



Centennial Coal

Charbon Colliery

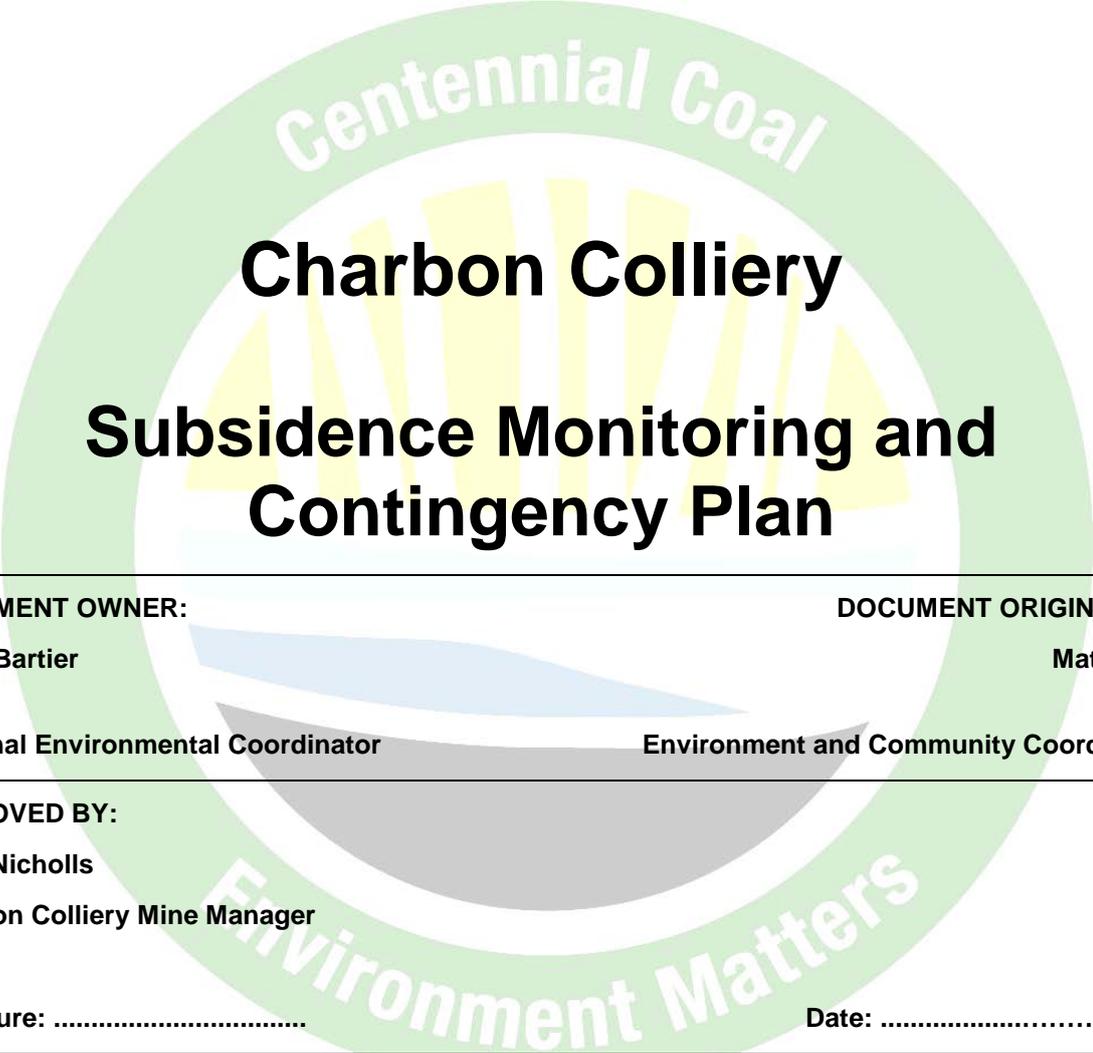
Subsidence Monitoring and Contingency Plan

June 2012





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Charbon Colliery

Subsidence Monitoring and Contingency Plan

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Title	Date Effective:	Revision Status:	Planned Review:	Page:
Subsidence Monitoring and Contingency Plan Document Number: CHJ – EWP – P – 001	30/07/2011	1.1	As required	3 of 28

Last Print Date and Time: 25 June 2012, 11:15 AM

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APPENDICES

APPENDIX 1 – RELEVANT PROJECT APPROVAL CONDITIONS
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Abbreviations

AEMR	Annual Environmental Monitoring Report
CCC	Community Consultation Committee
CCL	Consolidated Coal Lease
CHPP	Coal Handling and Processing Plant
DTIRIS	Department of Trade and Investment, Regional Infrastructure and Services
EA	Environmental Assessment
EDM	Electronic Distance Modelling
EPL	Environmental Protection Licence
I&I NSW	Department of Industry and Investment
ML	Mining Lease
MOP	Mine Operations Plan
NSW	New South Wales
SMP	Subsidence Management Plan



1 INTRODUCTION

Charbon Colliery is an underground (bord and pillar) and open-cut coal mine operated by Charbon Coal Pty Limited (Charbon Coal), a joint venture between Centennial Coal Company Limited (Centennial) (95 percent) and SK Networks Resources Australia Pty Ltd (5 percent). Charbon Colliery is located in the Western Coalfields of NSW, approximately 87 kilometres north west of Lithgow and 3 kilometres south of Kandos (see **Figure 1**). The Colliery has been in operation since the 1920's and initially supplied coal for the former Charbon Cement Works until its closure in 1977. The mine continued to produce coal for local consumption until the Colliery was upgraded in 1985.

The Project Site in its current state covers an area of approximately 2,692 hectares and consists of six open cut mines; one underground mine; rail loop and loading facilities; and a coal handling and processing plant (CHPP).

Charbon Coal received Project Approval 08_0211 for the continuation of operations at the Charbon Colliery on the 7th of September 2010. The Project Approval is supported by the Continued Operation of the Charbon Colliery Environmental Assessment (EA) completed in November 2009 by R.W. Corkery & Co Pty Limited. Schedule 3, Condition 25 of the Project Approval outlines the requirement for the preparation and implementation of a Subsidence Monitoring and Contingency Plan for the approved Western Underground operations. This management plan is required to be submitted to the Director-General for approval three months prior to the commencement of mining operation in the Western Underground.

This document has been completed in order to fulfil the requirements of the Project Approval and to provide employees and contractors of Charbon Coal with a clear understanding of the requirements relating to subsidence monitoring of the approved Western Underground at the Charbon Colliery. All conditions relevant to this Subsidence Monitoring and Contingency Plan have been presented in **Appendix 1**.

2 PURPOSE

The purpose of this Subsidence Monitoring and Contingency Plan is to:

- Ensure that appropriate baseline data is collected to enable the effective monitoring of subsidence associated with the Western Underground;
- Ensure that appropriate field investigation of subsidence associated with the Western Underground is undertaken and recorded effectively;
- Outline proposed contingency measures to address any unpredicted subsidence related impacts and consequences in the Western Underground;
- Outline procedures to ensure adherence to all guidelines and legislative requirements relevant to the Subsidence Monitoring and Contingency Plan;
- Provide all employees and contractors of Charbon Coal with a clear description and understanding of responsibilities and requirements regarding subsidence monitoring required for the Western Underground;
- Address the relevant conditions of the Project Approval (see **Section 4.2**); and
- Address relevant commitments made in the Statement of Commitments (see **Section 4.2**).



3 SCOPE

The approved Western Underground is located below Haystack Mountain (see **Figure 2**). Mining will be undertaken in the Lithgow Seam by the bord and pillar method of mining using a continuous miner and will include first workings only (see **Figure 3**). This mining method will ensure that pillars of in-situ coal remaining after the completion of mining operations are of sufficient size to provide adequate support and to prevent the development of significant surface subsidence in the areas above the proposed workings (Corkery & Co, 2009). 20mm or more of surface subsidence is defined as being significant by the *Guideline for Applications for Subsidence Management Approvals* (SMP Guidelines) (DMR, 2003). The maximum predicted subsidence in the Western Underground is 20mm (Seedsman, 2009).

This Subsidence Monitoring and Contingency Plan details monitoring and reporting requirements to assess subsidence, environment and public safety aspects associated with the development of panels within the Western Underground. This management plan also outlines proposed contingency measures to address any significant subsidence related impacts. It is noted that significant subsidence related impacts are not expected to occur as a result of predicted subsidence levels.

This Subsidence Monitoring and Contingency Plan has been prepared in accordance with the following approvals and management plans:

- Guideline for Applications for Subsidence Management Plan Approvals (DMR, 2003);
- Charbon Colliery Continued Operations Environmental Assessment (2009);
- Charbon Colliery Mine Operations Plan (MOP) 2010-2014 (2010);
- Subsidence Management Plan Approval (2007);
- Charbon Colliery Subsidence Management Plan Written Report (2006); and
- Charbon Colliery Subsidence Management Plan (2006).

4 REGULATORY REQUIREMENTS

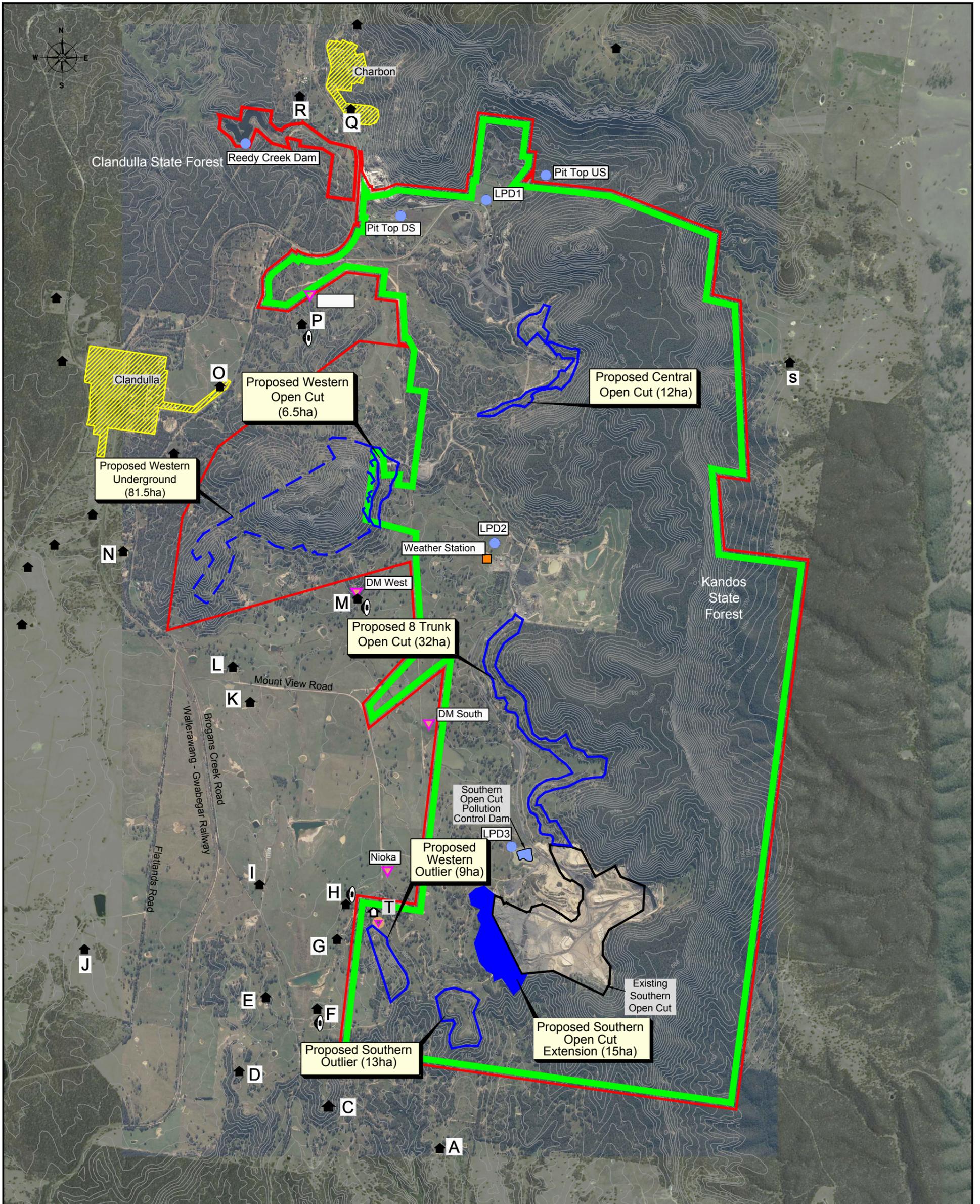
4.1 RELEVANT LEGISLATION

All activities at the Charbon Colliery are conducted in accordance with relevant NSW and Commonwealth legislation, the commitments made in the Environmental Assessment (EA) and Project Approval (08-0211). Charbon Coal operates in accordance with the criteria outlined within Environmental Protection Licence (EPL) 528, issued under Section 55 of this Act.

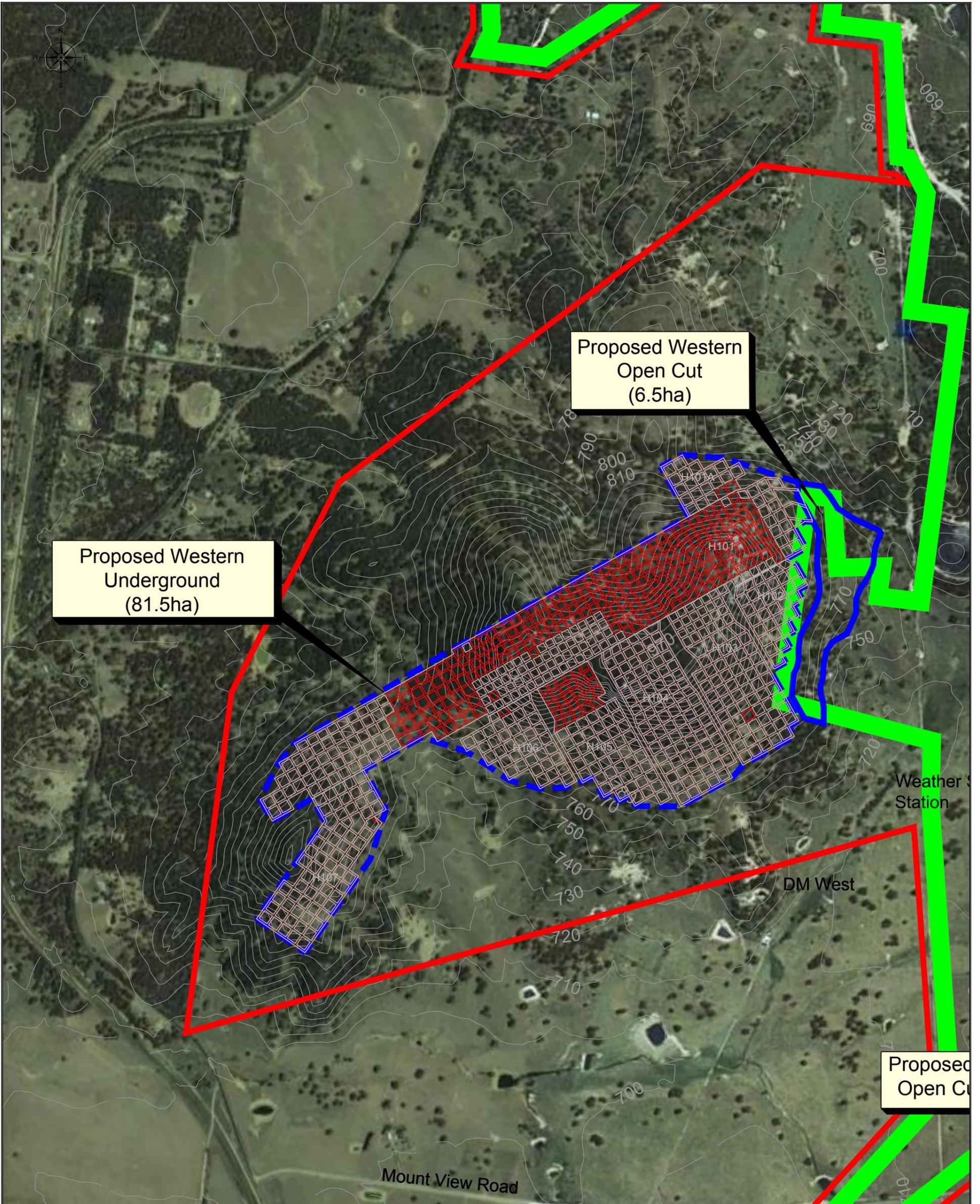
A summary of leases held by Charbon Colliery has been summarised in **Table 1**.

Table 1 – Summary of Leases and Licences

Leases				
Lease Type	Number	Approval Date	Expiry	Covering
Consolidated Coal Lease	732	13 Dec 1989	2 Dec 2025	
Coal Lease	1318	29 Jun 1993	June 2014	Adjoining CCL732
Mining Lease	1384	19 Jan 1996	18 Jan 2017	Third Entry Open Cut
Mining Lease	1501	21 Dec 2001	20 Dec 2022	Northern extension to CML 1384.
Mining Lease	1524	28 Oct 2002	27 Oct 2023	Access Road Extension Open Cut
Mining Purposes	No.'s 270, 499, 505, 526, 662, 663, 670, 964			



LEGEND <ul style="list-style-type: none"> — Project Site Boundary — Colliery Holding Boundary (offset for clarity) — Existing ROM Coal Haul Road — Existing / Approved Open Cut Mine Area — Proposed Open Cut Mining Area Residential Area — Contour (m AHD) (Interval = 10m) ■ Weather Station ● Surface Water Monitoring Location ● Deposited Dust Monitoring Location ● High Volume PM₁₀ Dust Monitoring Location ▲ Non Project-related Residence and Reference ▲ Project-related Residence and Reference ● Noise Measurement Location 	 Scale 1:30 000 (A3).	FIGURE 2 Western Underground	Project: Subsidence Monitoring and Contingency Plan Client: Charbon Coal Pty Ltd										
	Base Plan Data Source: RWC & Geo-spectrum (Australia) Pty Ltd.	<table border="1"> <thead> <tr> <th>Version</th> <th>Date</th> <th>Author</th> <th>Checked</th> <th>Approved</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>12/04/11</td> <td>LH</td> <td>AW</td> <td>AH</td> </tr> </tbody> </table>	Version	Date	Author	Checked	Approved	1	12/04/11	LH	AW	AH	 GSS ENVIRONMENTAL Environmental, Land and Project Management Consultants
Version	Date	Author	Checked	Approved									
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LEGEND Project Site Boundary Colliery Holding Boundary (offset for clarity) Existing / Approved Open Cut Mine Area Contour (m AHD)(Interval = 10m)	 Scale 1:10 000 (A3)		FIGURE 3 Mine Plan		Project: Subsidence Monitoring and Contingency Plan										
	Base Plan Data Source: RWC & Geo-spectrum (Australia) Pty Ltd.		GSS ENVIRONMENTAL Environmental, Land and Project Management Consultants		Client: Charbon Coal Pty Ltd										
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						Projection: MGA94 Zone 56									

4.2 PROJECT APPROVAL CONDITIONS

The Project Approval defines a number of conditions relevant to the preparation and implementation of a Subsidence Monitoring and Contingency Plan for the Western Underground at Charbon Colliery. Conditions relating specifically to the production of this management plan have been summarised in **Table 2**. This table also outlines where these conditions have been addressed within this document.

All Project Approval conditions associated with this Subsidence Monitoring and Contingency Plan have been documented in **Appendix 1**, including conditions relating to the required content of management plans as outlined by Schedule 5, Condition 2 of the Project Approval.

Table 2 – Relevant Project Approval Conditions

Condition	Condition Requirement	Section Addressed
24	The Proponent shall ensure that surface subsidence resulting from underground mining at the Western Underground is less than 20mm.	6
25	The Proponent shall prepare and implement a Subsidence Monitoring and Contingency Plan for the Western Underground to the satisfaction of the Director-General. This plan must:	This Document
25a	Be prepared in consultation with I&I NSW and submitted to the Director-General for approval 3 months prior to the commencement of mining operations at the Western Underground;	4.4
25b	Include a program for monitoring pillar stability in the Western Underground;	7.2
25c	Include a program for baseline recording and later inspection of cliff faces and steep slopes and investigation of any occurrences or evidence of mass rock movements on the surface of the land which may be affected by mining in the Western Underground;	7.3, 7.4 and 7.5
25d	Provide for regular reporting to I&I NSW and the Department; and	9
25e	Include contingency measures to address any significant subsidence-related impacts.	8
26	The Proponent shall ensure that underground mining operations within the "Existing/Approved Underground Mine Area" as shown in Figure 2 of Appendix 2 of the Project Approval (the Charbon Underground) are only conducted in accordance with a Subsidence Management Plan approved by I&I NSW.	6

Table 3 provides details of relevant commitments made by Charbon Colliery in the Statement of Commitments as appended to the Project Approval. The table also details where these commitments have been addressed within this management plan.

Table 3 – Relevant Commitments (Statement of Commitments)

Condition	Commitment	Section Addressed
11.1	Undertake first workings only.	3
11.2	Restrict subsidence levels to < 20 mm of subsidence.	6
11.3	Prepare a Western Underground Subsidence Monitoring Plan as part of the Strata Management Plan in consultation with I&I NSW	This Document



4.3 GUIDELINES

Section 7.2 (8) of the SMP Guidelines outlines that the principal elements of a monitoring program may include the following (DMR, 2003):

- Monitoring of subsidence impacts on surface and sub-surface features;
- Monitoring of the effectiveness of any mitigation and/or remedial measures; and
- Monitoring of subsidence development.

4.4 CONSULTATION

In accordance with Schedule 3, Condition 25(a) of the Project Approval, the Charbon Subsidence Monitoring and Contingency Plan has been prepared in consultation with DTIRIS (formerly I&I NSW). This document was provided to Michael Young on the 21st April 2011. This document was then provided to Paul Langley (Subsidence Executive Officer). No correspondence has been received to date.

As the Subsidence Monitoring and Contingency Plan is required to be submitted to the Department three months prior to commencement of operations within the Western Underground, Charbon Coal are submitting the report for approval. Evidence of written correspondence will be forwarded to the Department if it is received from DTIRIS.

Evidence of this consultation, if received will be provided in **Appendix 2**.

Extensive consultation was undertaken during the preparation of the Continued Operation of the Charbon Colliery EA. This included a program of community and government consultation to ensure that potential impacts and environmental issues were identified.

Relevant stakeholders included the following:

- Department of Planning (now Department of Planning and Infrastructure);
- Department of Environment and Climate Change (now Office of Environment and Heritage, Department of Premier and Cabinet);
- Department of Primary Industries (now DTIRIS);
- Department of Water and Energy (now Department of Primary Industries – Office of Water);
- Mid-Western Regional Council;
- Forests NSW;
- 33 Non-Project Related Residences;
- Community Consultative Committee (CCC); and
- Clandulla Progress Association.

Throughout the life of operations at the Charbon Colliery, consultation will continue with stakeholders through regular reporting (see **Section 9**) and also Charbon CCC meetings.

5 ROLES AND RESPONSIBILITIES

Roles and responsibilities relevant to employees of Charbon Colliery and this management plan have been summarised below in **Table 4**.

Table 4 – Roles and Responsibilities of Site Personnel

Position	Responsibility
Mine Manager	Promptly notify the District Inspector of Coal Mines of any identified issues
	Ensure that the requisite personnel and equipment are provided to enable the effective implementation of this management plan
Senior Mining Engineer	Conduct visual inspections of pillar condition and include in shift reports
	Inform the Mine Manager of impacts requiring notification to DTIRIS
	Inform the Mine Manager of the requirement for a geotechnical expert to inspect pillar stability at the completion of individual panel development
Environmental and Community Coordinator	Conduct subsidence monitoring and inspections within the applicable subsidence zone to the standard required and using the subsidence inspection checklist (see Appendix 3)
	Conduct cliff line monitoring in accordance with Table 7
	Conduct the steep slope monitoring in accordance with Table 8
	Inform the Mine Manager of impacts requiring notification to DTIRIS
	Ensure that monitoring and/or inspections are conducted to the required schedules (see Section 7)
	Ensure that persons conducting the monitoring and/or inspections are trained in the requirements of this plan and understand their obligations
	Review and assess subsidence monitoring results and inspection checklists
	Take actions to remediate any public safety issue identified during inspections
	Where actions are beyond capabilities - notify landowner/infrastructure owner and Technical Services Manager

6 SUBSIDENCE CONTROL MEASURES

Underground mining at the Charbon Colliery is undertaken in accordance with the requirements of the Project Approval (Western Underground) and an approved SMP (8 and 9 Trunk Panels). Implementation of the approved mining methods and management measures allows for the effective mitigation of significant subsidence related impacts at the Charbon Colliery.

The Western Underground has been designed with a constraint of negligible subsidence (<20mm) and includes first workings with 6m wide roadways and pillar height of approximately 3.0m. The depth of cover in the Western Underground ranges from a maximum of 220m to a minimum of 15m. The following



general guidelines have been used to design the Western Underground in a way that is expected to result in negligible subsidence:

- 15m to 80m depth – pillars on 16m centres;
- 80m to 200m depth – pillars on 26m centres; and
- 200m to 220m – pillars on 26m and 30m centres.

The 16m pillars are to be formed on retreat by quartering pillars formed at 32m (Seedsman, 2009).

In accordance with Schedule 3, Condition 25(c) of the Project Approval, a program has been developed for the recording of baseline data associated with the mining of the Western Underground (see **Sections 7.3, 7.4 and 7.5**). **Section 7** outlines the monitoring plan that will be implemented at the Charbon Colliery in order to effectively monitor subsidence related impacts associated with mining of the Western Underground.

7 MONITORING PLAN

The Monitoring Plan outlined below has been completed in accordance with the requirements of the Project Approval. The plan includes the following components:

- Subsidence monitoring and inspections;
- Pillar stability monitoring;
- Cliff face monitoring program;
- Steep slope monitoring program; and
- Investigation of mass rock movements.

7.1 SUBSIDENCE MONITORING

As a result of the surface terrain, monitoring of subsidence associated with mining in the Western Underground will be completed through a combination of surveying, analytical instruments and visual inspections. Monitoring frequency, requirements and techniques have been detailed below. A summary of the subsidence monitoring program has been provided in **Table 5**.

7.1.1 Subsidence Surveying

Reflectors will be placed on accessible surface rocks above the Western Underground Panels. Reflectors are to be placed on various surface features including cliff faces and steep slopes. These fixed points will be utilised as survey markers for subsidence surveying. Monitoring of the survey markers will occur prior to the commencement of development to establish baseline data and at the completion of mining in the approved Western Underground.

Surveying will be by 3D Trig Electronic Distance Modelling (EDM) with accuracies of $\pm 10\text{mm}$ in the X, Y and Z directions. As subsidence levels associated with the Western Underground are expected to be no more than 20mm and consequences of subsidence in the area are not significant, such accuracies are adequate to confirm the success of this design in subsidence control.

All monitoring results along with mine face locations, pictures and field reports will be sent to the Principal Subsidence Engineer within one month of the survey monitoring being completed.

7.1.2 Tiltmeters

Charbon Colliery will undertake monitoring of tilt associated with the development of Panels within the Western Underground. This will be completed through the installation of tiltmeters at accessible surface



features above the Western Underground. It is proposed that these instruments will be attached to various features including a cliff face. This will enable the effective monitoring of tilt associated development works and significant surface features at the Charbon Colliery.

Tiltmeters will record data continually, although this information is required to be manually uploaded to a data-logger. The manual upload of data will take place prior to the commencement of development works to establish baseline data and at the completion of mining in the approved Western Underground (at a minimum). Results obtained from tiltmeters will be provided to the Principal Subsidence Engineer within one month of monitoring being completed.

7.1.3 Subsidence Inspections

Visual field inspections will take place prior to undertaking development works to establish baseline condition and at the completion of mining within the Western Underground. The inspections will cover the full subsidence bowl out to the 26.5° angle of draw as required by the SMP Guidelines.

Inspections will be carried out by trained persons and will follow the inspection checklist (see **Appendix 3**). Inspections will identify the following subsidence impacts:

- Surface cracking;
- Surface humps (compression); and
- Step change in land surface.

If actual subsidence exceeds predicted subsidence, reviews of relevant management plans and procedures will be triggered.

Table 5 – Subsidence Monitoring Program

Item	Method	Parameter	Frequency
Surveying	Fixed survey points (EDM)	Changes in X, Y and Z directions	Before and after mining
Tiltmeters	Angular displacement	Changes in X and Y directions	Before and after mining
Visual Inspections	Visual and photographic evidence	Presence or absence of damage	Before and after mining

7.2 PILLAR STABILITY MONITORING PROGRAM

In accordance with Schedule 3, Condition 25(b) of the Project Approval, a Pillar Stability Monitoring Program has been developed for the Western Underground. Monitoring includes surveying of pillar sizes, visual underground pillar inspections and rib telltales. Monitoring of pillar stability will take place in accordance with **Table 6**.

At the conclusion of panel development within the Western Underground, results from the Pillar Stability Monitoring Program will be reviewed by external geotechnical expertise and results linked to surface subsidence results.

Table 6 – Pillar Stability Monitoring Program

Item	Method	Parameter	Frequency
Pillar Size Auditing	Surveying	Pillar size surveyed for height and width	Completion of development in each individual Panel
Visual Inspections	Visual and photographic evidence (to be reported on shift reports)	Visual signs of deterioration	Every shift during mining
Pillar Performance	Rib Telltale	Roof or rib movement	1 per 1000m of advance

7.3 CLIFF LINE MONITORING PROGRAM

The Airly Commission of Enquiry (1993) defined cliffs as being greater than 20m in height and 72 degrees in slope. Cliffs associated with the Western Underground have been identified in **Figure 4**. Monitoring of clifflines associated with the Western Underground will be undertaken through surveying fixed survey points (reflectors) located on cliff faces (see **Section 7.1.1**) before and after mining. Monitoring will also be conducted using visual inspections and tiltmeters.

Monitoring will take place prior to undertaking development works to establish baseline data and at the completion of mining in the Western Underground. Monitoring of clifflines will be conducted in accordance with the **Table 7**.

Table 7 – Cliff Line Monitoring Program

Item	Method	Parameter	Frequency
Cliff Appearance	Visual and photographic evidence	Presence or absence of damage	Before and after mining
Cliff Base and Face	Fixed survey points (EDM)	Changes in X, Y and Z directions	Before and after mining
	Visual and photographic evidence	Presence or absence of damage	Before and after mining
	Tiltmeters	Changes in the X and Y directions	Before and after mining

7.4 STEEP SLOPE MONITORING PROGRAM

For the purpose of this document, any ground located above the Western Underground at a grade of 1 in 3 (33.33%) or greater has been considered as a steep slope. Steep slopes have been identified in **Figure 4**.

Monitoring of steep slopes associated with the Western Underground will be undertaken through surveying fixed survey points (reflectors) located on steep slopes (see **Section 7.1.1**) before and after mining. Monitoring will also be conducted using visual inspections.

Monitoring will take place prior to undertaking development works to establish baseline data and at the completion of mining in the Western Underground. Monitoring of clifflines will be conducted in accordance with the **Table 8**.



Table 8 – Steep Slope Monitoring Program

Item	Method	Parameter	Frequency
Slope	Fixed survey points	Changes in X, Y and Z directions	Before and after mining
Slope Appearance	Visual and photographic evidence	Presence or absence of damage	Before and after mining

7.5 INVESTIGATION OF MASS ROCK MOVEMENTS

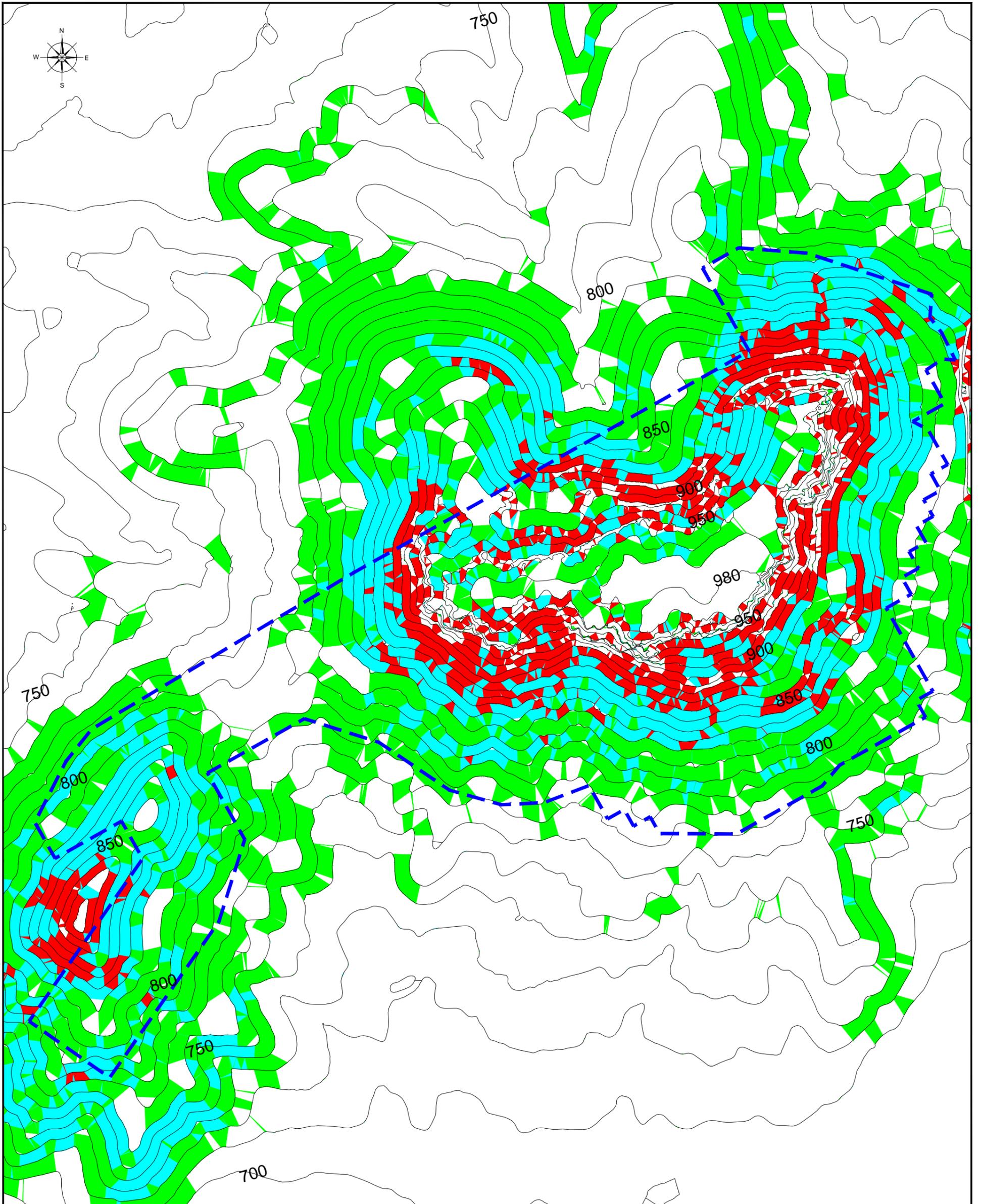
In accordance with Schedule 3, Condition 25(c) of the Project Approval, a program has been developed for the investigation of any occurrences or evidence of mass rock movements on the surface of the land which may be affected by mining the Western Underground.

In the event that Charbon Coal are informed of an occurrence of mass rock movement in the proximity of operations in the Western Underground an investigation is to be undertaken in accordance with the methodology outlined for the visual monitoring of clifflines and steep slopes at the Charbon Colliery (see **Sections 7.3** and **7.4**). Baseline information will be compared with monitoring data to provide evidence of mass rock movements.

If it is determined that mass rock movements have occurred as a result of mining in the Western Underground Charbon Coal will implement actions as required by the contingency plan (see **Section 8**).

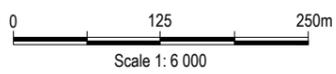
8 CONTINGENCY PLAN

In the event that predicted subsidence levels are exceeded within the Western Underground, a contingency plan has been developed. The following contingency measures have been developed to address any potential significant subsidence related impacts. Potential affected features that have been addressed within this contingency plan include clifflines, steep slopes and surface cracking (see **Table 9**). There is no public infrastructure located above the Western Underground.



LEGEND

- - - Project Site Boundary
- Contours
- Slopes above 1 in 3, less than 1 in 2
- Slopes above 1 in 2
- Cliffs above 66% and higher than 10m



Base Plan Data Source:

Version	Date:	Author:	Checked:	Approved:
1	12/04/11	LH	AW	AH
2	13/04/12	KC	AW	AH

FIGURE 4

Slope Analysis



GSS ENVIRONMENTAL
Environmental, Land and Project
Management Consultants

Project:
Subsidence Monitoring and
Contingency Plan

Client:
Charbon Coal Pty Ltd

File:
Fg4_CCC04-012_SlopeAnalysis_120413

Projection:
MGA 94 Zone 56

Table 9 – Contingency Plan

Feature	Impact	Contingency Measure
Cliff Line Damage or Instability	Surface cracking < 5cm wide on top of cliff line, minor visible cracking on cliff face, or rock fall of isolated blocks	Suitably trained internal employee to inspect and judge stability of rock face and need for further investigation/action Monitor over next 12 months
	Surface cracking 5 – 10cm wide on top of cliff line, substantial visible cracking on rock face, or rock fall of > 100m ³	Erect warning signs and danger tape in immediate area Suitably qualified external consultant to inspect and judge need for further action/investigation
	Surface cracking > 10cm wide, major damage to cliff face or rock fall of > 100m ³	Erect warning signs and danger tape in immediate area Suitably qualified external consultant to inspect and judge need for further action/investigation Immediately notify Principal Subsidence Engineer
Steep Slope Damage or Instability	Surface cracking < 5cm wide on slope, or rock fall of isolated blocks	Suitably trained internal employee to inspect and judge stability of rock face and need for further investigation/action Monitor over next 12 months
	Surface cracking 5 – 10cm wide on slope, visible rock fall	Erect warning signs and danger tape in immediate area Suitably qualified external consultant to inspect and judge need for further action/investigation
	Surface cracking > 10cm wide, substantial rock fall, tree fall	Erect warning signs and danger tape in immediate area Suitably qualified external consultant to inspect and judge need for further action/investigation Immediately notify Principal Subsidence Engineer

Feature	Impact	Contingency Measure
Surface cracking	Surface cracking < 5cm	Monitor over next 12 months
	Surface cracking 5 – 10cm	Erect warning signs where necessary Monitor over next 12 months
	Surface cracking > 10cm	Erect warning signs where necessary Repair cracks > 10cm in width with excavation and re-compaction where practical

9 REPORTING

9.1 REPORTING

In accordance with Schedule 5, Condition 6 of the Project Approval, Charbon Colliery will notify the Director-General and any other relevant agencies of any incident associated with the project as soon as practicable after they become aware of an incident. A detailed incident report should be submitted to the Director-General and relevant agencies within 7 working days of the incident.

9.2 ANNUAL ENVIRONMENTAL MANAGEMENT REPORTS

Annual Environmental Management Reports (AEMR) are provided annually to relevant government agencies and provide information relating to the environmental management of the mine, monitoring results, incidents, the rate and success of rehabilitation during the reporting period, and planned works for the coming year. Records of all subsidence monitoring results will be provided as an appendix to the AEMR.

9.3 ANNUAL REVIEW

By 31 March 2011, and annually thereafter, Charbon Colliery shall submit to the Director-General a report reviewing the annual environmental performance of the project. The contents of the required report are detailed in Schedule 5, Condition 3(a-f) of the Project Approval.

9.4 COMPLAINTS HANDLING

All complaints received by Charbon Coal are handled in accordance with the *Procedure for Recording and Reporting Community Complaints*. As required by EPL 528 a complaints line currently exists at the mine to receive calls from the local community. This complaints line (02 6357 9200) operates 24 hours a day, 7 days a week. The phone number is listed in the local directory for easy access and all residents are encouraged to contact the site regarding any issue of concern. All complaints are logged on a complaints form, which forms part of the Register of Complaints that is maintained in accordance with the requirements of EPL 528. The complaints form includes the following details:

- Date and time of the complaint;
- Complainant details;
- Details of the issue or complaint;
- Actions taken to remediate the issue;
- Follow up actions required;



- Details of further liaison with complainant; and
- Closure of the issue.

Charbon Coal's '*Procedure for Recording and Reporting Community Complaints*' outlines that the person receiving the call/email/personal communication/letter has the responsibility to:

- Correctly fill out the Complaints/Enquiries Report Sheet;
- Follow the chart for community initiated contact (see **Figure 5**); and
- Report the complaint/enquiry in accordance with **Table 10**.

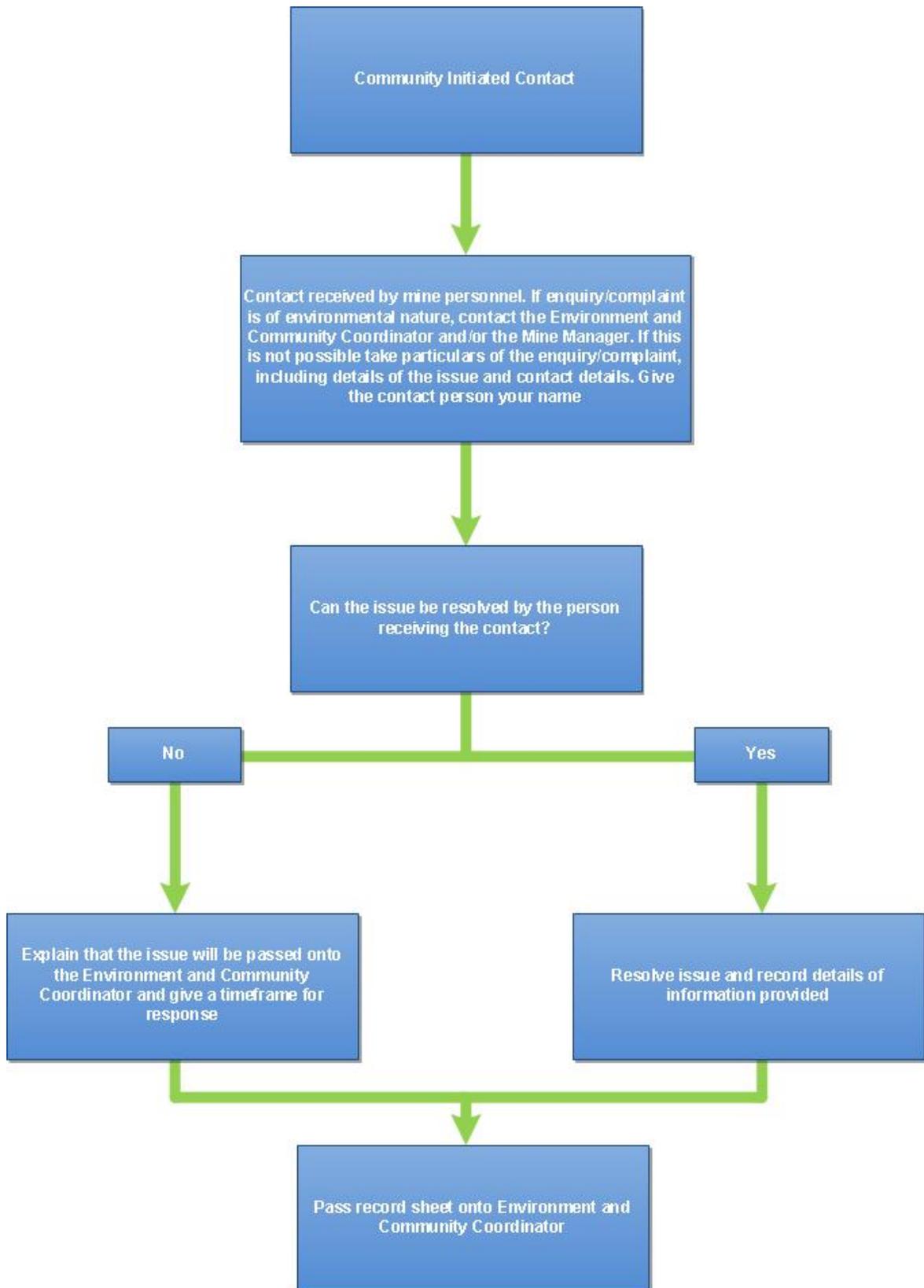


Figure 5 – Procedure for Community Initiated Contact

Table 10 – Community Complaints Reporting Requirements

Report to	Report Mechanism	Reported By	Report Time
Office of Environment and Heritage, Department of Premier and Cabinet	Annual Return from Licence	Two Company Directors with a statement from Mine Manager based on info from Environment and Community Coordinator.	Received by Company Directors 4 weeks before report due
	Reporting of Exceedance	Environment and Community Coordinator.	Varies according to severity/duration of non-compliance – usually as soon as possible
Department of Planning and Infrastructure	Annual Report to Director-General	Community Consultative Committee Chairperson Environment and Community Coordinator	Annually
	Biannual Meetings (CCC)	Environment and Community Coordinator	At meetings plus documented in minutes
Mine Manager	Verbal/weekly report	Environment and Community Coordinator	Within 1 working day of advice
Mine Manager	Monthly Operational Report	Environment and Community Coordinator	Within 2 working days of month end
Community Consultative Committee	Report to Biannual meetings	Environment and Community Coordinator	At meetings plus documented in minutes
Centennial Board	Monthly Environment Report	Operations Manager (with information provided by Group Environmental Manager)	Relevant Board report/meeting
Group Environmental Manager	Monthly Report	Environment and Community Coordinator	End of month



9.5 NON-COMPLIANCE WITH STATUTORY REQUIREMENTS

In the event that surface subsidence resulting from mining in the Western Underground exceeds the 20mm consent criteria as outlined in the Project Approval, the following actions should be undertaken by Charbon Coal (see **Figure 6**):

- Identify the cause of the non-compliance;
- Determine the root cause of the non-compliance;
- Once the source of the non-compliance has been identified, additional controls should be implemented or operational activities altered or ceased until a favourable outcome can be achieved;
- The situation should be investigated to determine if there are any visible signs of significant subsidence related impacts;
- If significant subsidence related impacts are identified, additional controls should be implemented to achieve a favourable outcome;
- The Environment & Community Coordinator should be informed of any corrective action taken or complaint received;
- A full and complete record of the incident, actions and sign-off by an authorised person should be recorded in a well-maintained log book;
- The Environment & Community Coordinator shall notify the Director-General and any other relevant agencies as soon as practicable, after becoming aware of the incident; and
- Within seven days of the incident, Charbon Coal shall provide the Director-General and any relevant agencies with a detailed report of the incident.

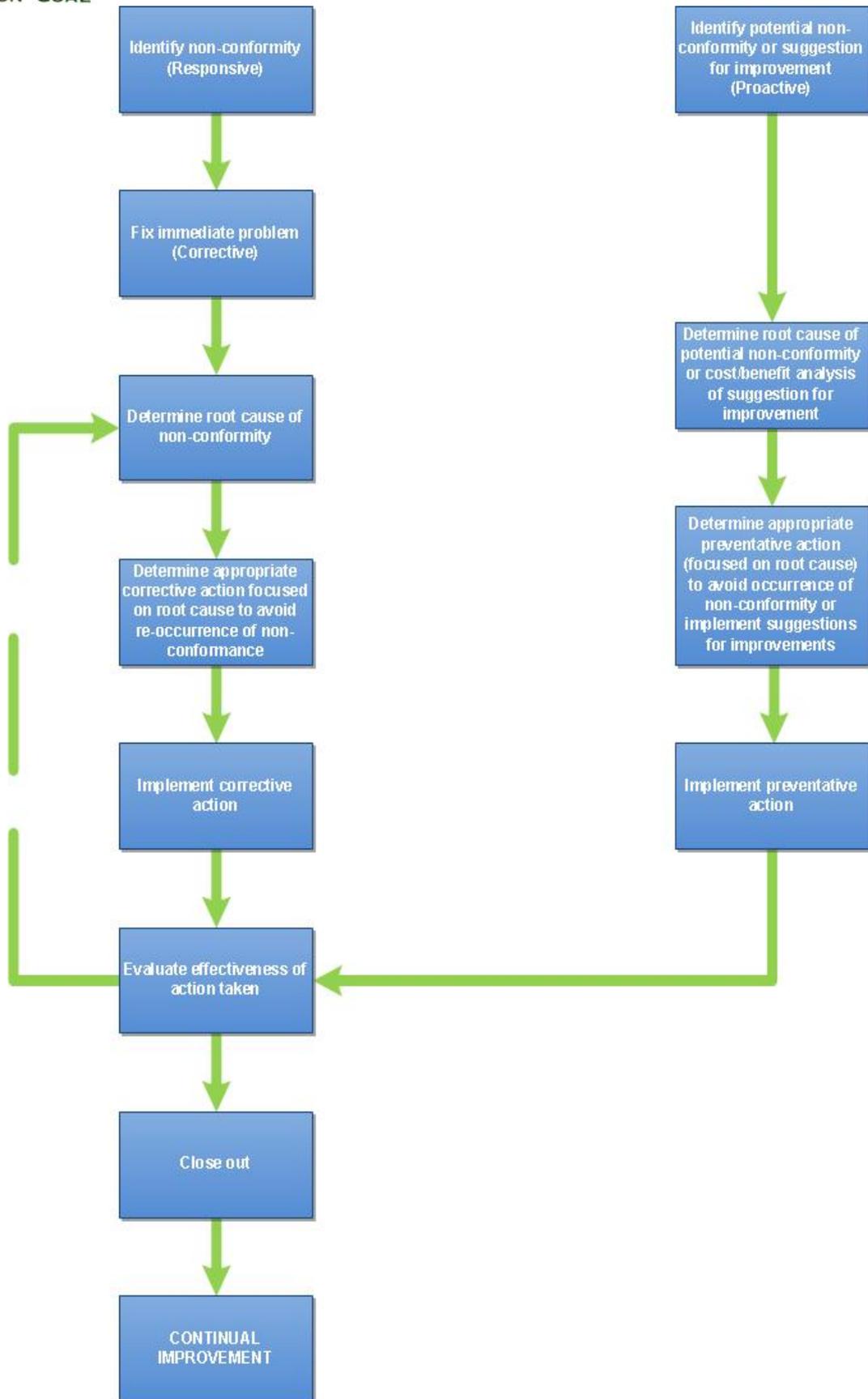


Figure 6 – Non - Compliance, Corrective Action and Preventive Action



10 PERIODIC REVIEW

This Subsidence Monitoring and Contingency Plan will be reviewed three years following adoption. Review of this management plan will also take place if records obtained in accordance with this document indicate that it is warranted, or in the event that there is a change to subsidence management implemented at the Charbon Colliery.

Any modifications to the Subsidence Monitoring and Contingency Plan will be undertaken in consultation with the appropriate government agencies.

11 CONTINUAL IMPROVEMENT

In accordance with Schedule 5, Condition 2(f) of the Project Approval, Charbon Coal will investigate and implement ways to improve the environmental performance of the project over time. This will be achieved through the effective application of best practice principles to mining operations including, where cost-effective and practicable, the adoption of best practice technologies, subsidence monitoring equipment, and subsidence management measures. Charbon Colliery will continue to improve on the mine's subsidence performance with progress to be monitored against performance indicators noted in **Section 7**.

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Relevant Project Approval Conditions



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Schedule 3

Subsidence

24. The Proponent shall ensure that surface subsidence resulting from underground mining at the Western Underground is less than 20 mm.
25. The Proponent shall prepare and implement a Subsidence Monitoring and Contingency Plan for the Western Underground to the satisfaction of the Director-General. This plan must:
 - a) Be prepared in consultation with I&I NSW and submitted to the Director-General for approval 3 months prior to the commencement of mining operations at the Western Underground;
 - b) Include a program for monitoring pillar stability in the Western Underground;
 - c) Include a program for baseline recording and later inspection of cliff faces and steep slopes and investigation of any occurrences or evidence of mass rock movements on the surface of the land which may be affected by mining in the Western Underground;
 - d) Provide for regular reporting to I&I NSW and the Department; and
 - e) Include contingency measures to address any significant subsidence-related impacts.
26. The Proponent shall ensure that underground mining operations within the "Existing/Approved Underground Mining Area" as shown in Figure 2 of Appendix 2 are only conducted in accordance with a Subsidence Management Plan approved by I&I NSW.

Schedule 5

Management Plan Requirements

2. The Proponent shall ensure that the Management Plans required under this approval are prepared in accordance with any relevant guidelines by a suitably qualified expert/s whose appointment has been endorsed by the Director-General. The plans must include:
 - a) Detailed baseline data;
 - b) A description of:
 - The relevant statutory requirements (including any relevant approval, licence or lease conditions);
 - Any relevant limits or performance measures/criteria; and
 - The specific performance indicators that are proposed to be used to judge the performance of, or guide the implementation of, the project or any management measures;
 - c) A description of the measures that would be implemented to comply with the relevant statutory requirements, limits, or performance measures/criteria;
 - d) A program to monitor and report on the:
 - Impacts and environmental performance of the project; and
 - Effectiveness of any management measures (see (c) above);
 - e) A contingency plan to manage any unpredicted impacts and their consequences;
 - f) A program to investigate and implement ways to improve the environmental performance of the project over time;
 - g) A protocol for managing and reporting any:
 - Incidents;
 - Complaints;

- Non-compliances with statutory requirements; and
- Exceedances of the impact assessment criteria and/or performance criteria;

h) A protocol for periodic review of the plan.

Note: At the discretion of the Director-General, some of these requirements may be waved where they are either not relevant or necessary.

Consultation with DTIRIS



APPENDIX 2

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Subsidence Inspection Checklist



APPENDIX 3

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SUBSIDENCE INSPECTION CHECKLIST		
Date:		
Panel Number:		
Face Position:		
Inspection Zone Start:		
Inspection Zone Finish:		
INSPECTION ITEM	CHECKED	COMMENTS
Surface cracking		
Surface humps (compression)		
Step change in land surface		
Damage/failure of surface improvements		
No cracking at top of cliffs, surface features/steep slopes on Haystack Mountain		
No new falls of rock visible		
Dams		
Other (e.g. evidence of unauthorised access)		

SUBSIDENCE INSPECTION CHECKLIST

Where to Inspect:

- 500 metres behind and 100 metres in front of the current face position; and
- Cover the full subsidence bowl out to the 26.5° angle of draw.

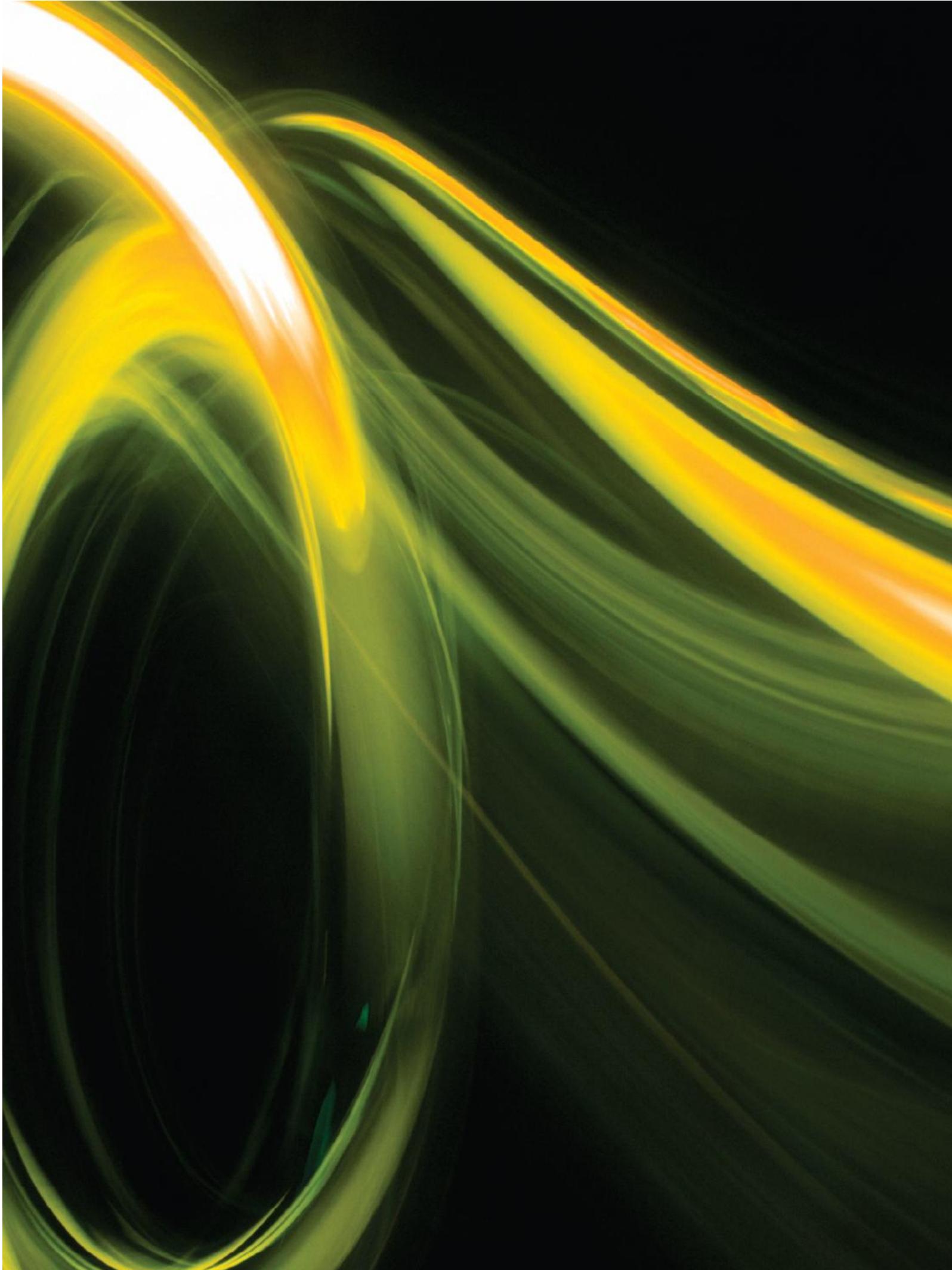
What to look for:

- Surface cracking - edges of extraction void and start and travelling abutments particularly in rock outcrop areas;
- Surface humps (compression) - near centre of extracted panels and travelling abutment;
- Step change in land surface - associated with cracking;
- Serviceability of fences, dams, and access tracks; and
- Any inspections required in infrastructure management procedures.

Actions if there is a public safety risk:

- Take actions to remediate the issue;
- Erect "NO ROAD" tape and warning signs if remediation is not possible; and
- Notify the Mine Manager.

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FUTURE POWER



Centennial Coal