

# Pre-Project Risk Assessment Register



**APPENDIX D**



Rocglen Coal Mine Project - Pre-Project Risk Register													Version: F Date: 8/12/2009	
Risk Category	Risk Ref. Number	Potential Issue / Risk	Relevance to the Project	Loss Type	Existing Controls / Management Response	RCE	Residual Controls			Proposed Additional Controls / Recommended Actions	Comments / Notes	Responsibility	By When	Completed Date
							C	P	Rating					
Project Planning	001	Poor project planning results in inadequate community & stakeholder consultation	Proposed project will require some level of consultation	CR, LC, MI	Community Consultation Committee (CCC). Existing relationships with government agencies. Development approval process.	Satisfactory	2	B	2B	II	Follow advice issued by DoP. Implement a consultation register.	GSSE & Whitehaven		
	002	Objections received from surrounding residents during exhibition period delays approval	Proposed project will be placed on public exhibition	CR, FI, MI	Community Consultation Committee (CCC). Existing relationships with surrounding residents. Development approval process, including DoP's assessment & consultation requirements.	Improving	3	C	3C	III	Follow advice issued by DoP. Implement a consultation register.	GSSE & Whitehaven		
Groundwater	003	Proposed project results in significant additional impact(s) on groundwater reserves	Groundwater identified on the original EA as a significant issue	LC, CR	Original EA. Groundwater monitoring program.	Improving	3	B	3B	III	Sub-consultant to evaluate & address predicted groundwater impacts associated with proposed project.	Groundwater Sub-Consultant		
Flora & Fauna	004	Proposed project will result in the disturbance of 16 ha (maximum) of the mine's approved Biodiversity Offset Area	Development proposals typically require biodiversity offset areas as part of the approval.	LC, CR	The Whitehaven Coal Regional Biodiversity Offset Strategy, which includes 1500 ha of White Box & Narrow-Leaved Ironbark Shrubby Woodland communities. Some 247 ha of the Regional Offset Area is allocated to meet the Rocglen & Canyon offset requirements. The remainder of the property to be used as offset will be assessed & registered as a biobank. Whitehaven has strategically purchased a parcel of land near Rocglen for potential offsetting purposes.	Improving	3	E	3E	IV	Sub-consultant to prepare a revised biodiversity offset strategy as part of mitigation measures for proposed project, including appraisal of vegetation within adjoining Whitehaven-owned land and a nearby parcel of land recently purchased by Whitehaven for potential offsetting purposes.	Ecology Sub-Consultant		
	005	Proposed project will necessitate the removal of a small isolated patch of Brigalow	Original mine layout was designed to retain the Brigalow patch	EN, LC	Sub-consultant has undertaken preliminary desk-top evaluation concluding Brigalow is likely to be unviable and that its contribution to regional biodiversity is also likely to be low.	Improving	3	E	3E	IV	Sub-consultant to undertake field survey and further assessment, including a Seven Part Test, to ascertain the viability & significance of the Brigalow stand.	Ecology Sub-Consultant		
	006	Project site contains threatened flora & fauna species that are significant		EN, LC	Original EA. Current management activities.	Satisfactory	3	B	3B	III	Sub-consultant to evaluate & address any ecology issues associated with proposed project.	Ecology Sub-Consultant		
	007	Proposed project may necessitate alternative rehabilitation outcome(s)	Current project approval & MOP nominate required rehabilitation outcomes	LC	Current proposed rehabilitation communities will be consistent with any future emplacement/stockpile dump design.	Satisfactory	3	B	3B	III	Conceptual mine closure & rehabilitation to be addressed within EA. Ensure rehabilitation is consistent with current project approval & MOP.	GSSE		
Cultural Heritage	008	The proposed project site may contain heritage sites/artefacts of significance	Area is known to contain heritage sites/artefacts of significance	LC	Original EA - original project site was assessed by archaeology consultants & identified artefacts relocated to keeping place. Provisions are in place for representatives from the local Aboriginal community to be on-site during stripping activities. Known methodology to report & relocate artefacts should any be found.	Satisfactory	3	C	3C	III	Sub-consultant to evaluate & address any cultural heritage issues associated with proposed project. Undertake consultation activities in accordance with the ICCR (DEC, 2004).	Heritage Sub-Consultant		
Noise & Vibration	009	Proposed project results in unacceptable increase in noise levels at surrounding receptors.	Nearest non-project neighbour, "Costa Vale", is located in excess of 1.5km from the Project Site.	LC, CR	Noise Management Protocol & Monitoring Program, which includes monitoring at "Costa Vale".	Improving	3	C	3C	III	Sub-consultant to evaluate & address predicted noise issues associated proposed project.	Noise & Vibration Sub-Consultant		
	010	Proposed project results in an unacceptable increase in vibration at surrounding receptors.	Nearest neighbour, "Costa Vale", is located in excess of 1.5km from the Project Site.	LC, CR	Blasting Monitoring Program, which includes monitoring at "Costa Vale".	Improving	3	C	3C	III	Sub-consultant to evaluate & address predicted vibration & over-pressure issues associated with proposed project.	Noise & Vibration Sub-Consultant		
Surface Water / Flooding	011	Revised landform required as part of the proposed project does not enable original post-mining surface water regimes to be reinstated.	Current MOP has surface water from un-named drainage line heading south	LC, EN, CR	SWMP. Conceptual final landform design.	Improving	3	D	3D	IV	Undertake and include complete surface water assessment within EA. Address mine closure, final landform & rehabilitation, including surface water management, within the EA. Prepare & forward draft landform design to Whitehaven ASAP.	GSSE		
	012	Proposed project will require altered & additional erosion & sedimentation management requirements.	Sediment laden water needs to be managed in accordance with the Blue Book	EN, LC	SWMP. Conceptual final landform design.	Improving	2	D	2D	III	Undertake complete surface water assessment, including re-design of clean & dirty water management systems.	GSSE		
	013	Site water balance will be inaccurate given proposed project components.	Rains in catchment	LC	Original water balance done by SCS	Satisfactory	2	B	2B	II	Undertake complete surface water assessment, including revised water balance.	GSSE		
Traffic & Transport	014	Proposed project increases impacts and/or safety risks on local traffic & transport routes.	Current project has interaction with local traffic & transport provisions	LC, CR	Existing EA commitments, including upgrade of Wean Road. Noise Monitoring Program includes transport noise safeguards & monitoring provisions. Roads currently used for coal transportation from Rocglen are approved for mine transport.	Satisfactory	2	B	2B	II	Traffic & transport issues associated with proposed project to be addressed within EA.	GSSE Whitehaven		The potential for impact upon the local road network (traffic volumes & safety) is considered negligible. The total annual ROM production from the site will remain unchanged and transport of coal from Rocglen will continue to occur via the approved transport route to the Whitehaven CHPP within the approved road transportation hours.
Visual Amenity	015	Increased visual impact associated with expanded emplacement areas and relocated stockpile area(s).	Proposed project will make the mine more visible from surrounding residences.	CR, LC	Current rehabilitation & revegetation activities. Conceptual final landform design & assessment.	Improving	3	D	3D	IV	Mine closure, final landform & rehabilitation, including progressive mine rehabilitation, to be addressed within EA. Visual impact of proposed project & final landform design to be addressed within EA. Undertake early reprofiling and revegetation of the external batter slopes of the emplacement areas to minimise visual impacts.	GSSE Whitehaven		
Soils & Land Capability	016	Final landform may result in a reduction of the pre-mining land capability and agricultural land suitability (also consider opportunities to present a net improvement in final land capability & classes)	As part of progressive mine rehabilitation, disturbed land will need to be rehabilitated to the pre-mining land capability (as near as possible)	LC, CR	Original EA - Soils & Land Capability Assessment.	Improving	2	D	2D	III	Soils & land capability issues to be addressed within EA. Mine closure, final landform & rehabilitation, including designing final landform to minimise reduction of land capability & agricultural suitability, to be addressed with EA.	GSSE		Consider opportunities to present a net improvement in final land classes
	017	Expanded Northern Emplacement Area reduces space available for topsoil/subsoil stockpiles.	Constrained areas available for conforming topsoil/subsoil stockpiles	LC	Project approval, MOP & end of month surveys	Improving	2	D	2D	III	Re-do topsoil/subsoil balance and assess need for - (a) alternative locations; (b) increased height of stockpiles; or (c) expedite final dump profile to enable dumping to occur sooner rather than later.	GSSE		

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Air Quality	018	Proposed project results in unacceptable increase in air quality impacts at surrounding residential receptors.	Nearest neighbour, "Costa Vale", is located in excess of 1.5km from the Project Site.	LC, CR	Air Quality Monitoring Program.	Satisfactory	3	C	3C	III	Sub-consultant to evaluate & address air quality issues associated with proposed project.	Air Quality Sub-Consultant		
	019	Additional GHG emissions as a result of burning additional coal, mine operation, liberating gas due to open cut mining method, etc.	Mine activities emit GHG	LC, CR	Whitehaven currently developing an energy savings action plan (initiatives will be rolled-out). Current GHG reporting requirements	Satisfactory	2	B	2B	II	Sub-consultant to evaluate & address GHG issues associated with proposed project.	Air Quality Sub-Consultant		
Mine Closure & Rehabilitation	020	Changes to approved final landform	Current final landform approved as part of EA & MOP	LC	EMS. MOP. Whitehaven currently preparing Landscape Management Plan.	Satisfactory	2	B	2B	II	Address mine closure, final landform & rehabilitation within the EA.	GSSE		
Site Services	021	Proposed project requires existing overhead powerline, owned by Country Energy, to be realigned to make way for expended Northern Emplacement Area.		FI	Current alignment of powerline known & mapped. Consultations with Country Energy have commenced, and a preferred re-alignment route has been identified.	Improving	3	E	3E	IV	Continue consultations with Country Energy. Assess the preferred realignment route for the powerline within the EA, including any potential ecological and/or heritage issues. Address in EA.	GSSE		
Waste Management	No change to current waste management systems proposed													
	022	Additional coarse reject volumes from expanded open cut pit	Long term, Whitehaven intend to backload coarse rejects from CHPP to Rocglen for disposal in the open cut pit when the void is of sufficient size.	LC	Coarse rejects not currently backloaded to Rocglen	Improving	2	B	2B	II	Approved system for coarse rejects, being backloading from CHPP to Rocglen for disposal, to operate in the long-term when the pit is of sufficient size. Address in EA.	GSSE		
Socio-Economic	024	Failure to obtain project approval results in shorter life of mine, with adverse socio-economic impacts (eg: loss of jobs, reduction in flow-on benefits, coal resources not recovered).	Rocglen mine operation provides significant socio-economic benefits	FI, CR	Development approval process.	Improving	3	B	3B	III	Undertake on-going consultation with DoP.	GSSE & Whitehaven		
		See above for potentially adverse social issues associated with air quality, visual amenity, greenhouse gas emissions, water quality and noise.												

# RISK MATRIX TOOL

## CONSEQUENCE CRITERIA

RATING	FINANCIAL IMPACT (\$AUD)	HEALTH & SAFETY	ENVIRONMENT	COMMUNITY / REPUTATION	LEGAL & COMPLIANCE	MANAGEMENT IMPACT
5	>\$1M+ loss or gain	<ul style="list-style-type: none"> <li>- Multiple fatalities; or</li> <li>- Significant irreversible effects to 10's of people</li> </ul>	<p>Category 5 An incident that has caused disastrous environmental impact with long term effect requiring major remediation</p> <p>Category 4 An incident that has caused serious environmental impact with medium term effect requiring significant remediation</p>	<ul style="list-style-type: none"> <li>- Prominent negative international media coverage over several days</li> <li>- Significant negative impact on share price for months</li> <li>- National media coverage over several days</li> <li>- Significant negative impact on share price for weeks</li> <li>- Community / NGO legal actions</li> <li>- Impact on local economy</li> </ul>	<ul style="list-style-type: none"> <li>- Major litigation or prosecution with damages of \$10M+ plus significant costs</li> <li>- Custodial sentence for company executive</li> <li>- Prolonged closure of operations by authorities</li> <li>- Major litigation costing \$1M+</li> <li>- Investigation by regulatory body resulting in long term interruption to operations</li> <li>- Possibility of custodial sentence</li> </ul>	<ul style="list-style-type: none"> <li>- Disaster with long term significant impact on the business that requires senior executives to spend considerable time to handle for several months</li> <li>- Full implementation of business-wide crisis management plan</li> <li>- Critical event or disaster with significant impact on a business unit that requires considerable senior management time to handle over several months</li> <li>- Full implementation of a business unit crisis management plan</li> </ul>
4	\$250K - \$1M loss or gain	<ul style="list-style-type: none"> <li>- Single fatality; and/or</li> <li>- Severe irreversible disability to one or more persons</li> </ul>	<p>Category 3 An incident that has caused moderate reversible environment impact with short term effect requiring moderate remediation</p> <p>Category 2 An incident that has caused minor reversible environmental impact requiring minor remediation</p>	<ul style="list-style-type: none"> <li>- Local media coverage over several days</li> <li>- Negative impact on local economy</li> <li>- Persistent community complaints</li> </ul>	<ul style="list-style-type: none"> <li>- Major breach of regulation with punitive fine</li> <li>- Significant litigation involving many weeks of senior management time</li> </ul>	<ul style="list-style-type: none"> <li>- Major event that requires the implementation of crisis contingency plans at a site level</li> <li>- Will require the involvement of business level managers and will take up the time of site managers for several weeks</li> <li>- Significant event that can be managed with careful attention – will take some site-level management time over several days</li> <li>- Local operation emergency and crisis response plan implemented</li> </ul>
3	\$50K - \$250K loss or gain	<ul style="list-style-type: none"> <li>- Extensive injuries or irreversible disability or impairment to one or more persons</li> </ul>	<p>Category 1 An incident that has caused negligible reversible environmental impact requiring very minor or no remediation</p>	<ul style="list-style-type: none"> <li>- Local media coverage</li> <li>- Complaint to site and/or regulator</li> </ul>	<ul style="list-style-type: none"> <li>- Breach of regulation with investigation or report to authority with prosecution and/or moderate fine possible</li> </ul>	<ul style="list-style-type: none"> <li>- Local operation of contingency plan</li> <li>- Will require some local management attention over several days</li> </ul>
2	\$5k - \$50K loss or gain	<ul style="list-style-type: none"> <li>- Medium term largely reversible disability to one or more persons</li> <li>- Significant medical treatment, disabling or lost time injury &lt;2 weeks</li> </ul>	<p>Category 1 An incident that has caused negligible reversible environmental impact requiring very minor or no remediation</p>	<ul style="list-style-type: none"> <li>- No media coverage</li> <li>- No community complaints</li> </ul>	<ul style="list-style-type: none"> <li>- Minor legal issues, non-compliances and breaches of regulation</li> </ul>	<ul style="list-style-type: none"> <li>- Local operation of contingency plan</li> <li>- Will require some local management attention over several days</li> </ul>
1	<\$5k loss or gain	<ul style="list-style-type: none"> <li>- First aid treatment or minor medical treatment</li> </ul>	<p>Category 1 An incident that has caused negligible reversible environmental impact requiring very minor or no remediation</p>	<ul style="list-style-type: none"> <li>- No media coverage</li> <li>- No community complaints</li> </ul>	<ul style="list-style-type: none"> <li>- Minor legal issues, non-compliances and breaches of regulation</li> </ul>	<ul style="list-style-type: none"> <li>- Local operation of contingency plan</li> <li>- Will require some local management attention over several days</li> </ul>



**LIKELIHOOD CRITERIA**

CATEGORY	CRITERIA
E	- 99% probability; or - Impact is occurring now; or - Could occur within "days to weeks"
D	- >50% and <99% probability; or - Balance of probability will occur; or - Could occur within "weeks to months"
C	- >20% and <50% probability; or - May occur shortly but a distinct probability it won't; or - Could occur in "years to decades"
B	- >1% and <20% probability; or - May occur but not anticipated; or - Could occur in "years to decades"
A	- <1% probability; or - Occurrence requires exceptional circumstances; or - Exceptionally unlikely, even in the long term future; or - Only occur as a "100 year event"

**RISK MATRIX**

LIKELIHOOD RATING	E	II	III	IV	V	V
	D	II	III	IV	IV	V
	C	I	II	III	IV	IV
	B	I	II	III	III	IV
	A	I	I	II	III	III
		1	2	3	4	5
CONSEQUENCE RATING						

**RISK CONTROL EFFECTIVENESS (RCE)**

RCE	GUIDE
Satisfactory	Nothing more to be done except review and monitor the existing controls. Controls are well designed for the risk, are largely preventative and address the root causes and Management believes that they are effective and reliable at all times. Reactive controls only support preventative controls
Improving	Most controls are designed correctly and are in place and effective. Some more work to be done to improve operating effectiveness or Management has doubts about operational effectiveness and reliability.
Poor	While the design of controls may be largely correct in that they treat most of the root causes of the risk, they are not currently very effective. There may be an over-reliance on reactive controls or some of the controls do not seem correctly designed in that they do not treat root causes, those that are correctly designed are operating effectively.
Very Poor	Significant control gaps. Either controls do not treat root causes or they do not operate at all effectively. Controls if they exist are just reactive.
None	Virtually no credible control. Management has no confidence that any degree of control is being achieved due to poor control design and/or very limited operational effectiveness.