



**Executive Summary
Internal Audit Report No. 4278**

IPR Restricted

AUDIT TITLE:	Hazelwood GHD Mine Fire Recommendations Review	Issued: March 2008
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AUDIT CONCLUSIONS AND SUMMARY

The October 2006 fire in the Hazelwood mine is estimated to have caused damage amounting to
Consultants GHD were asked to review the causes of the fire and recommend improvements to measures and controls at Hazelwood to prevent and respond to such events. We reviewed the progress of actions to address the recommendations of the review.

The GHD report was issued in January 2007 and Hazelwood established actions to address the recommendations. There was good progress in implementing the changes; most of the items (14 of the 20 GHD recommendations) had been fully implemented with the remaining 6 were in process.

MANAGEMENT RESPONSE	Target Date for Completion of all Priority 1 Recommendations:	N/A
<p style="text-align: center;">Name Title</p>	<p style="text-align: center;">Date:</p>	

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BACKGROUND AND OBJECTIVES AND SCOPE OF THE AUDIT

In October 2006 there was a major fire in the Hazelwood mine. Whilst mine fires are not uncommon, this fire was in the operating face and spread quickly causing damage to circa 1.5km of the coal conveyor system and severely damaged dredger 11. The expected cost of the fire is of which IPRH expect to receive from the insurers after allowing for the excess on the assets and i excess for the first 60 days of business interruption cover.

In order to learn lessons from the event, consultants GHD were contracted to:

- establish the facts surrounding the fire, including the contributing factors and underlying causes; and,
- review the adequacy of existing controls and procedures and recommend preventative and corrective actions;

We reviewed the progress made, by the Hazelwood mine in implementing the GHD recommendations.

KEY ISSUES

- 1 20 recommendations arose from the GHD review; resulting in 49 actions proposed by Hazelwood to address and implement the recommendations. At the time of the review, 37 of the proposed actions had been completed and 12 were in various stages of progression. The details and status of the individual GHD recommendations are scheduled in the Appendix to this report.
- 2 Only two additional recommendations were made by Internal Audit. One related to GHD recommendation 4 and was to establish formal monitoring to ensure that the annual refresher training is conducted for designated mine staff. The other related to GHD recommendation 10 and was to perform a cost/benefit analysis to determine whether the Incident Control Centre (ICC) required back-up generators to provide for the event that external power was not available during an emergency

REPORT DISTRIBUTION:	IPR Board:	All Board Members
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Appendix: Status of Recommendations from the (GHD) Review of the 2006 Fire in the Hazelwood Mine

GHD Recommendation	Status
<p>Recommendation 1</p> <p>In July of each year, a plan should be developed for the upcoming fire season based on weather predictions and mine conditions. Note that with the current conditions, a fire season may need to be designated from October to March.</p>	Complete
<p>Recommendation 2</p> <p>An annual audit of the fire system should be undertaken prior to the start of the fire season in accordance with the fire season plan (Refer to Recommendation 1). The audit should review all aspects of the fire service facilities, systems and procedures. This should include hardware, documentation (eg. emergency response plans), fire pumps and electrical supply, spray coverage of coal levels and fire fighting training, etc.</p>	Complete
<p>Recommendation 3</p> <p>Predefined conditions should be identified to assist in determining whether a Fire Alert should be declared. The criteria should not be based solely on CFA Total Fire Bans as the CFA criteria includes factors relating to conditions that are not applicable to an open-cut coal mine. These conditions should include ranges in temperature, humidity, wind direction or speed that can define 'severe weather conditions'.</p>	In-progress Complete
<p>Recommendation 4</p> <p>Fire Alert processes are understood but are not always fully complied with. As the Fire Alert is a critical control to prevent fires, the procedures including roles and responsibilities should be reviewed, updated, reiterated and enforced for mine personnel.</p>	In-progress
<p>Recommendation 5</p> <p>Roles and responsibilities of Fire Services and personnel to support Fire Services during a Fire Alert and in an incident should be reviewed. The review should cover the responsibilities and tasks required by the Fire Services Group including the Fire Services Officer, Supervisor and Operators for the normal daily tasks, during a Fire Alert and during an incident. The review should also cover which mine personnel or contractors would provide a valuable and effective resource to support Fire Services during a Fire Alert and an incident dependent on their roles and responsibilities. For instance, utilising the maintenance crew for additional fire spotting after a Fire Alert has been declared. Refer to Appendix D for Organisational responsibilities in Fire Prevention.</p>	In-progress Complete
<p>Recommendation 6</p> <p>Interface and communications between Operations, Fire Services and Maintenance needs to be reviewed in terms of fire systems, particularly in relation to the power supply for the fire pumps.</p>	Complete
<p>Recommendation 7</p> <p>Roles, responsibilities and procedures outlined within the IPRH Emergency Response Plan should be reviewed and rewritten utilising a checklist approach so that each person undertaking an emergency role can confirm that they are undertaking their key activities.</p>	In-progress
<p>Recommendation 8</p> <p>In a significant fire, each coal level should be treated as a fire zone and a Zone leader allocated after consultation with the CFA.</p>	Complete
<p>Recommendation 9</p> <p>Once it has been determined that there is a significant fire, all supervisors should return to the ICP for a briefing and to undertake a role of co-ordinating the fire teams. A co-ordinated approach to fighting fires is more effective than just large numbers of fire fighters.</p>	Complete
<p>Recommendation 10</p> <p>The ICP should continue to be established as a special facility separate from normal operations or mine activities. The ICP should have available all essential equipment required for an emergency response, that is easily and quickly accessible; and able to be transported to any onsite facility. This equipment may be available as a mobile 'kit'.</p>	In-progress Complete
<p>Recommendation 11</p> <p>IPRH should consider notifying the CFA immediately once a spot fire has been reported and verified on site. The CFA remains on alert for a nominated amount of time (eg. 15 minutes). Within this time frame they must receive further notification from the site that the fire has been extinguished otherwise they will send out an initial response crew in anticipation that the fire has escalated and requires their assistance. This practice is undertaken at other mines in Latrobe Valley.</p>	Complete

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GHD Recommendation	Status
<p>Recommendation 12</p> <p>The IPRH Significant Issue Corporate Response Plan and the IP Corporate Serious Incident Procedure should be reviewed and updated to ensure there are no discrepancies and the IPRH Emergency Response Plan should be consistent with the IPRH Significant Issue Corporate Response Plan.</p>	In-progress
<p>Recommendation 13</p> <p>Work procedures and practices within the 'Mine Fire Service Policy and Code of Practice' and the 'Fire Instructions' should be systematically reviewed and updated.</p>	Complete
<p>Recommendation 14</p> <p>Whilst it should be recognised that the priority is to ensure that sufficient water is used to control the spread of fires, particularly to ensure no burning coal is transferred to the power station, mine operations should be trained to understand the effects of excessive water transferred to the power station.</p>	Complete
<p>Recommendation 15</p> <p>The use of thermal imaging cameras and other technology in the detection of faulty idlers should be investigated for their application and used where appropriate.</p>	Complete
<p>Recommendation 16</p> <p>The use of thermal imaging cameras was effective during the fire fighting and should be considered as well as other technology for wider use in spotting fires within the mine.</p>	Complete
<p>Recommendation 17</p> <p>A procedure for dealing with Carbon Monoxide (CO) during fire fighting, including the use of CO monitors, should be developed since personnel safety is a major responsibility and concern in fighting coal fires.</p>	Complete
<p>Recommendation 18</p> <p>Whilst the efforts of all mine, contractor and CFA personnel are highly commended in their assistance with the fire fighting, it should be emphasised and reinforced to all personnel that no job is so important that they should take excessive risks.</p>	Complete
<p>Recommendation 19</p> <p>Allocating IPRH operations staff to CFA strike teams during a fire should be included within IPRH procedures (eg. Emergency Response Plan and/or Fire Instructions) and reinforced so that it becomes normal practice.</p>	Complete
<p>Recommendation 20</p> <p>To ensure that the ongoing efficient operations of the mine are not compromised over the long term as a result of the fire incident, a detailed risk analysis should be carried out to assess the life cycle impact of the fire on maintenance costs and longevity of the mine infrastructure assets.</p>	Complete