appendix B.11&B.12 for locations, sizes, & quantities etc* .). The operating area is to be protected by wetted corridors established along the working levels. Pipelines and sprays are to be provided such that if all sprays on working levels were to operate simultaneously under light wind conditions:

- A minimum of 50% of exposed coal on working levels would be wetted at a rate of at least 6 mm/hour.

- The wetting down would be such as to provide intersecting corridors of wetted coal. The width of the wetted corridors should be a minimum of 50 metres. The unwetted coal areas should not exceed 12,500 m2 in area with a maximum dimension in any direction of 250m. Portable or readily relocatable sprays are to be used if necessary to achieve this requirement.

Appendix A.3 shows examples of this protection.

3.2 CONVEYOR AND RAIL TRANSPORT CORRIDORS

3.2.1 Batters

Exposed coal on all batters within each corridor is to be capable of being continuously wetted using rotary sprays located on the bench below each batter .

3.2.2 Berms

All berms within the transport corridor are to be clay covered and where practicable graded such that they shed fretting coal or permit clean up thereof. Alternatively coal berms should be water protected as per benches, section .3.2.4

3.2.3 Benches Supporting Conveyors

Benches supporting conveyors are to be clay covered except those supporting face conveyors.

3.2.4 Benches Without Conveyors

Benches without conveyors are to be either clay covered or to come under the protection of the batter rotary spray system. Any additional sprays should be located so that the unwetted coal areas do not exceed 12,500 m2 in area with a maximum dimension in any direction of 250 metres.

3..3 SERVICE AREAS AND CORRIDORS

Service areas such as power supply corridors control system corridors, power distribution centres, pumping stations, access roads and escape routes shall be protected as follows:

- Power supply corridors and control system corridors are to comply with the reliability criteria, clay covering and water protection required for pole lines and cables as laid down in Section 4.5.

- Power distribution centres are to be located on clayed surfaces, of a minimum of 75 mm thickness, with at least 5 m of clayed surfaces beyond the perimeter of the power distribution centre.

- Pumping stations are to be located on clayed surfaces and comply with requirements for protection of power supply and control systems.

- Access roads internal to and on the perimeter of the open cut should be clearly sign posted and kept clear for emergency use.

3.4 WORKED OUT BATTERS

As a minimum requirement worked out batters are to be protected as follows:

- All benches are to be clay covered.

- All berms are to be eliminated by trimming or by filling with clay such as to shed fretted coal provided that batter stability calculations indicate that neither of these options will cause batter failure.

- Tanker filling points are to be provided such that a tanker on any part of the worked out batters is within 5 minutes travel of a tanker filling point .**NOTE** in the absence of tanker filling points a 4 hydrant manifold will suffice Fixed sprays should be used in conjunction with the droppers for the tanker filling points in order to provide wetted breaks.

Alternatively:

- Where practicable, fire break zones extending down to full depth of each batter may be utilised such that the length of exposed coal in any one batter is not greater than 500 m. These zones can be in the form of metalled vehicle access ramps or clay covering, a minimum of 8 m wide.

Appendix A.4 shows examples of this protection

3.5 WORKED OUT FLOOR OF THE MINE

The worked out floor of the open cut as excavated, normally consists of low grade coal and overburden.Ultimately these areas are used for overburden disposal or water storage which eliminates fire risk. Whilst exposed, fire protection is based on the provision of

intersecting fire break zones across the floor of the open cut in the form of clay covering and the provision of tanker filling points as outlined in Section 3.4.Individual exposed coal areas left by these fire break zones shall be no greater than 12,500 m2 in area..

For the period between exposure of the floor and the completion of clay fire break zones or the establishment of ponds or overburden dumps, protection shall be by the provision of wetted corridors as required for working levels.

To provide protection to the operating levels from fires spreading along the floor of the open cut, a clay fire break zone or a single header with sprays will be provided at no greater than 100 m from the toe of the bottom working level.

Appendix A.1 shows an example of the various Mine areas.

4. PLANT AND EQUIPMENT

4.1 Dredgers, Stackers, Mobile Slewing conveyors and other major excavating plant

The protection of dredgers and other major machines shall be based on the principle of protecting each machine where it stands by providing:

- A charged water supply of adequate capacity adjacent to the machine, fitted with a 4 hydrant manifold every 83 metres.(**NOTE** *All fire hydrants are to conform to specifications see attachment No 2 for hydrant specifications*)when unattended or non operational, machines are to be connected to this supply. A minimum pressure of 40 metres head at each rotary spray (or sufficient head to operate each rotary spray adequately, whichever is greater) is required for effective operation when all machine water outlets are operating.

- Sufficient number of rotary sprays to provide a spray curtain to protect the machine against airborne combustibles. Stackers not subject to airborne combustibles are exempt from this.

- Such additional sprays to the above as required to provide a saturated island for the machine to stand on. Stackers or other major plant which operate on a clayed area are exempt from this.

- All rotary sprays are to be capable of being operated from ground level.

- A spray system and equipment to protect the machine from fires occurring within the machine including

a. Sprayline protection will consist of 2x38 mm diameter Birdsmouth Spraylines **minimum**, fitted to both sides of the conveyor with Birdsmouths spaced at 3.6m intervals along its entire length Where machines are fitted with spill belts, the above will also apply.*(see appendix B.1)*..

b. Fire hose reels conveniently located throughout the machine

c. An adequately sized water storage tank capable of providing a supply to the hose reels when the machine is not connected to the charged water supply.

d. Portable extinguishers of appropriate type conveniently located throughout the machine.*(for location, size, type, and quantity see appendix no B.12).*

- Protection of power supply system by locating it within a clayed or wetted corridor

- Provision of fire resistant conveyor belting on dredgers. Provision of flame resistant impact idlers on all major plant. Consideration to be given to need and justification for fire resistant conveyor belting on mobile slew conveyors and stackers taking into account the size of machine and its influence on open cut reliability.

4.1.1 Protection requirements for Dredgers,Stackers,Mobile Slew Conveyors and any other major plant out under maintenance

Protection requirements for Dredgers,& other major plant will be based on protecting each machine where it stands by providing the following:-

- Plant to be connected to a water supply. **Note, if plant is to be connected to water supply by fire hose, 90 millimetre percolating hose is to be used.**

- A water supply strategically set up so that it can be capable of being directed under pressure to any part of the machine and have the capacity of extinguishing a large fire (eg. a 150millimetre water monitor.).

- A Burning &Welding Permit will be required daily to cover any burning & welding activities on plant, or any appliance using naked flame for cooking,

heating, or any other purpose (permit to be obtained from Fire Service during D/shift &Shift Manager after hours.)

For Burning &Welding purposes it is essential that percolating fire hose be used(*see appendix B.2 for appropriate percolating fire hose*) from the water supply to the machine ,however their will be times when this could cause problems .In this case the Fire Services Supervisor and a representative from the maintenance group will meet and come to some alternative arrangement

If during any maintenance activity any part of the fire service water supply system is disconnected, the Fire Service Supervisor is to be notified immediately, so that a temporary connection can be made.

4.1.2 Site Offices & Crib Rooms

When site offices & amenities buildings are required in the Hazelwood Power Corporation l Mine they are to be sited on a clayed or hard standing area .They are to be a minimum of 10 metres from the nearest part of a Dredger and or any conveyor system. They are to be set up adjacent to a charged water supply and have sufficient rotary sprays attached to provide a saturated island around the buildings .

4.2 CONVEYORS

4.2.1 Dredger Face Conveyor

The protection of dredger face conveyors shall be based on the principle of providing a wetted corridor along the conveyor. The wetted corridor is to be provided as follows

- Inbuilt birdsmouth spray systems and other protective equipment are to be provided on the drive unit and trailing frame.

- Rotary sprays shall be spaced to give a continuous wetted corridor along the conveyor, and be capable of protecting the Head & T/End units. Hydrants shall be spaced at not greater than 55 metre intervals along both sides of the conveyor. Hydrant and dredger supplies shall be provided from a charged header.

- Rotary sprays shall be capable of being operated from either end of the transport level, or from a remote location, to allow management of water usage during wetting down and fire fighting activities. If remote control is used the failure mode shall be to an open position.

- The Mine Operation Manager is to ensure special precautions are taken during beltshifts, fire main rearrangements or maintenance of pipework.

4.2.2 Coal and Overburden Trunk Conveyors Below Grass Level

The protection of trunk conveyors below grass level is based on the principle of locating the conveyor on a clayed surface and in a wetted corridor along its full length as follows:

- Benches to be clayed and protected as per Section 3.2.
- Rotary sprays shall be spaced to give a continuous wetted corridor along the conveyor.and be capable of protecting the Head &T/End units. Hydrants shall be spaced at not greater than 55 metre intervals along both sides of the conveyor.
- Birdsmouth sprays to be provided on at least one side of the conveyor for its full length. When one birdsmouth spray line only is provided, it shall be located on the opposite side of the conveyor to the rotary sprays and preferably on the north or west side of the conveyors. The birdsmouth sprays will be controlled by clearly marked valves spaced not more than 200 m, apart and be accessible from both sides of the conveyor. (alternatively conveyor cross over steps ,or other arrangements are to be made to allow access to spray valves.)
- Inbuilt birdsmouth spray systems on Conveyor Drives & Trailing Frames

Appendix A.5 shows an example of this protection

4.2.3 Coal Trunk Conveyors Above Grass Level

The principle of protection is to provide a wetted area for the Conveyor head end , and tail end units, and hydrant and birdsmouth spray supplies for the full length of the conveyor, which is to be located within a fire break zone. This is to be achieved by the provision of the following:

- Hydrants shall be spaced at not greater than 55 metre intervals along both sides of the conveyor.
- Birdsmouth spray lines along the north or west side of the conveyor. These sprays should be controlled by clearly marked valves spaced not more than 200 m apart and accessible from both sides of the conveyor (alternatively conveyor

cross overs steps ,or other arrangements are to be made to allow access to spray valves.)

- Inbuilt birdsmouth spray systems on Conveyor Drive unit, & Trailing frame
- A fire break zone of at least 25 m width on either side of the conveyor , or a lesser fire break zone of 10 m would be acceptable where rotary sprays provide a continuous wetted corridor along the conveyor

Appendix A.6 shows an example of this protection.

4.2.4 Overburden Trunk Conveyors above Grass Level

The principle of protection is to provide a wetted area for the head, and tail end units, and hydrant supplies for the full length of the conveyor, which is to be located within a fire break zone. This is to be achieved by the provision of the following:

- Inbuilt birdsmouth spray systems on Conveyor drive unit.
- Hydrants at not greater than 55 m intervals on one side of the conveyor.
- Rotary sprays at not greater than 55 metres on one side of conveyor and be capable of protecting the Head &T/end units *(if Lanzoni skipper or Nelson Big gun sprays spacing to be 100 metres).*
- A fire break zone of at least 10 m width on both sides of the conveyor.

Appendix A.6 shows an example of this protection.

4.2.5 Overburden Dump Conveyor

The principle of protection is to provide a wetted area for the head and tail end units, and hydrant supplies along the full length of the conveyor as follows:

- Provision of a header along the length of the conveyor with hydrants at not greater than 55 m intervals, on one side of the conveyor supplying protection for the conveyor, tripper and stacker.
- Provision of a header along the length of the conveyor with rotary sprays fitted at 55 metres intervals, on one side of the conveyor supplying protection for the

conveyor tripper ,stacker , Head & T/ End units, *(if sprays are of the Lanzoni skipper or Nelson Big gun type, spacings to be at 100 metres)*

- Inbuilt birdsmouth spray systems on Conveyor Drive Units and Trailing frames.

4.2.6 Elevated Conveyors

Fire protection for these areas is based on minimising coal spill by appropriate plant design washing away coal build up, and the use of a spray system capable of wetting the conveyors and support structure. This is to be achieved by the provision of:

- A dust and coal spill clean up system.
- Spraying and wetting down facilities to restrict the spread of fire. Clearly marked control valves to be accessible from both conveyor level and ground level.
- Clearly marked access points and escape ways no more than 100 m apart.
- Telephones or a fire alarm signalling system located adjacent to appropriate access points and escape ways.
- Fire hydrants at conveyor level, spaced at not greater than 55 m intervals, and at conveyor and ground level located adjacent to all access points and escape ways.
- Fire hose reels to be installed at intervals of no greater than 40metres apart along elevated conveyors . **Note:** A standard fire hose reel consists of a 19 millimetre diameter x 20 metre length of non percolating rubber hose.*(see appendix B.5 for hose reels).*

Appendix A.7 shows an example of this protection.

4.2.7 Multiple Transfer Areas

Fire protection for these areas is based on minimising coal spill by appropriate plant design and regular clean up of coal spill ,plus the use of a spray system capable of wetting the conveyor system and support structure. This is to be achieved by the provision of:

- A dust and coal spill clean up system.

- Spraying and wetting down facilities to resist the spread of fire. Clearly marked control valves to be accessible from both conveyor and ground level.
- Clearly marked access and escape ways.
- Telephones or a fire alarm signalling system located adjacent to appropriate access points and escape ways.
- Fire hydrants at conveyor and ground levels, spaced at not greater than 55 m intervals, and located adjacent to all access points and escape ways.
- Rotary sprays are to be installed on the highest point of the conveyor units & be strategically place,.so that when all are being operated, a saturated island over the entire transfer point is achieved.
- Fire hose reels to be installed at intervals of no greater than 40 metres apart on conveyors in the transfer area . **Note:** A transfer point is determined by the concreted area where conveyors intersect.*(see Mine definitions page 9 dot point 9)*
- A fire break zone at least 25 m width clear of any conveyor.

4.2.8 Enclosed Conveyors

Fire protection for these areas is based on minimising coal spill and coal dust by appropriate plant design, washing down of coal build up, and the use of a spray system capable of wetting the conveyor and support structure. Within enclosed areas it is important to minimise the amount of coal dust in the atmosphere and the coal dust fall-out on surfaces and to minimise the potential chimney effect. These aims are to be achieved by the provision of:

- A dust and coal spill clean up system.
- Spraying and wetting down facilities to resist the spread of fire. Clearly marked control valves to be at internal and external locations .
- Clearly marked access points and escape ways no more than 100 m apart.
- Telephones or a fire alarm signalling system located adjacent to appropriate access points and escape ways.

- Fire hydrants at internal and external locations, spaced at not greater than 55 m intervals and located adjacent to all access points and escape ways.
- Fire hose reels installed at intervals of no greater than 40 metres along conveyors.
- Fire resistant baffles should be located at no more than 30 m intervals along the length of the conveyor. These should comprise vertical curtains extending from the roof down to approximately 2 m from the floor. The curtains are to be fabricated from non combustible and non explodable materials.
- Roof vents to reduce chimney effect. Vents should be placed immediately against the lower side of each heat baffle - vents are to be sized on the basis of 1 m^2 per 100 m^2 of floor area.
- A one hour (minimum) fire rating bulk head is to be constructed across the full cross section of the enclosed conveyor at the junction of the conveyor with the coal bunker.
- A fire break of at least 10 metres width on each side of the enclosed conveyor.

Appendix A.8 shows an example of this protection.

4.2.9 Specific Protection of Conveyor Drive Units

Conveyor drive units below grass level in the open cut are to be protected by rotary sprays mounted either on headers or on the drive unit, or by portable rotary sprays such that a saturated island can be achieved under and around the drive unit, while at the same time achieving a spray curtain to protect the full height of the unit.

Protection against fires caused within all drive units is also to be achieved by live hose reels and by appropriate extinguishers conveniently located on or adjacent to the unit.

Protection of the conveyor belting within drive units is to be achieved by birdsmouth sprays spaced on each side of the conveyor but staggered to give optimum coverage of belt surfaces and idlers .

Hydrants should be located close to each drive unit for ready connection of portable rotary sprays and hosing facilities.

4.2.10 Rail Track and Rolling Stock Protection

Protection of these areas is based on the provision of the following:

- Facilities for cleaning coal dust from locomotives and rolling stock
- Rail track centre sprays located to wash down the underside of trains to prevent the carrying of fires along the rail tracks. In particular, protection shall be provided for trains entering and leaving loading stations, and also trains entering and leaving bunkers.
- Where possible, sprays should be train activated.
- Hydrants placed adjacent to the rail tracks loading station and bunker areas to be spaced not greater than 55 m apart and within 30 m of the track.
- Water supply with appropriate hose cocks at regular intervals and at all loops along the Interconnecting Railway between Yallourn & Hazelwood Power Corporation Mines.

4.2.11 Bunkers and Galleries

Fire protection for bunkers and galleries are based on minimising coal spill and coal dust by appropriate plant design and the regular washing down of coal dust build up from bunker & gallery structures,the provision of fire retarding baffles, etc.(used to retard the chimney affect of fires in areas like the Morwell Galleries). and the provision of an adequate water supply and strategically placed fire equipment . Within enclosed areas it is important to minimise the amount of coal dust in the atmosphere and the coal dust fall-out on surfaces. These aims are to be achieved by the provision of:

- Bunker and gallery structures designed to minimise the settling and accumulation of dust.
- Internal roof mounted spray systems capable of suppressing airborne dust *(see appendix no B 6.)*. Separate spray systems are to be provided for the bunker and galleries, consideration should be given to supplying automatic detection systems to activate an alarm, where practicable, particularly where bunkers and/or galleries are unmanned.

- Fire hose reels, hydrants and hoses to be provided at readily accessible locations within the bunker and gallery including all entrance ways.
- A dust and coal spill clean up system for the gallery.
- A dust suppression system for use in the bunker when the level of air-borne dust is in excess of the relevant Health and Safety Standard.*(see appendix no B. 6).*
- Birdsmouth sprays to wet the conveyor belts.
- Escape facilities and access routes clearly marked. *(see H.P.C Mine evacuation procedures as per H.P.C Emergency Response Plan)*
- Telephones or a fire alarm signalling system located adjacent to appropriate access points and escape ways.
- Lifts and lift wells to be external to the bunker and separated from it by a fire rated door and provided with an escape way.
- System for the emergency emptying of the bunker other than to the Power Station.

A wall between the gallery and bunker to stop draughts and the passage of atmospheric dust, and to impede the progress of a fire from either side of the wall to the other side.

Appendix A. 9 shows an example of this protection.

4.3 AUXILIARY MACHINES (MOBILE PLANT)

The protection of mobile plant from fire and the elimination of mobile plant as a source of fire when working on coal shall be based on the following:

- Routine cleaning and prevention of coal build up.
- Provision of an approved exhaust system, braking system and splash plates where required to reduce the risk of starting fires.*(see appendix B.7).*

- When mobile plant is operating on coal surface, it is to be inspected every 2 hours or earlier if necessary for coal build up around working parts, and washed down as required.

- Carrying of a fully charged knapsack spray and/or chemical fire extinguishers, plus a 6 metre x19 millimetre wash down hose fitted with a C.F.A 64 millimetre female coupling and spray nozzle as a "first aid" measure *(see appendix B. 9)*

- If plant breaks down on coal surface and cannot be moved, a rotary spray is to be connected to a water supply and set up to protect machine .

- At the end of each of each shift, plant not required for operation during the next shift is to be travelled of coal surface and parked on a sanded or clayed area adjacent to a fire hydrant or rotary spray .**Note** plant is not to be parked within 10 metres of any Conveyor ,Dredger,Machine,or Building .

- During times of Fire Alert machines are to be travelled of coal surface, and parked adjacent to a water supply, unless otherwise instructed.

4.4 MOTOR VEHICLES

The protection of motor vehicles from fire and the elimination of motor vehicles as a source of fire when travelling on coal shall comply and be based on the following:

- Routine cleaning and prevention of coal build up

- Vehicles that operate on coal surface are to have their exhaust systems checked at least every 2 hours for coal build up and wash as required.

- Provision of an approved exhaust system, braking system and splash plates where required to reduce the risk of starting fires. Approval shall be obtained from the Fire Service Officer. Vehicles without such approval shall not travel on coal surfaces*(see appendix B 7 & B. 8).*

- Drivers operating vehicles on coal surface are not to exceed the speed limit of 15k/p/h

- Carrying of a standard fire suppression pack as "first aid" measures.*(see appendix B .9)*

During times of Fire Alert , vehicles are not to enter coal surface unless permission from the Fire Service Officer is granted (Refer to mines Fire Instructions).

- In an emergency, special tanker escort must be provided to vehicles not meeting these requirements

4.5 ELECTRICAL SUPPLIES

4.5.1 Reliability.

Duplication of supply, geographic separation of feeders and automatic switching is to be provided so as to achieve the required levels of reliability for open cut plant and equipment. Where practicable, duplicate supplies are to be provided from separate power distribution centres. Automatic fault isolation facilities are to be provided for all plant connections on feeders supplying fire service pumps. Where practicable the distribution system should be flexible enough to supply major items of plant from alternate feeders. Required levels of reliability for pumping stations are listed in Section 7 1 7

4.5.2 Routing and Type of Supply.

Preferably, supply down batters should be via overhead lines. However, where overhead supply would interfere with plant movement, supply by mine power cable or flexible trailing cable may be provided.(See comments in this section: Cables on coal, Cables down batters, for required protective measures.).

Siting and protection of poles and cables is to be based on the following requirements:

- Overhead or underground feeder arrangements should provide sufficient physical separation to preclude loss of more than one feeder as a result of a single event.
- For parallel overhead feeders of standard open cut construction a minimum of 10 m spacing should be provided - for field situations where this cannot be achieved, specific approval of reduced spacing is required from the Mine Operation Manager.
- Alternate supply underground feeder cables should be routed separately, or if this is not possible they should be at least 2 m apart.

- Crossovers of overhead lines should be avoided where at all possible - if this is not possible then consideration should be given to construction to minimise failure, ie. "super" spans, and to minimise interference with other feeders should failure occur. The use of cables, other than extensions of already necessary cables, to overcome crossing difficulties should be avoided.

4.5.3 Siting of Poles.

- Poles should be sited at least 2 m from top of batters.
- Poles adjacent to the toe of coal batters should be sited so that the protected area round the pole will remain free from accumulated coal fines.
- Where practicable, poles should be sited on flat areas.

Poles on Coal.

- Poles should be protected by a 3 m radius area of compacted sand or clay with a minimum depth of 75 mm. For other transmission structures the protected area should extend 3 m beyond the perimeter of the structure.
- The protective covering should be inspected and maintained prior to each summer period.

Poles on Other than Coal.

- A 3 m radius area round timber poles must be kept clear of combustible material. A clear area is not required around concrete poles.

4.5.4 Siting of Cables

Cables on Coal.

- Machine cables are to be laid within the protected area of the rotary sprays.

  Fixed cables on flat surfaces are to be laid on compacted sand or clay mats at a minimum spacing of 0.5 m and with the mat extending 1 m on either side of cables - alternatively, cables can be run in covered concrete troughing boxes.

- Cables down batters should be run in open concrete troughing boxes or be provided with other equivalent protection. The troughing should be maintained free of accumulated coal fines.

- The use of racks or catenaries to route cables down batters should be avoided unless a protective spray system or equivalent protective measure is employed. Special attention is to be given to protecting the cables at the top and bottom of the batter.

Cables on Other than Coal

- Cables should be laid at a minimum of 0.5 m centres and combustible material kept clear for 1 m on either side of cables.

5. PERSONNEL

The principles upon which the safety of all personnel is based are to provide:

- As clean a working environment as is practicable to limit the occurrence of fire.

- Control over sources of ignition such as cutting and welding, mobile equipment and motor vehicles. Potentially inflammable materials such as oil, greases and fuels should be stored and used in a safe manner.

- Protected access and escape ways

- Evacuation Procedures *(see H.P.C Emergency Response Plan).*

- Access for fire fighting.

- Provision of adequate communications equipment and systems.

- An organised approach to prevention and suppression of fire and the formulation of emergency response plans and fire instructions.

- Training sessions and exercise to ensure that each employee understands techniques and mine procedures for fighting brown coal fires and undergoes refresher training sessions at no greater than three yearly intervals.

- Inspection and monitoring procedures to minimise potential fire sources on plant and within the mining environs.

- Inspection and monitoring procedures to ensure appropriate fire protection equipment and procedures are in place and adhered to

6. EXTERNAL PROTECTION

6.1 Fire Breaks

To reduce the hazard from a fire external to the open cut, provision of appropriate fire breaks and control of grassed and forested areas within the "zone of responsibility", as outlined in 6.3, are necessary. In order to inhibit a fire approaching the open cuts and to reduce the occurrence of burning fragments entering the open cut and its surrounds, the following requirements apply:

6.1.1 Permanent Fire Break Zone

Zone 1

A continuous 50 metre wide and permanently maintainded fire break corridor around the perimeter of the open cut is to exist all year round, (can include roads) and consist of the following:

- Grass not to exceed 100 millimetres in height.

- No trees ,shrubs, scrub are permissible in this area..

- Constant monitoring of the fire break corridor is required to ensure the above protection is maintained.

6.1.2 FUEL REDUCTION ZONE

Zone 2

From the outer edge of the 50m fire break zone to the Morwell Open Cut boundaries (in all directions)including all road verges,the following is to be observed during the proclaimed fire season -

- Grass is not to exceed 100 millimetres in height.

- All combustionable material/s to be removed, such as tree branches, scrub etc.

6.1.3 External To Morwell Open Cut Boundaries .

Zone 3

Any fire hazard considered a threat to the Morwell Open Cut from external sources can be brought to the attention of H.P.C Mine Statutory Fire Prevention Officer who can by contacting the following - H.P.C Mine Property Officer, C.F.A, Latrobe Council, have the offending problem seen to (*for reference to Morwell Open Cut boundaries see attachment no 1).*

6.2 PROTECTION PROCEDURES

6.2.1 Modes of Protection

- Slashing
- Grazing
- Burning
- Discing

It is essential that before any decision is made on the mode of grass reduction in and around the M/O/C environs, the Morwell Open Cut Fire Officer is to consult with the Morwell Open Cut Enviromental Officer and solicit his advice & instructions on what mode of grass cutting is the most desirable for a particular area..

Grazing is carried out on leased land/s within the H.P.C Mine environs and is the preferred option of grass reduction.

Grazing is managed so as to cover as much of the grassed lands as possible and is carried out as follows:-

Leaseholder is responsible for managing his lease and to comply with fire regulations pertaining to the C.F.A act & Hazelwood Power Corporations Fire Service Policy and Code Of Practice.Leaseholder is responsible to keep grass levels within the H.P.C Mine boundaries to the required regulations as per Zone 1&2

The H.P.C Mine Fire Officer will continually monitor fuel levels within the mine and take action as required .If Leaseholders are not meeting their obligations re fire protection, the

Hazelwood Power Corporations Property Officer is to be notified so as the appropriate action can be taken.

6.3 TIMBERED AREAS

Mine Operation Manager is responsible for the management of treed and forested areas under his control to ensure the least possible fire hazard to the mine consistent with operating and environment requirements. "Management" includes both the maintenance and establishment of treed and forested areas.
Areas under the Mine Operation Managers' control are those within the perimeter of the mine plus those Hazelwood Power Corporation lands which are within the following proximity's of open cut operational areas:

Northern side 1.0 km Western side 1.0 km Southern side 0.5 km Eastern side 1.0 km
Within the distances mentioned above, treed and forested areas should primarily consist of:

1. Scattered, tall, clean boled trees that have firm bark and an overall crown cover of less than 35% (over any given treed area) with a minimum of 3 metres of open space between crowns of individual trees.

2. Grass and herbaceous understoreys that are kept short by grazing or mechanical means during those periods of high rural fire risk.

For areas under the control of Mine Managers but outside of the distances mentioned above, treed areas of greater density (i.e.up to forest/plantation density) may be permitted. Approval of the Mine Manager is required for establishment of trees in these areas including matters such as location, species selection, provision of fire breaks and access, and on going management.

For non Hazelwood Power Corporation land, where unacceptable hazards have been created within the vicinity of the mine, the Mine Manager should ensure that the Statutory Fire Prevention Officer is informed so that appropriate action can he taken. This section of the Code of Practice is compatible with the requirements of the PGOD Bushfire Mitigation Manual and the SECV document "Trees and Fire Protection - Guidelines for the Latrobe Valley". Any applications of the above policy must be approved by the Mine Operation Manager.

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7. RESOURCES FOR PROTECTION

7.1 WATER SUPPLY REQUIREMENTS

7.1.1 Water Supply

The source of water is to be designed so that supply is from at least two systems, such that the loss of the larger system or pumping station will not reduce the supply available below 50% of the designed maximum demand.

7.1.2 Maximum Demand

The system should be designed to supply sufficient water to operate whichever is the greater of either Option A or Option B described below. The maximum demand criteria do not provide for coincident maximum demands above and below grass level of an open cut. (Both Options A and B define use of fire service networks below grass level in the mine.)

Option A - Consisting of the sum of the following:

- An allowance to operate rotary sprays to provide cover to 50% of exposed coal and all machine and conveyor protection sprays on the working levels.
- An allowance to operate three hydrants on one header on each of the working levels.
- An allowance to operate the rotary and birdsmouth sprays protecting one quarter of the length of the trunk conveyor system below grass level.

Option B - Consisting of the sum of the following

- An allowance to operate rotary sprays to provide cover to 25% of exposed coal and all of the machine protection sprays on the working levels.
- An allowance to operate three hydrants on one header on each of the working level.
- An allowance to operate the rotary and birdsmouth sprays protecting one half of the length of the trunk conveyor system.
- An allowance to operate three hydrants per header for the headers protecting half of the length of the trunk conveyor system.

7.1.3 Capacity of Storage

Water storage's are to be provided for the following conditions:

- Sufficient water for fire services throughout a fire service season in a drought cycle and sufficient additional storage to suppress one major fire within the open cut.*(drought cycles calculated from rainfall data gathered over 20 years.see attachment no 3).*

7.1.4 Operational Modes of Water Storage's

Summer Period

Main Dirty Water Pondage is to be operated between -RL 64.3 &-RL65.1 during the months Dec, Jan, Feb, March unless adverse weather dictate otherwise.(for approximate pondage capacities at this operating mode see appendix B.10.)

Reserve Dirty Water Pondage is to be operated between -RL62.0 &-RL62.24 during the months of Dec, Jan, Feb, March unless adverse weather conditions dictate otherwise (for approximate pondage capacities at this operating mode see appendix B.10).

Winter Period

Main Dirty Water Pondage is to be operated between -RL65.1 & -RL65.6 during the months April through to November unless adverse weather dictate otherwise (see appendix B.10).

Reserve Dirty Water Pondage is to be operated so that water levels do not exceed .RL62.48 during the months April through to November unless adverse weather conditions dictate otherwise .(see appendix B.10).

7.1.5 Restoration of Storage

Within 10 days of a major fire there should be adequate water in storage to suppress another major fire. The water reserve required for this specific purpose is defined in the previous statement.

If water is stored in more than one storage, then the storage which provides the immediate source for the fire service system must be large enough to store the water reserve required to suppress a major fire plus an allowance for siltration and flood regulations.

7.1.6 Location and Availability of Water Storage's

The locations of the storage's of water should take account of the reliability of supply and capacity requirements listed above. The storage's should be dedicated to mine use.

7.1.7 Water Pressures

For personnel safety reasons, the static pressure in the reticulated water system should be designed not to exceed 115 m head at hydrants, rotary sprays and other points used for tapping the fire service water. The pressure shall not be lower than the pressure necessary to operate all fire service equipment effectively with a minimum of 40 m head at any tapping point.

7.1.8 Reliability of Water Supply

Gravity supply of water to the pipe network is preferred because of its reliability. In some circumstances it may be necessary to provide pressure reduction systems in order to avoid pressure greater than 115 m head at hydrants and rotary sprays. Other circumstances require the provision of pressure boosting systems in the form of pumping stations.

Reliability of power supply to pumping stations *is* critical to the reliability of the fire protection system. Other requirements for the security of electrical supplies are detailed in item 4.5

As a general requirement fire service pumping stations should be designed such that the loss of one power supply feeder should still allow the supply of 50% of the pumping station capacity either by the provision of-

Two or more power supply feeders, or

- A sufficient number of individual pumps such that half the number of pumps supply at least half the required pumping capacity.
- The reliability of the power supply to the fire service pumping system should be such that any one fault would not reduce the capacity of the system to meet the maximum demand by more than 50X, and then for no longer than 30 seconds.
- This level of reliability is required for the dedicated fire service pumps, multipurpose pumps with a fire service component and fire service booster pumps .

The level of reliability required for other pumping installations such as dewatering pumps and fire service storage replenishment pumps, is that any single fault should not cause a loss of pumping capacity for more than four hours duration. The concept for such installations should take this level of reliability into account in design and operation stages.

7.1.9 System Monitoring

Sufficient remote monitoring and control equipment is to be installed in the fire service system to allow reliable operation under normal and foreseen emergency conditions. Alarm signals, pressure, flow rate and status indications may be required at key locations to allow efficient operation of the system under a variety of circumstances.

7.1.10 Rate of Precipitation

The spraying equipment on exposed coal is to be able to deliver a minimum precipitation rate of 6 mm/hour over the wetted area.

7.2 WATER RETICULATION

7.2.1 General Requirements

Materials, installation techniques and siting of pipelines should take into consideration possible earth movement effects, corrosion, accessibility and provision for isolation and drainage.

The whole system of reticulation is to be such as to optimise the hydraulic efficiency with regard to performance and cost.

7.2.2 Main Supply Lines

As required by Section 8.1.1 each source of supply should have a separate, secure Main Supply Line. The design and location of the Main Supply Lines should take into consideration their importance to the water supply system.

7.2.3 Ring Main

The principle of feeding headers from both ends to maximise hydraulic efficiency requires a ring feed arrangement.

7.2.4 Feeders and Headers

Headers are to be connected at each end to a feeder thus providing a ring feed system of reticulation. This optimises the performance of header sprays and allows at least partial operation of the header from either end.

Appendix A.2 shows an example of the various categories of fire service pipe.

7.2.5 Tanker Filling Points

Tanker filling points are to be provided at:

- Each end of each transport working level.
- For Worked out batters in accordance with Section 3.4.
- On worked out floors in accordance with Section 3.5.
- At grass level around the open cut at strategic locations.

Consideration should be given to ease of access, location and reliability of water supply in the design of filling points. (See Section 4.4).**Note. A 4 hydrant manifold is acceptable as a tanker filling point in lieu of the normal stand pipe type**

7.2.6 Hydrants, Hoses, Sprays, Valves and Other Fittings

These should be appropriate for fire fighting purposes with due regard being given to interchangeability between various sections of Hazelwood Power Corporation and the CFA.

7.3 MOBILE WATER SUPPLY

Each open cut is to have at least one dedicated mobile tanker unit available. Provision must be made for additional back-up mobile water supplies in the event of them being required.

Mobile tanker/s shall be positioned on the conveyor transport level when belt shifting is carried out without an adjacent header being charged.

After normal work hours a mobile tanker will be parked outside the Conveyor Control Centre for emergency use after hours.

7.4 MOBILE PLANT AND EQUIPMENT

Mobile plant and equipment are to be available for emergency use in open cuts to maximise fire fighting potential, eg. such equipment as elevating platform vehicles, floodlights, cranes, tractors. pumps, etc.

7.5 COMMUNICATIONS

A fully equipped multi-channel communication system is to be provided in the Fire Service Office in each open cut, capable of being manned by additional operators on fire emergencies. Provision is also to be made to enable the CFA Incident Controller or the DISPLAN Coordinator to use the Fire Service Office as a control centre in the event of an emergency situation.

Fire spotter stations are to be available either dedicated or for emergency use for fire spotting purposes and provided with an adequate means of communication with the Fire Service Office.
The Fire Service Office may be strategically positioned to also fulfil the role of a fire spotter station. Fire spotter stations are to be located such that an adequate view of all of the mine is available under various wind conditions.

Communications systems and alarms as described elsewhere in this document are required in bunkers, conveyor transfer areas. on elevated conveyors, near pumping stations and on all major machines.

7.6 ORGANISATION

A plan of the organisation and disposition of all open cut personnel and equipment for the fighting of major fires is to be kept and annually updated and issued by the beginning of October in each year.

7.7 FIRE INSTRUCTIONS

An up-to-date set of Fire Service Instructions is to be maintained for each open cut and re-issued to Supervisory staff and key operating personnel by the beginning of October each year. Additional copies are to be displayed or available for information of all personnel.

7.8 HIGH FIRE RISK DAYS

The CFA may declare a Total Fire Ban Day based on their assessment of fire risk within in an area or throughout the state of Victoria. The accompanying restrictions apply to Hazelwood Power Corporation property and operations.

When severe weather conditions exist in an open cut resulting in a high risk of fire spreading, the Mine Manager may declare a Fire Alert within the open cut area and en-act special precautions for fire watch, burning and welding, access and wetting down procedures as defined in the mines Fire Instructions.

Their may be times when the mines vigilance to fire outbreak and response, may be compromised. Poor visibility eg. fog etc, or times when the majority of the mines personnel exit the mine for brew & lunch breaks, and/or any other reason the majority of the workforce is out of the mine To minimise this risk of fire outbreak, fire patrols are to be carried out during these times.

Fire patrols in the mine are to be carried out as follows -

- From 0730 hrs - 0745 hrs when visibility from the Fire Service Office down into the mine is compromised (fog etc.).
- From 1230 hrs - 1300 hrs from October 1st through to March 31st.
- When ever the Fire Service Officer considers it necessary.

7.9 PRE SUMMER & FIRE SEASON WORKS PROGRAM

- Organise and carry out fire training to all mine personnel & relevant contractors by 15th of December each year.
- On or around 1st of October each year have Mine Planning issue an up to date drawing of the Fire Prevention, Slashing, Grazing Layout Plan .Once layout plan has been recieved, organise to have grass cutting, slashing etc.carried out with start date approx 15th December, and conclusion date approx 26th January.**NOTE** Starting and finishing dates for grass cutting will depend on weather conditions.
- Carry out constant monitoring of fuel growth and any other fire hazards, particularly during the fire season..
- On or about the 12th of December each year a wet test is to be carried out on the mines water reticulation system .The test is to be carried out in the operational areas of the mine, and all operational sprays are to be activated in conjunction with the major pumping stations The aim of the test is to show up any deficiencies in the reticulation, and or the spray system . It also highlights the areas where portable sprays require

setting up, indicates how much water is being used , how much water is in reserve ,tests the system.

- Have the Emergency Response Plan / Fire Instructions updated by 1st of October annually, and distributed to the appropriate personnel.
- Inspect and test crane mounted monitors before the oncoming fire season.
- Inspect and monitor slip on fire tankers on a weekly basis during the fire season.
- Inspect and run the Low Quality Water system monthly during the fire season.
- Have Mine Planning issue 5 off up to date copies of the Mine Orientation Plan for placement in - the Control Centre, Fire Service Office, Displan complex across the road from Fire Service Office, East side lookout tower, & one spare..
- Carry out out an inventory of fire fighting equipment before the fire season.
- Ensure that all forseeable maintenance has been carried out on all critical fire service pumps & major pipelines before the fire season.

8. ACCEPTABLE PRACTICES

As part of this Fire Protection Code of Practice, acceptable equipment and techniques are included for use in the prevention and Suppression of fires in the Latrobe Valley open cut coal mines. The equipment and techniques contained adhere to the requirements of the Fire Service Policy and this Fire Service Code of Practice. They may be employed in one or all of the mines depending on individual mine requirements.

The equipment and techniques contained in this Code of Practice have resulted from many years of fire service operation and development. Development of fire protection equipment and methods is an ongoing exercise and the Code of Practice will be the vehicle through which new practices are approved for general implementation.

APPENDICES

INDEX FOR APPENDIX A

FIRE SERVICE PRACTICES

Appendix A - Practices

1. Mine Layout

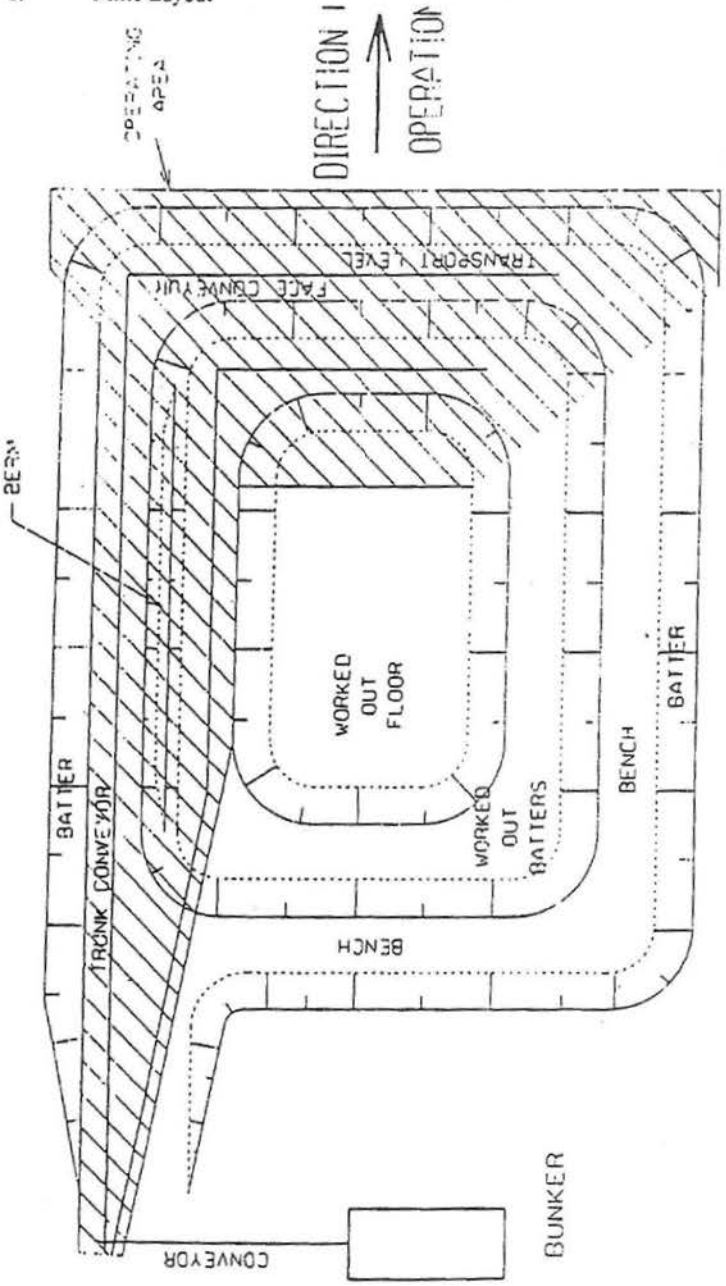


FIG - 1 DIAGRAMMATIC LAYOUT SHOWING MINE FEATURES

APPENDIX A PRACTICES

2. Pipeline Nomenclature

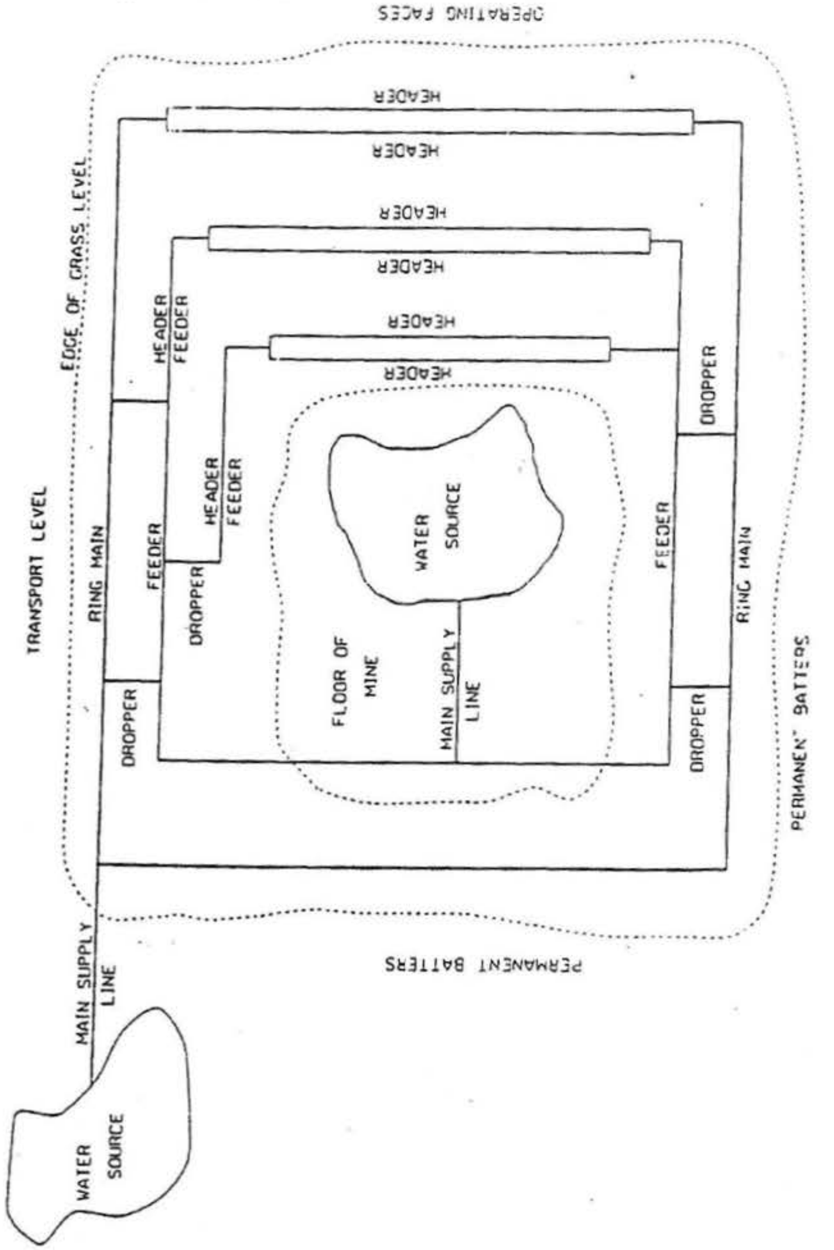
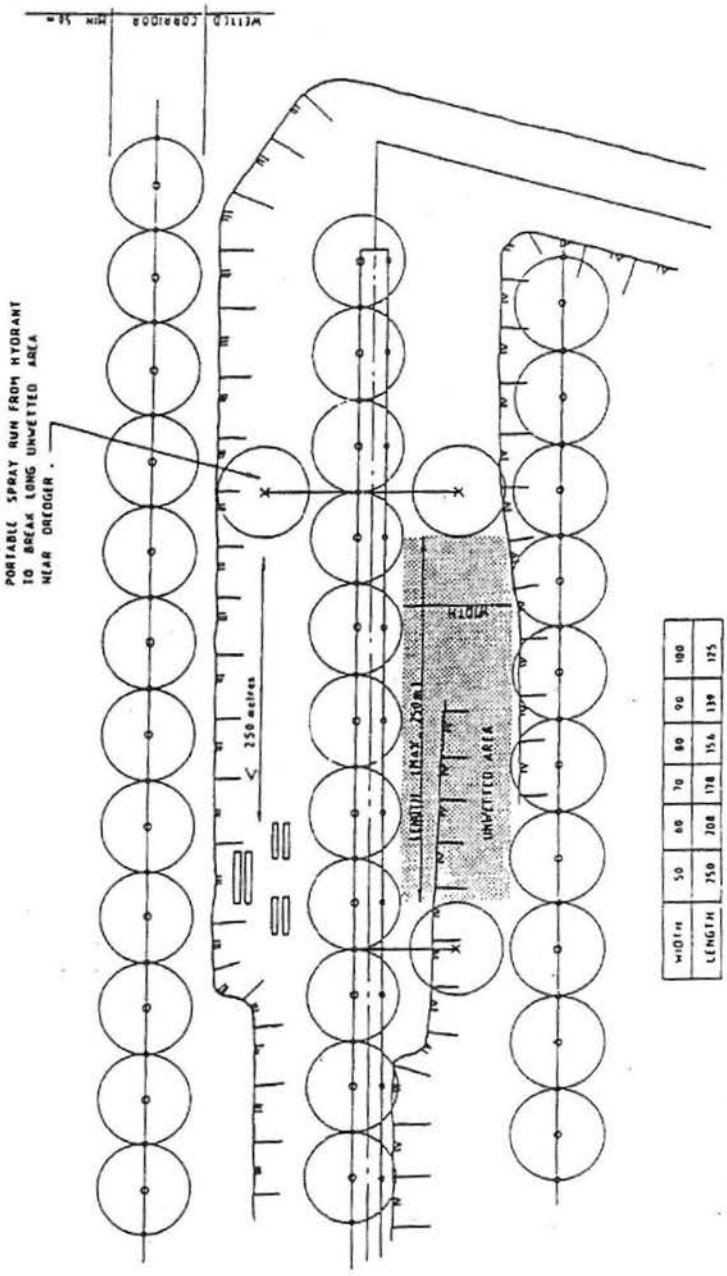


FIG - 2 PIPELINE NOMENCLATURE

APPENDIX A PRACTICES

3. Examples of Limiting Unwetted Areas



WIDTH	50	60	70	80	90	100
LENGTH	250	208	178	156	139	125

FIG – 3. EXAMPLE OF LIMITING UNWETTED AREA TO LESS THAN 12500 sq m

APPENDIX A PRACTICES

4. Worked out Batters

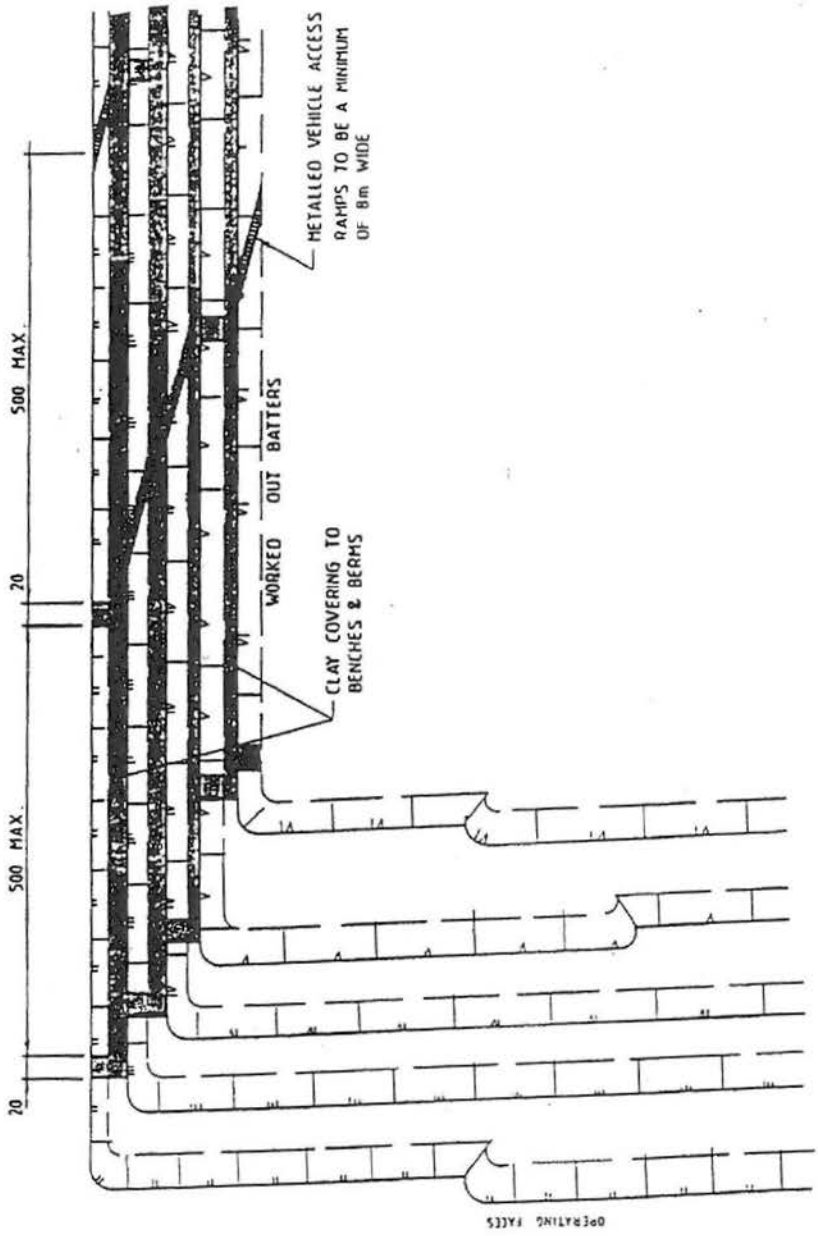


FIG – 4 WORKED OUT BATTERS-EXAMPLE OF FIRE PROTECTION

APPENDIX A PRACTICES

5. Permanent Batter - Transport Route

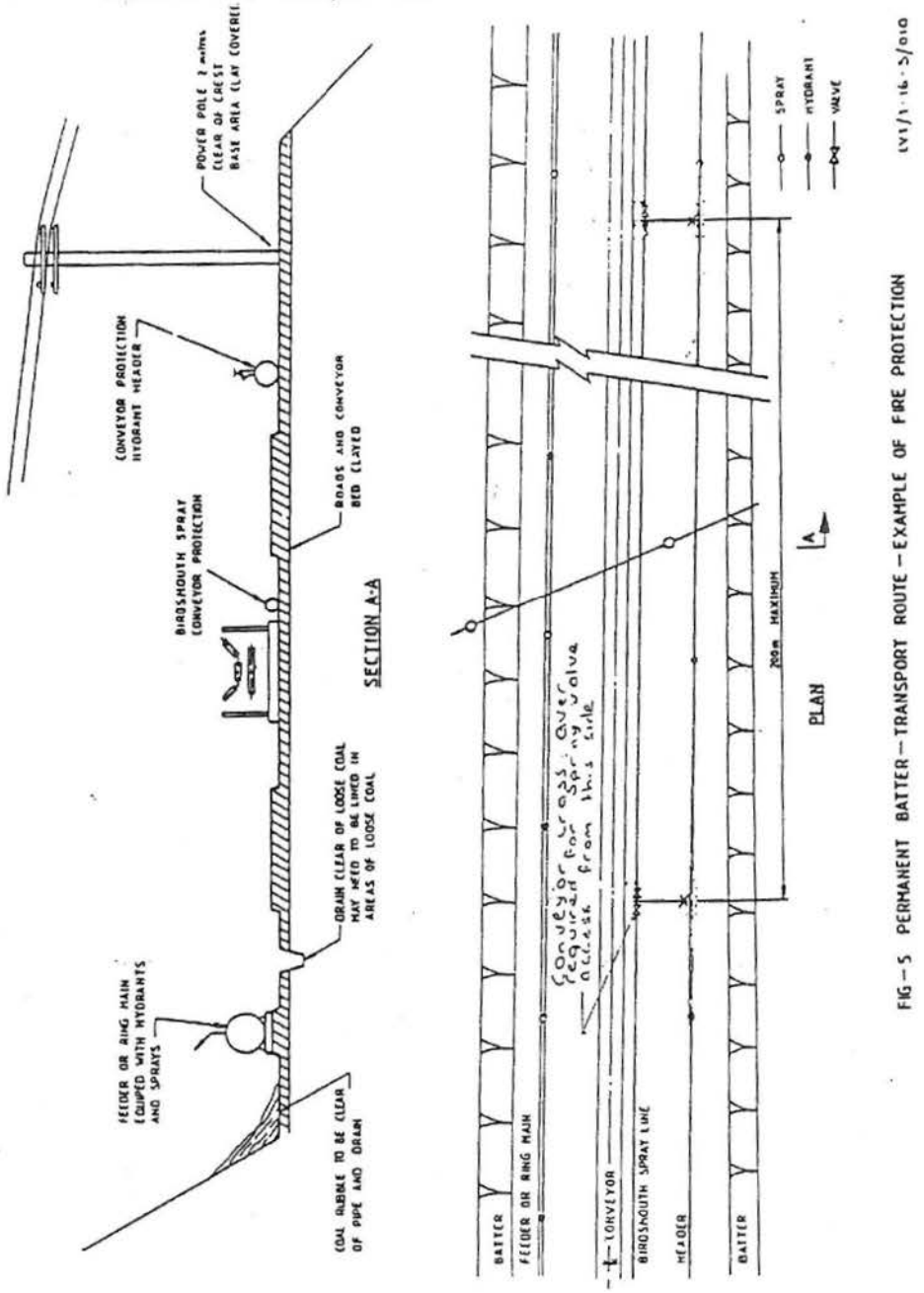


FIG-5 PERMANENT BATTER-TRANSPORT ROUTE-EXAMPLE OF FIRE PROTECTION

APPENDIX A PRACTICES

6. Conveyors above Grass Level

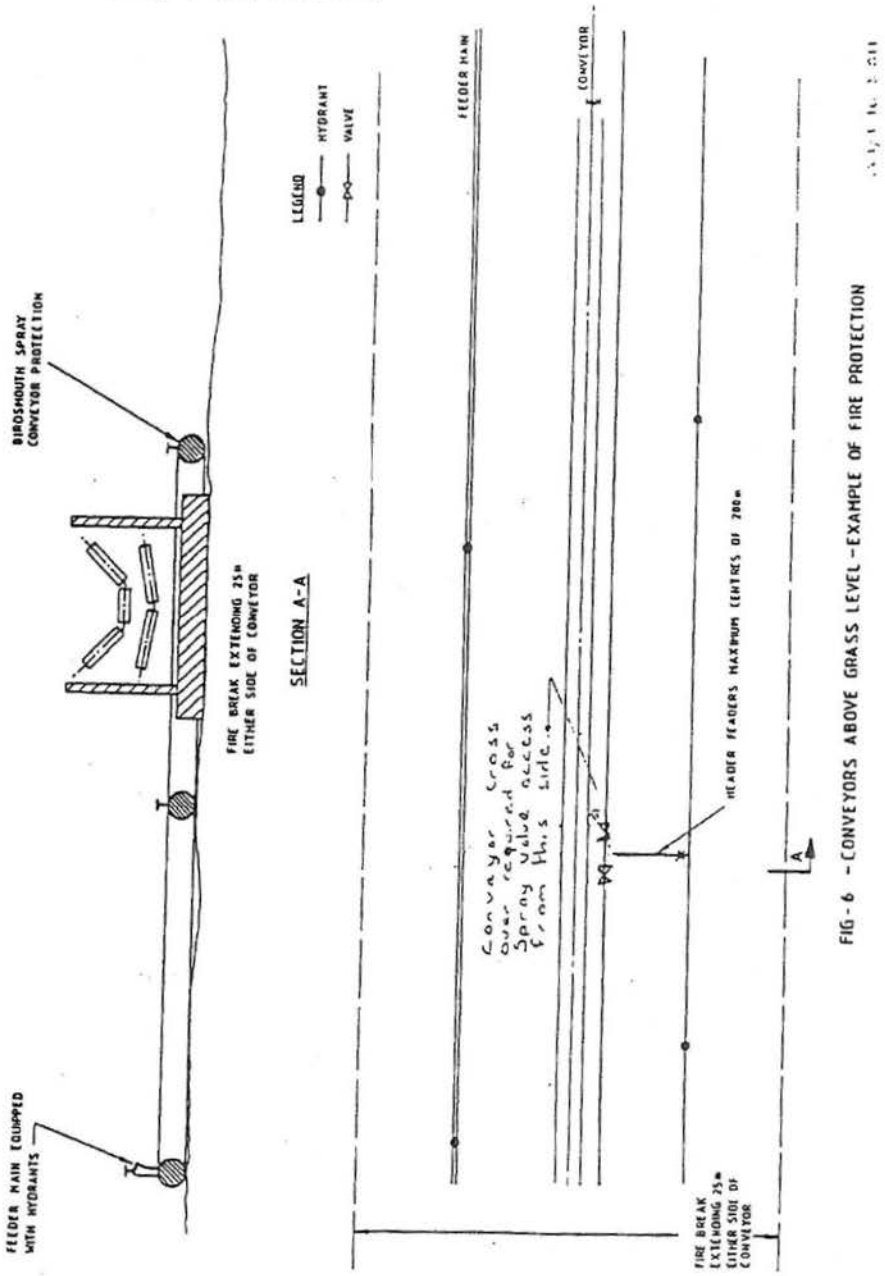


FIG-6 - CONVEYORS ABOVE GRASS LEVEL - EXAMPLE OF FIRE PROTECTION

APPENDIX A PRACTICES

7. Elevated Conveyors

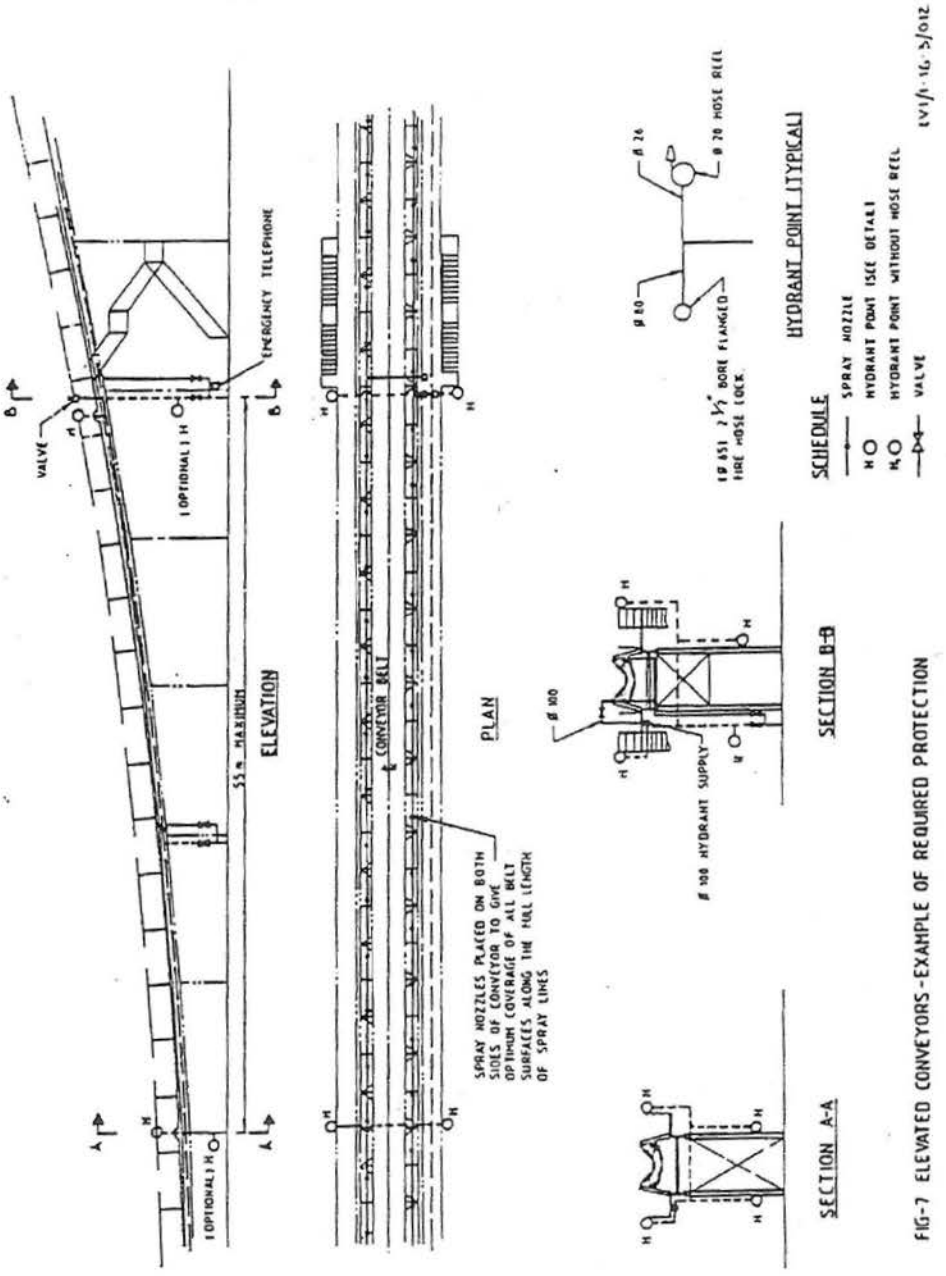


FIG-7 ELEVATED CONVEYORS - EXAMPLE OF REQUIRED PROTECTION

APPENDIX A PRACTICES
8. Enclosed Conveyors

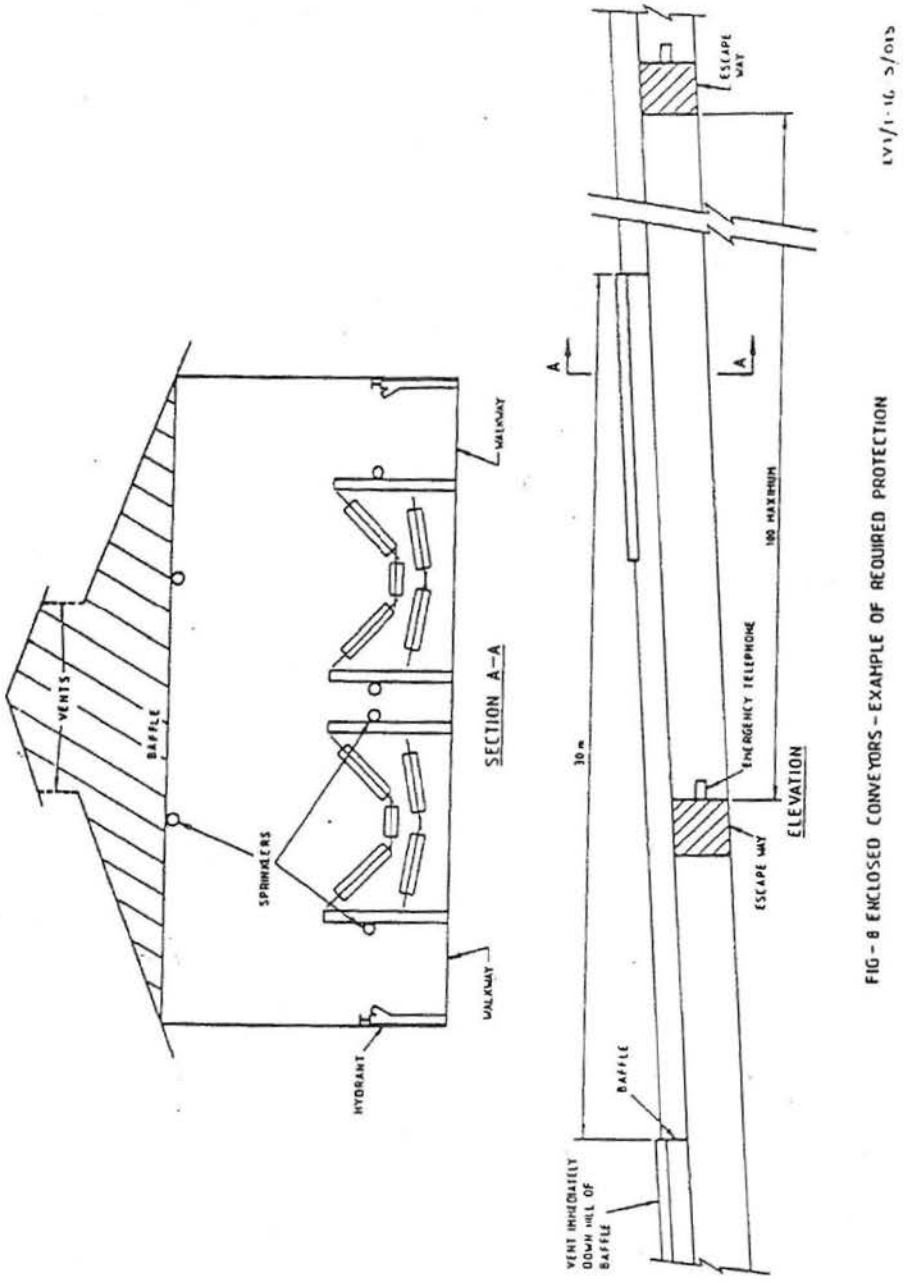


FIG - 8 ENCLOSED CONVEYORS - EXAMPLE OF REQUIRED PROTECTION

APPENDIX A PRACTICES

9. Typical Cross-section of Bunker

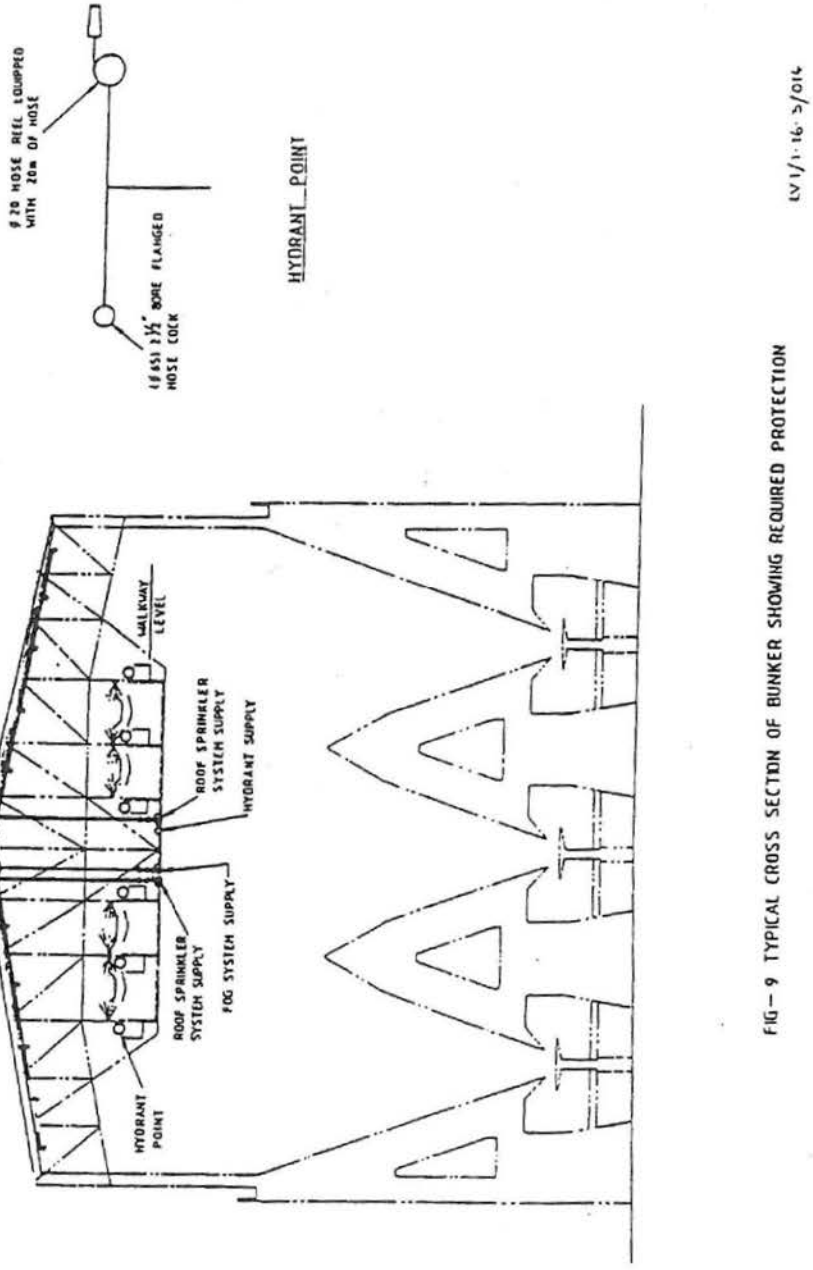


FIG – 9 TYPICAL CROSS SECTION OF BUNKER SHOWING REQUIRED PROTECTION

INDEX FOR APPENDIX B

ACCEPTABLE FIRE SERVICE MATERIALS & EQUIPMENT

APPENDIX B
ACCEPTABLE FIRE SERVICE MATERIALS & EQUIPMENT

ITEM	DESCRIPTION.	OPERATING PROCEDURES LIMITATIONS OF USE.
1. BIRDSMOUTH SPRAYS:	a. 4.8 millimetre orifice sprays as detailed on Drg No 0Y12/41/ 238	Birdsmouth spray lines are usually located about 1.8 to 2.0m offset from the conveyor .The position allows a good spray to 1.22 m and 1.48m along conveyors and allows access for mechanical access, and cleaning under the conveyor
	Birdsmouth sprays as above	Dredger, Stackers, Mobile Slew Conveyors, and Conveyor Head Ends are to be fitted with 2 x 64 mm Birdsmouth spraylines(one each side of conveyor), with Birdsmouth sprays spaced at 3.6m intervals along the sprayline. Spray operating pressure should be a minimum 0.18 Mpa but preferably working pressures of 0.2 MPa (20 metre head should be adopted. Pressure reduction is achieved by orifice plates inserted within the spray or valve stops
2.STANDARD FIRE HOSES	a. For general fire service work 65 millimetre x 30 metre and 38 millimetre x 30 metre lengths of canvas or synthetic percolating hose is to be used b. For supply to dredgers from header manifolds or hydrants etc, 90 millimetre x 30 metre canvas or synthetic percolating hose is to be used .	High Percolating Fire Hose is a specially designed hose to comply with the Hazelwood Power Corporations specifications re percolating hose usage in the H.P.C Mine, whilst at the same time exceeding the requirements of Australian Standard AS2792-1992, therefore no fire hose is to be used in the **H.P.C Mine** unless it meets these standards. NOTE *for hose percolation rates & formulas see attachment no7.*

ITEM	DESCRIPTION.	OPERATING PROCEDURES LIMITATIONS OF USE.
3.. HYDRANTS	Standard 65 millimetre Fire Hydrants of Gunmetal construction capable of discharging 15 Lt of water per second minimum. Victorian Country Fire Authority fire couplings throughout	To be used at maximum spacing of 55 m on pipelines to give overlap with a standard fire hose.*(for hydrant specifications see attachment No2)*
4. ROTARY SPRAYS	a. Bauer Circular or Sector - Rainer SR42 or Perrott P46BSZ sprays with 18 millimetre nozzles or alternatively Lanzoni Skipper, or Nelson Big Gun sprays.	To be used at maximum spacing of 55 m,(*if Lanzoni Skipper, or Nelson Big Gun sprays spacings to be 100m*) to give a continuous wetted area . Minimum working pressure of 0.4 MPa (40 metre head) and a maximum of 1.15 MPa (115 m head).
5. FIRE HOSE REELS	To be in accordance with AS 1221-1976 .19 millimetre ID hose by 30m long with a 6.5 millimetre diameter outlet- shut off nozzle.	Operating pressures for hose reels are to be in the range 0.3 MPa to 1.15 MPa (30 m to 115 m head)
6 TYPICAL DUST SUPPRESSION SYSTEM FOR BUNKERS	4 millimetre TT2W "Unijet nozzle by Spraying systems (Australia) Pty Ltd.	To be installed below roof level spaced on a 3m x 6m grid

ITEM	DESCRIPTION.	OPERATING PROCEDURES LIMITATIONS OF USE.
7.EXHAUST SYSTEMS.	Any new vehicle prototype will be fitted with a modified exhaust system applicable to the H.P.C Mine, and field tested by the H.P.C Mine Fire Service Officer or his deputy.(see exhaust mods attachment no4). It will be tested for suitability and effectiveness in a controlled field test, in a standard coal slurry pit *(see attachment no 5)*. to ascertain if modifications require being made to the vehicle to reduce coal splash to the engine compartment and exposed exhaust components. Installation of metal guard to cover all exposed exhaust system components at front of vehicle(and must clear muffler by 25 millimetres all around). Guard is to be fitted as such ,so that it does'nt protrude past the face of the bumper (extend bumper mounts if required). Muffler is to be mounted on the bumper with flexible exhaust mounts. Wheel arch guards are to be fitted where coal splash is being directed onto exhaust system or up into engine cavity.	Guard to be manufactured from 1.6 millimetre galvanised mild steel or expanded mesh Perforations are to be a minimum of 43 625 square mm's, and a maximum of ~~400 square~~ mm.'Distance between the perforations are not to exceed 3 mm. Exhaust pipe & muffler are to be kept above the chassis members and be 25 mm clear of all vehicle components .(Heat shields to be fitted where required). If heat shields are to be used they are to be constructed from 1.0 mm mild steel minimum. (Asbestos materials will not be accepted) Where the exhaust pipe exits the exhaust manifold through the front panel of the vehicle there is to be a 12 mm minimum clearance all around. If this is not possible, a hole will need to be cut out of the front panel to allow the 12 mm clearance. Exhauts pipe exit from muffler is to run along the inside of the bumper cavity with 25 mm minimum clearance from the inside of the bumper and finish in the centre of the front wheel mud flap Provide extractors,headers or inverted manifolds to redirect exhaust system if required.

ITEM	DESCRIPTION.	OPERATING PROCEDURES LIMITATIONS OF USE.
	Belly plates to be fitted to the underneath of the engine cavity to protect exhaust from coal splash. Mud flaps to be installed on the back side & front side of front wheels to protect end of exhaust pipe from coal splash. Contractor is to ensure that muffler is positioned as such to allow maximum air flow to the radiator (which also affects the air conditioner) and the correct operating temperature is achieved.	
8 BRAKING SYSTEMS	As per drawing A12-87-267 Front Mounted Exhaust and Brake Modifications for Latrobe Valley Open Cut Vehicles *(see attachment no 4).*	Before any vehicle enters coal surface it must be fitted with an approved braking system which conforms with the following criteria: Remove all disc brake backing plates and fit stainless steel bands to all vented discs as detailed in the drawing . Stainless steel to cover all disc vents . Join band with stainless steel band , lock or rivet. Machine edge of disc if necessary to form a lip to retain stainless band. *(see attachment No 4.).* Note: **Any vehicle fitted with drum brakes is exempt from the above brake modifications**

ITEM	DESCRIPTION.	OPERATING PROCEDURES LIMITATIONS OF USE.
9. VEHICLE & PLANT FIRE EQUIPMENT	As per H.P.C Mine Rationalisation of Fire Equipment document *(see attachment. no.10).*	All vehicles & plant that operate in the Morwell Mine are to be fitted with the appropriate fire suppression equipment
10 WATER STORAGE & CAPACITIES	Approximate calculations for the confirmation of Summer & Winter Dirty Water Pond , operating levels	Summer operation - High level RL -64.3 Summer min operating level -RL -65.1 Winter operation - High level RL- 65.1 Winter min operating level -RL- 65.6 <u>Reserve capacity</u> Summer operation - High level RL - 62.0 Summer min operating level -RL-62. 24 . Winter operation :- water levels not to exceed RL-62.48 *(for approx calculations on pond capacities see attachment no 6)*

ITEM	DESCRIPTION.	OPERATING PROCEDURES LIMITATIONS OF USE.
11. FIRE HOSE & SUNDRY EQUIPMENT LOCATIONS	All fire fighting hose to be of the high percolating type with the exception of the 38 millimetre hose with the only stipulation being ,that it be percolating hose (High percolating 38 millimetre hose loses to much water through percolation to be effective. For hose percolation rates & formulae see attachment no 7). All fire hose in the Hazelwood Power Corporation Mine will be fitted with standard C.F.A. couplings.	Conveyor Head ends :- 4 off x30m fire hoses plus 2 branches installed in 2 hose boxes located adjacent to Head end. Conveyor Tail ends :- 2 off x 30m fire hoses plus 1 branch installed in one hose box adjacent to Tail end. Reserve Coal levels :- For every pipe header on the level , one hose box containing 2 off x 30 m fire hoses and 1 branch are to be installed at each end of each pipeline Dredgers & major coal winning plant :- 4 off 64mm or alternatively 38 mm x 30m fire fighting hose plus 5 off 90 mm x 30m for dredger hook up. Vehicles:-2 off 30m x 38 mm percolating fire hose, ~~plus 1off 19 mm x20m fire hose reel type hose fitted~~ with a spray nozzle.A fire hose branch and fully charged knapsack is also to be carried in the vehicle. Plant:- A 6m x 19mm fire hose reel type hose is to be carried on all plant in addition to a charged 9 Lt foam extinguisher.

ITEM	DESCRIPTION.	OPERATING PROCEDURES LIMITATIONS OF USE.
12 FIRE EXT. TYPES,& LOCATIONS & SERVICING	Fire extinguisher types in the Hazelwood Corporation Mine consist mainly of 4 types :- CO 2 (Carbon Dioxide gas) 9 Lt Stored Pressure Foam 9 Lt Stored Pressure Water Dry Chemical Powder **NOTE:** A standard group of extinguishers consists of :- 2 CO 2 x 2.2Kg (minimum weight) extinguishers. 2 x 9Lt Foam extinguishers	Conveyor Head Ends :-1 Standard group of fire extinguishers. Pump Stations 1 CO 2 x 2.2Kg (minimum weight) per pump cubicle Bore Pump Cubicles :-1 CO 2 x 2.2Kg (minimum weight) per pump cubicle Dredgers:- 1 CO 2 x 2.2Kg (minimum weight) adjacent to operators cabin Crib Shack :-1 CO 2 x 2.2Kg (minimum weight) extinguishers Slew Area :- 1 Standard group of fire extinguishers. Main Electrical Switch Room :- 1 Standard group of fire extinguishers. Travel Area :-1 Standard group of fire extinguishers. Travelling Hopper :- 1 CO 2 x 2.2Kg (minimum weight) extinguisher. Mobile Slew Conveyors Travel Area :-1 Standard group of fire extinguishers. Main electrical switch room :- 1 Standard group of fire extinguishers. Slew area :- 1 Standard group of fire

extinguishers.

Operators cabin :- 1 CO 2 x 2.2Kg (minimum weight) extinguisher.

TS 2 Travelling Stacker

Tripper :-1 Standard group of fire extinguishers

Stacker Travel :-1 Standard group of fire extinguishers

APPENDIX C

TESTING AND ACCEPTANCE PROCEDURES

EXAMPLE/S
1. TESTING OF ROTARY SPRAYS.

ITEM	TEST PROCEDURE	RESULT
ENDURANCE TEST	Spray to be operated with 115m head	
PRESSURE TEST		
PRECIPITATION		
SECTORING TEST		
WIND DRIFT		
PRICE		
MAINTENANCE		

Mounting/attachment requirements,

Limitations of use

Testing officer _____

Health and Safety Approval _____

INDEX FOR APPENDIX D : FIRE SERVICE AUDIT CHECKLISTS

The following is a broad list of the various topics from the Fire Service Code of Practice. Check lists should be prepared for all of these topics for auditing purposes .These check lists should comprehensively cover the detailed requirements of the Code of Practice

Latrobe Valley Open Cuts. Fire Protection code of practice
Checklist Page 1 of 2

Coal and Overburden Trunk Conveyors below grass level

Conveyor Number [ ] Checked by..... Date.....

Section No.	Requirement under Code	Meets requirement ? Yes	No	If no, comment
4.2.1	Exposed coal on all batters within each corridor is to be capable of being continuously wetted using rotary sprays located on the bench below each batter			
4.2.2	All berms within the transport corridor are to be clay covered and where practicable graded such that they shed fretting coal or permit clean up. Alternatively coal berms should be water protected as per benches in Sect. 4.2.4			
4.2.3	All benches supporting conveyors are to be clay covered.			
5.2.2	Rotary sprays shall be spaced to give a continuous wetted corridor along the conveyor along the conveyor. Hydrants shall be spaced at not greater than 55 metre intervals along both sides of the conveyor.			
5.2.2	Birdsmouth sprays to be provided on at least one side of the conveyor for its full length. When one birdsmouth spray line only is provided, it shall be located on the opposite side of the conveyor to the rotary sprays and preferably on the north or west side of the conveyors. The birdsmouth sprays will be controlled by clearly marked valves spaced not more than 200 m apart and accessible from both sides of the conveyor.			
5.2.9	2 Carbon Dioxide and 2 Foam type fire extinguishers to be placed adjacent to the access steps of the drive unit. Live hose reels are also to be provided either on, or located adjacent to the conveyor drive unit.			

Latrobe Valley Open Cuts, Fire Protection code of practice
Checklist Page 2 of 2

Coal and Overburden Trunk Conveyors below grass level

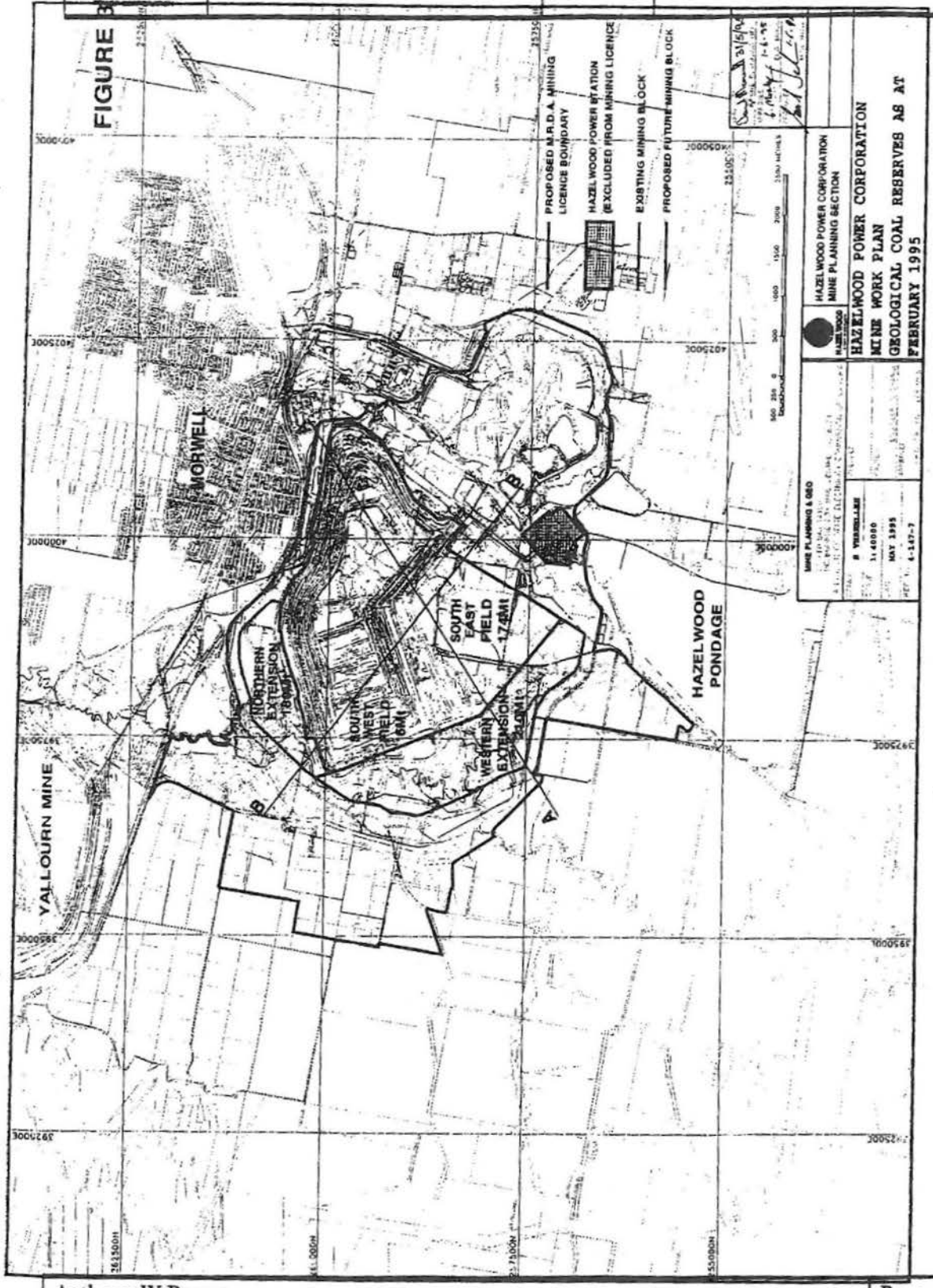
Conveyor Number [ ] Checked by..... Date.....

Section No.	Requirement under Code	Meets requirement ? Yes	No	If no, comment
5.2.9	Conveyor drive units below grass level in the open cut are to be protected by rotary sprays mounted either on headers or on the drive unit, or by portable rotary sprays such that a saturated island can be achieved under and around the drive unit, while at the same time achieving a spray curtain to protect the full height of the unit.			
5.2.9 5.2.2	Protection of the conveyor belting within drive units is to be achieved by birdsmouth sprays spaced on each side of the conveyor but staggered to give optimum coverage of belt surfaces and idlers. Inbuilt birdsmouth spray systems are to be provided on drive, turnover and tail end units.			
5.2.9	Hydrants should be located close to each drive unit for ready connection of portable rotary sprays and hosing facilities.			

ATTACHMENTS

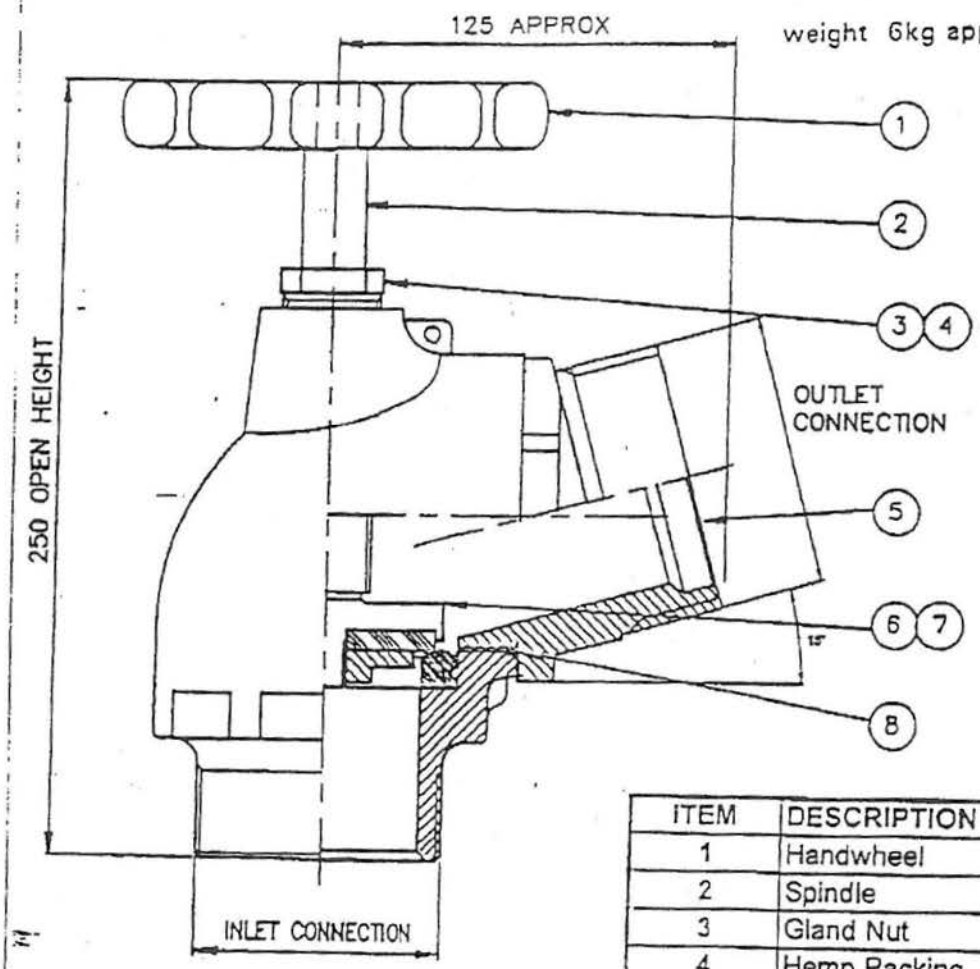
ATTACHMENT No 1	HAZELWOOD POWER CORPORATION MINE BOUNDARIES
ATTACHMENT No 2	FIRE HYDRANT SPECIFICATIONS
ATTACHMENT No 3	RAINFALL DATA.
ATTACHMENT No 4	MODIFIED EXHAUST & BRAKE DRAWINGS
ATTACHMENT No 5	MODIFIED EXHAUST TEST PIT SPECIFICATIONS
ATTACHMENT No 6	HIGH WATER STORAGE & CAPACITY CALCULATIONS.
ATTACHMENT No 7	FIRE HOSE PERCOLATION RATES & FORMULAS
ATTACHMENT No 8	FIREMANS TEST QUESTIONS & RESULTS.
ATTACHMENT No 9	DREDGER FIRE HOSE HOOK UP DIAGRAM.
ATTACHMENT No 10	EXTRACT FROM RATIONALISATION OF FIRE EQUIPMENT DOCUMENT

FIGURE 3


PROPOSED M.R.D.A. MINING LICENCE BOUNDARY
HAZELWOOD POWER STATION (EXCLUDED FROM MINING LICENCE)
EXISTING MINING BLOCK
PROPOSED FUTURE MINING BLOCK
HAZELWOOD POWER CORPORATION
MINE PLANNING SECTION
HAZELWOOD POWER CORPORATION
MINE WORK PLAN
GEOLOGICAL COAL RESERVES AS AT
FEBRUARY 1995
MORWELL
YALLOURN MINE
HAZELWOOD PONDAGE
NORTHERN EXTENSION 18MT
SOUTH WEST FIELD 6MT
SOUTH EAST FIELD 17.4MT
WESTERN EXTENSION 24MT

Attachment 2
Fire Hydrant Specifications

CFA Landing Valve Oblique



ITEM	DESCRIPTION
1	Handwheel
2	Spindle
3	Gland Nut
4	Hemp Packing
5	Outlet Adaptor
6	Jumper Valve
7	Jumper Vale Washer
8	O-Ring

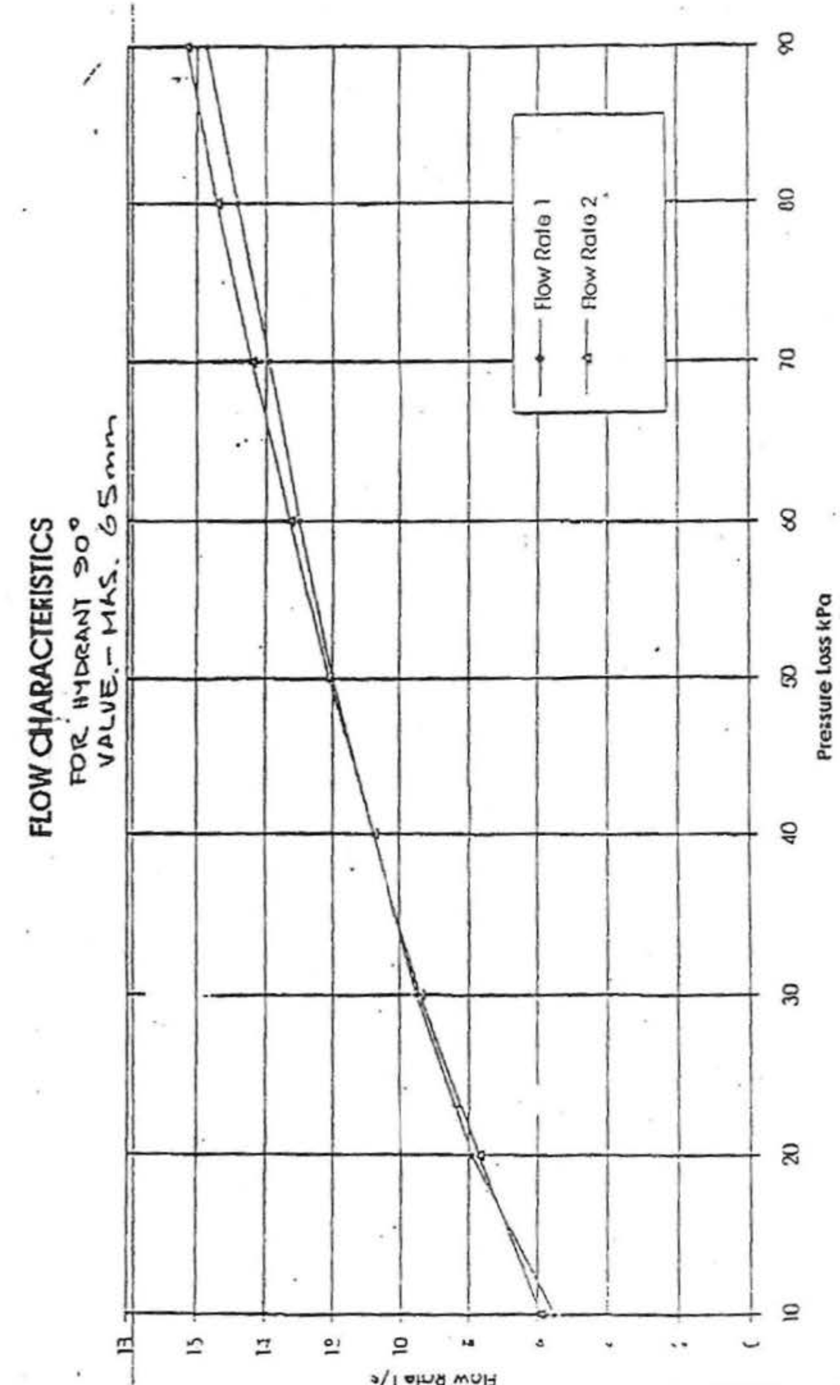
1. Hydrotest seat - 2700 kpa
2. Hydrotest Body- 2700 kpa

QUELL Hydrant Landing Valves

* Compact design
* Dezincification resistant
* Cast Iron with Bronze trim or Full Bronze (Not for use in HPC Mine)
* Variety of Inlets available including Roll Groove and Flange
* Spare parts available for each style
* Accessories - Blank caps, Reducers and adaptors
* Fully Approved - Australian Standards
  Watermark Specification No: 012
* Fully Patented- No: 638177

CFA Landing Valve Oblique

PART NO	DESCRIPTION	INLET	OUTLET	MAT'L
110367	Valve - Hydrant	65mm BSP Male	65mm CFA -Thd	C.I.
110374	Valve - Hydrant	65mm BSP Female	65mm CFA -Thd	C.I.
110383	Valve - Hydrant	65mm Roll Grooved	65mm CFA -Thd	C.I.
110392	Valve - Hydrant	65mm Shouldered	65mm CFA -Thd	C.I.
110401	Valve - Hydrant	65mm BSP Male	65mm CFA -Thd	G.M.



FLOW CHARACTERISTICS
FOR HYDRANT 90°
VALVE.- MAS. 65mm
Flow Rate 1
Flow Rate 2
Pressure Loss kPa
Flow Rate l/s

Attachment 3
Rainfall Data

HAZELWOOD METEOROLOGICAL STATION

MONTHLY RAINFALL TOTALS - MM

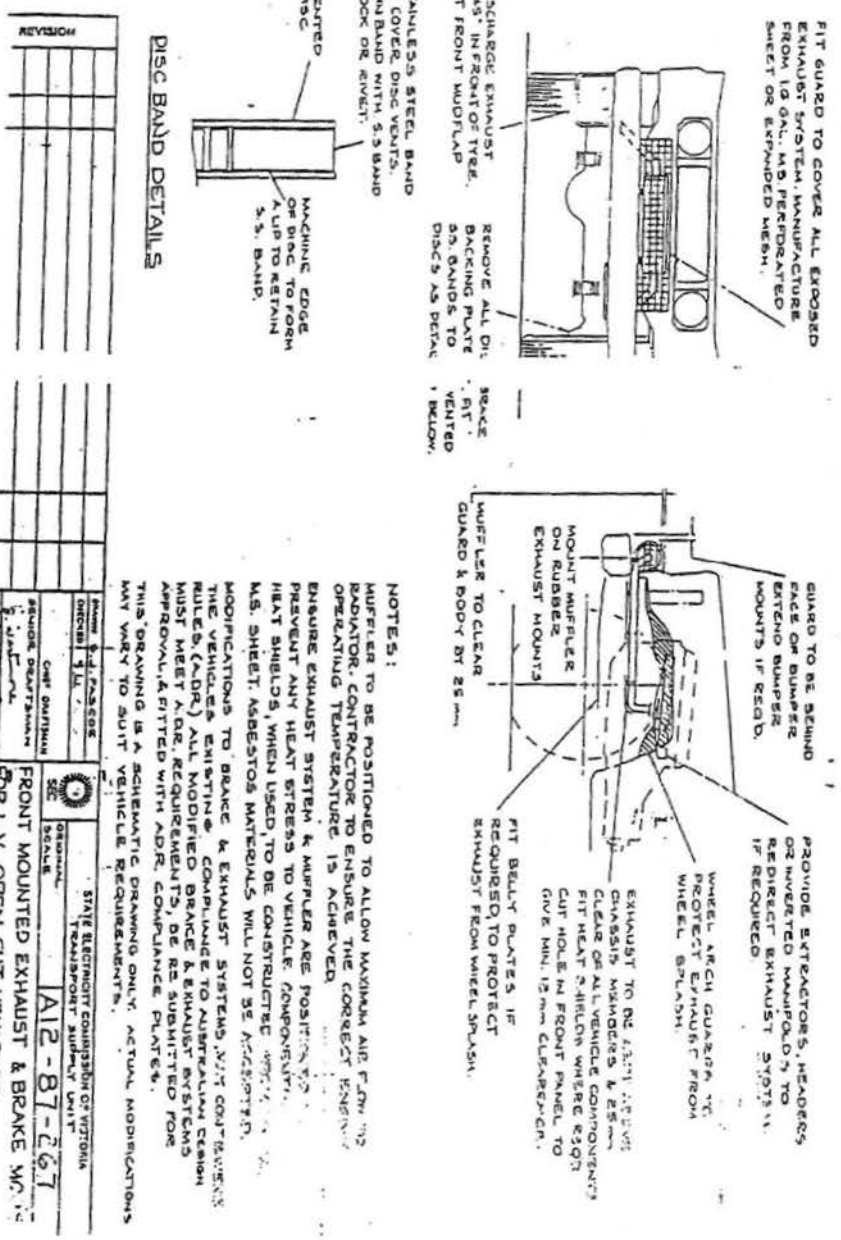
Based on 0900 daily readings.

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	YEAR
1980	43	9	36	39	40	71	53	59	81	48	58	* 111	653
1981	56	13	79	17	74	69	73	102	30	60	45	23	641
1982	43	7	82	43	60	36	21	20	62	25	12	26	437
1983	45	5	73	57	141	66	55	39	136	72	78	33	800
1984	69	18	53	59	17	41	63	97	83	37	40	80	657
1985	17	31	65	91	57	59	84	61	45	44	87	151	792
1986	33	32	11	63	105	75	95	25	52	89	19	97	696
1987	52	30	61	34	43	63	56	47	67	39	67	53	612
1988	31	7	34	41	99	43	63	46	64	65	103	103	699
1989	29	38	103	32	58	73	75	42	110	135	17	39	751
1990	2	47	59	76	32	33	59	106	47	87	52	34	634
1991	124	2	25	23	34	120	101	97	120	50	51	89	836
1992	43	15	61	42	40	81	30	61	97	68	85	122	745
1993	87	71	59	14	17	81	79	45	139	92	72	65	821
1994	45	102	17	42	54	38	17	63	76	47	135	30	666
1995	74	29	34	85	66	81							
AVE	47	35	53	49	66	58	64	69	76	66	64	62	709
MAX	130	144	220	96	153	120	139	133	139	150	135	151	931
MIN	2	2	5	8	17	20	15	20	26	25	12	5	437

Note: Data to September 1989 daily read gauge
Data from October 1989 is pluviograph data

Attachment 4

Modified Exhaust and Brake Drawings



Attachment 5

Modified exhaust test pit & test specifications

Before any vehicle can travel on coal surface it must be fitted with an approved & tested modified exhaust system.

Tests are to be carried out in a standard coal slurry pit and supervised by the H.P.C Mine Fire Service Officer or his deputy.All vehicles that have satisfactorily undergone the test are to have the results documented and the records kept at the Mine F/Service Office.

SLURRY PIT DIMENSIONS -

Length 100 metres
Width 20 metres
Depth approx 300 millimetres of sloppy coal slurry (*slurry pit can be specially constructed or a coal level utilised)*

Testing will consist of the following

Speed 1 - Travel through coal slurry at 15kph, then inspect motor cavity, fire wall, exhaust manifold, and exhaust pipe from motor through to exhaust pipe exit,
adjacent to vehicle front wheel for coal splash and document

Speed 2 - Travel through at 20 kph and carry out inspections as per speed 1 above .

Speed 3 -Reverse vehicle at approx 10 to 15 kph and at same time turning front wheels on and of full lock from left to right, inspect for coal splash around engine,exhaust manifold, and exhaust pipe.

Speed 4 -Travel through slurry pit at 30kph, carry out inspections as per speed 1,2& 3 above ,document and ascertain from these tests whether vehicle exhaust modifications conform to the required standards f the H.P.C Mine and are suitable for entry onto coal surface.

Attachment 6

HIGH WATER STORAGE AND CAPACITY CALCULATIONS

Approximate calculations for the conformation of Summer and Winter, Dirty Water Pond, operating levels.

The following calculations are only a rough calculation to back up the operating levels set for the Dirty Water Pond. The Figures set are based on twenty years of operating experience.
It is recommended that a complete operating analysis and flood assessment be conducted every five years at a minimum to check the operating levels and dirty water storage capacities. At the same time a complete bottom of pond survey should also be completed.

The figures set are as follows;

- Summer High level RL -64.3
- Summer Minimum Operating level RL -65.1
- Winter High level RL -65.1
- Winter Minimum Operating level RL -65.6

Summary table for Dirty Water Pond, RL's, Available capacities at each RL, and Volume over a vertical distance at each RL.

RL	Volume m3	Difference in RL	Volume Between Levels
-63	879786		
-63.2	851718	0.2	28068
-63.4	822879	0.2	28839
-63.6	796316	0.2	26563
-63.8	769043	0.2	27273
-64	742087	0.2	26956
-64.2	715443	0.2	26644
-64.4	689134	0.2	26309
-64.6	663100	0.2	26034
-64.8	637326	0.2	25774
-65	611845	0.2	25481
-65.1	599215	0.1	12630
-65.2	586666	0.1	12549
-65.4	561819	0.2	24847
-65.6	537656	0.2	24163
-65.8	514039	0.2	23617
-66	491048	0.2	22991
-66.2	468672	0.2	22376
-66.4	447026	0.2	21646

These bottom of pond RL levels were measured in June 1995.

Summary table of monthly rain fall data used has been collected from 1960 to 1993.

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Av Rain	47	33	54	49	67	58	65	70	75	66	62	62
Max rain av	130	144	220	96	153	120	139	133	136	150	104	151
Min rain av	2	2	5	8	17	20	15	20	26	25	12	5

The Summer Fire season is defined as 1 December to 31 March each year.
The off or Winter season is the 1 April to 30 November.

Summer Season, Dec to March average rain fall: (62+47+33+54)/4 = 49mm. 0.049m/month

Calculations:- 0.049m/mth * 1/30 mth/day = 0.0016m/day
=> 1.6 mm/day.

Area of the cut at grass level =600 Ha
-1 Hectare = 10000 m2
=6,600,000 m2

Captured volume: V = Area * Rainfall (m^3)

Calculations:- V = 6600000m^2 * 0.0016m/day
=10,780m^3/Day

The pond level rise in millimetres per day:

Calculation:-

If the pond is at RL -65.1
Given the average summer daily rainfall 1.6 mm/day
Pond volume increase will be, 10780 m^3/day

From the surveyed RL level table,
at RL -65.1 Vol= 599215 m^3

From the RL table the rise in level of 100mm (0.1m), from RL -65.1 to -65.0, corresponds to a volume increase of 12630 m3

=> 100mm = 12630 m^3
Rise in level of, 1mm = 126.3 m^3

At RL -65.1 & rainfall 1.6 mm/day,

Rise mm/day = 10780 m^3/day * 1/126.3 mm/m^3
= 86 mm/day.

Summary table of rainfall, Volume caught and level rise.

	Rain fall in mm/mth	Rain fall in mm/day	Vol caught m3/day	Level rise at RL -64.2 in mm	Level rise at RL -65.1 in mm
Summer Average	49	1.6	10780	82	86
Summer worst day ever	163	5.4	35860	272	285
Assumed 30 mm in one day		30	198000	1500	

Note: This assumes that all of the rainfall in the area of the Open Cut returns to the Main Dirty Water Pond. This will not be the case but only highlight the importance of operating the reserve storage capacity, in conjunction with the main dirty water pond, as detailed in the "Code of practice"

Given the above "levels of Rise", the pumping capacity is now assessed:

Assumptions;

- Its summer
- The pond is at RL -65.1
- Three pumps are available at Dirty Water Pump Station
- Background usage consumes 300 l/sec
- Total pumping capacity is 540 l/sec
- In one day 30mm of rain falls.
- All background usage of water returns to the main dirty water pond.

The available capacity for removing water is:-

calculations; l/sec = 540 - 300
=240 l/sec

Given; 1 l/sec = 1/1000 m3
1 day = 60 * 60 * 24 sec
=> 240 l/sec = 0.24 m^3/sec * 86400 sec/day
= 20.736 m^3 / day.

With 30mm/day = 198000 m^3/day

Volume of water entering the dirty water pond will be: =177264 m^3/day

At RL -65.1 the rise in water level will be:

given at RL 65.1 1 mm = 126.3 m^3

The rise in the water level in one day would be:- = 177264 m^3/day * 1/126.3 mm/m^3
= 1403.5 mm/day.

This is based on the assumptions above.

Attachment 7
FIRE HOSE PERCOLATION RATES AND FORMULAS

SPECIFICATION BACKGROUND OF h.p. FIRE HOSE

H.P. is a specially designed hose to comply with The State Electricity Commission High Percolating hose requirements, whilst at the same time exceeding the requirements of Australian Standard AS2702-1992

H.P. (High Percolating) was developed in conjunction with the "Morwell Fire Review Committee" following the major fire at Morwell in 1976.

This hose was developed to ensure that the Open Cuts were well prepared should a fire of this magnitude be repeated in the future, In order to assist in the protection of both life and valuable assets.

H.P. has some unique construction features which set it apart

standard types of percolating hose and these feature are a result of many, many months of product development in order that:

(i) Consistent high percolating rates could be achieved.

(ii) A consistent percolation rate will be achieved fro in one production batch to another.

(iii) Rate of percolation will remain high, even after the hose has been in service for a period of time

Note: Any normal percolating hoses will dry up due to the combined effects of suspended solids In the water and coal particles clogging external weave of the hose.

We would respectfully draw to your attention the following :

Alternative hose may be offered, which would undoubtedly be normal percolating hose with minor alterations to the lining, or "pin pricked linings to give initial high percolation rates.

Development in the past has proven beyond doubt that these types of products will not be suitable for the intended application due to lack of percolation and indeed In many cases no percolation at all after initial use.

SPECIFICATION FOR GENERATION VICTORIA
HIGH PERCOLATING HOSE
H/P 1-95

Scope:

Following the major fires at the Morwell Open Cut in 1976, it was deemed necessary to have a hose capable of percolating at higher rates to ensure:

I. Adequate water supplies for fire fighting purposes.

ii. A high degree of self protection for the hose and surrounding areas in the event of a fire.

iii. A high degree of dust suppression.

This product was developed over a period of time in conjunction with SECV Engineers, soley as a purpose built product.

CONSTRUCTION:

1. Jacket

The fire hose jacket is to be constructed of poly vinyl alcohol staple warp yarn with filament polyester weft, all materials are to be of virgin quality and free from knots, lumps, twists and any irregularities.

2. Lining

Lining is to be of a pre-vulcanised natural latex compound, applied in such a manner as to give an even consistent percolation rate as per the Specification requirement, along the complete hose length.

Dimensions:

Nominal Bore : 38mm, 64mm, 89mm
Bore Tolerance to be -0mm to + 1.5mm.
Nominal length to be 30 metres.
Working pressure: 1400 kPa
Maximum Burst Pressure : 3500 kPa
Dimensional Stability as per AS2792 1992

Percolation Rate:

All hoses shall percolate at the following rate:

5 l/min/m2 minimum to
10 l/min/m2 maximum
at 700 kPa in accordance with AS2792-1992 Appendix J

The above rate equates to the fllowing results when tested in a NATA Registered Laboratory utilising a 4 metre colection tray.

Diameter	Percolation Rate
38mm N/B	12 - 24 litres/per 5 mins
64mm N/B	20 - 40 litres/per 5 mins
89mm N/B	28 - 56 litres/per 5 mins

Marking:

All marking to be in accordance with the requirements of AS2792-1992

Certification:

All product supplied against this Specification are to be manufactured by a supplier who is quality endorsed to ISO9002-1994 (AS/NZS ISO9002:1994) Quality Systems.

Batch testing is to be conducted with each delivery and a NATA endorsed (stamped) certificate supplied from the original manufacturer.

Conformance of product to this Specification is to be verified by a NATA endorsed (stamped) Test Certificate.

Attachment 8
FIREMAN TEST QUESTION AND ANSWERS

MINING OPERATIONS DIVISION
SERVICES SECTION
NAME OF TRAINEE: ID:
DATE OF TEST: TESTED BY:
Circle appropriate PASS / FAIL

PASS FAIL

NOTE: TO PASS TEST TRAINEE MUST GAIN 72 POINTS OUR OF A POSSIBLE 80 POINTS TRAINEE MUST ANSWER FROM QUESTION I TO 5 WITH 100% ACCURACY BEFORE CONTINUING TEST

SUPERVISORS MUST ENSURE DURING FIRE EXTINGUISHING DEMONSTRATIONS THAT FIRE CONDITIONS AND RESTRICTIONS ARE SUITABLE AT ALL TIMES FOR THE LIGHTING OF FIRES.

ONLY FIRE SERVICE SUPERVISORS CAN ADMINISTER THIS TEST.

WHEN THE TRAINEE PASSES THE TEST THE FRONT SHEET MUST BE GIVEN TO THE FIRE SERVICES OFFICER TO BE KEPT AS A PERMANENT RECORD

TRAINEES WILL BE GIVEN TWO CHANCES TO PASS THIS TEST IF FAILURE ON THE SECOND ATTEMPT OCCURS FIREMAN TRAINING WILL NOT CONTINUE.

1. TRAINEE TO GIVE EXPLANATION OF FIREMAN'S DUTIES VALUE 5
To protect personnel and plant from fire. Inspections of burning / welding locations for fire. Assess fire equipment and procedures prior to each job. Continue to assess fire condition at all times. return all fire equipment back to store in a clean serviceable state.

2. TRAINEE MUST STATE CORRECT ACCIDENT PROCEDURE FOR H.P.C MINE VALUE 4
Attend to patient.
Dial telephone extension ? or use radio system select channel 3A and call operator using MAYDAY CALL SIGN.
When Your call sign is answered give:
- Your name

- location of accident. number injured
- details of ill injuries
- what assistance is required

Wait with patient

3. TRAINEE MUST STATE CORRECT FIRE PROCEDURES VALUE 3

Assess situation. Make judgment on requirements (type of fire, equipment needed)
Contact fire services and report fire and assistance required

4. WHAT INACTION CAN MAKE YOUR BOILERMAKER/TRADESMAN LIABLE FOR A FINE OF $5 000 OR 12 MONTHS IMPRISONMENT UNDER THE CFA ACT?

Not placing cut off's and electrode stubs in a fire proof receptible

5. THERE ARE FOUR TYPES OF FIRE EXTINGUISHERS USED IN H.P.C. MINING OPERATIONS, WHAT ARE THEY? VALUE 4

Co2 Foam Dry Chemical Water

6.WHAT IS THE CORRECT AND MOST EFFICIENT EXTINGUISHER WHEN FIGHTING AN ELECTRICAL, OIL, COAL OR RUBBER FIREVALUE 4

Electrical fire,	Co2 or Dry Chemical
Oil fire,	Foam
Coal fire,	Water
Rubber fire,	Water

COMMENTS

TOTAL FOR THIS PAGE

WHEN SHOULD WATER BE USED TO EXTINGUISH FIRE VALUE 1

When electrical apparatus isn't in fire vicinity.

8 WHY IS WATER THE MOST APPROPRIATE AID TO FIGHTING COAL FIRES? VALUE 5

( ) Readily available
( ) Cost affective

9.WHAT TYPE OF FIRE CAN DRY CHEMICAL BE USED ON OTHER THAN ELECTRICAL FIRES? VALUE 1 1

( ) All fires.

10 WHAT TYPE OF BRANCH CONNECTIONS ARE USED IN H.P.C. MINING OPERATIONS \ALUE 3

( ) Straight jet type.
( ) Combination fan jet type
( ) Foam.

11 WHEN SHOULD A FIRE BLANKET BE USED DURING BURNING AND WELDING?

VALUE 1

( ) When personnel or plant are in danger from exposure to fire.

12. WHAT TYPES OF HOSES ARE USED FOR FIRE PROTECTION IN H.P.C. MINING OPER ATIONS VALUE 7

( ) 90 mm X 33 m Percolating (usually for hooking up to dredger & plant)
( ) 64 mm X 33 m Percolating (fighting fire)
( ) 38 mm X 33 m Percolating (fire fighting)
( ) 19 mm X 20 m Rubber (burning and welding)

13 WHY ARE PERCOLATING HOSES USED TO FIGHT COAL FIRES? VALUE 1

( ) Percolating hoses sweat water, protecting themselves from fire.

I 4 WHEN BURNING AND WELDING IS TO TAKE PLACE WHAT SHOULD FIREMEN DO PRIOR TO THE COMMENCEMENT OF WORK VALUE 7

( ) Identify work to be done.
( ) Ascertain that a fire permit has been issued to boilermaker.
( ) Clear inflammable material from area.
( ) Damp down entire area, ensuring a fully charged hose is available at all times.
( ) Install fire blanket if required
( ) Inspect burning and welding location at least once during lunch time.
( ) At completion of work ensure final inspection of site takes place.

COMMENTS

TOTAL FOR THIS PAGE

15 CAN BURNING AND WELDING TAKE PLACE WITHOUT A FIRE PERMIT"?
VALUE 1
( ) No

16. WHEN RETURNING USED FIRE EQUIPMENT WHAT MUST YOU DO?
VALUE 2
( ) Notify fire Service Officer that equipment has been returned.
( ) Report any damage that may have occurred to the equipment

17. AS A FIREMAN DURING BURNING AND WELDING, WHAT WOULD YOU DO IF WIND BECAME EXCESSIVE VALUE 1

( ) Gain direction from supervision

18.WHEN SHOULD A FIREMAN LEAVE A BURNING AND WELDING SITE?
VALUE 2
( ) 1 hour after burning and welding has ceased.
( ) When directed by supervisor

19 WHAT IS A CHARGED HEADER? VALUE 1
) Pipeline that is fully charged with water

20. WHAT SIDE OF A CONVEYOR WILL YOU FIND A CHARGED HEADER?
VALUE 1
( ) Dredger side of conveyor

21. WHO ISSUES BURNING AND WELDING PERMITS?VALUE 2
( ) Fire service office attendant
( ) After hours, Operational Shift Supervisor.

22. WHERE SHOULD WELDING ROD BUTTS BE PLACED AFTER USE?
VALUE I
( ) Designated receptacle bucket

COMMENTS

TOTAL FOR THIS PAGE

23. TRAINEE MUST DEMONSTRATE THE FOLLOWING OPERATIONS. (All machines to be used in fire suppression demonstration will be selected by supervision)

( ) Set up a foam station ready for use. VALUE 5

( ) Using a fire extinguisher put out an oil fire. VALUE 5

( ) Using a hose and branch, put out a coal fire.
VALUE 5

( )Hose up dredge machine for fire protection. using the correct size and type of fire hose required. VALUE 5

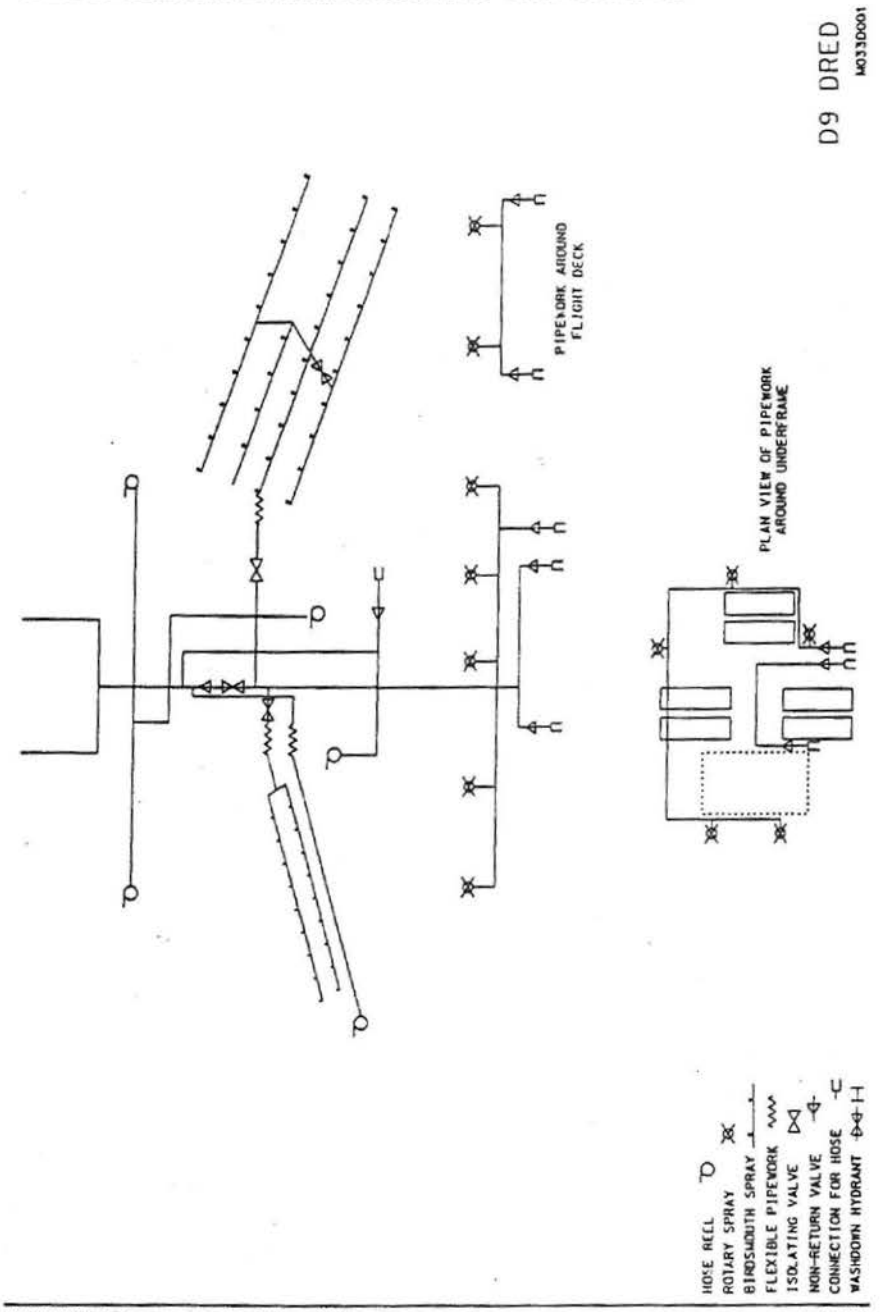
( ) Set up burning and welding equipment at HSB. DRG VALUE 5

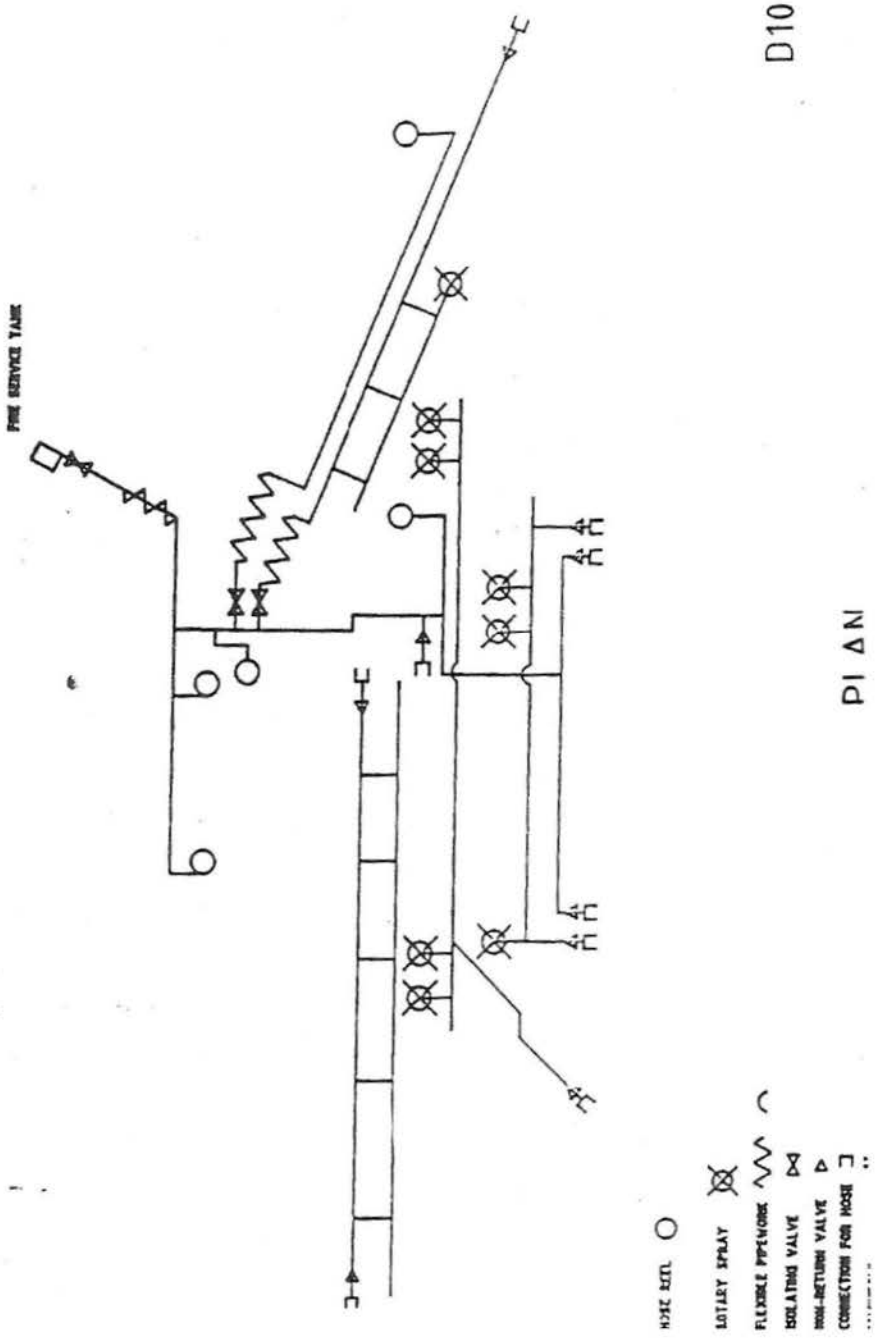
COMMENTS:

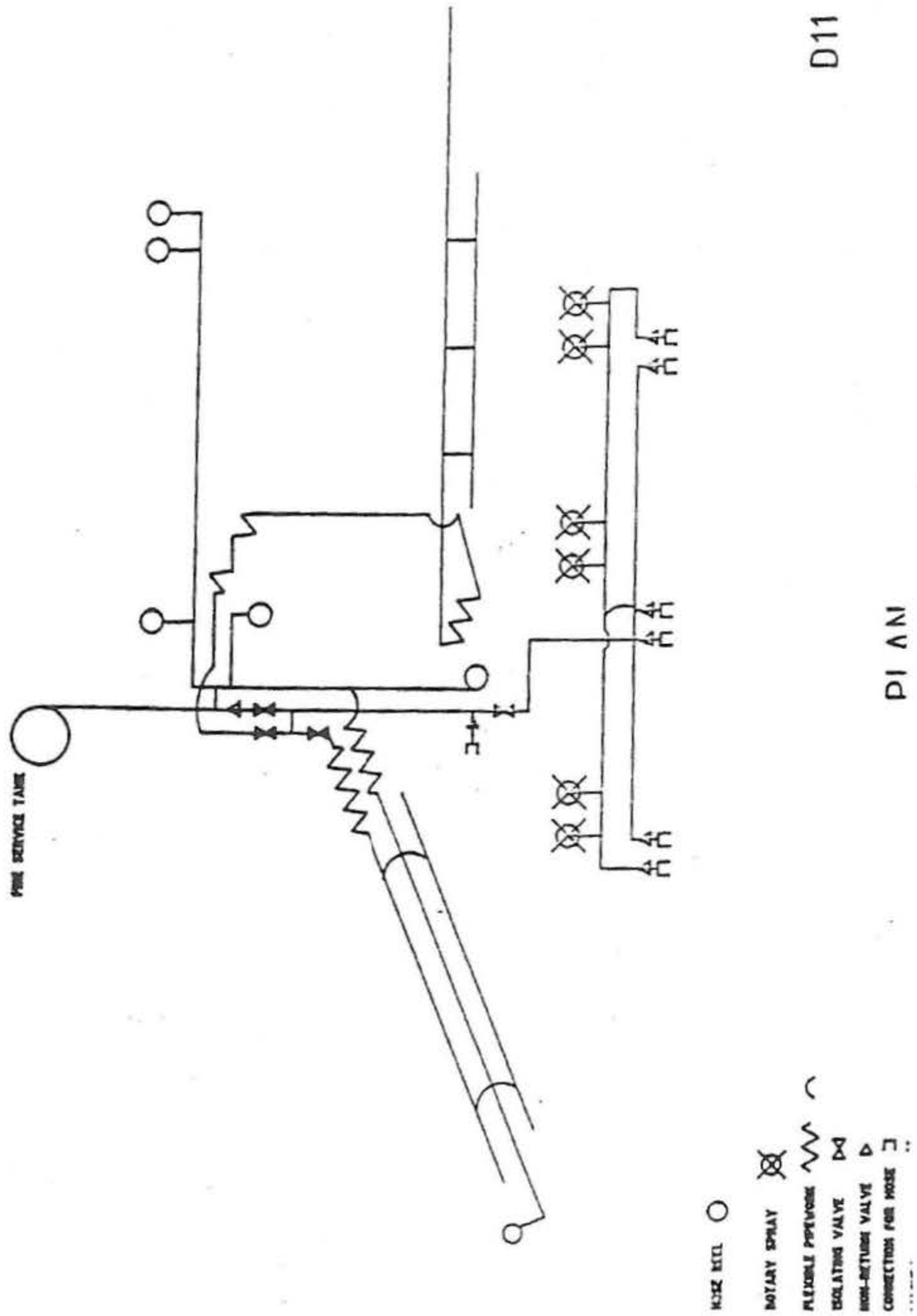
TOTAL FOR WHOLE TEST

Attachment 9

DREDGER FIRE HOSE HOOKUP DIAGRAMS




D10
PLAN
FIRE SERVICE YARD
HOSE REEL
LOCKED SPRAY
FLEXIBLE PIPEWORK
ISOLATING VALVE
NON-RETURN VALVE
CONNECTION FOR HOSE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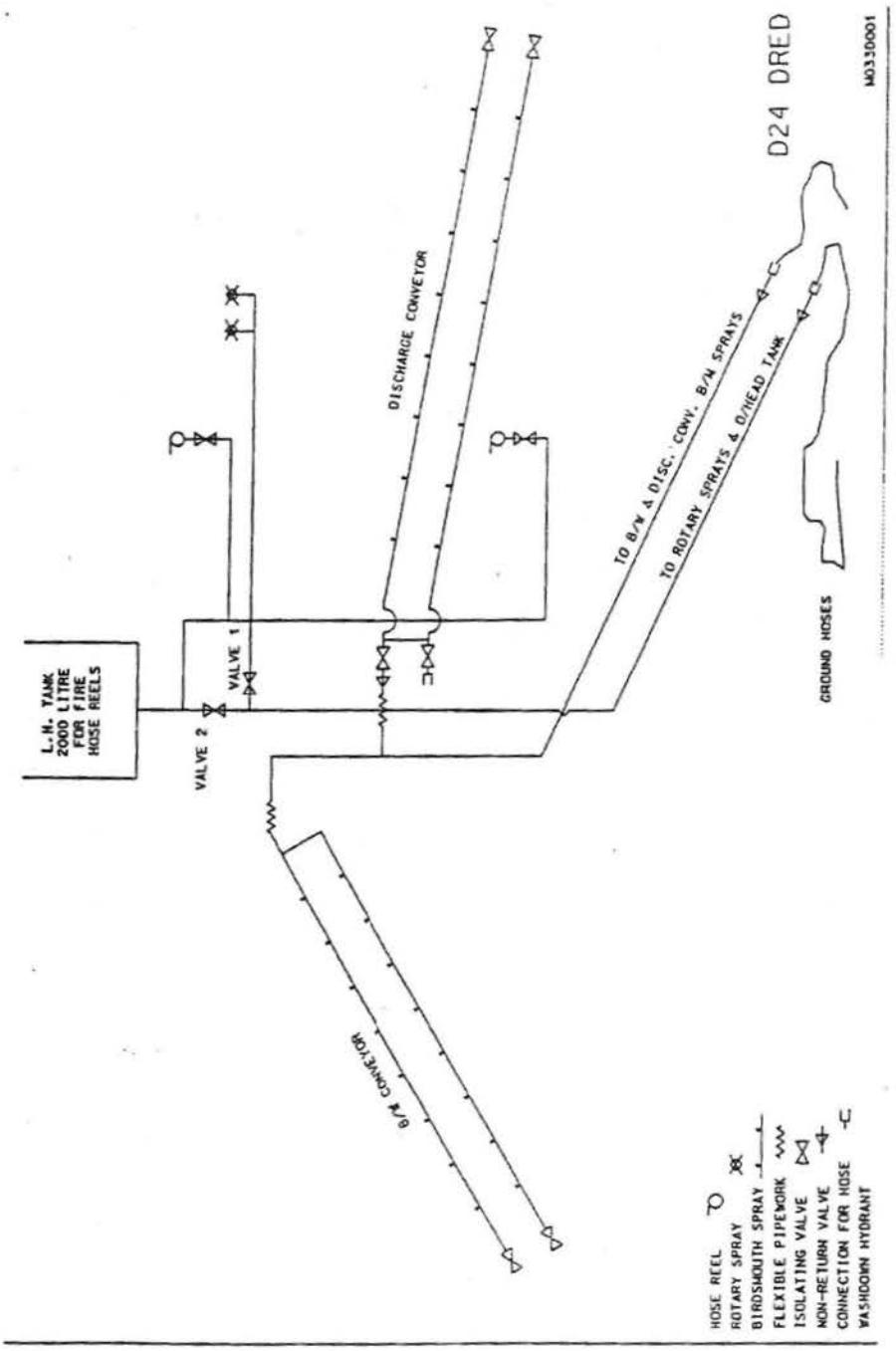
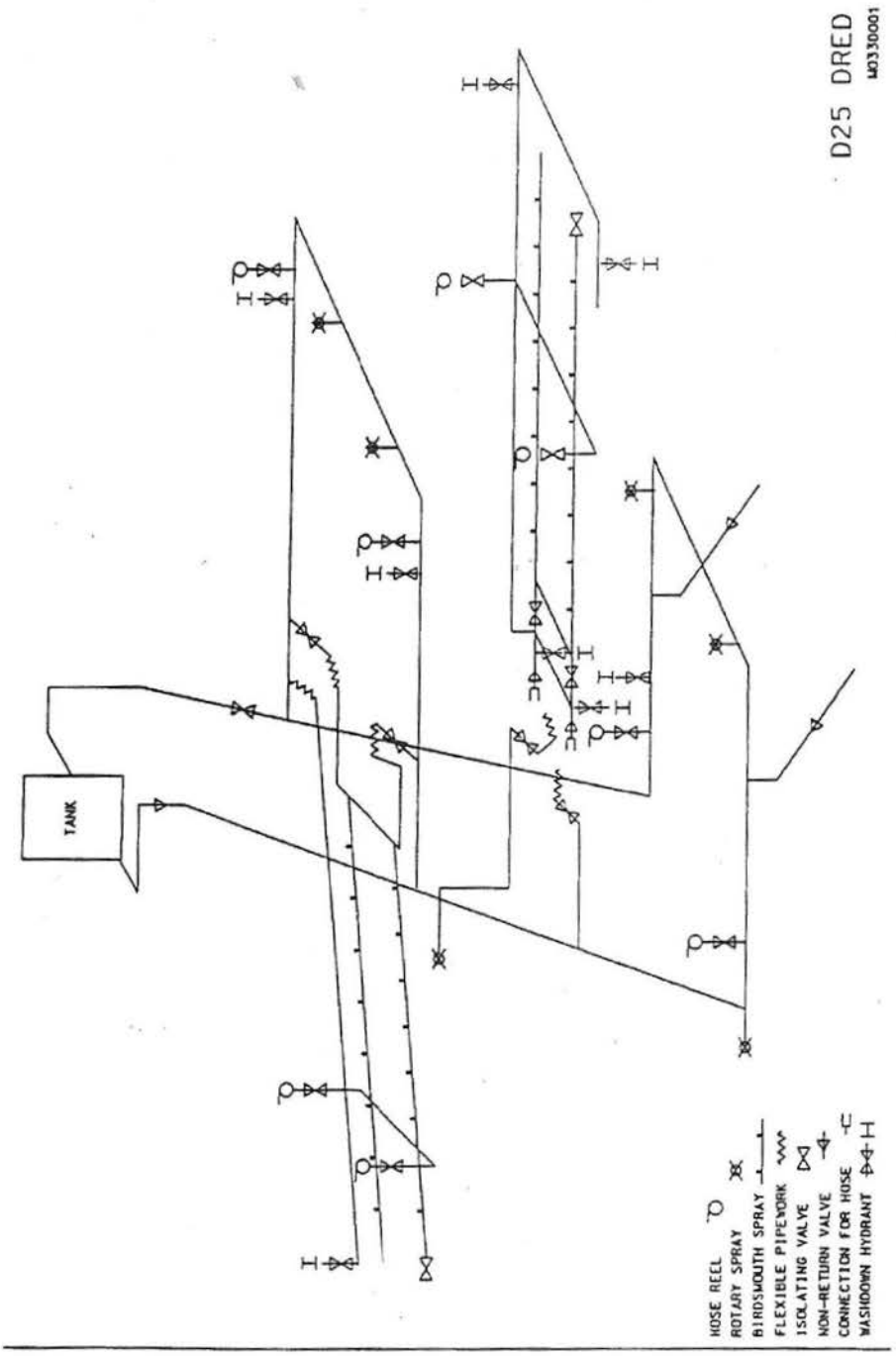
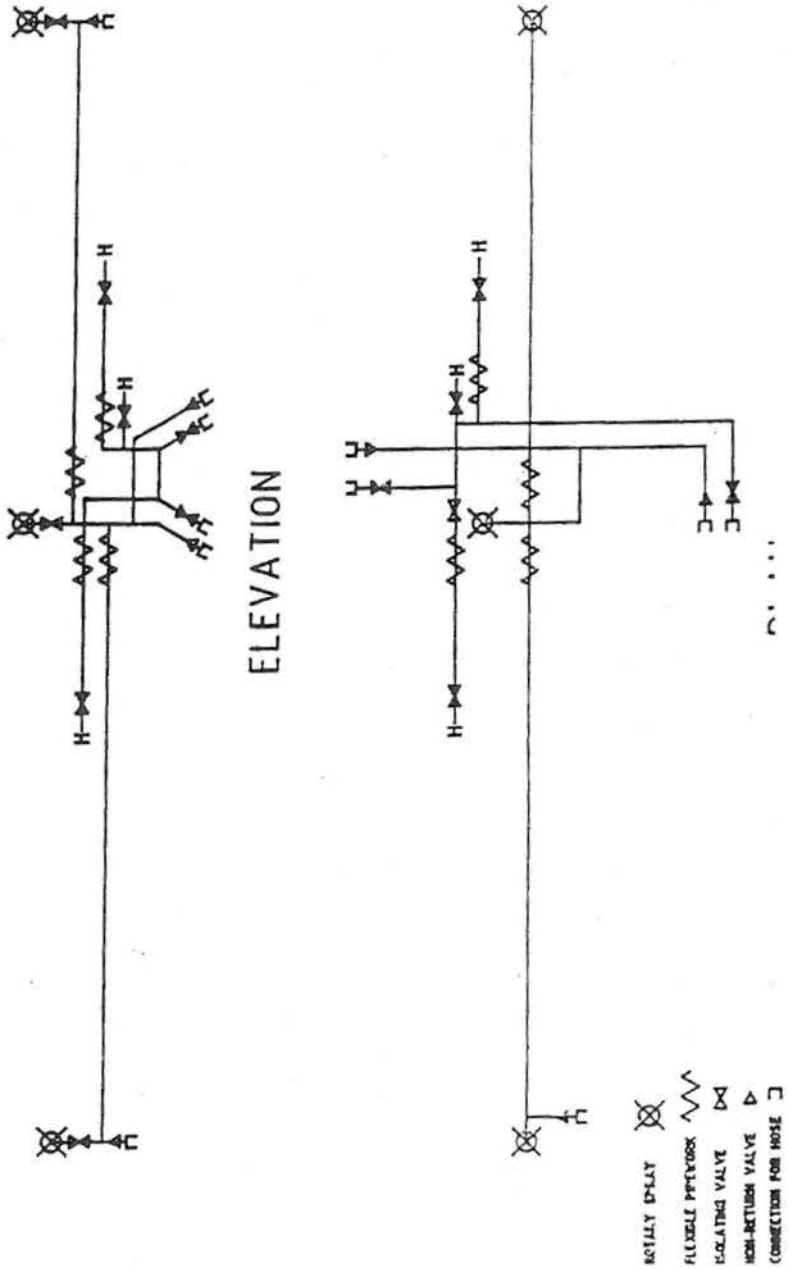
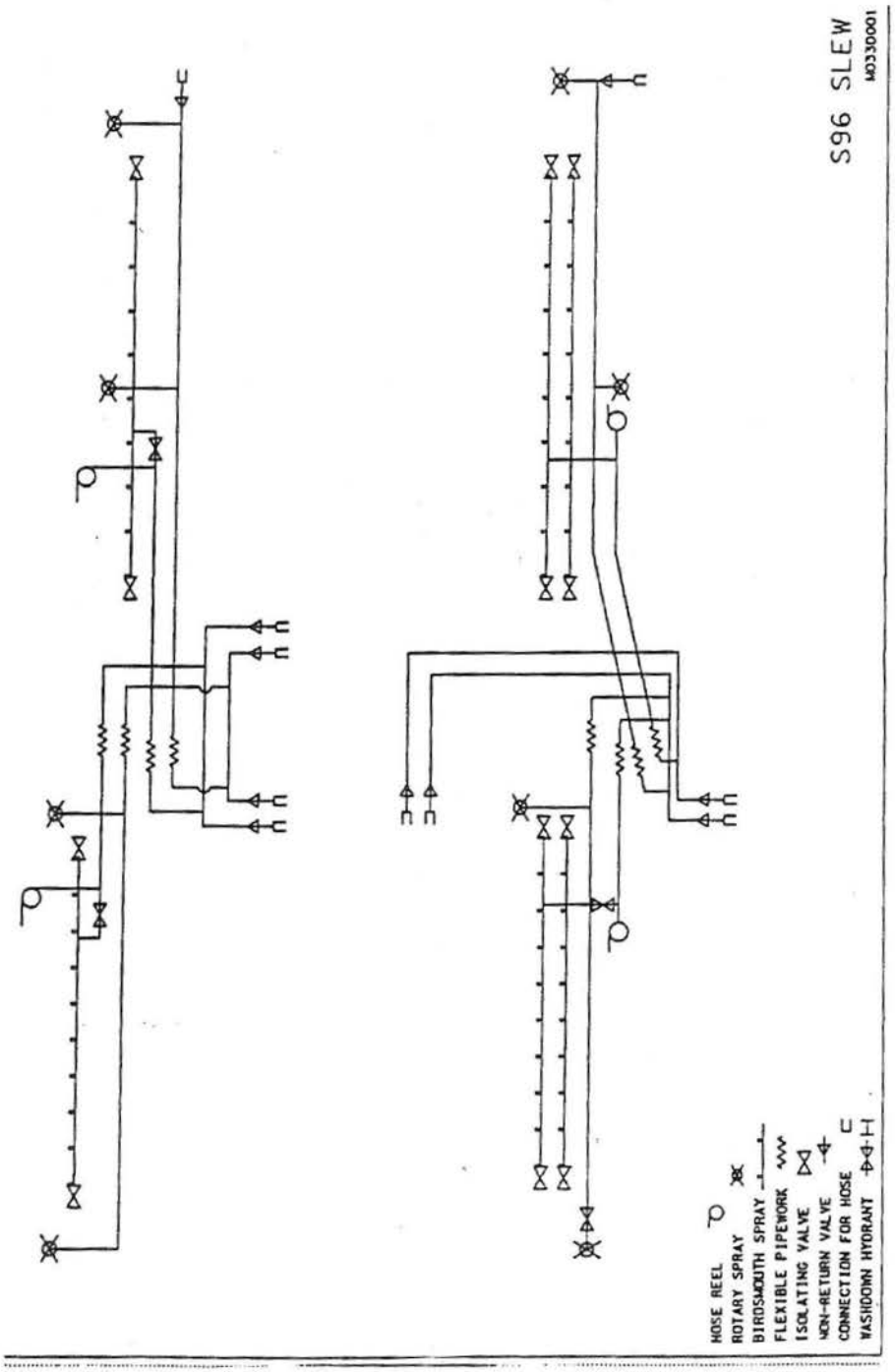
PLAN
FIRE SERVICE TANK
HOSE REEL
ROTARY SPRAY
FLEXIBLE PIPEWORK
ISOLATING VALVE
NON-RETURN VALVE
CONNECTION FOR HOSE

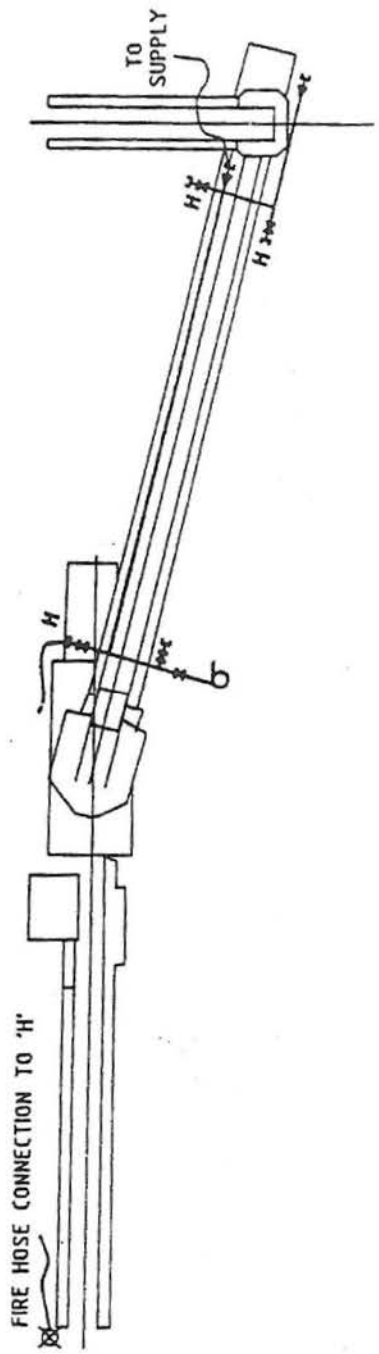

D24 DRED
M0330001
DISCHARGE CONVEYOR
TO B/W & DISC. CONV. B/W SPRAYS
TO ROTARY SPRAYS & O/HEAD TANK
GROUND HOSES
L.H. TANK 2000 LITRE FOR FIRE HOSE REELS
VALVE 1
VALVE 2
B/W CONVEYOR
HOSE REEL
ROTARY SPRAY
BIRDSMOUTH SPRAY
FLEXIBLE PIPEWORK
ISOLATING VALVE
NON-RETURN VALVE
CONNECTION FOR HOSE
WASHDOWN HYDRANT


D25 DRED
TANK
HOSE REEL
ROTARY SPRAY
BIRDSMOUTH SPRAY
FLEXIBLE PIPEWORK
ISOLATING VALVE
NON-RETURN VALVE
CONNECTION FOR HOSE
WASHDOWN HYDRANT

S94


ELEVATION
ROTARY SPRAY
FLEXIBLE PIPEWORK
ISOLATING VALVE
NON-RETURN VALVE
CONNECTION FOR HOSE


S96 SLEW
M033D001
HOSE REEL
ROTARY SPRAY
BIROSMOUTH SPRAY
FLEXIBLE PIPEWORK
ISOLATING VALVE
NON-RETURN VALVE
CONNECTION FOR HOSE
WASHDOWN HYDRANT



TS 2 STACKER
H033D001

HOSE REEL
ROTARY SPRAY
ISOLATING VALVE
NON-RETURN VALVE
CONNECTION FOR HOSE
WASHDOWN HYDRANT H

Attachment 10

EXTRACT FROM THE H.P.C FIRE EQUIPMENT RATIONALISATION POLICY

VEHICLE AND PLANT FIRE SUPPRESSION PACKS

Vehicles that enter the Morwell Mine are to be equipped with the following fire fighting equipment -

- 1 off 30 m x 38 millimetre percolating fire hose fitted with 64 millimetre C.F.A. couplings.
- 1 off 20 m x 19 millimetre fire hose fitted with the TPB10 triple purpose spray nozzle and 64 millimetre C.F.A. couplings.
- 1 off Hose Director fitted with a 16 millimetre nozzle.
- 1 off 16 litre minimum, fully charged knapsack spray.

Mobile Plant -

- 1 off 6 m x 19 millimetre wash down fire hose fitted with 64 millimetre C.F.A. couplings.
- 1 off 9 litre fully charged foam extinguisher.