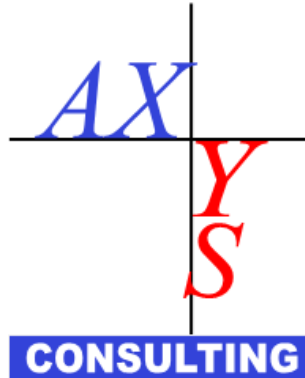


APPENDIX 3

Stage 2 Extension Project Environmental Risk Assessment

Record Number.

AR0866



AUSTAR COAL MINE

Environmental Impacts for the mining of LW A5a Risk Assessment

5th November 2009

Compiled By:

Shane Chiddy

Revision: 1

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Section 1. Introduction:

Yanzhou Coal Mining Company of China has expanded its operations and operates the former Southland / Ellalong Colliery renaming it Austar Coal Mine. The mine is located South West of the Cessnock township in the hunter valley coalfields of NSW.

The Austar Coal Mine underground working section is mined utilising longwall retreat methods. The mine produces from a single longwall with development panels. Extraction from the longwall is from a block width of 200 metres, with full seam height of 5800 mm being mined.

Coal extracted from the mine is conveyed out of the mine via the extensive underground conveyor belt system to the surface Coal Handling and Preparation Plant (CHHP) via the 1000 tonne surface storage bin and the drift belt. From here the coal is transported by rail to the Port Waratah coal terminal, in Newcastle, where it is exported to customers.

Within Stage 2 of the mine Longwalls LWA3, LWA4 and LWA5 are to be mined.

The mine is considering mining an additional Longwall block in the Stage 2 area. This is to provide production continuity as the mine equipment relocates into the new area of the mine. This additional Longwall Block is known as LWA5a.

Stage 2 Longwall production has been approved, and with the addition of one further longwall block, the mine is to review the environmental effects from the incremental changes to the area after the mining of Longwalls LWA3, LWA4 and LWA5.

The area under consideration is the 20mm study contour generated by the incremental subsidence from the mining of Longwall LWA5a. Environmental effects outside this area were also considered where deemed relevant.

Therefore, this risk assessment is to review the environmental hazards associated with mining an additional Longwall block (LWA5a) within the current Stage 2 Area at the Austar Coal Mine, and to determine what controls, if any, are required to reduce or eliminate any identified hazards to tolerable levels as far as practicable.

The following assumptions and limitations were applied to this risk assessment:

- Area under consideration is the 20mm study contour generated by the incremental subsidence from the mining of Longwall A5a

This risk assessment was performed at the Austar Coal Mine during November of 2009 by Shane Chiddy of AXYS Consulting

All identified treatment options are presented within this report in Attachment 5 - Risk Treatment Schedule and Action Plan

Section 2. Analysis and Report:

This Analysis was facilitated by:	Shane Chiddy
The Analysis took place:	5th November 2009
This Report has been compiled by:	Shane Chiddy
The Report was compiled:	5th November 2009
This Analysis has been verified by:	
The Verification occurred:	
This Analysis has been Authorised by:	
The Authorised occurred:	

Section 3. Participants:

The following people participated in the Analysis:

<u>Participant</u>	<u>Participant Position</u>	<u>Relevant Experience</u>
Adrian Moonie	Austar Coal Mine Technical Services Manager	10 Years
Gary Mulhearn	Austar Coal Mine Environmental Engineer	10 Years
Peter Jamieson	Umwelt Director	19 Years
Catherine Pepper	Umwelt Associate	6 Years

Section 4. System Description:

Within Stage 2 of the mine Longwalls LWA3, LWA4 and LWA5 are to be mined.

The mine is considering mining an additional Longwall block in the Stage 2 area. This is to provide production continuity as the mine equipment relocates into the new area of the mine. This additional Longwall Block is known as LWA5a.

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Section 5. Context Summary:

Strategic Context

Austar Coal Mine is committed to ensuring safety within its operation.

When new equipment or processes are implemented, Austar Coal Mine management insist that Risk Assessment techniques are used to reduce the risks to people, equipment and operations.

Corporate Context

As Austar Coal Mine is committed to safety, when new equipment is introduced into the mine management insist that Risk Assessment techniques are used minimising exposure to its people and the operations.

Risk Management Context

The primary objective of this risk assessment is to identify hazards associated with mining an additional Longwall block (LWA5a) within the current Stage 2 Area at the Austar Coal Mine, and to determine what controls, if any, are required to reduce or eliminate any identified hazards to tolerable levels as far as practicable.

The main consideration is for personal safety but equipment damage, operational loss or environmental issues will be considered where relevant.

Section 6. Objectives and Scope:

A scoping session was held prior to the Assessment and the detail was agreed and confirmed, the scope included:

The objective of this risk assessment is to identify hazards associated with mining an additional Longwall block (LWA5a) within the current Stage 2 Area at the Austar Coal Mine, and to determine what controls, if any, are required to reduce or eliminate any identified hazards to tolerable levels as far as practicable.

Section 7. Assumptions and Constraints:

The following assumptions and limitations were applied to this risk assessment:

- Area under consideration is the 20mm study contour generated by the incremental subsidence from the mining of Longwall A5a

Related Document Include;

- AS NZS 4360-2004 Risk Management
- MDG1010 - Risk Management Handbook for the Mining Industry.
Dated. May 1997
- MDG1014 - Guide to Reviewing a Risk Assessment of Mine Equipment
and Operations
Dated. July 1997
- Coal Mine Health and Safety Act 2002
- Coal Mine Health and Safety Regulations 2006

Section 8. Safety Standard:

An audit system needs to be in place to ensure all recommendations from this assessment are carried out prior to the required dates identified within the assessment

This Risk Assessment must be reviewed within 12 months to ensure all risks have been identified and controls put in place.

The group were introduced to the Risk Assessment Process at the commencement of the session by the facilitator. The various steps were explained and the group reviewed the Likelihood, Consequence and Risk Ranking matrix.

The risk ranking was done with consideration to existing controls being in place.

Controls were developed using the following forms.

- Avoiding the risk. By deciding not to start or continue with the activity that gives rise to the risk (where this is practicable). Risk avoidance can occur inappropriately if individuals or organisations are unnecessarily risk-averse. Inappropriate risk avoidance may increase the significance of other risks or may lead to the loss of opportunities for gain.
- Changing the likelihood of the risk, to reduce the likelihood of the negative outcomes.
- Changing the consequences, to reduce the extent of the losses. This includes pre-event measures such as reduction in inventory or protective devices and post-event responses such as continuity plans.
- Sharing the risk. This involves another party or parties bearing or sharing some part of the risk, preferably by mutual consent. Mechanisms include the use of contracts, insurance arrangements and organisational structures such as partnerships and joint ventures to spread responsibility and liability. Generally there is some financial cost or benefit associated with sharing part of the risk with another organisation, such as the premium paid for insurance. Where risks are shared in whole or in part, the organisation transferring the risk has acquired a new risk, in that the organisation to which the risk has been transferred may not manage the risk effectively.
- Retaining the risk. After risks have been changed or shared, there will be residual risks that are retained. Risks can also be retained by default, e.g. when there is a failure to identify or appropriately share or otherwise treat risks

The above risk control options were applied by reference to the following control methodologies in a hierarchical sequence.

- 1 Design – to the extent reasonable and practicable ensure that hazards are designed out when new materials, equipment or work systems are being planned for the workplace.
- 2 Remove the hazard or substitute less hazardous materials, equipment or substances.
- 3 Adopt a safer process – alter tool, equipment or work practices to make them safer.
- 4 Enclose or isolate the hazard – provide guards or remote operation and handling techniques.
- 5 Provide effective ventilation – install local or general exhaust ventilation systems.

- 6 Establish appropriate administrative procedures. Set up, document and implement new procedures that provide for:
 - Scheduling of the job so that fewer workers are exposed;
 - Routine maintenance and housekeeping procedures;
 - Training on hazards and correct work procedures.
- 7 Personal Protective Equipment – provide suitable and properly maintained personal protective equipment and training in its use.

Section 9. Facilitator Qualifications:

Shane Chiddy holds an Associate Diploma in Engineering (Electrical), is an Officer of the Institution of Engineers (Australia) and is a member of the Maintenance Engineering Society of Australia (MESA). He has also completed Conveyancing Law through Macquarie University and Establish the Risk Management Systems (Mine 7033 - G3) through Queensland University.

Prior to commencing his consulting career, Shane Chiddy qualified as an electrician and worked underground for 9 years. He then occupied a number of engineering roles within Rio Tinto, including such roles as Electrical Supervisor, Development Engineer and Senior Production Engineer. This latest role was responsible for the Longwall, underground diesel equipment and conveyors.

Additionally Shane Chiddy has been trained and accredited by John Moubray in the UK as a certified RCM II practitioner, and has conducted a number of extensive Reliability-centred Maintenance II analyses including underground and surface equipment such as Longwalls, Continuous Miners and conveying systems.. He has facilitated RCM II analysis and delivered training in the mining, defence and telecommunications industries.

His consulting experience includes the application of Reliability-centred Maintenance II and extensive Risk Management and Project Management assignments. Shane is also experienced in software development and in the development and presentation of training packages.

Section 10. Sub-Systems Analysed:

SUB-SYSTEM		STEP IN PROCESS	
1	Natural Features	A	1.01 Catchment Areas or Declared Special Areas
		B	1.02 Rivers or Creeks
		C	1.03 Aquifers or Known Groundwater Resources
		D	1.04 Springs
		E	1.05 Sea or Lake
		F	1.06 Shorelines
		G	1.07 Natural Dams
		H	1.08 Cliffs or Pagodas
		I	1.09 Steep Slopes
		J	1.10 Escarpments
		K	1.11 Land Prone to Flooding or Inundation
		L	1.12 Swamps, Wetlands or Water Related Ecosystems
		M	1.13 Threatened or Protected Species
		N	1.14 National Parks
		O	1.15 State Conservation Areas
		P	1.16 State Forests
		Q	1.17 Natural Vegetation
		R	1.18 Areas of Major Geological Interest
		S	1.19 Air Quality
		T	1.20 Acoustic Amenity (Noise)
		U	1.21 Vibration
		V	1.22 Energy Usage
		W	1.23 Greenhouse
2	Public Utilities	A	2.01 Railways
		B	2.02 Roads (All Types)
		C	2.03 Bridges
		D	2.04 Tunnels
		E	2.05 Culverts
		F	2.06 Water, Gas or Sewerage Infrastructure
		G	2.07 Liquid Fuel Pipelines
		H	2.08 Electricity Transmission Lines or Associated Plants
		I	2.09 Telecommunication Lines or Associated Plants
		J	2.10 Water Tanks, Water or Sewage Treatment Works
		K	2.11 Dams, Reservoirs or Associated Works
		L	2.12 Air Strips
		M	2.13 Any Other Public Utilities
3	Public Amenities	A	3.01 Hospitals

Section 10. Sub-Systems Analysed:

SUB-SYSTEM		STEP IN PROCESS	
3	Public Amenities	B	3.02 Places of Worship
		C	3.03 Schools
		D	3.04 Shopping Centres
		E	3.05 Community Centres
		F	3.06 Office Buildings
		G	3.07 Swimming Pools
		H	3.08 Bowling Greens
		I	3.09 Ovals or Cricket Grounds
		J	3.10 Race Courses
		K	3.11 Golf Courses
		L	3.12 Tennis Courts
		M	3.13 Visual Amenity
		4	Farm Land And Facilities
B	4.02 Farm Buildings or Sheds		
C	4.03 Gas or Fuel Storage		
D	4.04 Poultry Sheds		
E	4.05 Glass Houses		
F	4.06 Hydroponic Systems		
G	4.07 Irrigation Systems		
H	4.08 Fences		
I	4.09 Farm Dams		
J	4.10 Wells or Bores		
K	4.11 Access Tracks		
5	Industrial, Commercial And Business Establishments	A	5.01 Workshops
		B	5.02 Business or Commercial Establishments or Improvements
		C	5.03 Gas or Fuel Storages or Associated Plants
		D	5.04 Waste Storages or Associated Plants
		E	5.05 Buildings, Equipment or Operations that are Sensitive to Surface Movements
		F	5.06 Surface Mining (Open Cut) Voids or Rehabilitated Areas
		G	5.07 Mine Infrastructure Including Tailings Dams or Emplacement Areas
		H	5.08 Any Other Industrial, Commercial or Business Features
6	Areas Of Archaeological Or Heritage Importance	A	6.01 Areas of Archaeological and/or Heritage Significance

Section 10. Sub-Systems Analysed:

SUB-SYSTEM		STEP IN PROCESS	
7	Items Of Architectural Importance	A	7.01 Items of Architectural Significance
8	Permanent Survey Control Marks	A	8.01 Permanent Survey Control Marks
9	Residential Establishments	A	9.01 Houses
		B	9.02 Flats or Units
		C	9.03 Caravan Parks
		D	9.04 Retirement or Aged Care Villages
		E	9.05 Associated Structures such as Workshops, Garages, On-Site Waste Water Systems, Water or Gas Tanks, Swimming Pools or Tennis Courts
		F	9.06 Any Other Residential Features of relevance
10	Any Other Item Of Importance	A	10.01 Any Other Item of Importance

Attachment 1
Risk Assessment
Methodology

Qualitative Risk Analysis

This Risk Analysis has been performed using Qualitative Risk Analysis techniques and has been performed in compliance with the Department of Mineral Resource Guideline MDG1010.

The Risk Assessment has followed the WRAC (Workplace Risk Assessment and Control) principals as outlined in the guideline.

The Qualitative approach succeeds by using local expert knowledge and relevant historical data.

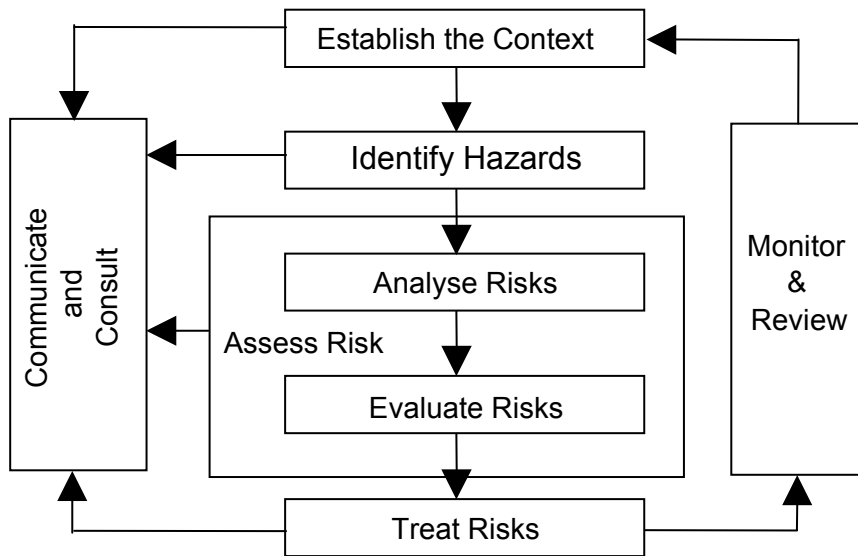
This system of analysis uses a participative approach which is very powerful for identifying potential hazard scenarios.

The following steps outline; the systematic identification of hazards, ranking of risks, and identification of new and/or improved controls; that will be used in the Risk Assessment session.

1. Introduce Team to Risk Assessment Plan document.
This includes the scope and method of the Risk Assessment.
2. Break system being assessed down into discrete sub-systems.
3. Identify and add potential deviation steps.
4. Review each sub-system and identify loss scenarios,
(Potential Incidents and Accidents)
5. For those hazards evaluate the risk using the risk rank method by.
Determining the probability, consequence, and risk rank of each loss scenario.
6. Identify existing controls for each hazard.
7. Specify additional controls required to control the hazard(s).
8. Close Risk Assessment
9. Document and distribute to the team for proof reading.
10. Verification of the assessment by a nominated person.

Prior to verification of the Risk Assessment, a "Risk treatment Schedule and Action Plan will be added to the verified Risk Assessment report to form a complete "Customer Risk Report

The available Standards on Risk Management (including MDG1010) define the Risk Management process as that shown below.



ESTABLISH THE CONTEXT

When establishing the context thought is given to:

1. The strategic context of the organisation and its relationship with the environment. Identifying both internal and external stakeholders. This step focuses on the environment in which the organisation operates.
2. The organisational context is to be understood. The capabilities, goals and objectives and the strategies in place to achieve them.
3. The process that is to be analysed in the organisation and determine the goals, objectives and scope of the analysis. Consideration is given to costs and benefits that are required. The resources required are also determined. The analysis boundaries are also determined.
4. Develop the Risk Evaluation Criteria. Determine risk acceptability and risk treatment. These issues may be based on operational, environmental, financial, legal, social or humanitarian issues.
5. Define the structure of the analysis that is to be performed.

IDENTIFY HAZARDS

Identification of all the Hazards to be Managed. To correctly apply this step a well structured systematic process must be used as any identified hazards missed at this point in the analysis will mean that no controls will be implemented to reduce or eliminate the hazard and its associated risks.

Identify

1. What Can Happen
2. How and Why it Can Happen

Checklists, Flowcharts and Brainstorming are some methods that can be used to achieve hazard identification.

RISK ANALYSIS

The main objectives of an analysis is to separate minor risks from major risks and to provide data to assist in the evaluation and treatment of hazards.

Risk Analysis involves considering the following

1. Likelihood of the Hazard occurring
2. Consequences if the Hazard does occur
3. Determining any Existing Controls

The combination of the Likelihood and the Consequence determines the level of the risk involved.

During the assessment the consequences are categorised as either

- P - Personal Hazards
- E - Environmental Hazards
- O - Operational Loss

This consequence category is identified on the Analysis Worksheets in the Column labeled 'T' for Type.

RISK EVALUATION

Evaluation involves comparing the level of risk found during the analysis with a previously established risk criteria.

The output of this part of the process is a list of prioritised hazards for further action.

If the resulting hazards fall into the low or acceptable risk categories they may be accepted with minimal further treatment. Although, low and acceptable hazards should be monitored and periodically reviewed to ensure that they remain acceptable.

If hazards do not fall into the low or acceptable risk category then they should be treated using other options.

RISK TREATMENT

Risk Treatment involves identifying the range of options for treating risks, assessing the options and preparing risk treatment plans and of course implementing them.

Risk Treatment may be in one of the following forms.

1. Risk Avoidance. Decide not to proceed with the activity.
2. Reduce Likelihood. Reduce the chance of the risk occurring.
3. Reduce the Risk Consequences. Reduce the consequence if the risk occurs.
4. Transfer the Risk. Involve other parties to bear or share the risks. This may reduce the hazard to the organisation, however, the risk may not be managed effectively as it still exists.
5. Retain (or accept) the Risk. Plans should be put in place to manage the

Risk Treatment Options should be assessed on the extent of any additional benefits or opportunities created. A number of options may be considered and applied either individually or in a combination.

Risk Treatment Plans should be developed to identify responsibilities, schedules, budgets and performance measures and the review process that is to be put in place.

MONITOR AND REVIEW

It is essential to monitor the effectiveness of the risk management system and the risk treatment implementation.

Risks and the effectiveness of control measures need to be monitored to ensure that the changing environments do not alter risk priorities. Few risks remain static.

Factors effecting Likelihood and Consequence change as do factors regarding suitability of controls.

COMMUNICATIONS AND CONSULTATION

Communication and consultation are important during the entire Risk Management process. It is important to develop a communication plan for both internal and external stakeholders.

This should be a two way consultation not a one way flow of information.

Effectiveness internal and external communications is important to ensure that those responsible for implementing risk management understand the basis on which all decisions have been made and why particular actions are required.

ADDITIONAL INFORMATION

To enable participants to fully understand the Risk Management and Risk Assessment Process it is recommended that they read copies of:

1. Risk Management Handbook for the Mining Industry MDG1010:1997
2. The combined Australian and New Zealand Standard AS/NZS 4360:1999 (Risk Management)
3. The combined Australian and New Zealand Standard AS/NZS 3931:1998 (Risk Analysis of Technology Systems - Application Guide).

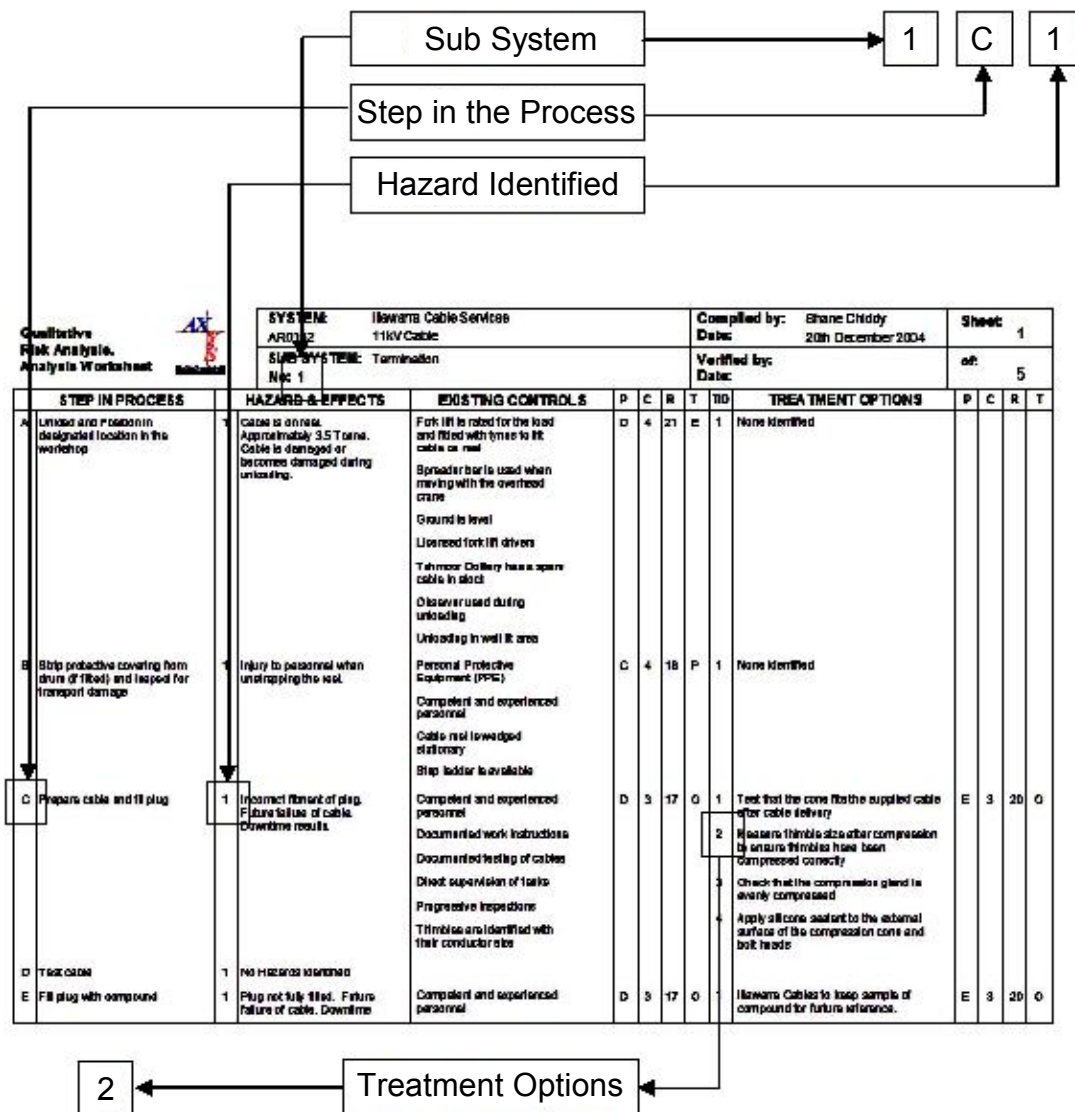
This last Standard is also in compliance with the International Standard IEC 60300-3-9:1995 (Application Guide - Section 9: Risk Analysis of Technological Systems).

Assessment Numbering

The assessment uses an alpha numeric numbering system to differentiate each Component, the Step in the Process, the Hazard and the Treatment Options.

The Sub System Number is found in the header of the worksheets, the Step Letter is found in the first column, the Hazard number in the third column and the treatment options in the TID (Treatment ID) column..

Using this method each hazard and treatment option throughout the analysis has a distinct identifier. This identifier then flows through all of the worksheets and can be referenced back to the Analysis Worksheets. As the example below shows the Distinct Identifier for the hazard is 1C1, the treatment option identified below would be identified as 1C1-2.



RISK RANK METHOD

For each event, the Likelihood (a letter A to E) and Consequence (a number 1 to 5) is selected. If an event effects more than one area of consequence (eg. effects people and operations), the highest rank number is always selected.

Likelihood

A	Almost Certain	Is expected to occur in most circumstances
B	Likely	Will probably occur in most circumstances
C	Moderate	Might occur at some time
D	Unlikely	Could occur at some time
E	Rare	May occur only in exceptional circumstances

Consequences

- People
- 1 - Fatality
 - 2 - Extensive injuries
 - 3 - Medical treatment required
 - 4 - First Aid Treatment
 - 5 - No injuries

- Environment or Asset Damage
- 1 - Long term damage to water, soil or air.
 - 2 - Water, soil or air effected badly.
 - 3 - Water, soil or air short term damage.
 - 4 - Could effect environment
 - 5 - No environmental effects

- Operational Loss
- 1 - More than \$500,000 production delay > 2 Weeks
 - 2 - \$100,000 to \$500,000 production delay 1 Week - 2 Days
 - 3 - \$50,000 to \$100,000 production delay 2 Days
 - 4 - \$5,000 to \$50,000 production delay 1 Day
 - 5 - Less than \$5,000 production delay <1 Day

Risk Ranking Table

CONSEQUENCE	LIKELIHOOD				
	A	B	C	D	E
1	1	2	4	7	11
2	3	5	8	12	16
3	6	9	13	17	20
4	10	14	18	21	23
5	15	19	22	24	25

The preliminary evaluation assumptions and results shall be documented and defined into the following risk categories.

Risk Ranking	Categories
1 - 8	Extreme Risk - consider stopping work (Design Out)
9 - 16	High Risk - should be reduced as soon as possible
17 - 20	Moderate Risk - management responsibility and action dates
21 - 25	Low Risk - managed by routine procedures

Attachment 2
Assessment Worksheets

**Qualitative
Risk Analysis.
Analysis Worksheet**



SYSTEM: AR0866	Austar Coal Mine Environmental Impacts	Compiled by: Date:	Shane Chiddy 5th November 2009	Sheet: of:	2 17
SUB SYSTEM: No: 1	Natural Features	Verified by: Date:			

STEP IN PROCESS		HAZARD & EFFECTS	EXISTING CONTROLS	P	C	R	T	TID	TREATMENT OPTIONS	P	C	R	T
H	1.08 Cliffs or Pagodas	1 natural dams did not require further assessment. The area of subsidence under analysis does not include cliffs or pagodas did not require further assessment.											
I	1.09 Steep Slopes	1 Mass movement of steep slopes due to mine subsidence. Localised damage to environment.	Base line assessment has been completed, steep slopes are at known locations Monitoring programs in place as part of existing SMP Predicted increase in grade is 1:3000 due to mining of LW A5a	D	5	24	E	1	None Identified				
J	1.10 Escarpments	1 The area of subsidence under analysis does not include escarpments did not require further assessment.											
K	1.11 Land Prone to Flooding or Inundation	1 Changes to depth, duration and velocity of flood waters due to mine subsidence. Damage to property above previously approved mining.	Subsidence predictions have been developed and indicate that the area will remain free draining Flood modelling has been undertaken No houses are located within the affected area	E	5	25	E	1	None Identified				
L	1.12 Swamps, Wetlands or Water Related Ecosystems	1 The area of subsidence under analysis does not include any swamps, wetlands or water related ecosystems and did not require further assessment.											
M	1.13 Threatened or Protected Species	1 Mine subsidence leads to loss of protected species or their habitat.	Base line assessment has been completed, known species within the area Subsidence predictions have been developed	D	4	21	E	1	Extend the monitoring programs to include the effects predicted from the mining of LW A5a (considerations of Threatened or Protected Species)	D	4	21	E

**Qualitative
Risk Analysis.
Analysis Worksheet**



SYSTEM: AR0866	Austar Coal Mine Environmental Impacts	Compiled by: Date:	Shane Chiddy 5th November 2009	Sheet: of:	3 17
SUB SYSTEM: No: 1	Natural Features	Verified by: Date:			

STEP IN PROCESS		HAZARD & EFFECTS	EXISTING CONTROLS	P	C	R	T	TID	TREATMENT OPTIONS	P	C	R	T
N	1.14 National Parks	1 The area of subsidence under analysis does not include any national parks and did not require further assessment.	Monitoring programs in place as part of existing SMP										
O	1.15 State Conservation Areas	1 The area of subsidence under analysis does not include any State Conservation Areas and did not require further assessment.											
P	1.16 State Forests	1 The area of subsidence under analysis does not include any State Forests and did not require further assessment.											
Q	1.17 Natural Vegetation	1 Mine subsidence or local flooding leads to damage or loss of Natural vegetation.	Subsidence predictions have been developed Base line assessment has been completed Monitoring programs in place as part of existing SMP Flood modelling has been undertaken	D	4	21	E	1	Extend the monitoring programs to include the effects predicted from the mining of LW A5a (changes to natural vegetation from Mine subsidence or local flooding)	D	4	21	E
R	1.18 Areas of Major Geological Interest	1 The area of subsidence under analysis does not include any areas of major geological interest and did not require further assessment.											
S	1.19 Air Quality	1 Air emissions will not be increased due to the mining of LW A5a, in the affected area.											
T	1.20 Acoustic Amenity (Noise)	1 Noise emissions will not be increased due to the mining of LW A5a, in the affected area.											
U	1.21 Vibration	1 Increased vibration due to the mining of LW A5a. Localised disturbances and possible	Vibration will not be increased due to the mining of LW A5a, in the affected area.	E	4	23	E	1	None Identified				

**Qualitative
Risk Analysis.
Analysis Worksheet**



SYSTEM: AR0866	Austar Coal Mine Environmental Impacts	Compiled by: Date:	Shane Chiddy 5th November 2009	Sheet: of:	4 17
SUB SYSTEM: No: 1	Natural Features	Verified by: Date:			

STEP IN PROCESS		HAZARD & EFFECTS	EXISTING CONTROLS	P	C	R	T	TID	TREATMENT OPTIONS	P	C	R	T
V	1.22 Energy Usage	1 damage to buildings. Increased use of energy to mine LW A5a.	Monitoring programs in place as part of existing SMP Past mining has not lead to any significant vibration in the stage 2 area. Top Coal Caving is a more efficient extraction method than conventional Longwall mining	E	5	25	E	1	None Identified				
W	1.23 Greenhouse	1 Increased emission of Greenhouse gases during the mining of LW A5a.	Top Coal Caving is a more efficient extraction method than conventional Longwall mining Area is low Methane seam content Monitoring of greenhouse gas emissions, and reporting NGERS Ventilation shaft gas content monitoring	E	5	25	E	1	None Identified				

**Qualitative
Risk Analysis.
Analysis Worksheet**



SYSTEM: AR0866	Austar Coal Mine Environmental Impacts	Compiled by: Date:	Shane Chiddy 5th November 2009	Sheet: 5
SUB SYSTEM: No: 2	Public Utilities	Verified by: Date:		of: 17

STEP IN PROCESS		HAZARD & EFFECTS	EXISTING CONTROLS	P	C	R	T	TID	TREATMENT OPTIONS	P	C	R	T
A	2.01 Railways	1 The area of subsidence under analysis does not include any railways and did not require further assessment.											
B	2.02 Roads (All Types)	1 The area of subsidence under analysis does not include any public roads and did not require further assessment.											
C	2.03 Bridges	1 The area of subsidence under analysis does not include any bridges and did not require further assessment.											
D	2.04 Tunnels	1 The area of subsidence under analysis does not include any tunnels and did not require further assessment.											
E	2.05 Culverts	1 The area of subsidence under analysis does not include any culverts and did not require further assessment.											
F	2.06 Water, Gas or Sewerage Infrastructure	1 The area of subsidence under analysis does not include any water, gas or sewerage infrastructure and did not require further assessment.											
G	2.07 Liquid Fuel Pipelines	1 The area of subsidence under analysis does not include any liquid fuel pipeline and did not require further assessment.											
H	2.08 Electricity Transmission Lines or Associated Plants	1 Damage to Electricity transmission lines due to mine subsidence. Transmission lines requires repair. (Includes 11kV and domestic supplies)	Base line assessment has been completed Monitoring programs in place as part of existing SMP Energy Australia Infrastructure Management Plan	D	3	17	E	1	Extend the Energy Australia Infrastructure Management Plan to include the effects predicted from the mining of LW A5a (Electricity transmission lines)	D	3	17	E
I	2.09 Telecommunication Lines or Associated Plants	1 Damage to domestic Telstra Local Network due to mine subsidence.	Base line assessment has been completed	D	3	17	E	1	Extend the Telstra Infrastructure Management Plan to include the effects predicted from the mining of LW A5a	D	3	17	E

**Qualitative
Risk Analysis.
Analysis Worksheet**



SYSTEM: AR0866	Austar Coal Mine Environmental Impacts	Compiled by: Date:	Shane Chiddy 5th November 2009	Sheet: 9
SUB SYSTEM: No: 4	Farm Land And Facilities	Verified by: Date:		of: 17

STEP IN PROCESS		HAZARD & EFFECTS		EXISTING CONTROLS		P	C	R	T	TID	TREATMENT OPTIONS				P	C	R	T
A	4.01 Agricultural Utilisation or Agricultural Suitability of Farm Land	1	Changes to drainage, ponding and flood levels. Changes to the agricultural Utilisation or Agricultural Suitability of Farm Land.	Base line assessment has been completed Flood modelling has been undertaken Monitoring programs in place	D	3	17	E	1	PSMP to consider additional impacts on drainage within the horticultural areas.	D	3	17	E				
B	4.02 Farm Buildings or Sheds	1	Damage to Farm buildings / sheds due to mine subsidence. Farm buildings / sheds require repair.	Subsidence predictions have been developed, all structures remain safe, servicable and repairable Monitoring programs in place Property subsidence management plans have been developed Low density of Farm buildings / sheds External structural inspections of have been conducted	D	3	17	E	1	PSMP to consider additional impacts on Farm buildings / sheds.	D	3	17	E				
C	4.03 Gas or Fuel Storage	1	The area of subsidence under analysis does not include any substantial Gas or Fuel Storage facilities and did not require further assessment.															
D	4.04 Poultry Sheds	1	The area of subsidence under analysis does not include any poultry sheds and did not require further assessment.															
E	4.05 Glass Houses	1	The area of subsidence under analysis does not include any glass houses and did not require further assessment.															
F	4.06 Hydroponic Systems	1	The area of subsidence under analysis does not include any hydroponic system and did not require further assessment.															
G	4.07 Irrigation Systems	1	Damage to irrigation systems	Base line assessment has been completed	D	3	17	E	1	PSMP to consider additional impacts on irrigation systems within the horticultural	D	3	17	E				

**Qualitative
Risk Analysis.
Analysis Worksheet**



SYSTEM: AR0866	Austar Coal Mine Environmental Impacts	Compiled by: Date:	Shane Chiddy 5th November 2009	Sheet: 10
SUB SYSTEM: No: 4	Farm Land And Facilities	Verified by: Date:		of: 17

STEP IN PROCESS		HAZARD & EFFECTS	EXISTING CONTROLS	P	C	R	T	TID	TREATMENT OPTIONS	P	C	R	T
H	4.08 Fences	1 due to mine subsidence. Irrigation systems require repair. Damage to fences due to mine subsidence. Fences require repair.	Subsidence predictions have been developed Base line assessment has been completed Subsidence predictions have been developed	D	3	17	E	1	areas. PSMP to consider additional impacts on fences within the horticultural areas.	D	3	17	E
I	4.09 Farm Dams	1 Damage to Farm dams due to mine subsidence. Reduced storage capacity. Farm dams require repair.	Base line assessment has been completed Subsidence predictions have been developed Existing Property Subsidence Management Plans (PSMP)	D	3	17	E	1	PSMP to consider additional impacts on farm dams within the horticultural areas.	D	3	17	E
J	4.10 Wells or Bores	1 The area of subsidence under analysis does not include any wells or bores and did not require further assessment.											
K	4.11 Access Tracks	1 Damage to Access Tracks due to mine subsidence. Access Tracks require repair.	Base line assessment has been completed Existing Property Subsidence Management Plans (PSMP) Subsidence predictions have been developed Flood modelling has been undertaken (access is maintained during 1 in 100 year flood under upperbound modelled subsidence predictions)	D	4	21	E	1	PSMP to consider additional impacts on farm access tracks	D	4	21	E

**Qualitative
Risk Analysis.
Analysis Worksheet**



SYSTEM: AR0866	Austar Coal Mine Environmental Impacts	Compiled by: Date:	Shane Chiddy 5th November 2009	Sheet: of:	13 17
SUB SYSTEM: No: 6		Verified by: Date:			

STEP IN PROCESS		HAZARD & EFFECTS	EXISTING CONTROLS	P	C	R	T	TID	TREATMENT OPTIONS	P	C	R	T
A	6.01 Areas of Archaeological and/or Heritage Significance	1 Damage to Archaeological and/or Heritage Significant sites due to mine subsidence.	No historic heritage significant sites identified Base line assessment has been completed Subsidence predictions have been developed No surface works are anticipated in the subsidence area of LW A5a	D	4	21	E	1	Develop a Cultural Heritage Management Plan	D	4	21	E
								2	Cultural Heritage Management Plan to include - In the event that surface disturbance is to be performed, undertake aboriginal heritage assessment				

**Qualitative
Risk Analysis.
Analysis Worksheet**



SYSTEM: AR0866	Austar Coal Mine Environmental Impacts	Compiled by: Date:	Shane Chiddy 5th November 2009	Sheet: of:	15 17
SUB SYSTEM: No: 8		Verified by: Date:			

STEP IN PROCESS		HAZARD & EFFECTS	EXISTING CONTROLS	P	C	R	T	TID	TREATMENT OPTIONS	P	C	R	T
A	8.01 Permanent Survey Control Marks	1 Movement of Permanent Survey Control Marks due to mine subsidence. Surveyors rely on false location of the marks.	Base line assessment has been completed Subsidence predictions have been developed	C	4	18	E	1	PSMP to consider re-surveying the Permanent Survey Control Marks affected by the mining of LW A5a	C	4	18	E

**Qualitative
Risk Analysis.
Analysis Worksheet**

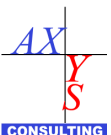



SYSTEM: AR0866	Austar Coal Mine Environmental Impacts	Compiled by: Date:	Shane Chiddy 5th November 2009	Sheet: 16
SUB SYSTEM: No: 9	Residential Establishments	Verified by: Date:		of: 17

STEP IN PROCESS		HAZARD & EFFECTS		EXISTING CONTROLS		P	C	R	T	TID	TREATMENT OPTIONS				P	C	R	T
A	9.01 Houses	1	Damage to Houses and property improvements due to mine subsidence. Houses and property improvements require repair. Owners emotional stress associated with uncertainty of events.	Base line assessment has been completed Existing Property Subsidence Management Plans (PSMP) External structural inspections of have been conducted Subsidence predictions have been developed, all structures remain safe, servicable and repairable Low density of Houses and property improvements Individual consultation with property owners	C	3	13	E	1	PSMP to consider additional impacts on Houses within the LW A5a mining area	C	3	13	E				
B	9.02 Flats or Units	1	The area of subsidence under analysis does not include any Flats or units and did not require further assessment.															
C	9.03 Caravan Parks	1	The area of subsidence under analysis does not include any caravan parks and did not require further assessment.															
D	9.04 Retirement or Aged Care Villages	1	The area of subsidence under analysis does not include any Retirement or Aged Care Villages and did not require further assessment.															
E	9.05 Associated Structures such as Workshops, Garages, On-Site Waste Water Systems, Water or Gas Tanks, Swimming Pools or Tennis Courts	1	Damage to Associated Structures due to mine subsidence. Houses and property improvements require repair. Owners emotional stress associated with uncertainty of events.	Base line assessment has been completed Existing Property Subsidence Management Plans (PSMP) External structural inspections of have been conducted Subsidence predictions have been developed, all structures remain safe, servicable and repairable	C	3	13	E	1	PSMP to consider additional impacts on Associated Structures within the LW A5a mining area	C	3	13	E				

Attachment 3

Risk Treatment Schedule (Risk Rank Order)


Qualitative Risk Analysis Risk Treatment Schedule		ANALYSIS NUMBER: AR0866	ANALYSIS SITE AND NAME Austar Coal Mine Environmental Impacts		Sheet: 1 of: 2
Ref	Risk	Hazard	TID	Treatment Options	
9A1	13	Damage to Houses and property improvements due to mine subsidence. Houses and property improvements require repair. Owners emotional stress associated with uncertainty of events.	1	PSMP to consider additional impacts on Houses within the LW A5a mining area	
9E1	13	Damage to Associated Structures due to mine subsidence. Houses and property improvements require repair. Owners emotional stress associated with uncertainty of events.	1	PSMP to consider additional impacts on Associated Structures within the LW A5a mining area	
1B1	17	Water flow and quality changes to ephemeral creeks due to mine subsidence. Changes to channel stability. Flow on environmental impacts result.	1	Extend the monitoring programs to include the effects predicted from the mining of LW A5a (upstream monitoring immediately downstream of Sandy Creek Road)	
2H1	17	Damage to Electricity transmission lines due to mine subsidence. Transmission lines requires repair. (Includes 11kV and domestic supplies)	1	Extend the Energy Australia Infrastructure Management Plan to include the effects predicted from the mining of LW A5a (Electricity transmission lines)	
2I1	17	Damage to domestic Telstra Local Network due to mine subsidence. Telecommunication lines requires repair.	1	Extend the Telstra Infrastructure Management Plan to include the effects predicted from the mining of LW A5a	
4A1	17	Changes to drainage, ponding and flood levels. Changes to the agricultural Utilisation or Agricultural Suitability of Farm Land.	1	PSMP to consider additional impacts on drainage within the horticultural areas.	
4B1	17	Damage to Farm buildings / sheds due to mine subsidence. Farm buildings / sheds require repair.	1	PSMP to consider additional impacts on Farm buildings / sheds.	
4G1	17	Damage to irrigation systems due to mine subsidence. Irrigation systems require repair.	1	PSMP to consider additional impacts on irrigation systems within the horticultural areas.	
4H1	17	Damage to fences due to mine subsidence. Fences require repair.	1	PSMP to consider additional impacts on fences within the horticultural areas.	
4I1	17	Damage to Farm dams due to mine subsidence. Reduced storage capacity. Farm dams require repair.	1	PSMP to consider additional impacts on farm dams within the horticultural areas.	
8A1	18	Movement of Permanent Survey Control Marks due to mine subsidence. Surveyors rely on false location of the marks.	1	PSMP to consider re-surveying the Permanent Survey Control Marks affected by the mining of LW A5a	
1C1	21	Ground water level and quality changes due to mine subsidence.	1	None Identified	
1M1	21	Mine subsidence leads to loss of protected species or their habitat.	1	Extend the monitoring programs to include the effects predicted from the mining of LW A5a (considerations of Threatened or Protected Species)	
1Q1	21	Mine subsidence or local flooding leads to damage or loss of Natural vegetation.	1	Extend the monitoring programs to include the effects predicted from the mining of LW A5a (changes to natural vegetation from Mine subsidence or local flooding)	
4K1	21	Damage to Access Tracks due to mine subsidence. Access Tracks require repair.	1	PSMP to consider additional impacts on farm access tracks	
6A1	21	Damage to Archaeological and/or Heritage Significant sites due to mine subsidence.	1	Develop a Cultural Heritage Management Plan	
			2	Cultural Heritage Management Plan to include - In the event that surface disturbance is to be performed, undertake aboriginal heritage assessment	
1U1	23	Increased vibration due to the mining of LW A5a. Localised disturbances and possible damage to buildings.	1	None Identified	


Qualitative Risk Analysis Risk Treatment Schedule	ANALYSIS NUMBER: AR0866	ANALYSIS SITE AND NAME Austar Coal Mine Environmental Impacts		Sheet: 2
				of: 2

Ref	Risk	Hazard	TID	Treatment Options
1I1	24	Mass movement of steep slopes due to mine subsidence. Localised damage to environment.	1	None Identified
1K1	25	Changes to depth, duration and velocity of flood waters due to mine subsidence. Damage to property above previously approved mining.	1	None Identified
1V1	25	Increased use of energy to mine LW A5a.	1	None Identified
1W1	25	Increased emission of Greenhouse gases during the mining of LW A5a.	1	None Identified

Attachment 4

Risk Treatment Schedule (Consequence Order)

Qualitative Risk Analysis Risk Treatment Schedule		ANALYSIS NUMBER: AR0866	ANALYSIS SITE AND NAME Austar Coal Mine Environmental Impacts			Sheet: 1 of: 2
Consequence Order						
Ref	Cons	Hazard	TID	Treatment Options		
1B1	3	Water flow and quality changes to ephemeral creeks due to mine subsidence. Changes to channel stability. Flow on environmental impacts result.	1	Extend the monitoring programs to include the effects predicted from the mining of LW A5a (upstream monitoring immediately downstream of Sandy Creek Road)		
2H1	3	Damage to Electricity transmission lines due to mine subsidence. Transmission lines requires repair. (Includes 11kV and domestic supplies)	1	Extend the Energy Australia Infrastructure Management Plan to include the effects predicted from the mining of LW A5a (Electricity transmission lines)		
2I1	3	Damage to domestic Telstra Local Network due to mine subsidence. Telecommunication lines requires repair.	1	Extend the Telstra Infrastructure Management Plan to include the effects predicted from the mining of LW A5a		
4A1	3	Changes to drainage, ponding and flood levels. Changes to the agricultural Utilisation or Agricultural Suitability of Farm Land.	1	PSMP to consider additional impacts on drainage within the horticultural areas.		
4B1	3	Damage to Farm buildings / sheds due to mine subsidence. Farm buildings / sheds require repair.	1	PSMP to consider additional impacts on Farm buildings / sheds.		
4G1	3	Damage to irrigation systems due to mine subsidence. Irrigation systems require repair.	1	PSMP to consider additional impacts on irrigation systems within the horticultural areas.		
4H1	3	Damage to fences due to mine subsidence. Fences require repair.	1	PSMP to consider additional impacts on fences within the horticultural areas.		
4I1	3	Damage to Farm dams due to mine subsidence. Reduced storage capacity. Farm dams require repair.	1	PSMP to consider additional impacts on farm dams within the horticultural areas.		
9A1	3	Damage to Houses and property improvements due to mine subsidence. Houses and property improvements require repair. Owners emotional stress associated with uncertainly of events.	1	PSMP to consider additional impacts on Houses within the LW A5a mining area		
9E1	3	Damage to Associated Structures due to mine subsidence. Houses and property improvements require repair. Owners emotional stress associated with uncertainly of events.	1	PSMP to consider additional impacts on Associated Structures within the LW A5a mining area		
1C1	4	Ground water level and quality changes due to mine subsidence.	1	None Identified		
1M1	4	Mine subsidence leads to loss of protected species or their habitat.	1	Extend the monitoring programs to include the effects predicted from the mining of LW A5a (considerations of Threatened or Protected Species)		
1Q1	4	Mine subsidence or local flooding leads to damage or loss of Natural vegetation.	1	Extend the monitoring programs to include the effects predicted from the mining of LW A5a (changes to natural vegetation from Mine subsidence or local flooding)		
1U1	4	Increased vibration due to the mining of LW A5a. Localised disturbances and possible damage to buildings.	1	None Identified		
4K1	4	Damage to Access Tracks due to mine subsidence. Access Tracks require repair.	1	PSMP to consider additional impacts on farm access tracks		
6A1	4	Damage to Archaeological and/or Heritage Significant sites due to mine subsidence.	1	Develop a Cultural Heritage Management Plan		
			2	Cultural Heritage Management Plan to include - In the event that surface disturbance is to be performed, undertake aboriginal heritage assessment		
8A1	4	Movement of Permanent Survey Control Marks due to mine subsidence. Surveyors rely on false location of the marks.	1	PSMP to consider re-surveying the Permanent Survey Control Marks affected by the mining of LW A5a		

Qualitative Risk Analysis Risk Treatment Schedule	ANALYSIS NUMBER: AR0866	ANALYSIS SITE AND NAME Austar Coal Mine Environmental Impacts		Sheet: 2
				of: 2

Ref	Cons	Hazard	TID	Treatment Options
1I1	5	Mass movement of steep slopes due to mine subsidence. Localised damage to environment.	1	None Identified
1K1	5	Changes to depth, duration and velocity of flood waters due to mine subsidence. Damage to property above previously approved mining.	1	None Identified
1V1	5	Increased use of energy to mine LW A5a.	1	None Identified
1W1	5	Increased emission of Greenhouse gases during the mining of LW A5a.	1	None Identified

Attachment 5

Risk Treatment Schedule and Action Plan

**Qualitative
Risk Analysis
Treatment Schedule**



SYSTEM: AR0866	Austar Coal Mine Environmental Impacts	Compiled by: Date:	Shane Chiddy 5th November 2009	Sheet: of:	1 7
SUB SYSTEM: No: 1	Natural Features	Verified by: Date:			

ID	HAZARD & EFFECTS	R	TID	TREATMENT	R	A/R	RESPONSIBILITY	IMPLEMENTATION	MONITORING	SIGN OFF
1B1	Water flow and quality changes to ephemeral creeks due to mine subsidence. Changes to channel stability. Flow on environmental impacts result.	17	1	Extend the monitoring programs to include the effects predicted from the mining of LW A5a (upstream monitoring immediately downstream of Sandy Creek Road)	17	Accept				
1C1	Ground water level and quality changes due to mine subsidence.	21	1	None Identified						
1I1	Mass movement of steep slopes due to mine subsidence. Localised damage to environment.	24	1	None Identified						
1K1	Changes to depth, duration and velocity of flood waters due to mine subsidence. Damage to property above previously approved mining.	25	1	None Identified						
1M1	Mine subsidence leads to loss of protected species or their habitat.	21	1	Extend the monitoring programs to include the effects predicted from the mining of LW A5a (considerations of Threatened or Protected Species)	21	Accept	Technical Services Manager	Thursday, 1 September 2011	Audit all additional controls and ensure they have been implemented	
1Q1	Mine subsidence or local flooding leads to damage or loss of Natural vegetation.		1	Extend the monitoring programs to include the effects predicted from the mining of LW A5a (changes to natural vegetation from Mine subsidence or local flooding)		Accept	Technical Services Manager	Thursday, 1 September 2011	Audit all additional controls and ensure they have been implemented	
1U1	Increased vibration due to the mining of LW A5a. Localised disturbances and possible damage to buildings.	23	1	None Identified						
1V1	Increased use of energy to mine LW A5a.	25	1	None Identified						
1W1	Increased emission of Greenhouse gases during		1	None Identified						

**Qualitative
Risk Analysis
Treatment Schedule**



SYSTEM: AR0866	Austar Coal Mine Environmental Impacts	Compiled by: Date:	Shane Chiddy 5th November 2009	Sheet: of:	3 7
SUB SYSTEM: No: 2		Verified by: Date:			

ID	HAZARD & EFFECTS	R	TID	TREATMENT	R	A/R	RESPONSIBILITY	IMPLEMENTATION	MONITORING	SIGN OFF
2H1	Damage to Electricity transmission lines due to mine subsidence. Transmission lines requires repair. (Includes 11kV and domestic supplies)	17	1	Extend the Energy Australia Infrastructure Management Plan to include the effects predicted from the mining of LW A5a (Electricity transmission lines)	17	Accept	Technical Services Manager	Thursday, 1 September 2011	Audit all additional controls and ensure they have been implemented	
2I1	Damage to domestic Telstra Local Network due to mine subsidence. Telecommunication lines requires repair.		1	Extend the Telstra Infrastructure Management Plan to include the effects predicted from the mining of LW A5a		Accept	Technical Services Manager	Thursday, 1 September 2011	Audit all additional controls and ensure they have been implemented	

**Qualitative
Risk Analysis
Treatment Schedule**



SYSTEM: AR0866	Austar Coal Mine Environmental Impacts	Compiled by: Date:	Shane Chiddy 5th November 2009	Sheet: of:	4 7
SUB SYSTEM: No: 4		Verified by: Date:			

ID	HAZARD & EFFECTS	R	TID	TREATMENT	R	A/R	RESPONSIBILITY	IMPLEMENTATION	MONITORING	SIGN OFF
4A1	Changes to drainage, ponding and flood levels. Changes to the agricultural Utilisation or Agricultural Suitability of Farm Land.	17	1	PSMP to consider additional impacts on drainage within the horticultural areas.	17	Accept	Technical Services Manager	Thursday, 1 September 2011	Audit all additional controls and ensure they have been implemented	
4B1	Damage to Farm buildings / sheds due to mine subsidence. Farm buildings / sheds require repair.		1	PSMP to consider additional impacts on Farm buildings / sheds.		Accept	Technical Services Manager	Thursday, 1 September 2011	Audit all additional controls and ensure they have been implemented	
4G1	Damage to irrigation systems due to mine subsidence. Irrigation systems require repair.		1	PSMP to consider additional impacts on irrigation systems within the horticultural areas.		Accept	Technical Services Manager	Thursday, 1 September 2011	Audit all additional controls and ensure they have been implemented	
4H1	Damage to fences due to mine subsidence. Fences require repair.		1	PSMP to consider additional impacts on fences within the horticultural areas.		Accept	Technical Services Manager	Thursday, 1 September 2011	Audit all additional controls and ensure they have been implemented	
4I1	Damage to Farm dams due to mine subsidence. Reduced storage capacity. Farm dams require repair.		1	PSMP to consider additional impacts on farm dams within the horticultural areas.		Accept	Technical Services Manager	Thursday, 1 September 2011	Audit all additional controls and ensure they have been implemented	
4K1	Damage to Access Tracks due to mine subsidence. Access Tracks require repair.	21	1	PSMP to consider additional impacts on farm access tracks	21	Accept	Technical Services Manager	Thursday, 1 September 2011	Audit all additional controls and ensure they have been implemented	

**Qualitative
Risk Analysis
Treatment Schedule**



SYSTEM: AR0866	Austar Coal Mine Environmental Impacts	Compiled by: Date:	Shane Chiddy 5th November 2009	Sheet: 5
SUB SYSTEM: No: 6	Areas Of Archaeological Or Heritage Importance	Verified by: Date:		of: 7

ID	HAZARD & EFFECTS	R	TID	TREATMENT	R	A/R	RESPONSIBILITY	IMPLEMENTATION	MONITORING	SIGN OFF
6A1	Damage to Archaeological and/or Heritage Significant sites due to mine subsidence.	21	1	Develop a Cultural Heritage Management Plan	21	Accept	Technical Services Manager	Thursday, 1 September 2011	Audit all additional controls and ensure they have been implemented	
			2	Cultural Heritage Management Plan to include - In the event that surface disturbance is to be performed, undertake aboriginal heritage assessment		Accept	Technical Services Manager	Thursday, 1 September 2011	Audit all additional controls and ensure they have been implemented	

**Qualitative
Risk Analysis
Treatment Schedule**



SYSTEM: AR0866	Austar Coal Mine Environmental Impacts	Compiled by: Date:	Shane Chiddy 5th November 2009	Sheet: of:	6 7
SUB SYSTEM: No: 8		Verified by: Date:			

ID	HAZARD & EFFECTS	R	TID	TREATMENT	R	A/R	RESPONSIBILITY	IMPLEMENTATION	MONITORING	SIGN OFF
8A1	Movement of Permanent Survey Control Marks due to mine subsidence. Surveyors rely on false location of the marks.	18	1	PSMP to consider re-surveying the Permanent Survey Control Marks affected by the mining of LW A5a	18	Accept	Technical Services Manager	Thursday, 1 September 2011	Audit all additional controls and ensure they have been implemented	

**Qualitative
Risk Analysis
Treatment Schedule**



SYSTEM: AR0866	Austar Coal Mine Environmental Impacts	Compiled by: Date:	Shane Chiddy 5th November 2009	Sheet: of:	7 7
SUB SYSTEM: No: 9		Verified by: Date:			

ID	HAZARD & EFFECTS	R	TID	TREATMENT	R	A/R	RESPONSIBILITY	IMPLEMENTATION	MONITORING	SIGN OFF
9A1	Damage to Houses and property improvements due to mine subsidence. Houses and property improvements require repair. Owners emotional stress associated with uncertainty of events.	13	1	PSMP to consider additional impacts on Houses within the LW A5a mining area	13	Accept	Technical Services Manager	Thursday, 1 September 2011	Audit all additional controls and ensure they have been implemented	
9E1	Damage to Associated Structures due to mine subsidence. Houses and property improvements require repair. Owners emotional stress associated with uncertainty of events.		1	PSMP to consider additional impacts on Associated Structures within the LW A5a mining area		Accept	Technical Services Manager	Thursday, 1 September 2011	Audit all additional controls and ensure they have been implemented	

Attachment 10
Revisions

Document Revision History

Revision	Date	Modification Description
1	05-Nov-09	Initial Release
