PLAN OF OPERATIONS

Wonbindi North

ML80170

Cockatoo Coal Limited

1st November 2013 – 31st August 2014

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APPENDICES

1 INTRODUCTION

The Baralaba Coal Mine is an opencut coal mine located in the Bowen Basin, Central Queensland, approximately 3 kilometres from the township of Baralaba. Approval has been granted to commence an expansion of the project to the north of the existing operations.

An Environmental Management Plan (EM Plan) was submitted on 5th October 2012 which outlined the management of the mining operations by Baralaba Coal Pty Ltd for the operation of Wonbindi North (ML80170). The Notice of Decision and Environmental Authority (EPML00617113) was issued on 17th May 2013.

A separate EM Plan and Environmental Authority (EA) application was lodged for Baralaba Central and Baralaba North as the tenements (ML5065, ML80175, and ML80169) are held by Baralaba Coal Pty Ltd. Although mining approval will be granted through separate EA's, the open cut mining operations on ML80169 (Baralaba North) and ML80170 will be operated as a single open cut coal mine operation by Baralaba Coal Pty Ltd and Wonbindi Coal Pty Ltd, and will be jointly referred to as the Baralaba North / Wonbindi North Mine.

Through a Deed of Agreement, Baralaba Coal Pty Ltd and Wonbindi Coal Pty Ltd will operate a contiguous operation across the mining lease boundary of ML80169 and ML80170. The deed sets out the terms and conditions of the cooperation between Wonbindi and Baralaba Coal in connection with the Project.

1.1 Term of Plan

The term of this Plan of Operations (PoO) is from 01 November 2013 to 31 August 2014.

The Plan is in accordance with Environmental Authority Permit Number EPML00617113 and Section 233 of the Environmental Protection Act 1994. The Plan of Operations complies with the EM Plan submitted to the department dated 5th October 2012.

This Plan of Operations is a replacement to the Plan of Operations which was submitted on the 14th October 2013. The plan is for a shorter term and ends on 31st August 2014. A partner PoO has been prepared for the mining on pre-existing tenure (ML5605, ML80157, ML5581, ML5590) and the new Baralaba North tenement (ML80169).

1.2 Holders of Environmental Authority

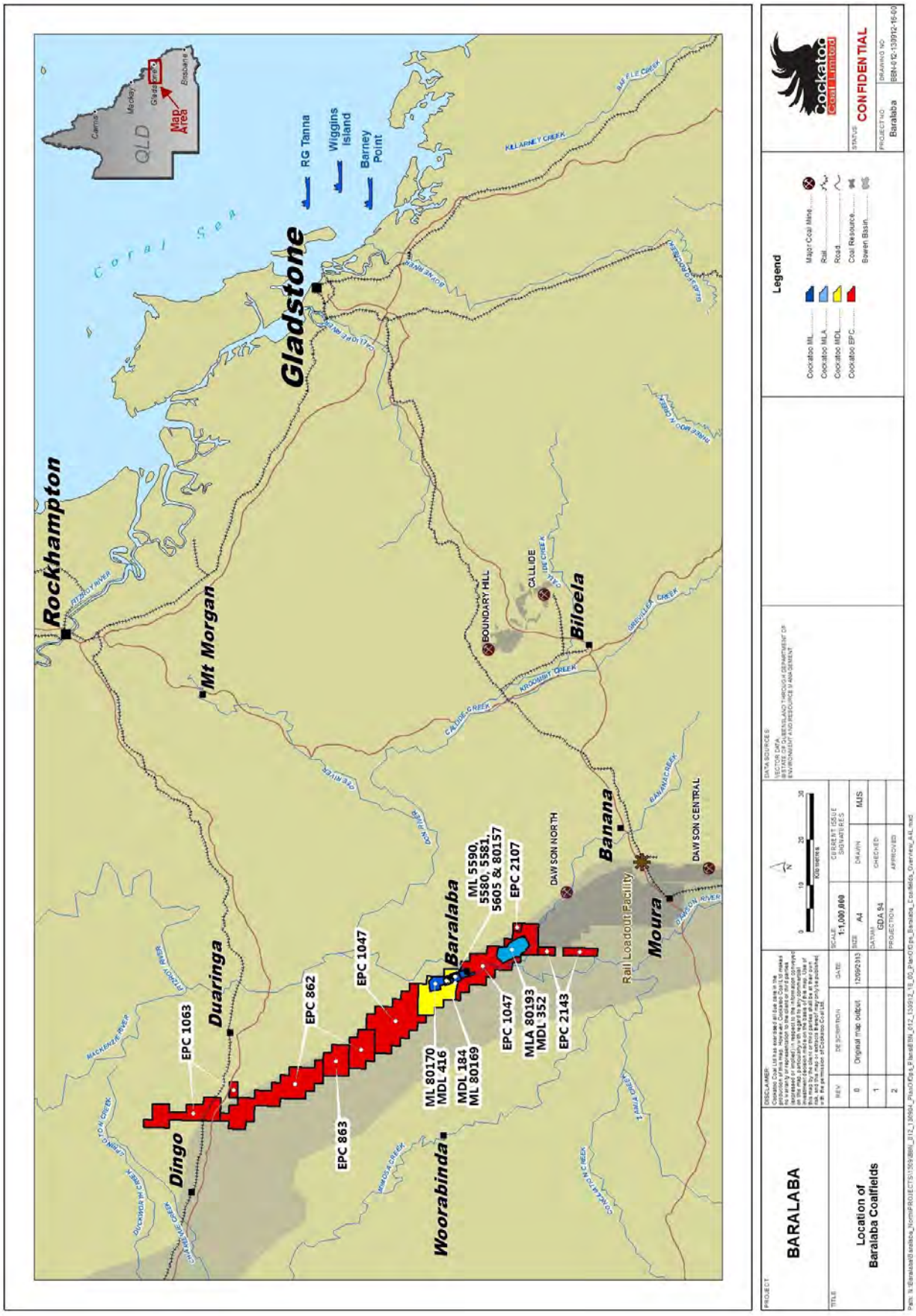
The Wonbindi North Coal Mine is owned by Wonbindi Coal Pty Ltd (80% Cockatoo Coal Pty Ltd, 20% JS Baralaba Wonbindi Pty Ltd). Wonbindi North Mine will be operated by Baralaba Coal Pty Ltd. Mining operations on ML80170 (Wonbindi North) will be operated by Wonbindi Coal Pty Ltd.

1.3 Project Location and Surroundings

The Baralaba Coal Mine is located within the Bowen Basin, Central Queensland, approximately 150km west of Rockhampton and 210km west of the Port of Gladstone. A site location plan is provided in Figure 1.

The mine is located 3km north of the township of Baralaba, which has a population of approximately 300 people and is supported predominantly by the mining and farming industries in the area. Baralaba North/Wonbindi North is located directly north of the Baralaba Central Mine, separated from the site by an Anabranch of the Dawson River. The leases straddle the Banana / Central Highlands Shire boundary.

Figure 1. Site Location Plan



1.4 Mining Tenements

This Plan of Operations includes all activities carried out on ML80170 with underlying property tenements shown in Table 1 and presented in Figure 2.

Table 1. Mining Tenements

Mining Tenement	Property Description	Shire Name	Tenure	Area (Ha) Within Ml
ML80170	11 KM46	Central Highlands Regional	Freehold	170.1
	12 KM46	Central Highlands Regional	Freehold	496.7
	8 KM44	Central Highlands Regional	Freehold	204.7
	A KM195	Central Highlands Regional	Easement	14.7
	B KM238	Central Highlands Regional	Easement	20.8
	A RP616373	Central Highlands Regional	Easement	5
	C RP616373	Central Highlands Regional	Easement	7.1
	Road	Central Highlands Regional	Road Reserve	14.4
	Hoadleys Road	Central Highlands Regional	Road Reserve	8.3

1.5 Replacement Plan of Operations

This Plan of Operations is a replacement to the Plan of Operations which was submitted on the 14th October 2013. This plan is for a shorter term and ends on 31st August 2014.

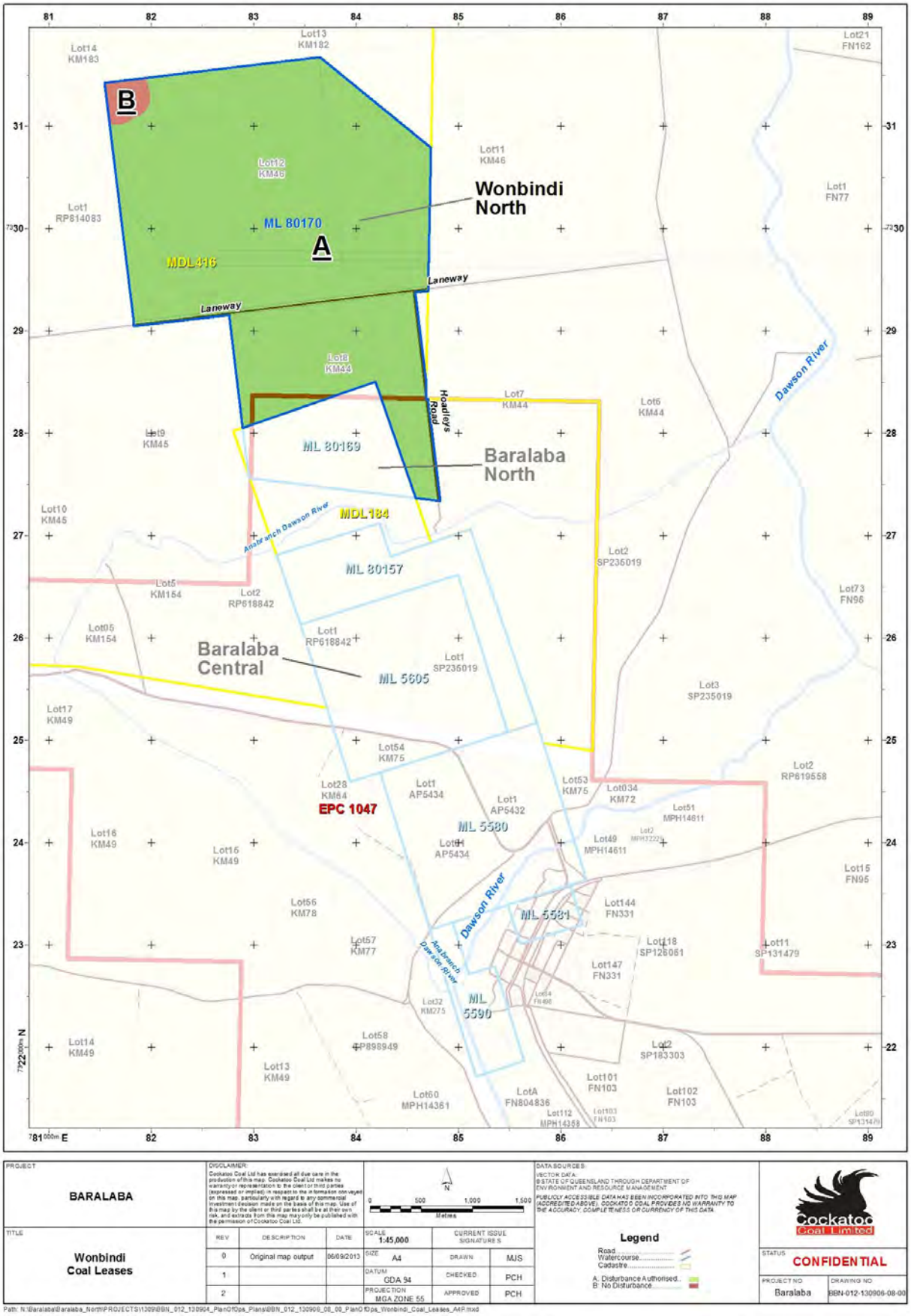
It must be noted that operations completed under this PoO will be wholly integrated with activities being undertaken on ML80169 (Baralaba North). Hence activities to be undertaken on ML80169 are also described within this document where relevant.

1.6 Summary of Activities

The activities to be included in this Plan of Operations for Wonbindi North are:

- Exploration drilling to improve resource definition;
- Bulk removal of overburden resulting in the exposure of the coal seams;
- Drill & Blast Activities
- Out of pit and some in-pit dumping of overburden and interburden;
- Extraction of coal at a rate of up to 1Mt per year;
- The operation of crushing and truck loading facilities on the lease;
- Infrastructure establishment (eg. building flood levee, haul roads, light vehicle roads, hardstands, ROM's, fuel facilities, water management, workshop & office facilities, etc);
- Associated activities such as equipment maintenance, environmental management, water management, and progressive rehabilitation.

Figure 2. Mining Tenements and Property Boundaries



PROJECT: BARALABA

TITLE: Wonbindi Coal Leases

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2 PLANNED ACTIVITIES

2.1 Overview

During the term of the plan it is intended that the development of the Baralaba/Wonbindi North leases will be a key activity. Works will include:

- Construction of supporting infrastructure (access roads, haul roads, ROM pads, amenities, laydown areas, workshops, offices, etc);
- Water and sediment control;
- Construction of the 1:1000 AEP flood protection levee;
- Early pit development works including topsoil stripping for pit and dumps, borrow pits for construction materials, etc;
- Initial box-cut & ongoing pit development in Wonbindi North including waste extraction, ex-pit dumping operations, drill & blast and coal mining activities;
- Processing of the coal by screening / crushing via a mobile sizing plant, followed by blending of the raw product;
- Road-train haulage of product coal to the train load-out facility located 10km east of Moura, and then transported to the Port of Gladstone for export; and
- Light and Heavy Vehicle servicing.

Figure 3 & 4 provide the planned progression of mining activities at the commencement of this plan and 31st August 2014 respectively.

The mining activities during the term of this plan will include:

- Waste extraction activities including drill & blast from the Outrigger section of the pit;
- Production of PCI and thermal coal at a rate of approximately 1,000,000tpa product coal;
- Construction of Flood Protection Levee (contiguous with the levee crossing ML80169);
- Construction of a small Mining Infrastructure area with a Heavy Vehicle workshop, washdown bay and fuel storage, office and crib rooms;
- Road-train haulage of product coal to the train load-out facility located 10km east of Moura, and then transported to the Port of Gladstone for export;
- Light and Heavy Vehicle servicing;
- Construction of a ROM Pad for processing of the coal by screening / crushing via a mobile sizing plant, followed by blending of the raw product; and
- Processing of the coal by screening / crushing via a mobile sizing plant, followed by blending of the raw product.

Figure 3. Mine Disturbance at commencement of Plan

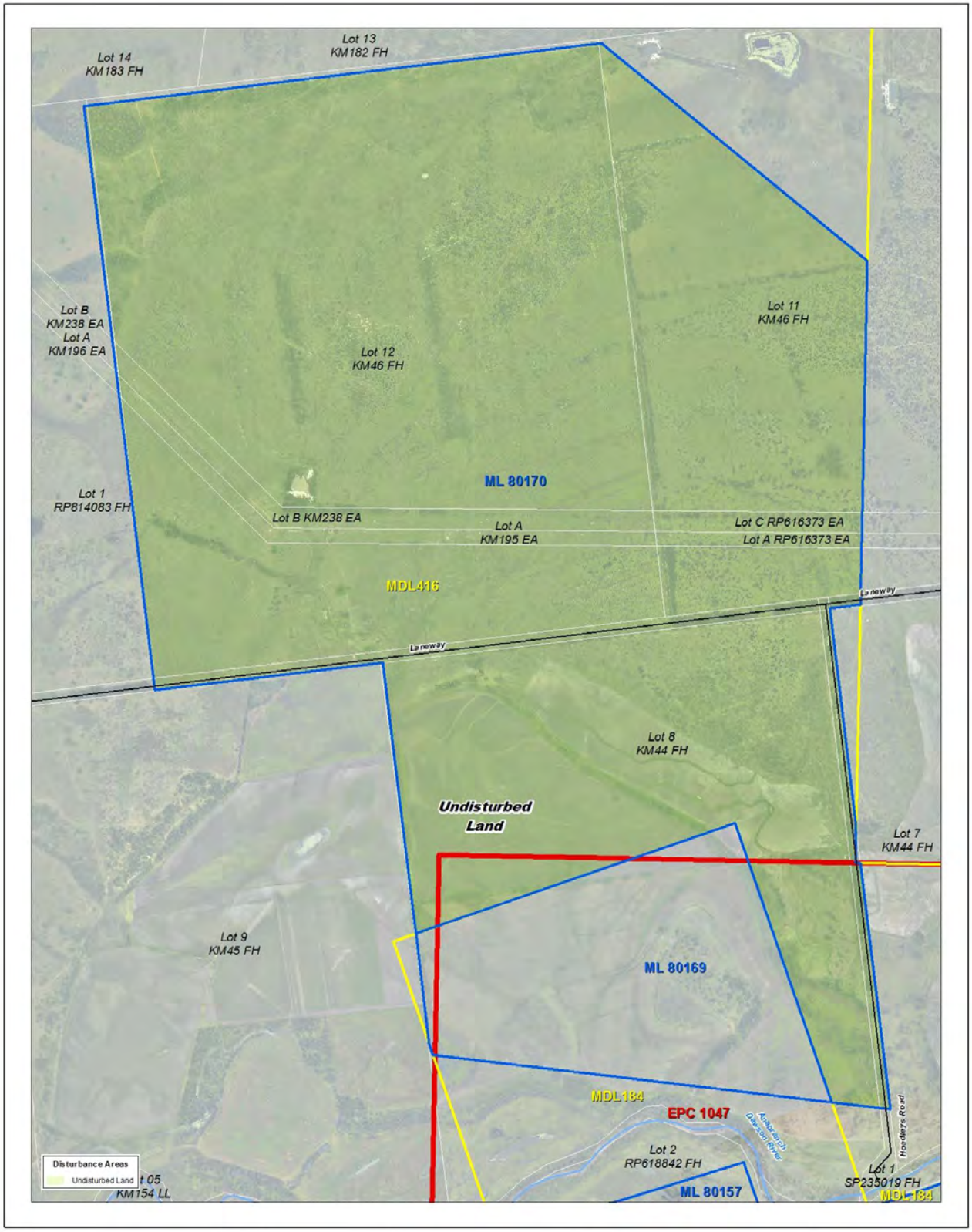

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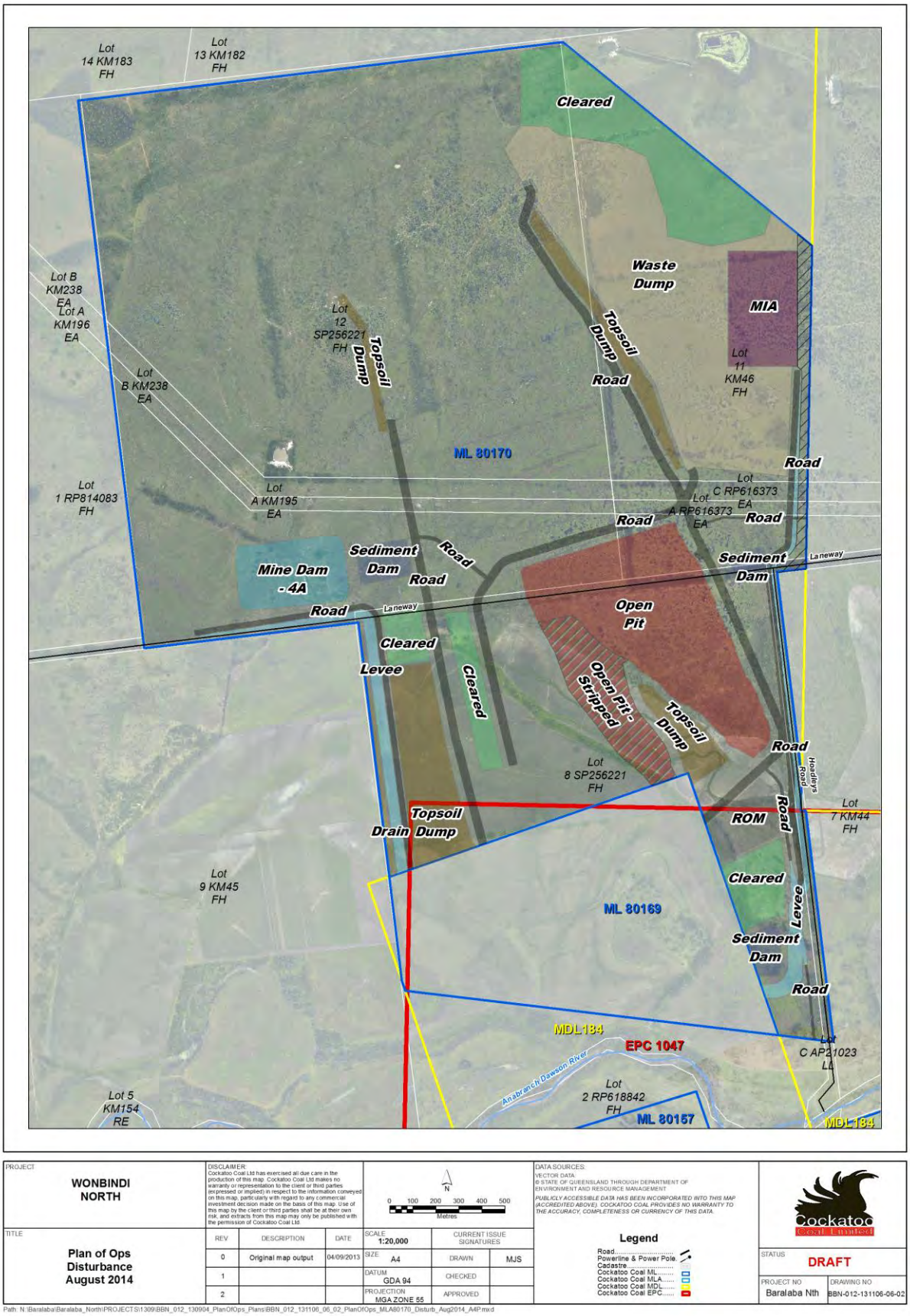
Figure 4. Mine Disturbance at end of term



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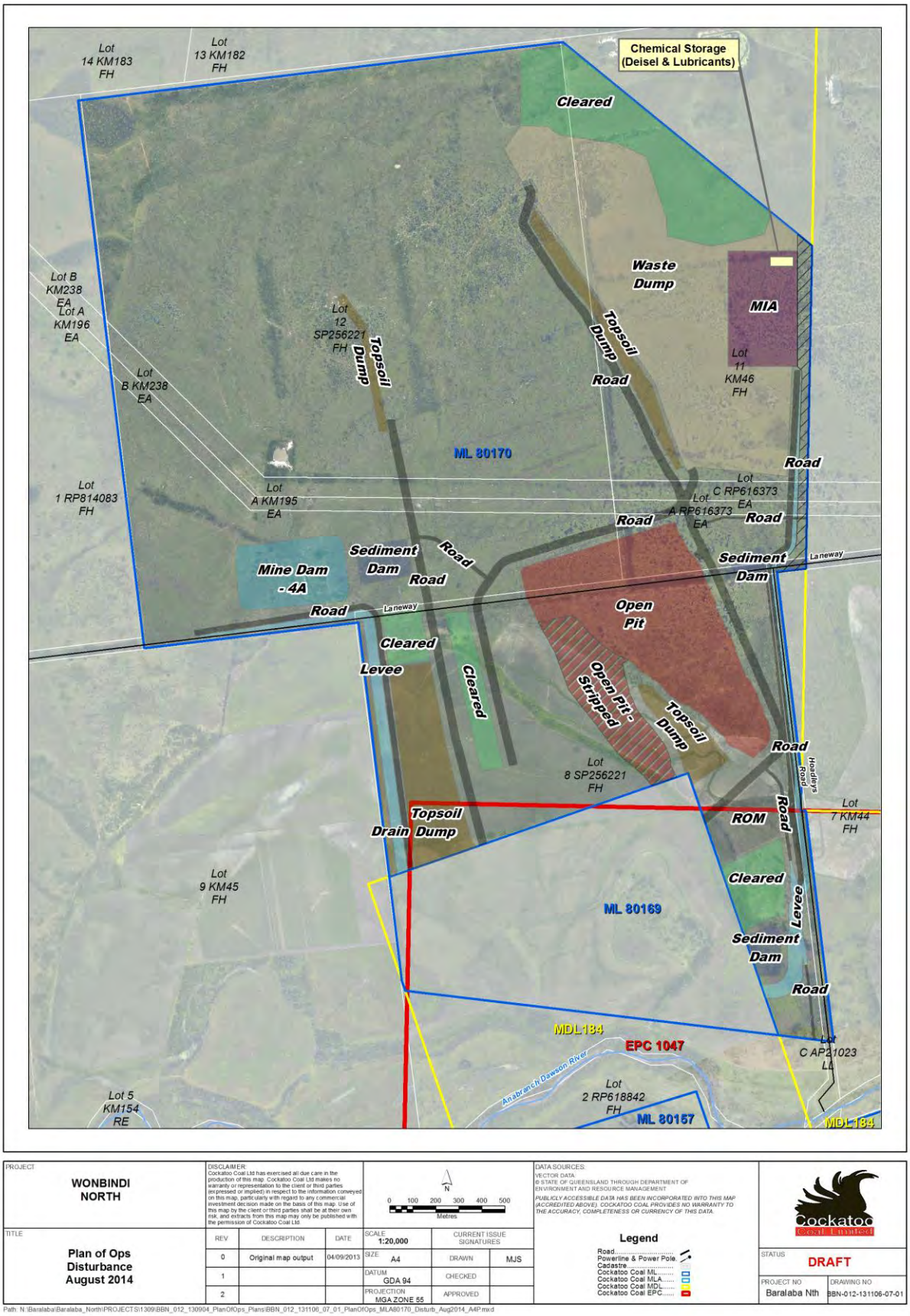
2.2 Environmentally Relevant Activities

The Environmentally Relevant Activities (ERA) for the Project are listed in Schedule 2 of the Environmental Protection Regulation 2008. Specifically the ERA's are:

Table 2. Environmentally Relevant Activities

ERA	Description
ERA 8 (3) (a) – Chemical Storage	**Location:** Wonbindi North Laydown Area (ML80170) • Diesel, Lube (oil, waste oil and grease) – up to 500,000L

Figure 5. Environmentally Relevant Activities



PROJECT: WONBINDI NORTH

TITLE: Plan of Ops Disturbance August 2014

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2.3 Mining Operations

2.3.1 Flood Protection

Due to the location of the Baralaba North Mine on the Dawson River Floodplain, a 1:1000 AEP flood protection levee will be constructed around the mine. The levee will be constructed to the 1:1000 year flood level (see Section 2.10 for additional details).

Materials for the levee will be sourced from borrow pits located within the mining pit footprint in both ML80169 and ML80170. Topsoil stockpiles will also be located on these leases within the flood protection levee.

Borrow material for the initial levee construction will be sourced from the Open pit zones shown on Figure 4. The actual dimensions and depths of the borrow pits are not yet known as the depth will be subject to in-situ suitability of the materials required for each zone of the levee structure.

2.3.2 Commencement of Mining

Mining will commence on the Wonbindi North lease in the Outrigger Pit and will progress into the main pit during working from South to North during the term of this Plan of Operations.

Pit waste will be dumped to an ex-pit dump to the East of the expansion pit footprint. . Topsoil will be salvaged and stockpiled in various locations on the lease. The location of the waste dumps and topsoil stockpiles are shown in Figure 4. All salvaged topsoil will be recorded in a topsoil inventory table (Appendix A) with locations recorded on a site topsoil plan. The waste dumps will be built in accordance with the Rehabilitation Management Plan to be submitted to the administering authority by 30 June 2013.

2.3.3 Coal Resources and Mine Life

The area encompassed by ML80169 is adjacent to and contiguous with ML80170 (Wonbindi North). As such, the open cut mine proposed for ML80169 will continue north into ML80170 as a single operation despite being subject to two different environmental authorities and plans of operations.

The life of the combined Baralaba North / Wonbindi North mines is expected to be at least 15 years, however further exploration is likely to extend the mine life. Coal will be extracted at a maximum rate of 1Mt ROM coal per annum.

2.3.4 Mining Method

Mining will utilise conventional mining equipment suitable for a truck and shovel, terrace mining technique.

Overburden will be removed in horizontal slices in a West to East direction exposing various seams dependant on position and depth of the slice. Coal mining of the various exposed seams progresses immediately behind the waste extraction in order to release the next drill and blast blocks in the sequence. The coal is mined in layers parallel to the seam dip to reduce contamination between high ash and low ash zones.

Drill and blast activities will be carried out in accordance with the blast management plan which encompasses current Baralaba central blasting practices.

Waste dumps will be constructed in accordance with the Rehabilitation Management Plan.

2.4 Infrastructure

2.4.1 Mine Industrial Area (MIA)

Where possible use will be made of existing Baralaba Central support infrastructure however additional infrastructure may be required and may include:

- office space, mining prestart, First Aid, and PPE stores;
- Refuelling facilities, hydrocarbon storage, and a heavy vehicle workshop;
- No sewage system will be installed at the laydown as septic tanks will be used and will require pump-out by licenced contractor;
- Car parks, walkways crib room and ablution facilities;
- Washdown facilities
- Potable water will continue to be supplied and delivered by a contractor.

2.4.2 Hydrocarbon Management

During the term of the plan support infrastructure with a combined capacity of 500kL will be installed including:

- bunded fuel farm within the MIA area
- lube farm
- waste oil facility

2.4.3 Explosives Storage

The existing Baralaba Central Explosives facilities will continue to be used for the term of this plan.

2.5 Site Access Roads

2.5.1 Mining Access – Central to North

Mining fleet, haul trucks and controlled / limited additional mine vehicle access to the Baralaba North mining area will be principally from the Baralaba Central Mine using the existing anabranch crossing (locally called Hoadley's Road). The anabranch crossing is currently a low level rock crossing with small reinforced concrete pipes. Plans to upgrade this crossing will be submitted as required.

2.5.2 General Access to North

To minimise interactions between heavy and light vehicles, a separate access route will be developed to the Baralaba North/Wonbindi North operations. The access will come in from the east, off the Baralaba-Duaringa Road. This access will travel west along a local road, known as the "Laneway". This road is not covered by a mining lease and is not part of the Environmental Authority. The appropriate approvals for constructing this access are to be obtained through Council. It will:

- Provide a connection between the Duaringa Baralaba Rd and the North Pit MIA / Satellite office.
- Enable multiple trailer fuel and explosives deliveries
- Provide adequate lateral clearances for occasional wide loads carrying plant / equipment spares.
- Road formation based on use of site won sandstone pavement, and low traffic volumes.
- Cattle grids, stock crossings and gates provided as required.

2.6 Coal Handling

2.6.1 ROM Pad

During the term of the plan it is planned to construct a ROM pad at Wonbindi North which will be sized to efficiently manage a 1Mt per annum operation. Coal processing operations will be limited to crushing and screening Run of Mine (ROM) coal.

Coal will be hauled to the Rail Load Out Facility at Moura in road going trucks, 24 hours per day, 7 days a week. Coal production from ML80170 is planned to commence in Q2 2014 when the coal production in Baralaba Central tapers off.

2.6.2 Coal Haulage Route

Coal haulage is conducted off lease and hence outside of the scope of the Environmental Authority. What follows is provided for information only.

From the ROM stockpile, product coal is loaded by front end loader on to B triple road trains and transported 62km along the "Middle Road" (a network of public roads) to the train load out facility located 10km east of the Township of Moura.

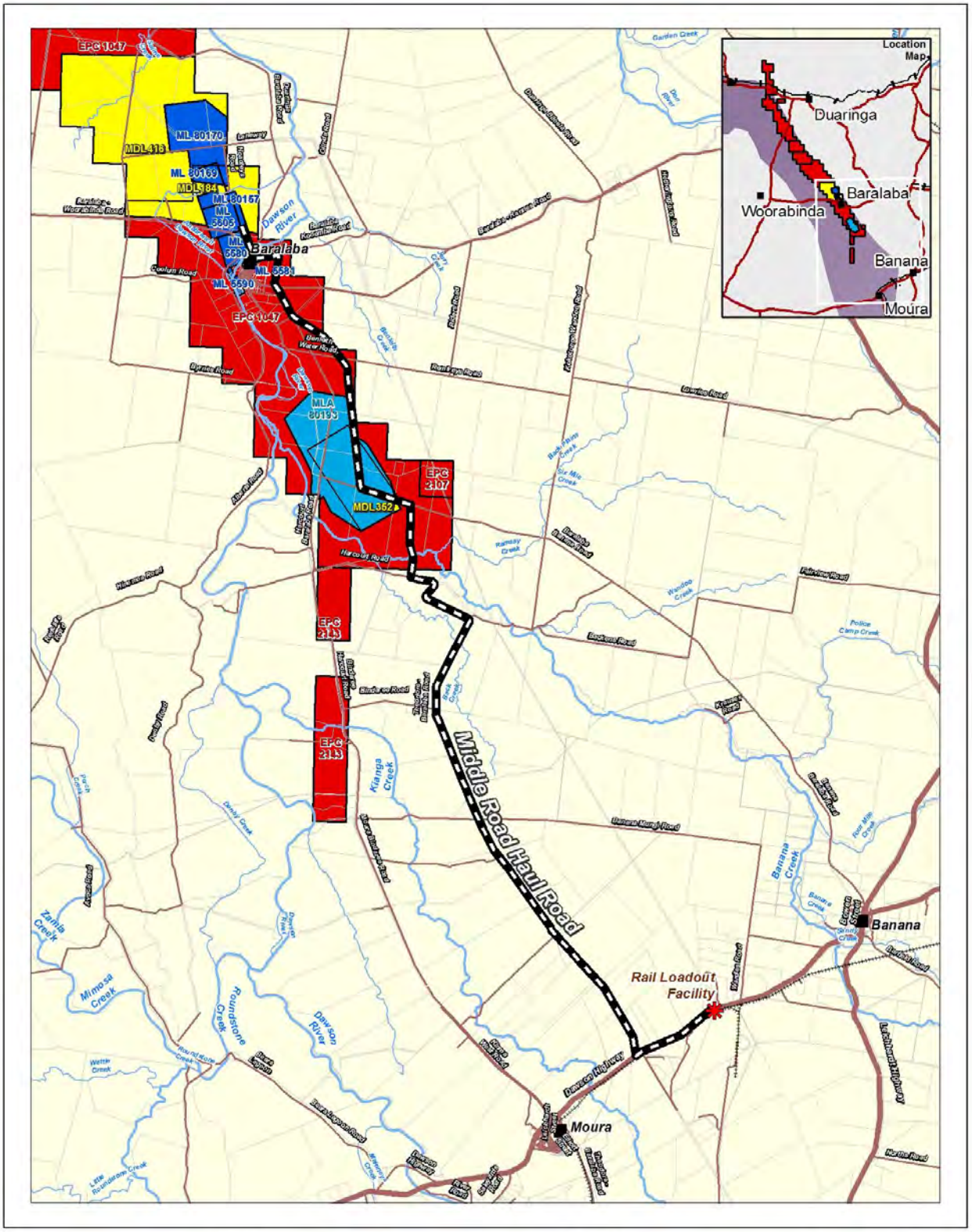
To address community concerns with regards to nuisance dust produced along a 12 km section of the unsealed road, Baralaba Coal Pty and Banana Shire Council are negotiating an agreement for sealing the road with bitumen. Water trucks are permanently employed watering the gravel sections of the route when haulage is occurring and when required.

2.6.3 Train Load-Out Facility

The train load-out facility is located off lease and hence outside of the scope of the Environmental Authority. The facility is located within the existing QR rail corridor on state owned land, adjacent to the Dawson Mine. The facility consists of a laydown pad, sufficient room for the trucks to manoeuvre, runoff collection ponds and a spray system to reduce dust generation. A site office with ablution facilities is also located outside the fenced area. The trains transport the coal to the RG Tanna Terminal in Gladstone.

Figure 6. Train Load out Facility - Moura

Figure 7. Middle Road Haul Road



PROJECT: BARALABA

TITLE: Middle Road Haul Road

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Legend: Middle Rd Haul Rd Road; Watercourse; Cockatoo Coal ML; Cockatoo Coal MLA; Cockatoo Coal MDL; Cockatoo Coal EPC

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2.7 Water Storage Facilities and Structures

During development of the Baralaba North / Wonbindi North pit, groundwater inflows are expected. Water balance modelling has included predicted groundwater inflows and surface water collection from rainfall events for a range of operating years. An excess of water is predicted under various rainfall events. A mine water dam will be built to contain this water prior to discharge. Discharge in accordance with EA conditions will be required to ensure excess water is not held on-site.

The mine will require less water storage during the initial pit development phases that are applicable to this plan than will be required as the mine progresses. Details of the water balance are included in the Water Management Plan.

2.7.1 Water Management

The Water Management Plan details all aspects of site water management. The plan will be reviewed annually. Water will be managed on the site as follows:

- Existing surface water drainage patterns will be maintained where practical to do so;
- Water from different sources will be managed separately:
    - Unaffected surface water will be diverted around disturbed areas wherever practical;
    - Runoff from the waste rock dumps will be captured in dedicated sediment dams, prior to off-site release or re-use (eg. pumped to mine water dam);
    - Water collected in-pit (groundwater inflow, surface runoff) will be captured and retained for use across sites and / or controlled off-site discharge (pumped to mine dam);
- Haul road dust suppression and process water requirements are taken from the mine dam when the dam has sufficient volume to allow. Cockatoo Coal Ltd have an abstraction permit to take water from the river, therefore when there is insufficient stored volume these demands could be met by using raw water from the river, if conditions allow.
- Overburden dumps will be rehabilitated as soon as practical to minimise potential for release of sediment-laden surface runoff. Surface runoff from the dumps will be directed to dedicated sediment dams;
- Infrastructure to manage contaminated water will be designed and operated to achieve zero uncontrolled discharge of contaminated water; and
- Discharge of excess water off-site will be in accordance with EA conditions which were developed in accordance with DEHP's "Final Model Water Conditions for Coal Mine in the Fitzroy Basin".

2.7.2 Mine Dam 4A

- Storage capacity of 300ML (to be constructed during the term of the plan)
- The location of the dam is shown in Figure 4.
- Designed as a 'regulated dam' with a "significant" hazard classification, to be built in accordance with DEHP "Manual for Assessing Hazard Categories and Hydraulic Performance of Dams – Version 3.1" (January 2012);
- Groundwater and surface runoff inflows to the mine pit will be pumped into the dam;
- The dam will be the main point of water supply for dust suppression demands (water unlikely to be available during term of this plan);
- There will be the ability to make controlled releases of water from Mine Dam 4A into the Dawson River (via the Anabranch) if the release criteria are met.

- Modelling predicts that up to 2000ML of storage will be required by year 2019, this is based on current knowledge of water seepage and water use. The additional capacity will be met by building additional cells to the mine dam. Prior to building of the additional storage, water modelling will be re-calculated using additional information collected during the operational phase.
- The design report and drawings for additional cells of this dam will be submitted for approval prior to construction.

2.7.3 Sediment Dams

A number of proposed sediment dams will be constructed in accordance with the Best Practice Erosion and Sediment Control (BPESC) guideline (IECA, 2008) to manage runoff from waste dumps;

The sediment dams will be constructed as needed, after disturbance is created in the relevant catchment. Not all will be built in the term of this plan.

2.8 Rehabilitation

The Post Mine Land Use Plan outlines the broad rehabilitation objectives and is attached as Appendix E. The goals and completion criteria for rehabilitation are detailed in the Rehabilitation Management Plan (September 2013).

2.8.1 Topsoil

All land clearing activities will be conducted on a progressive basis, with only areas required for mining activities cleared. Clearing and grubbing will be undertaken under a Ground Disturbance Permit system. Topsoil will be stripped from areas to be disturbed by mining or associated infrastructure using dozers or scrapers, and will be stockpiled for later use in rehabilitation.

An assessment of salvaged topsoil stockpiles has been conducted and an inventory of topsoil is listed (refer Appendix A).

A Topsoil Management Plan has been developed and outlines control strategies to ensure that the topsoil resource is appropriately managed.

2.8.2 Elevated Waste Dumps

Elevated landforms will be created from out-of-pit spoil dumps. Progressive rehabilitation of these areas will be limited until the floodplain void is completely backfilled – this backfill sits outside the term of this plan.

2.8.3 Final Void

There will not be any void backfilling during the term of this plan. Backfilling of the void will be conducted in a progressive sequence once sections of the pit reach maximum depth which is outside the timeframe of this plan. A backfilling the void report will be submitted by 30th June 2014.

2.8.4 Monitoring

Monitoring of rehabilitation outcomes will be a core component of the Rehabilitation Management Plan. The Rehabilitation Monitoring Plan is attached as Appendix C.

2.8.5 Weed Management

The Weed Management Plan has been implemented to prevent the spread of weeds off-site and the introduction of new weeds onto the site. Weed control will be implemented in key areas as required and any weeds present will be controlled (e.g. if a Declared Weed was found on-site, or if the weeds were likely to impact on revegetation success).

2.8.6 Erosion Control

The site Erosion and Sediment Control Plan details all erosion management methods (refer Appendix B). Construction activities, especially the building of the levee will have sediment and erosion control plans implemented for managing runoff.

2.9 Hydrogeology

The groundwater monitoring network for the Baralaba North/Wonbindi North mining operations has been established to monitor the entire area and has not been designed to monitor on a per lease basis.

A groundwater monitoring network is established in the Baralaba/Wonbindi North Project area and comprises seven bores; four of which are screened within the alluvial aquifer, two within the Permian Coal Measures, and one within a fault zone. These bores have been monitored routinely as part of the site monitoring program.

An additional network of bores has been installed in the Baralaba North/Wonbindi North Project area to gain additional understanding of the groundwater regime. This program of work was carried out in late 2012 by Sinclair Knight Merz (SKM). This included:

- drilling and installation of six monitoring bores in the Quaternary aged alluvium and six monitoring bores and one production bore in the Permian aged formations including installation of automatic data loggers in monitoring bores;
- drilling and installation of 9 vibrating wire piezometers (VWPs) with data loggers;
- hydraulic testing on all bores which contained groundwater to determine estimates of the hydraulic conductivity of the aquifer material; and
- purge and sampling on all bores which contained groundwater and measurement of acidity (pH) and (EC).

A groundwater monitoring and management plan for Baralaba North / Wonbindi North is being developed to address the EA permit conditions. To ensure the groundwater monitoring and management plan adequately monitors the potential impacts of the proposed mining activities, Cockatoo Coal Limited is engaging the services of a hydrogeologist to review the current monitoring regime and propose any necessary improvements.

The groundwater monitoring and management plan will include:

- description of groundwater monitoring bores;
- monitoring locations (co-ordinates); and
- monitoring frequency and parameters.

2.10 Flood Protection

The Northern operations are also located on the Dawson River floodplain, and consequently a similar flood protection levee (AEP 1:1000) will be required. This levee is one of the major construction activities to be undertaken during the term of the plan. The levee protects the mining operations on both tenements and seamlessly crosses the boundaries of the leases.

The levee height is designed to be the AEP 1:1000 plus freeboard. The flood modelling has identified the 1:1000 AEP flood height as RL89.2 (upstream) and therefore the levee height is RL89.7 at its highest point around the proposed flood levee. The flood height gets lower downstream and therefore the levee height grades down to be RL89 at its lowest point downstream.

The materials required for construction of the levee will be sourced from clay borrow pits (for the clay core of the levee) and the pre-strip for the box cut of the proposed mine. During construction of the levee, sediment and erosion control plans will be implemented to protect the surrounding environment, particularly the Anabranch.

The full geotechnical and design report and recommendations will be submitted to DEHP prior to construction.

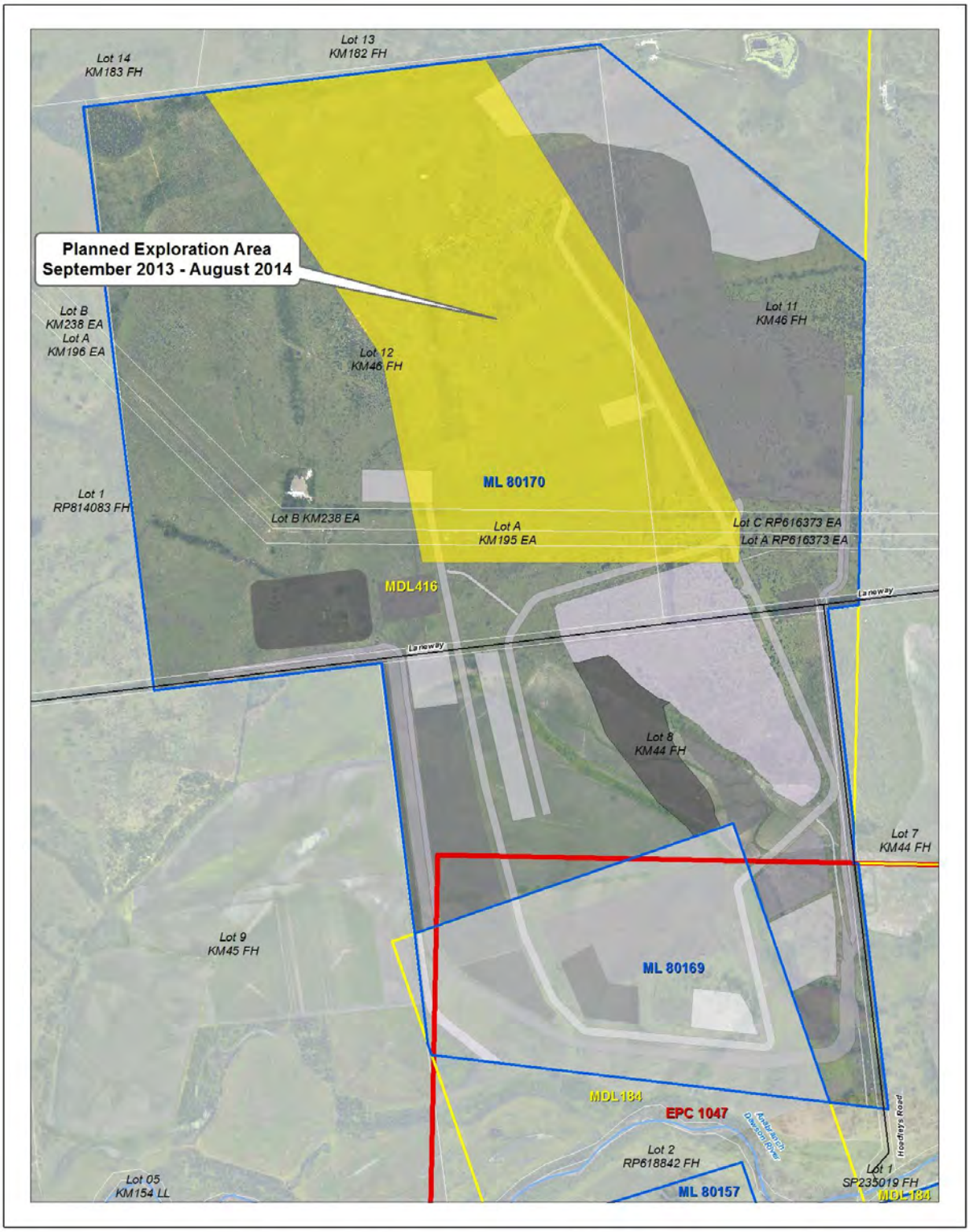
2.11 Exploration Program

Exploration will extend over the eastern half of ML80169 and ML80170 as per Figure 8. Exploration activities will be focussed on infill drilling to better define coal seam structure within the intended mining horizon. This work will involve the following:

- Chip hole drilling at 50m spacing along east/west lines 75m apart ~ 100 holes
- Core hole drilling (4”) within the northern extent of ML80170 ~ 12 holes
- Water monitoring holes ~ 12 holes

Access to the planned exploration activities will be along pre-existing roads and tracks. Drill pads will be cleared in accordance with Cockatoo Coal’s clearance and preparation procedures. Rehabilitation will conform to the relevant tenures EA and Cockatoo Coal’s site rehabilitation procedure. Costs for rehabilitation of sites outside planned disturbance areas are provided for in exploration operating budgets and occurs upon completion of drilling.

Figure 8. Planned Exploration Area - Baralaba North/Wonbindi North



PROJECT: WONBINDI NORTH	DISCLAIMER: Cockatoo Coal Ltd has exercised all due care in the production of this map. Cockatoo Coal Ltd makes no warranty or representation to the client or third parties (expressed or implied) in respect to the information conveyed on this map, particularly with regard to any commercial investment decision made on the basis of this map. Use of this map by the client or third parties shall be at their own risk, and extracts from this map may only be published with the permission of Cockatoo Coal Ltd.				DATA SOURCES: VECTOR DATA: © STATE OF QUEENSLAND THROUGH DEPARTMENT OF ENVIRONMENT AND RESOURCE MANAGEMENT. PUBLICLY ACCESSIBLE DATA HAS BEEN INCORPORATED INTO THIS MAP (ACORD ITS ABOVE). COCKATOO COAL PROVIDES NO WARRANTY TO THE ACCURACY, COMPLETENESS OR CURRENCY OF THIS DATA.	
TITLE: Plan of Ops August 2014 Disturbance Exploration Activities	REV	DESCRIPTION	DATE	SCALE 1:20,000	CURRENT ISSUE SIGNATURES		Legend: Planned Exploration; Road; Powerline & Power Pole; Cadastre; Cockatoo Coal ML; Cockatoo Coal MLA; Cockatoo Coal MDL; Cockatoo Coal EPC	Cockatoo Coal Limited
	0	Original map output	18/09/2013	SIZE A4	DRAWN	MJS		STATUS: CONFIDENTIAL
	1			DATUM GDA 94	CHECKED	TKG		PROJECT NO: Baralaba Nth
	2			PROJECTION MGA ZONE 55	APPROVED	JAM		DRAWING NO: BBN-012-130912-18-00

Path: N:\Baralaba\Baralaba_North\PROJECTS\1130\BBN_012_130904_PlanOfOps_Plans\BBN_012_130912_18_00_PlanOfOps_Disturb_Exploration_Aug2014_A4P.mxd

3 PROGRESSIVE REHABILITATION/ FINANCIAL ASSURANCE

3.1 Rehabilitation Cost Estimate

Rehabilitation costs have been calculated in accordance with *Guideline Mining – Calculating Financial Assurance for Mining Projects Version 2* (EHP, Aug 2012). Calculations have considered (as per section 3.2.1 of the guideline):

- the cost to:
    - i) rehabilitate all areas which have been, or are proposed to be, significantly disturbed;
    - *ii)* remove all infrastructure constructed by or for the environmental authority holder, except where agreed in writing by the post mining land owner / holder that it will be used and maintained for a lawful activity (leaving infrastructure also needs the written permission of the Minister for Natural Resources and Mines under ss. 141, 194 and 276 of the *Mineral Resources Act 1989);*
    - iii) remediate any contaminated land and site investigations;
- the full extent of work necessary to meet the conditions of the environmental authority;
- project specific issues;
- cost estimates for the work to be completed by third party;

Rates used within the calculation have been sourced from:

- third party contracting rates;
- plant manufacturers handbook production rates;
- third party mining engineering consultants; and
- actual rates from current operations.

It is believed that these rates are representative of industry rates and include mobilisation.

A summary of the rehabilitation cost estimate based on the above criteria and the maximum area of disturbance (December 2015) is detailed in Table 3.

3.2 Performance Category

The maximum gross financial liability occurs at 31 August 2014, and has been calculated as $15,575,879.

The financial assurance discount as per EHP *Guideline: Calculating financial assurance for mining projects Version 2* is understood to not be currently available to Wonbindi North mine as it is classified as a new project. Although the project is an extension to the existing operations at Baralaba Central it is approved under a separate EA, so it is recognised as a new project.

Accordingly the financial assurance liability for Wonbindi North is $15,576,000 (rounded to nearest thousand).

Table 3. Financial Assurance Calculation

Wonbindi North Rehab Plan (ML80170)					
		Area Category	Unit Rehab Cost	Total Predicted as at 31-Aug-14	
				Area (ha)/ Vol (bcm) [A]	Rehab Cost ($) [R]
A		Total Lease Area	n/a	890.13	
		ML80170	n/a	890.13	
B		Undisturbed Area	n/a	505.54	
C		Cleared Area	n/a	64.51	
D		Total Area of Significant Disturbance	n/a	320.08	
	D1	**Disturbance Category (ha) -> Total Area YTD**			
		Pit Void - rehabilitate Post backfill	$ 8,200.10	64.91	$ 532,288.11
		Surcharge dump reprofile & rehabilitate	$ 12,988.82	80.86	$ 1,050,329.83
		Levee - rehabilitate (bulk fill trucked to void)	$ 6,426.06	17.56	$ 112,854.45
		Roads - reprofile & Rehabilitate	$ 8,726.97	29.62	$ 258,529.51
		Water Dam - reprofile & rehabilitate	$ 8,726.97	13.65	$ 119,152.81
		Sediment Dam - reprofile & rehabilitate	$ 8,726.97	8.11	$ 70,800.16
		ROM & Other Pad - reprofile & rehabilitate	$ 8,726.97	6.53	$ 56,948.72
		Other (topsoil dumps) - spread, rip and seed	$ 3,903.44	34.31	$ 133,943.96
		Structural for surcharge dumps - works, banks, rock lined waterways	$ 1,774.04	-	$ 143,456.24
		Facilities Demolition	$ 1,935,642.16	-	$ -
		Total D1		**255.57**	**$ 2,478,303.78**
	D2	**Rehabilitation Category (ha) -> Total Area YTD**			
		Trees cleared / topsoil stripped	$ 6,426.06	64.51	$ 414,555.99
		Established :			
		- Prior 31 Dec 2009	$ 1,141.56	-	$ -
		- Year to 31 Dec 2010	$ 1,141.56	-	$ -
		- Year to 31 Dec 2011	$ 1,141.56	-	$ -
		- Year to 31 Dec 2012	$ 1,141.56	-	$ -
		- Year to 31 Dec 2013	$ 1,141.56	-	$ -
		- Year to 31 Aug 2014	$ 1,141.56	-	$ -
		Total D2		**64.51**	**$ 414,555.99**
	D3	**Successfully Rehabilitated**			
		Total D3		-	$ -
		Total D		**320.08**	**$ 2,892,859.77**
E		Volume of Pit (bcm)			
	E1	Truck/excavator waste to backfill void to 1:1000	$ 0.81	11,726,819	$ 9,473,343.07
		Total E		**11,726,819**	**$ 9,473,343.07**
T		Total Cost to Complete Rehabilitation of D and E			$ 12,366,202.84
M		Maintenance and Monitoring (5% of costs excluding backfill cost) & contract management (10% total cost)			$ 1,381,263.27
		SUBTOTAL			**$ 13,747,466.12**
G		GST (10% of costs if not included above)	10%		$ 1,374,746.61
AR		Annual Rehabilitation Cost in current $s (T+M+G)			$ 15,122,212.73
CPI		Calculated as 3% of Annual Rehabilitation Cost by number of years covered by schedule i.e. x 1	3%		$ 453,666.38
		GROSS FINANCIAL ASSURANCE LIABILITY (Corrected for predicted CPI)			$ 15,575,879.11
		FINANCIAL ASSURANCE TO BE PAID for Category 2 Performance	1		$ 15,575,879.11

4 ENVIRONMENTAL ACTION PROGRAM

The environmental action program provides the control strategies and the action programs required to comply with the Environmental Authority conditions relevant to the mining activities during the period of the Plan of Operations.

4.1 Schedule A - General

EA Condition	Control Strategy	Action Program
General **A1** This environmental authority authorises environmental harm referred to in the conditions. Where there is no condition or this environmental authority is silent on a matter, the lack of a condition or silence does not authorise environmental harm.	Not applicable	Not applicable
A2 In carrying out the mining activity authorised by this environmental authority, disturbance of land: a) may occur in the areas marked 'A'; and, b) must not occur in the areas marked 'B', c) must not occur in the areas marked 'C' without consultation first occurring with administering authority, on the map that is Figure 1, attached to this environmental authority.	Clearing will only be allowed in authorised areas. Managed by the Ground Disturbance Permit.	Prior to disturbance, a Ground Disturbance Permit must be issued to ensure that clearing is not conducted in unauthorised areas. Ground Disturbance Permit must be validated by site environmental representative and Project Manager.
A3 Mining activities must not be carried out in, or 200m of, the 'North-west soak' as defined by the approximate coordinates in Table A1: Area of exclusion of mining activities and depicted in Figure 1 and 5.	Clearing will only be allowed in authorised areas. Managed by the Ground Disturbance Permit.	Prior to disturbance, a Ground Disturbance Permit must be issued to ensure that clearing is not conducted in unauthorised areas. Ground Disturbance Permit must be validated by site environmental representative and Project Manager.
Deed of Cooperation **A4** It is acknowledged that the open cut mining operations on ML80169 (Baralaba Coal Pty Ltd) and ML80170 (Wonbindi Coal Pty Ltd) will be operated	Not applicable	Not applicable

EA Condition	Control Strategy	Action Program
as a single open cut coal mine operation by way of the 'Baralaba North Mine Project Cooperation Deed', and will be jointly referred to as the Baralaba North / Wonbindi North Mine.		
Maintenance of measures, plant and equipment **A5** The holder of this environmental authority must: a) install all measures, plant and equipment necessary to ensure compliance with the conditions of this environmental authority; b) maintain such measures, plant and equipment in a proper and efficient condition; c) operate such measures, plant and equipment in a proper and efficient manner; and d) ensure all instruments and devices used for the measurement or monitoring of any parameter under any condition of this environmental authority are properly calibrated.	Appropriate plant will be installed, maintained and competently operated	Appropriately qualified and competent persons will be employed to ensure appropriate equipment is procured and maintained in accordance with manufacturers requirements. Appropriate procedures will be implemented to ensure all equipment is fit for purpose, appropriately maintained and operated.
A6 No change, replacement or alteration of any plant or equipment is permitted if the change, replacement or alteration increases, or is likely to substantially increase, the risk of unlawful environmental harm caused by the mining activities.	Any proposal to changes in plant (with the potential to increase environmental risk) will be discussed with the administering authority and appropriate action taken.	Appropriately qualified and competent persons will be employed to ensure appropriate equipment is procured and maintained in accordance with manufacturers requirements.
Coal Extraction **A7** The environmental authority holder is approved for a coal extraction rate of up to one (1) million tonnes per annum (Mtpa) of run-of-mine (ROM) ore from the Baralaba North / Wonbindi North Coal Mine (ML80169 and ML80170 - combined) in accordance with this environmental authority (EA) MIN100860309 and EA MIN101813010.	Mine planning will be based on 1Mtpa	General Manager Operations to ensure production does not exceed limit
Monitoring **A8** Except where specified otherwise in another condition of this authority, all monitoring records or reports required by this environmental authority must	Monitoring records will be maintained for 5 years	Appropriate IT and document management systems will be implemented to ensure records are maintained

EA Condition		Control Strategy	Action Program
	be kept for a period of not less than five (5) years.		
A9	The environmental authority holder must, where monitoring is a requirement of this environmental authority, ensure that a competent person(s) conducts all monitoring.	An appropriately qualified and competent person will be employed at the operation.	The General Manager Operations shall ensure an appropriately qualified and competent person is engaged to carry out monitoring.
A10	Upon request from the administering authority, copies of monitoring records and reports must be made available and/or provided to the administering authority's nominated office within ten (10) business days or by an alternative timeframe agreed between the administering authority and the holder.	Records will be produced as required	Appropriate IT and document management systems will be implemented to ensure records are maintained and accessible
A11	Any management or monitoring plans, systems or programs required to be developed and implemented by a condition of this environmental authority must be reviewed for effectiveness in minimising the likelihood of environmental harm on an annual basis, and amended promptly if required, unless a particular review date and amendment program is specified in the plan, system or program.	An annual review of relevant plans will be undertaken	An annual EA compliance audit shall be completed. This shall include management plans and procedures required by the EA.
Financial assurance			
A12	Provide to the administering authority financial assurance for the amount and in the form acceptable to the administering authority in accordance with the most recent edition of the administering authority's Guideline – Calculating financial assurance for mining projects, before the proposed mining activities can commence.	Financial assurance will be lodged	Third party review of rehabilitation cost estimates on each revision of Plan of Operations
A13	The amount of financial assurance must be reviewed by the holder of this environmental authority when a plan of operations is amended or replaced or the authority is amended.	Financial assurance will be reviewed as required	Third party review of rehabilitation cost estimates on each revision of Plan of Operations
A14	The financial assurance is to remain in force until the administering authority is satisfied no claim is likely to be made on the assurance.	Financial assurance to remain in place until released by administering authority	N/A

EA Condition	Control Strategy	Action Program
Risk management **A15** The holder of this environmental authority must develop and implement a risk management system for mining activities which mirrors the content requirement of the Standard for Risk Management (ISO31000:2009), or the latest edition of an Australian Standard for risk management, to the extent relevant to environmental management, by 30 June 2013.	CCL Risk Management Standard; Broad Brush Risk Assessment; Sitewide Risk Register	Existing Risk Management Standard will be reviewed and updated to ensure compliance and adequacy with respect to management of environmental risks. To be completed by 30 June 2013
Emergency Response and Contingency Planning **A16** An emergency response/contingency plan must be developed and implemented within the current Plan of Operations to manage unacceptable risks identified in the risk management system or the associated monitoring.	Emergency Response Plan	Existing Baralaba Central Emergency Response Plan will be reviewed to ensure compliance and adequacy with respect to management of environmental risks. A Broad Brush Risk Assessment will be carried out for Baralaba North activities. Baralaba North Emergency Response Plan to be developed prior to the commencement of construction.
A17 The emergency response/contingency plan must address the following matters: a) response procedures to be implemented to reduce the likelihood of environmental harm arising from incidents of unacceptable risk; b) response procedures to minimise the extent and duration of environmental harm by an incident; c) the practices and procedures to be employed to restore the environment or mitigate any environmental impact caused; d) a description of the resources to be used in response to an incident; e) the training of staff that will be called upon to respond to incidents; f) procedures to investigate the cause of any	Emergency Response Plan to address all requirements.	Existing Baralaba Central Emergency Response Plan will be reviewed and updated to ensure compliance and adequacy with respect to management of environmental risks. Baralaba North Emergency Response Plan to be developed prior to the commencement of construction.

EA Condition	Control Strategy	Action Program
incidents, including releases, and where necessary, implement remedial actions to reduce the likelihood of recurrence of similar events; g) the provision and availability of documented procedures to staff attending any incident to enable them to effectively respond; and h) timely and accurate reporting of the circumstance and nature of incidents to the administering authority.		
Notification of emergencies, incidents and exceptions **A18** The holder of this environmental authority must notify the administering authority by written notification within twenty-four (24) hours after becoming aware of any emergency or incident which results in the release of contaminants not in accordance, or reasonably expected to be not in accordance with, the conditions of this environmental authority.	Incident Reporting Procedure Emergency response plan to include notification requirements. Induction program to make workers aware of obligations	Emergency response plan to be reviewed to ensure notifications are included. Induction to be reviewed to ensure obligation to report is included. Toolbox talk prepared to cover existing workers (contractors and staff) to be rolled out by 30 June 2013.
A19 The holder of this environmental authority must notify the administering authority by written notification within twenty-four (24) hours, after becoming aware of any emergency, incident or information about circumstances which results, or may result in, environmental harm not in accordance with the conditions of this environmental authority, or a contravention of the conditions of this environmental authority.	Emergency response plan to include notification requirements. Incident Reporting Procedure	Emergency response plan to be reviewed to ensure notifications are included. Incident investigation procedures to include relevant requirements
A20 The notification in conditions A18 and A19 must include, but not be limited to, the following: a) the environmental authority number and name of the holder; b) the name and telephone number of the designated contact person;	Emergency response plan to include notification requirements. Incident Reporting Procedure	Emergency response plan to be reviewed to ensure notifications are included. Incident investigation procedures to include relevant requirements

EA Condition		Control Strategy	Action Program
	c) the location of the emergency or incident; d) the date and time of the emergency or incident; e) the time the holder of the environmental authority became aware of the emergency or incident; f) where known: g) the estimated quantity and type of substances involved in the emergency or incident; h) the actual or potential cause of the emergency or incident; i) a description of the nature and effects of the emergency or incident including environmental risks, and any risks to public health or livestock; j) any sampling conducted or proposed, relevant to the emergency or incident; k) immediate actions taken to prevent or mitigate any further environmental harm caused by the emergency or incident; and, l) what notification of stakeholders who may be affected by the emergency or incident has occurred, or is being undertaken.		
A21	Within ten (10) business days following the initial notification of an emergency or incident, or receipt of monitoring results, whichever is the latter, further written advice must be provided to the administering authority, including the following: a) Results and interpretation of any samples taken and analysed; b) Outcomes of actions taken at the time to prevent or minimise unlawful environmental harm; and c) Proposed actions to prevent a recurrence of the emergency or incident.	Incident Reporting Procedure	Incident investigation procedures to be reviewed to ensure requirements are met. Procedure to also include position responsible for notification. To be completed by prior to the commencement of construction
A22	All reasonable actions are to be taken to minimise environmental harm, or potential environmental	Emergency Response Plan	Implementation of Emergency Response Plan

EA Condition	Control Strategy	Action Program
harm, resulting from any emergency, incident or circumstances not in accordance with the Conditions of this environmental authority.		
Complaints **A23** In the event of a complaint about any mining activity that, after investigation, is in the opinion of an authorised person causing a nuisance at a sensitive place, the holder of this environmental authority must take appropriate action to mitigate the nuisance. The holder of this environmental authority must take the action within the reasonable time set by the administering authority.	Respond to direction of authorised person	Respond to direction of authorised person
A24 The holder of this environmental authority must record all environmental complaints received about the mining activities including the following details: a) Name, address and contact number for of the complainant; b) Time and date of complaint; c) Reasons for the complaint; d) Investigations undertaken; e) Conclusions formed; f) Actions taken to resolve the complaint; g) Any abatement measures implemented; and h) Person responsible for resolving the complaint. i) This information must be made available for inspection by the administering authority on request.	Complaints will be recorded on the Complaint Form as per the Complaints Management Procedure	Complaints shall be recorded and managed in accordance with the Complaints Management Procedure. This will include completion of the approved Complaint Form. The software package Consultation Manager (or similar) will be used to record complaint information.
A25 The holder of this environmental authority must, when requested by the administering authority, undertake relevant specified monitoring within a reasonable timeframe nominated or agreed to by the administering authority to investigate any complaint of environmental harm. The results of the investigation (including an analysis and interpretation	Respond to direction of administering authority	The General Manager Operations will ensure that competent resources are available to implement any investigations required.

EA Condition	Control Strategy	Action Program
of the monitoring results) and abatement measures, where implemented, must be provided to the administering authority within ten (10) business days of completion of the investigation, or no later than ten (10) business days after the end of the timeframe nominated by the administering authority to undertake the investigation.		
Third party reporting **A26** The holder of this environmental authority must: a) within one (1) year of the commencement of this authority, obtain from a suitably qualified and experienced third party a report on compliance with the conditions of this environmental authority, b) obtain further such reports at regular intervals not exceeding three years from the completion of the report referred to in condition A26 (a) **c)** provide each report to the administering authority within 90 days of its completion.	Compliance Audit reports will be commissioned as required	Audit requirements will be incorporated into the project Legal and Other Obligations Register. General Manager Operations will ensure resources are available for compliance reports to be prepared as per the schedule.
A27 Where a condition of this environmental authority requires compliance with a standard, policy or guideline published externally to this environmental authority and the standard is amended or changed subsequent to the issue of this environmental authority the holder of this environmental authority must: a) Comply with the amended or changed standard, policy or guideline within 2 years of the amendment or change being made, unless a different period is specified in the amended standard or relevant legislation, or where the amendment or change relates specifically to regulated structures referred to in condition G37, the time specified in that condition; and	Appropriate standards will be used for compliance purposes	The existing Legal and Other Obligations Register will be updated as relevant legislative and/or approval changes are made. The Register shall be reviewed at least annually to ensure currency.

EA Condition		Control Strategy	Action Program
	b) Until compliance with the amended or changed standard, policy or guideline is achieved, continue to remain in compliance with the corresponding provision that was current immediately prior to the relevant amendment or change.		
A28	Words and phrases used throughout this environmental authority are defined in the Definitions section of this authority. Where a definition for a term used in this environmental authority is sought and the term is not defined within this environmental authority, the definitions in the Environmental Protection Act 1994, its regulations and policies must be used.	Not applicable	Not applicable

4.2 Schedule B - Air

EA Condition	Control Strategy	Action Program
Dust **B1** The release of dust or particulate matter, or both, resulting from the mining activity, must not cause an environmental nuisance at any sensitive or commercial place.	Dust control methods will be employed	An Air Quality Management Environmental Control Plan will be implemented; The ECP shall as a minimum include provisions detailed in Section 3.2.3 of the project EMP.
B2 Dust and particulate monitoring must be undertaken within a reasonable and practicable timeframe nominated by the administering authority to investigate any complaint (which is neither frivolous nor vexatious nor based on mistaken belief in the opinion of the authorised officer) of environmental nuisance at any sensitive or commercial place, and the results must be notified within fourteen (14) days to the administering authority following completion of monitoring.	Dust monitoring will be undertaken as required	An Environmental Monitoring Plan shall be developed and implemented
B3 Dust and particulate matter must not exceed the following levels when measured at any sensitive or commercial place: a) Dust deposition of 120 milligrams per square metre per day, averaged over one month, when monitored in accordance with the most recent version of Australian Standard AS3580.10.1 Methods for sampling and analysis of ambient air – Determination of particulate matter – Deposited matter – Gravimetric method. b) A concentration of particulate matter with an aerodynamic diameter of less than 10 micrometres (PM10) suspended in the atmosphere of 50 micrograms per cubic metre over a 24 hour averaging time, when monitored in accordance with the most recent version of	Dust control methods will be employed.	An Environmental Monitoring Plan shall be developed and implemented to monitor as per conditions.

EA Condition		Control Strategy	Action Program
	either c) Australian Standard AS3580.9.6 Methods for sampling and analysis of ambient air - Determination of suspended particulate matter – PM10 high volume sampler with size-selective inlet – Gravimetric method or d) Australian Standard AS3580.9.9 Methods for sampling and analysis of ambient air - Determination of suspended particulate matter – PM10 low volume sampler– Gravimetric method. **e)** A concentration of particulate matter suspended in the atmosphere of 90 micrograms per cubic metre over a one (1) year averaging time, when monitored in accordance with the most recent version of AS/NZS3580.9.3:2003 Methods for sampling and analysis of ambient air - Determination of suspended particulate matter – Total suspended particulate matter (TSP) – High volume sampler gravimetric method.		
B4	If monitoring indicates exceedence of the relevant limits in condition B3, resulting from mining activities, then the environmental authority holder must: a) address any complaints including the use of appropriate dispute resolution if required; and **b)** immediately implement dust abatement measures so that emissions of dust from the activity do not result in further exceedences of the relevant limits in condition B3 and/or cause environmental nuisance.	Address as required	The General Manager Operations will ensure appropriate resources are available to properly address any issues that arise.
B5	The holder of this environmental authority must undertake real-time PM10 monitoring at a minimum of three locations specified in Table B1: Air Quality Monitoring, at any given time.	Monitoring will be undertaken	An Environmental Monitoring Plan shall be developed and implemented. Air Quality Monitoring aspects of the plan shall be implemented prior to the commencement of construction.

EA Condition	Control Strategy	Action Program
B6 The holder of this environmental authority must undertake dust deposition monitoring at all of the locations specified in Table B1: Air Quality Monitoring, at any given time.	Monitoring will be undertaken	An Environmental Monitoring Plan shall be developed and implemented. Air Quality Monitoring aspects of the plan shall be implemented prior to the commencement of construction.
B7 Where monitoring at locations identified in Table B1: Air Quality Monitoring indicates that the air quality objectives detailed in condition B3 have been exceeded, the holder of this environmental authority must investigate the matter and report to the administering authority within fourteen (14) days: a) the concentration of PM10 particulates or dust deposition rate recorded; b) a description of meteorological conditions occurring at the time; and **c)** the measures taken to reduce dust generated by the mining activities	Address as required	An Air Quality Management Environmental Control Plan will be implemented; The ECP shall as a minimum include provisions detailed in Section 3.2.3 of the project EMP. The General Manager Operations will ensure appropriate resources are available to properly address any issues that arise
Odour nuisance **B8** The release of noxious or offensive odour(s) or any other noxious or offensive airborne contaminant(s) resulting from the mining activity must not cause an environmental nuisance at any nuisance sensitive or commercial place.	Odour control methods will be employed as required	Odour is seen as a low risk issue for the site, but odour control methods will be employed as required.
B9 When requested by the administering authority odour monitoring must be undertaken within a reasonable and practicable timeframe nominated by the administering authority to investigate any complaint (which is neither frivolous nor vexatious nor based on mistaken belief in the opinion of the authorised officer) of environmental nuisance at any sensitive or commercial place and the results must be notified within fourteen (14) days to the administering authority following completion of monitoring.	Odour monitoring shall be undertaken if required	Odour monitoring shall be undertaken if required

EA Condition		Control Strategy	Action Program
B10	If the administering authority determines the odour released to constitute an environmental nuisance the environmental authority holder must: a) address the complaint including the use of appropriate dispute resolution if required; and **b)** immediately implement odour abatement measures so that emissions of odour from the activity do not result in further environmental nuisance.	Odour mitigation actions will be determined in consultation with the administering authority	Odour mitigation actions will be determined in consultation with the administering authority

4.3 Schedule C - Water

EA Condition	Control Strategy	Action Program
Contaminant Release **C1** Contaminants that will, or have the potential to cause environmental harm, must not be released, directly or indirectly, to any waters except as permitted under the conditions of the environmental authority.	Mine Water Discharge Procedure - Releases will be in accordance with environmental authority conditions.	The Water Management Plan will address Contaminant Release Criteria. Water containment infrastructure will be designed, maintained and operated in accordance with relevant engineering standards.
C2 Unless otherwise permitted under the conditions of this environmental authority, the release of mine affected water to waters must only occur from the release points specified in Table C1: Mine affected water release points, sources and receiving waters and depicted in Figure 4 attached to this environmental authority.	Mine Water Discharge Procedure - Releases will only be made from locations specified in Table C1	As per C1
C3 The release of mine affected water to internal water management infrastructure installed and operated in accordance with a water management plan that complies with conditions C32–C37 inclusive is permitted.	NA	As per C1
C4 The release of mine affected water to waters must not exceed the release limits stated in Table C2: Mine affected water release limits when measured at the monitoring points specified in Table C1: Mine affected water release points, sources and receiving waters for each quality characteristic.	Release are not to exceed relevant limits	As per C1
C5 The release of mine affected water to waters from the release points must be monitored at the locations specified in Table C1: Mine affected water release points, sources and receiving waters for each quality characteristics and at the frequency specified in Table C2: Mine affected water release limits and	Monitoring will be undertaken for the required parameters and in the required locations	An Environmental Monitoring Plan shall be developed and implemented. Appropriate resources (equipment and personnel) will be available to ensure all necessary monitoring is completed as per licence requirements

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Table C3: Release Contaminant Trigger Investigation Levels *Note: The administering authority will take into consideration any extenuating circumstances prior to determining an appropriate enforcement response, in the event condition C5 is contravened due to a temporary lack of safe or practical access. The administering authority expects the environmental authority holder to take all reasonable and practicable measures to maintain safe and practical access to designated monitoring locations.*		
C6 If quality characteristics of the release exceed any of the trigger levels specified in Table C3: Release Contaminant Trigger Investigation Levels during a release event, the environmental authority holder must compare the downstream results in the receiving waters to the trigger values specified in Table C3: Release Contaminant Trigger Investigation Levels and: a) Where the trigger values are not exceeded then no action is to be taken; or b) Where downstream results exceed the trigger values specified in Table C3: Release Contaminant Trigger Investigation Levels for any quality characteristics, compare the results of the downstream sites to the data from background monitoring sites and i. If the result is less than the background monitoring site data, then no action is to be taken; or ii. If the result is greater than the background monitoring site data, complete an investigation in accordance with the ANZECC and ARMCANZ 2000 methodology, into the potential for environmental harm and provide a written report to the administering authority in the next annual return,	Investigations will be undertaken and appropriate action taken	General Manager Operations will ensure that a competent person is available to initiate investigation and that an appropriate level of resources are available to ensure investigation can be completed as per licence requirements

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outlining: 1. Details of the investigations carried out; and 2. Actions taken to prevent environmental harm. *Note: Where an exceedance of a trigger level has occurred and is being investigated, in accordance with C5 2(b)(ii) of this condition, no further reporting is required for subsequent trigger events for that quality characteristic.*		
C7 If an exceedance in accordance with condition C6 (b) (ii) is identified, the holder of the environmental authority must notify the administering authority, in writing, within fourteen (14) days of receiving the result.	Administering authority will be notified	Administering authority will be notified as per the method agreed upon with the authority.
Mine Affected Water Release Events **C8** The holder must ensure a stream flow gauging station(s) is installed, operated and maintained to determine and record stream flows at the locations and flow recording frequency specified in Table C4: Mine affected water release during flow events.	Gauging station will be installed	Gauging station will be installed. The gauging station will be a component of the Environmental Monitoring Plan.
C9 Notwithstanding any other condition of this environmental authority, the release of mine affected water in accordance with condition C2 must only take place during periods of natural flow events in accordance with the receiving water flow criteria specified in Table C4: Mine affected water release during flow events when measured at the monitoring points specified in Table C1: Contaminant release points, sources and receiving waters.	The Mine Water Discharge Procedure will ensure releases are in accordance with environmental authority conditions	Gauging Station will be installed, and will be used to identify when water releases can be made.
C10 The release of mine affected water to waters in accordance with condition C2 must not exceed the electrical conductivity and sulphate release limits or the maximum release rate (for all combined release point flows) for each receiving water flow criteria for	Releases will be in accordance with condition	The Mine Water Discharge Procedure will be applied to ensure releases are in accordance with environmental authority conditions

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discharge specified in Table C4: Mine affected water release during flow events, when measured at the monitoring points specified in Table C1: Contaminant release points, sources and receiving waters.		
C11 The daily quantity of mine affected water released from each release point must be measured at the monitoring points in Table C1: Mine affected water release points, sources and receiving waters, and recorded.	Volumetric monitoring equipment will be installed.	An Environmental Monitoring Plan shall be developed and implemented. The plan shall include provision for volumetric monitoring equipment tol be installed. Equipment will be monitored and maintained as required in order to ensure compliance. Release permit will include a function check of monitoring equipment.
C12 Releases to waters must be undertaken so as not to cause erosion of the bed and banks of the receiving waters, or cause a material build-up of sediment in such waters.	Releases found to be causing erosion or sediment build-up will be immediately ceased	The Environmental Monitoring Plan shall incorporate daily checks of bed and banks below the release point during releases.
Notification of Release Event **C13** The authority holder must notify the administering authority within six (6) hours of commencing a release event. Notification must include the submission of written verification of the administering authority of the following information: a) Release commencement date / time; b) Expected release cessation date / time; c) Release point(s); d) Release volume (estimated); e) Receiving water/s including the natural flow rate; and f) Any details (including available data) regarding likely impacts on the receiving water(s). Note: Notification to the administering authority must be addressed to Manager and Project Manager of the local Administering Authority via email or facsimile.	Administering authority will be notified	Notification of releases will be carried out via the administering authority agreed channels only. A backup plan will be agreed upon internally should the need arise. Notification to the administering authority will be addressed to Manager and Project Manager of the local Administering Authority via email or facsimile

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C14 The authority holder must notify the administering authority as soon as practicable, (nominally within twenty-four (24) hours after cessation of a release) of the cessation of a release notified under condition C13 and within twenty-eight (28) days provide the following information in writing: a) Release cessation date / time; b) Natural flow volume in receiving water; c) Volume of water released; d) Details regarding the compliance of the release with the conditions of this environmental authority (i.e. contamination limits, natural flow, discharge volume); e) All in-situ water quality monitoring results; and f) Any other matters pertinent to the water release event. Note: Successive or intermittent releases occurring within 24 hours of the cessation of any individual release can be considered part of a single release event and do not require individual notification for the purpose of compliance with conditions C13 and C14, provided the relevant details of the release are included within the notification provided in accordance with conditions C13 and C14.	Administering authority will be notified	Administrating Authority will be notified on cessation of discharge as per conditions.
Notification of Release Event Exceedence **C15** If the release limits defined in Table C2: Mine affected water release limits are exceeded, the holder of the environmental authority must notify the administering authority, in writing, within twenty-four (24) hours of receiving the results.	Administering authority will be notified	A competent person shall be employed to review data and report any exceedence to the administering authority. Reporting of the mine affected water release results will be carried out in writing via the agreed channels.
C16 The authority holder must, within twenty-eight (28) days of a release that exceeds the conditions of this authority, provide a report to the administering	Report will be prepared and provided to administering authority	Exceedence of water quality criteria shall be treated as an incident and investigated in line with the mine accident and incident investigation procedures.

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authority detailing: a) The reason for the release; b) The location of the release; c) All water quality monitoring results; d) Any general observations; e) All calculations; and **f)** Any other matters pertinent to the water release event.		This report shall be provided to the administering authority and contain the information as per the requirements of this condition
Monitoring of Water Storage Quality **C17** Water storages stated in Table C5: Water Storage Monitoring, which are associated with the release points, must be monitored for the water quality characteristics specified in Table C6: Onsite Water Storage Contaminant Limits at the monitoring locations and at the monitoring frequency specified in Table C5: Water Storage Monitoring.	Monitoring will be completed	Water storage monitoring shall be incorporated into the Environmental Monitoring Plan and will be carried out as per the frequency and specification of this condition. General Manager Operations shall ensure appropriate budget is in place and competent persons employed to enable monitoring as required.
C18 In the event that waters storages defined in Table C5: Water Storage Monitoring exceed the contaminant limits defined in Table C6: Onsite Water Storage Contaminant Limits, the holder of the environmental authority must implement measures, where practicable, to prevent access to waters by all livestock.	All mining areas will be fenced for safety reasons	Where practicable measures will be implemented to prevent access to waters by all livestock.
Receiving Environment Monitoring and Contaminant Trigger Levels **C19** The quality of the receiving waters must be monitored at the locations specified in Table C8: Receiving Water Upstream Background Sites and Downstream Monitoring Points for each quality characteristics and at the monitoring frequency stated in Table C7: Receiving Waters Contaminant Trigger Levels.	Monitoring will be undertaken as required	Receiving Environment monitoring shall be incorporated into the Environmental Monitoring Plan and will be carried out as per the frequency and specification of this condition. General Manager Operations to ensure appropriate budget is in place and competent persons employed to enable monitoring as required.
C20 If quality characteristics of the receiving water at the downstream monitoring points exceed any of the	Results comparisons will be made	If exceedences are found as per this condition, investigations will be carried out as per the

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trigger levels specified in Table C7: Receiving Waters Contaminant Trigger Levels during a release event the environmental authority holder must compare the downstream results to the upstream results in the receiving waters and: a) Where the downstream result is the same or a lower value than the upstream value for the quality characteristics then no action is to be taken; or b) Where the downstream results exceed the upstream results complete an investigation in accordance with ANZECC and ARMCANZ 2000 methodology, into the potential for environmental harm and provide a written report to the administering authority in the next annual return, outlining: 1. Details of the investigations carried out; and 2. Actions taken to prevent environmental harm. *Note: Where an exceedance of a trigger level has occurred and is being investigated, in accordance with C20(b) of this condition, no further reporting is required for subsequent trigger events for that quality characteristic.*		requirements of condition C20. General Manager Operations to ensure appropriate budget is in place and competent persons employed to enable assessment of data as required.
Receiving Environment Monitoring Program (REMP) **C21** The environmental authority holder must develop and implement a Receiving Environment Monitoring Program (REMP) to monitor, identify and describe any adverse impacts to surface water environmental values, quality and flows due to the authorised mining activity. This must include monitoring the effects of the mine on the receiving environment periodically (under natural flow conditions) and while	REMP will be developed and implemented	The pre-existing REMP for the Baralaba Central Mine will be reviewed for adequacy and updated as appropriate to suit the needs of the expanded operation.

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	mine affected water is being discharged from the site. For the purposes of the REMP, the receiving environment is the waters of the Dawson River Anabranch and connected or surrounding waterways within 15km downstream of the release. The REMP should encompass any sensitive receiving waters or environmental values downstream of the authorised mining activity that will potentially be directly affected by an authorised release of mine affected water.		
C22	The REMP must: a) Assess the condition or state of receiving waters, including upstream conditions, spatially within the REMP area, considering background water quality characteristics based on accurate and reliable monitoring data that takes into consideration temporal variation (e.g. seasonality); and b) Be designed to facilitate assessment against water quality objectives for the relevant environmental values that need to be protected; and c) Include monitoring from background reference sites (e.g. upstream or background) and downstream sites from the release (as a minimum, the locations specified in Table C8: Receiving Water Upstream Background Sites and Downstream Monitoring Points); and d) Specify the frequency and timing of sampling required in order to reliably assess ambient conditions and to provide sufficient data to derive site specific background reference values in accordance with the Queensland Water Quality Guidelines 2009. This should include monitoring	REMP will address required items.	The pre-existing REMP for the Baralaba Central Mine will be reviewed for adequacy and updated as appropriate to suit the needs of the expanded operation.

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	during periods of natural flow irrespective of mine or other discharges; and e) Include monitoring and assessment of dissolved oxygen saturation, temperature and all water quality parameters listed in Table C2: Mine affected water release limits and Table C3: Release Contaminant Trigger Investigation Levels; and f) Include, where appropriate, monitoring of metals/metalloids in sediments (in accordance with ANZECC & ARMCANZ 2000, BATLEY and/or the most recent version of AS5667.1 Guidance on Sampling of Bottom Sediments); and g) Include, where appropriate, monitoring of macroinvertebrates in accordance with the AusRivas methodology, and h) Apply procedures and/or guidelines from ANZECC & ARMCANZ 2000 and other relevant guideline documents; and i) Describe sampling and analysis methods and quality assurance and control; and **j)** Incorporate stream flow and hydrological information in the interpretations of water quality and biological data.		
C23	A REMP Design Document that addresses each criterion presented in conditions C21 and C22 must be prepared and submitted to the administering authority no later than three (3) months after the date of issue of this environmental authority. Due consideration must be given to any comments made by the administering authority on the REMP Design Document and subsequent implementation of the program.	REMP design document will be completed within three months of commencement of environmental authority	The pre-existing REMP for the Baralaba Central Mine will be reviewed for adequacy and updated as appropriate to suit the needs of the expanded operation. Consequently the design document will take the form of an REMP gap analysis comparing the existing REMP with the requirements for an REMP for the expanded operation.

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C24 A report outlining the findings of the REMP, including all monitoring results and interpretations in accordance with conditions C21 and C22 must be prepared annually and made available on request to the administrating authority. This must include an assessment of background reference water quality, the condition of downstream water quality compared against water quality objectives, and the suitability of current discharge limits to protect downstream environmental values.	REMP report will be prepared as required.	All results will be compiled annually to complete the report which will be made available to the administering authority.
Water reuse **C25** Mine affected water may be piped or trucked or transferred by some other means that does not contravene the conditions of this environmental authority and deposited into artificial water storage structures, such as farm dams or tanks, or used directly at properties owned by the environmental authority holder or a third party for the purpose of: a) supplying stock water subject to compliance with the quality release limits specified in Table C9: Stock Water Release Limits; or b) supplying irrigation water subject to compliance with quality release limits in Table 10: Irrigation Water Release Limits; or **c)** supplying water for construction and/or road maintenance in accordance with the conditions of this environmental authority.	The Water Management Plan addresses the use of mine affected water	The Water Management Plan will outline the procedures to be used when using mine-affected water. Any mine affected water transferred for the use on properties owned by the environmental authority holder or a third party for any of the uses stated in condition C25, will not contravene the conditions of this environmental authority.
C26 Mine affected water may be piped or trucked or transferred by some other means that does not contravene the conditions of this environmental authority and deposited into artificial water storage structures, such as dams or tanks, for the purpose of supplying water to Wonbindi North Coal Mine. The volume, pH and electrical conductivity of water	The Water Management Plan addresses the use of mine affected water Noted: Baralaba and Wonbindi mines will be run as a single operation.	All water transferred to Wonbindi North Coal Mine will monitored for volume, pH and EC and records kept.

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transferred to Wonbindi North Coal Mine must be monitored and recorded.		
C27 If the responsibility for mine affected water is given or transferred to another person in accordance with conditions C25 or C26: a) the responsibility for the mine affected water must only be given or transferred in accordance with a written agreement (the third party agreement); and b) the third party agreement must include a commitment from the person utilising the mine affected water to use it in such a way as to prevent environmental harm or public health incidents and specifically make the persons aware of the General Environmental Duty (GED) under section 319 of the Environmental Protection Act 1994, environmental sustainability of the water disposal and protection of environmental values of waters; and **c)** the third party agreement must be signed by both parties to the agreement.	There are no plans to re-use water outside of the operation during the term of this plan.	If any water was transferred to another person, it will be carried out as per condition.
Water general **C28** All determinations of water quality and biological monitoring must be: a) performed by a person or body possessing appropriate experience and qualifications to perform the required measurements; b) made in accordance with methods prescribed in the latest edition of the administering authority's Monitoring and Sampling Manual; c) collected from the monitoring locations identified within this environmental authority, within 12 hours of each other where possible; d) carried out on representative samples; and	A competent person will be engaged to complete all monitoring and only NATA accredited laboratories will be used for off-site analysis.	Water monitoring shall be incorporated into the Environmental Monitoring Plan. The plan shall conform to the requirements of Condition C28 A supply agreement shall be maintained with a laboratory with NATA accreditation for the required analysis. The General Manager Operations shall ensure that a competent person is available to complete monitoring.

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e) analysed at a laboratory accredited (e.g. NATA) for the method of analysis being used. *NOTE: Condition C28 requires the Monitoring and Sampling Manual to be followed and where it is not followed because of exceptional circumstances this should be explained and reported with the results.*		
C29 The release of any contaminants as permitted by this environmental authority, directly or indirectly to waters, other than internal water management infrastructure that is installed and operated in accordance with a water management plan that complies with conditions C32 to C37 inclusive: a) must not produce any visible discolouration of receiving waters; and **b)** must not produce any slick or other visible or odorous evidence of oil, grease or petrochemicals nor contain visible floating oil, grease, scum, litter or other objectionable matter.	Releases will comply with the requirements and will be in accordance with the Water Management Plan and the Mine Water Discharge Procedure.	Releases will comply with the requirements and will be in accordance with the Water Management Plan and the Mine Water Discharge Procedure.
Annual Water Monitoring Reporting **C30** The following information must be recorded in relation to all water monitoring required under the conditions of this environmental authority and submitted to the administering authority in the specified format with each annual return: a) the date on which the sample was taken; b) the time at which the sample was taken; c) the monitoring point at which the sample was taken; d) the measured or estimated daily quantity of mine affected water released from all release points; e) the release flow rate at the time of sampling for each release point; f) the results of all monitoring and details of any exceedences of the conditions of this	Monitoring data will be recorded	General Manager Operations will ensure that a competent person supervises monitoring activities and that an appropriate IT resources are available for effective recording and analysis of data The annual return submitted to the administering authority will contain the information stated in condition C30..

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environmental authority; and **g)** water quality monitoring data must be provided to the administering authority in the specified electronic format upon request		
Temporary Interference with waterways **C31** Temporarily destroying native vegetation, excavating, or placing fill in a watercourse, lake or spring necessary for and associated with mining operations must be undertaken in accordance with the administering authority's Guideline - Activities in a Watercourse, Lake or Spring associated with Mining Activities.	Temporary interference with waterways will comply with the guideline	Ground disturbance permit system shall include provision to ensure guideline requirements are implemented.
Water Management Plan **C32** A Water Management Plan must be developed by an appropriately qualified person and implemented prior to the commencement of activities.	Water Management Plan	The Baralaba Central Water Management Plan has been developed and is reviewed as required, it will be made available on request. The Baralaba North/Wonbindi North Water Management Plan will be implemented prior to the commencement of activities. An appropriately qualified and experienced person shall be employed to ensure implementation of the plan is managed. The General Manager Operations shall ensure appropriate resources are made available for the implementation of the plan.
C33 The Water Management Plan must: a) provide for effective management of actual and potential environmental impacts resulting from water management associated with the mining activity carried out under this environmental authority; and b) be developed in accordance with the administering authority's guideline Preparation of	Water Management Plan	Water Management Plan shall be reviewed annually to ensure compliance is maintained. General Manager Operations to ensure resources are available for Water Management Plan review.

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	water management plans for mining activities (EM324) and include: c) a study of the source of contaminants; d) a water balance model for the site; e) a water management system for the site; f) measures to manage and prevent saline drainage; g) measures to manage and prevent acid rock drainage; h) contingency procedures for emergencies; and **i)** a program for monitoring and review of the effectiveness of the water management plan.		
C34	The Water Management Plan must be reviewed each calendar year and a report prepared by an appropriately qualified person. The report must: a) assess the plan against the requirements under condition C33; b) include recommended actions to ensure actual and potential environmental impacts are effectively managed for the coming year; and **c)** identify any amendments made to the water management plan following the review.	The Water Management Plan will be reviewed annually.	Water Management Plan shall be reviewed annually to ensure compliance with condition C34 is maintained. The plan will include recommended actions and amendments as per this condition. General Manager Operations to ensure resources are available for Water Management Plan review.
C35	The holder of this environmental authority must attach to the review report required by condition C34, a written response to the report and recommended actions, detailing the actions taken or to be taken by the environmental authority holder on stated dates: a) to ensure compliance with this environmental authority; and **b)** to prevent a recurrence of any non-compliance issues identified.	The Water Management Plan review report will be completed	Water Management Plan shall be reviewed annually to ensure compliance is maintained. The review report will contain the requirements stated in this condition. General Manager Operations to ensure resources are available for Water Management Plan review.
C36	The review report required by condition C34 and the written response to the review report required by condition C35 must be submitted to the administering	The Water Management Plan review report will be provided with the annual return	The review report will be submitted to the administering authority with the subsequent annual return as per this condition.

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authority with the subsequent annual return under the signature of the appointed signatory for the annual return.		
C37 A copy of the Water Management Plan must be provided to the administering authority on request.	The Water Management Plan will be made available on request.	The plan will be provided at the administering authority on request.
Saline Drainage **C38** The holder of this environmental authority must ensure proper and effective measures are taken to avoid or otherwise minimise the generation and/or release of saline drainage.	Rehabilitation Management Plan - Rehabilitation strategies shall be developed to minimise the risk of saline drainage	The Rehabilitation Management Plan will be developed by 30 June 2013 and will include measures to minimise the risk of saline drainage.
Acid Rock Drainage **C39** The holder of this environmental authority must ensure proper and effective measures are taken to avoid or otherwise minimise the generation and/or release of acid rock drainage.	Rehabilitation Management Plan - Rehabilitation strategies shall be developed to minimise the risk of acid rock drainage	Pre-mining geochemistry studies have not identified any high risk AMD material. It is possible that some rejects will be produced at Baralaba North with low levels of sulphur. While significant acid production is unlikely, this material will be disposed of deep in pit as a precautionary measure.
Stormwater and Water sediment controls **C40** An Erosion and Sediment Control Plan must be developed by an appropriately qualified person and implemented for all stages of the mining activities on the site to minimise erosion and the release of sediment to receiving waters and contamination of stormwater.	Sediment and Erosion Control Plan	The erosion and sediment control plan will be updated by a person holding appropriate qualifications and demonstrated competency.
C41 Stormwater, other than mine affected water, is permitted to be released to waters from: a) erosion and sediment control structures that are installed and operated in accordance with the Erosion and Sediment Control Plan required by condition C40; and **b)** water management infrastructure that is installed and operated, in accordance with a Water Management Plan that complies with conditions C32 to C37 inclusive, for the purpose of ensuring	Water management systems shall be designed and installed in line with requirements	The operation and installation of water management infrastructures will be included in the water management plan and will comply with conditions C32 to C37. A design review of containment systems will be completed by a competent person. A post construction inspection shall be completed to ensure all structures have been installed as per design.

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water does not become mine affected water.		
C42 The maintenance and cleaning of any vehicles, plant or equipment must not be carried out in areas from which contaminants can be released into any receiving waters.	Vehicle cleaning and maintenance to be completed at MIA	A vehicle wash-down facility will be made available at the mine industrial area. Workshop facilities will be upgraded during the term of the plan to ensure compliance.
C43 Any spillage of wastes, contaminants or other materials must be cleaned up as quickly as practicable to minimise the release of wastes, contaminants or materials to any stormwater drainage system or receiving waters.	Spill kits will be available to facilitate cleanup as needed	Spill kits are to be placed in strategic locations and be made mandatory on service vehicles. Spill kit inventories shall be taken monthly to ensure they are properly equipped. Spill response training shall be included in the site induction and reinforced through toolbox training sessions.
Groundwater **C44** The holder of the environmental authority must develop and implement a Groundwater Monitoring and Management Program prior to the commencement of mining activities. The program must: a) be able to detect a significant change to ground water quality values due to activities that are part of this mining project; b) include measures to minimise the impact of the mining activities on groundwater resources; c) include contingency procedures for emergencies; and **d)** include a program for monitoring and review of the effectiveness of the groundwater monitoring and management program.	Groundwater Monitoring Program and Environmental Monitoring Plan will ensure all monitoring is designed and conducted.	Groundwater monitoring arrangements are to be included in the project Environmental Monitoring Plan. General Manager Operations is to ensure that the required resources are available for monitoring to be completed. Monitoring is to be completed by a competent person. All analytical results shall be sourced from laboratories with appropriate NATA certification.
Background groundwater monitoring program **C45** A background groundwater monitoring program must be developed, as part of the groundwater monitoring and management program, to include bore(s) that	Groundwater monitoring program to be implemented.	Bore locations to be reviewed by a competent person and any new bores that will be required will be installed.

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are located an appropriate distance from potential sources of impact from mining activities to provide the following: a) representative groundwater samples from the aquifers potentially affected by mining activities, b) at least 12 sampling events, no more than 1 month apart, c) background groundwater quality in hydraulically isolated background bore(s) that have not been affected by any mining activities, and d) final groundwater contaminant trigger levels and limits required in condition C46; e) final groundwater monitoring locations required in Table C11: Groundwater monitoring locations and frequencies and Table C13: Groundwater levels; f) groundwater RL's required under condition Table C13: Groundwater levels; and **g)** sufficient information to allow the holder to determine predicted seasonal fluctuations of groundwater levels.		Groundwater monitoring arrangements are to be included in the Environmental Monitoring Plan. General Manager Operations is to ensure that the required resources are available for monitoring to be completed. Monitoring is to be completed by a competent person. All analytical results shall be sourced from laboratories with appropriate NATA certification.
C46 Groundwater contaminant trigger levels as per Table C12: Groundwater investigation trigger levels must be finalised based on a background groundwater monitoring program defined in condition C45 and submitted to the administering authority with the groundwater monitoring and management program, within twelve (12) months of grant of this environmental authority.	Trigger levels will be determined	Suitable experts in groundwater will be consulted to ensure appropriate trigger levels are proposed.
Groundwater Monitoring and Management **C47** The groundwater monitoring and management program, including all data, must be reviewed on an annual basis by an appropriately qualified and experienced person. The review must include	Review will be completed	Groundwater monitoring and management program and data will be reviewed on an annual basis by an expert in the field and will include the information required as per condition C47.

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a) the assessment of groundwater levels and quality data, and the suitability of the monitoring network; b) assess the program against the requirements under condition C44; c) include recommended actions to ensure actual and potential environmental impacts are effectively identified and managed for the coming year; and **d)** identify any amendments to the groundwater monitoring and management program following the review.		Groundwater monitoring will be included in the site Environmental Monitoring Plan. The General Manager Operations is to ensure appropriate financial provision is made to allow for this review to be completed.
C48 The assessment under condition C47 must be submitted to the administering authority within twenty-eight (28) days of receiving the report, with a written response to the assessment report and recommended actions, detailing the actions taken or to be taken by the environmental authority holder to ensure compliance with this environmental authority and minimise impacts on groundwater resources by the mining activity.	Review will be provided to the administering authority	Review will be provided to the administering authority within timeframe stated and contain the information shown in condition C48.
Groundwater Monitoring **C49** Groundwater affected by the mining activities must be monitored at the locations and frequencies defined in Table C11: Groundwater monitoring locations and frequencies for the parameters identified in Table C12: Groundwater investigations trigger levels.	Groundwater monitoring program to be implemented.	Ground water monitoring will occur at the locations and frequencies for the parameters identified in Table C12 as condition C49. These requirements shall be integrated into the site Environmental Monitoring Plan. General Manager Operations is to ensure that the required resources are available for monitoring to be completed. Monitoring is to be completed by a competent person. All analytical results shall be sourced from

EA Condition	Control Strategy	Action Program
		laboratories with appropriate NATA certification.
C50 Groundwater levels affected by the mining activities must be monitored at the locations and frequencies defined in Table C13: Groundwater levels.	Groundwater monitoring program to be implemented.	Ground water monitoring will occur at the locations and frequencies for the parameters identified in Table C12 as condition C49. These requirements shall be integrated into the site Environmental Monitoring Plan. General Manager Operations is to ensure that the required resources are available for monitoring to be completed. Monitoring is to be completed by a competent person. All analytical results shall be sourced from laboratories with appropriate NATA certification.
C51 The following information must be recorded in relation to all groundwater water sampling: a) the date on which the sample was taken; b) the time at which the sample was taken; c) the monitoring point at which the sample was taken; and **d)** the results of all monitoring.	Groundwater monitoring program to be implemented.	Ground water sampling information will be recorded as per condition C51. General Manager Operations is to ensure that the required resources are available for data to be reliably recorded
C52 The method of groundwater sampling required by this environmental authority must comply with that set out in the latest edition of the administering authority's Water Quality Sampling Manual.	Monitoring program to conform to standard	Monitoring program shall be reviewed for its compliance with Condition C52 and for adequacy by an expert in the field.
Groundwater investigation **C53** Subject to requirements of condition C49, if the groundwater investigation trigger levels defined in Table 12: Groundwater investigation trigger levels are exceeded then the environmental authority holder must complete an investigation into the potential for environmental harm and notify the administering authority within twenty-eight (28) days of receiving the analysis results.	Investigation will be completed if trigger levels are exceeded	Investigation will be completed if trigger levels are exceeded

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C54	In the event that groundwater fluctuations in excess of two metres per year beyond predictable seasonal fluctuations as determined by condition C45 are detected at the groundwater monitoring locations nominated in Table C13: Groundwater levels, an investigation must be undertaken within fourteen (14) days of detection to determine if the fluctuations are a result of: a) mining activities; b) pumping from licensed or unlicensed bores; or **c)** seasonal variation.	Investigation will be completed if trigger levels are exceeded	Investigation will be completed if trigger levels are exceeded
C55	If the results of the investigation identify that the groundwater fluctuations are a result of mining activities, the holder of the environmental authority must notify the administering authority and provide a copy of a report detailing the findings and outcomes of the investigation within seven (7) days of receiving the result.	Administering authority will be notified as required.	Administering authority will be notified as required.

4.4 Schedule D – Waste

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Waste Management **D1** The holder of this environmental authority must develop, implement and maintain a waste management program in accordance with the Environmental Protection Act 1994 and subordinate legislation for the site. The waste management program must include: a) a description of the mining activities that may generate waste; i. the waste management control strategies must consider: ii. the types and amounts of wastes generated by the mining activities; iii. segregation of the wastes; iv. storage of the wastes v. transport of the wastes vi. monitoring and reporting matters concerning the waste b) the hazardous characteristics of the wastes generated including disposal procedures for hazardous wastes c) a program for reusing, recycling or disposing of all wastes d) how the waste will be dealt with in accordance with the waste management hierarchy, including a description of the types and amounts of waste that will be dealt with under each of the waste management practices in the waste management hierarchy (i.e. avoidance, reuse, recycling, energy recovery, disposal) e) procedures for identifying and implementing opportunities to minimise the amount of waste generated, promote efficiency in the use of resources and improve the waste	Waste Management Plan implemented on site	Waste management plan will be developed as per the requirements of condition D1

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management practices employed f) procedures for dealing with accidents, spills and other incidents g) details of any accredited management system employed, or planned to be employed, to deal with waste h) how often the performance of the waste management program will be assessed i) the indicators or other criteria on which the performance of the waste management program will be assessed; and **j)** staff training and induction to the waste management program		
D2 All general and regulated waste must be removed from the site to a facility that is lawfully able to accept the waste under the Environmental Protection Act 1994.	All waste to be removed lawfully	Waste management plan to be developed and implemented. Induction and toolbox training to cover waste management
D3 Unless otherwise permitted by the conditions of this environmental authority or with prior approval from the administering authority and in accordance with a relevant standard operating procedure, waste must not be burnt.	Burning of waste will be prohibited	Induction to advise that burning of waste is prohibited.
D4 The holder of this environmental authority may burn vegetation cleared in the course of carrying out extraction activities provided the activity does not cause environmental harm at any sensitive place or commercial place.	Burning of waste vegetation shall be undertaken under competent supervision	Any burning of vegetation required will be carried out under approval from the General Manager Operations and with a Rural Fires Permit. Relevant supervisors shall receive fire safety training.
D5 All combustible materials, including grass and vegetation, must be removed within a ten (10) metre radius of any waste storage area. *NOTE: Waste storage area include areas for the storage of general wastes, scrap tyres or other regulated wastes.*	Waste stored on hardstand areas only. Grass to be slashed around perimeter as required.	Waste stored on hardstand areas only. Grass to be slashed and chemically treated near all waste storage areas and around perimeter as required.
D6 Regulated waste, other than that authorised to be disposed of on-site under this authority, must only be removed and transported from the site by a person who holds a current authority to transport such	Regulated waste to be removed by licenced contractors only	Procurement procedures to include verification of required licencing. Annual checks of electronic submission of waste tracking records are to be made against records held on site.

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	wastes to a facility that is lawfully able to accept the waste under the Environmental Protection Act 1994.		
D7	Regulated waste generated in the mining activity can be temporarily stored on site awaiting removal provided it is stored to ensure there is minimal risk of causing fire or contamination to land or waters.	Waste to be stored on hardstand areas only that are protected by water management structures.	Waste storage requirements to be included in the Waste Management Plan. Induction and/or toolbox training to advise on appropriate waste storage practices. Monthly site inspections of waste storage facilities will be completed to ensure compliance with conditions D6, D7 and D8.
D8	Each container of regulated waste stored awaiting movement off site must be marked to identify the contents.	All containers to be labelled	All containers to be clearly labelled
D9	Regulated waste must only be removed to a facility licensed under the Environmental Protection Act 1994 to receive such waste.	Regulated waste to be removed by licenced contractors only	Procurement procedures to include verification of required licencing.
D10	Scrap tyres stored awaiting disposal or transport for take-back and recycling, or waste-to-energy options must be stored must be stockpiled in volumes less than three (3) metres in height and 200m2 and at least ten (10) metres from any other tyre storage area.	Scrap tyres to be stored as required	Designated scrap mine storage areas to be constructed as needed
D11	Subject to demonstrating to the administering authority that no other use higher in the waste management hierarchy can be practicably implemented, waste tyres generated from mining activities may be disposed of on site in spoil emplacements.	In spoil disposal of tyres to be managed as required	Tyres will be managed in accordance with the Waste Management Plan. Where no other viable options are available, tyres will be disposed of near the pit floor within spoil disposal areas. Records shall be maintained that include survey locations and description of the disposed tyres. .
D12	Scrap tyres resulting from the mining activities disposed within the operational land must not impede saturated aquifers, cause contamination or compromise the stability of the consolidated landform.	Waste tyres to be placed near as practical to pit floor	Hydrogeology investigations have not identified any risk associated with the practice. No special provisions considered necessary.

4.5 Schedule E – Noise and Vibration

EA Condition	Control Strategy	Action Program
Noise and vibration nuisance **E1** Noise, airblast overpressure and vibration from activities must not cause an environmental nuisance at any sensitive or commercial place.	Mine planning and blast design to consider noise impacts	Noise studies prior to the commencement of mining indicate that compliance with the required noise levels is achievable. Where considered necessary monitoring shall be undertaken in accordance with the Environmental Monitoring Plan.
E2 All noise, overblast pressure and vibration from activities must not exceed the levels specified in Table E1: Noise Limits, Table E2: Airblast overpressure level, and Table E3: Vibration limits at any sensitive or commercial place.	Mine planning and blast design to consider noise impacts	Blast design shall consider the required noise and vibration limits. . Monitoring shall be undertaken in accordance with the Environmental Monitoring Plan
Noise monitoring **E3** When requested by the administering authority, noise monitoring must be undertaken to investigate any complaint of noise nuisance, and the results notified within fourteen (14) days to the administering authority. Monitoring must include: a) LA10, adj, 10 mins; b) LA, max adj, T; c) relevant background sound level; d) the level and frequency of occurrence of impulsive or tonal noise; e) atmospheric conditions including temperature, relative humidity and wind speed and direction; and location, date and time of recording; f) effects due to extraneous factors such as traffic noise; and **g)** location, date and time of recording.	Noise monitoring shall be undertaken upon request	Monitoring shall be undertaken in accordance with the Environmental Monitoring Plan Noise monitoring (when undertaken under Administering Authority direction) shall include the required parameters. Monitoring program to be designed by a competent person.
E4 The method of measurement and reporting of noise levels must comply with the latest edition of the administering authority's Noise Measurement Manual.	Monitoring to comply with Noise Measurement Manual	Noise monitoring program is to be included in the site Environmental Monitoring Plan. This plan shall conform to the required standards. The noise monitoring program (when undertaken under Administering Authority direction) shall

EA Condition	Control Strategy	Action Program
		include the required parameters. Monitoring program to be designed by a competent person.
Airblast overpressure monitoring **E5** When requested by the administering authority, airblast overpressure monitoring must be undertaken to investigate any complaint of airblast overpressure nuisance, and the results notified within fourteen (14) days to the administering authority. Monitoring must include: a) location of the blast(s) within the mining area; b) atmospheric conditions including temperature, relative humidity and wind speed and direction; and **c)** location, date and time of recording.	monitoring shall be undertaken upon request	Monitoring shall be undertaken under the supervision of a person competent in airblast overpressure monitoring. Air blast overpressure monitoring is to be included in the site Environmental Monitoring Plan.
Vibration monitoring **E6** When requested by the administering authority, vibration monitoring must be undertaken to investigate any complaint of vibration nuisance, and the results notified within fourteen (14) days to the administering authority. Monitoring must include: a) peak particle velocity (mm/s); b) air blast overpressure level (dB linear Peak); c) location of the blast/s within the mining area (including which bench level) ; d) atmospheric conditions including temperature, relative humidity, and wind speed and direction; and, **e)** location, date and time of recording.	monitoring shall be undertaken upon request	Monitoring shall be undertaken under the supervision of a person competent in vibration monitoring. Vibration monitoring is to be included in the site Environmental Monitoring Plan
Noise, airblast overpressure and vibration exceedence **E7** If monitoring indicates exceedence of the limits in Table E1: Noise Limits, Table E2: Airblast overpressure level, and Table E3: Vibration limits then the environmental authority holder must: a) address any complaints including the use of appropriate dispute resolution if required; and, **b)** immediately implement abatement measures so	Complaints will be addressed as required	Complaints will be addressed as required

EA Condition	Control Strategy	Action Program
that emissions from the activity do not result in further exceedences of the limits in Table E1, Table E2, and Table E3 and/or cause environmental nuisance.		
Blasting **E8** Every explosive blast for the mining activity shall be designed by a competent person, and be in accordance with a Blast Management Plan, to achieve the criteria specified in Table E1: Noise Limits, Table E2: Airblast overpressure level, and Table E3: Vibration limits.	A competent blast engineer shall design each blast A competent shotfirer shall conduct each blast	A blasting procedure shall be implemented as a component of the site safety management system. The plan shall include environmental requirements to inform designers and shot firers. A competent blast engineer shall design each blast A competent shotfirer shall conduct each blast
E9 All relevant information pertaining to the design of every explosive blast for the mining activity in relation to the criteria specified in Table E1: Noise Limits, Table E2: Airblast overpressure level, and Table E3: Vibration limits shall be kept in written and diagrammatic form.	All blast design and monitoring data shall be recorded	All blast design and monitoring data shall be recorded

4.6 Schedule F – Land

EA Condition	Control Strategy	Action Program
Strategic Cropping Land **F1** The environmental authority holder must comply with each of the conditions under the Strategic Cropping Land Protection Decision SCLRD2012/000089.	Compliance with SCL Protection Decision	All relevant ground disturbance will comply with SCL Protection Decision SCLRD2012/000085
F2 If there is any inconsistency between the Strategic Cropping Land Protection Decision and this Environmental Authority, the Strategic Cropping Land Protection Decision prevails to the extent of the inconsistency.	The SCL protection decision will prevail where there is an inconsistency with the Environmental Authority.	All relevant ground disturbance will comply with SCL Protection Decision SCLRD2012/000085 even when there is an inconsistency with the environmental authority.
Topsoil **F3** Topsoil must be strategically stripped ahead of mining in accordance with a Topsoil Management Plan.	Topsoil management plan to be implemented	Topsoil management plan to be updated and implemented.
F4 A topsoil inventory which identifies the topsoil requirements and availability of suitable topsoil on site, must be detailed in the Plan of Operations.	Topsoil inventory is provided in Appendix A	Topsoil inventory is provided in Appendix A
F5 Topsoil and subsoils must be managed to ensure stability and minimise the release contaminants. Measures must include: a) vegetating stockpiles; b) minimising the height of stockpiles; and **c)** re-using stockpiles as soon as possible.	Control measures to be included in the topsoil management plan	Control measures shall be included in the topsoil management plan
Preventing contaminant release to land **F6** Contaminants must not be released to land in manner which constitutes nuisance, material or serious environmental harm.	Requirement to prevent land contamination to be included in induction and toolbox training	Requirement to prevent land contamination to be included in induction and toolbox training
F7 The environmental authority holder must take all practicable actions necessary to secure loads prior to transporting materials off site to minimise emissions or spillage of any material from vehicles or other transport infrastructure	Appropriate measure will be taken	Rules for securing of loads etc shall be included in the relevant site safety procedures and training.
Chemicals and flammable or combustible liquids **F8** All flammable and combustible liquids must be contained within an on-site containment system and controlled in a manner that prevents environmental harm and	Storages will comply with AS1940	Procurement procedures to include requirement for flammable and combustible liquid storage to meet as a minimum AS1940. Biennial inspection as per AS1940 and to ensure

EA Condition		Control Strategy	Action Program
	maintained in accordance with the current edition of *AS 1940 – Storage and Handling of Flammable and Combustible Liquids*		compliance with condition F8 will be carried out by a licenced inspector.
F9	All chemicals must be contained within an on-site containment system and controlled in a manner that prevents environmental harm and maintained in accordance with the current version of the relevant Australian Standard	Storages will comply with relevant standards	Procurement procedures to include requirement for any chemical storage to meet the requirements of the applicable Australian Standard/s. Biennial inspection as per AS1940 and to ensure compliance with condition F8 will be carried out by a licenced inspector.
F10	All explosives, corrosive substances, toxic substances, gases and dangerous goods must be stored and handled in accordance with the relevant Australian Standard	Storages and handling requirements will comply with relevant standards	Procurement procedures to include requirement for any explosive storage to meet the requirements of the applicable Australian Standard/s. Explosive handling requirements shall be manage through the safety management system
F11	All chemicals and flammable or combustible liquids stored on site that have the potential to cause environmental harm must be stored in, or serviced by, an effective containment system that is impervious to the materials stored and managed to prevent the release of liquids to waters or land. Where no relevant Australian Standard is available, the following must be applied: a) storage tanks must be bunded so that the capacity and construction of the bund is sufficient to contain at least 110% of a single storage tank or 100% of the largest storage tank plus 10% of the second largest storage tank in multiple storage areas; and **b)** drum storages must be bunded so that the capacity and construction of the bund is sufficient to contain at least 25% of the maximum design storage volume within the bund	Containment systems to be designed and constructed in accordance with condition	Containment systems to be designed and constructed in accordance with condition F11
Spills **F12**	Any spillage or release of Flammable and combustible liquids; or, Chemicals, must be controlled in a manner that prevents environmental harm.	Spill response kits and training to be provided	Spill kits are to be placed in strategic locations and be made mandatory on service vehicles. Spill kit inventories shall be taken monthly to ensure they are properly equipped. Spill response training shall be included in the

EA Condition	Control Strategy	Action Program
		site induction and re-enforced though toolbox training sessions.
F13 An appropriate spill kit, personal protective equipment and relevant operator instructions/emergency procedure guides for the management of wastes, chemicals and flammable and combustible liquids associated with the activity must be kept at the site.	Spill response kits and training to be provided	Spill response training shall be included in the site induction and re-enforced though toolbox training sessions. Waste Management Plan and Emergency Preparedness and response plan developed to include spill response for site.
F14 Anyone operating with wastes, chemicals or flammable and combustible liquids under this approval must be trained in the use of the spill kit.	Spill response kits and training to be provided	Spill response training shall be included in the site induction and re-enforced though toolbox training sessions.
Infrastructure **F15** All infrastructure, constructed by, or for, the environmental authority holder during the licensed activities including water storage structures, must be removed from the site prior to surrender, except where agreed in writing by the post mining land owner / holder. *Note: This is not applicable where the landowner / holder is also the environmental authority holder.*	Rehabilitation planning to include removal of infrastructure	Rehabilitation planning to include removal of infrastructure
F17 All areas significantly disturbed by mining activities must be rehabilitated to a stable landform with a self-sustaining vegetation cover in accordance with: a) Table F2 (a): Final Land Use and Rehabilitation Approval Schedule – Baralaba Central; and, b) Table F2 (b): Final Land Use and Rehabilitation Approval Schedule – Baralaba North; and, c) Table F3 (a): Landform Design criteria – Baralaba Central; and, **d)** Table F3 (b): Landform Design criteria – Baralaba North.	Rehabilitation Management Plan to be developed by 30 June 2013.	Rehabilitation Management Plan to be developed by 30 June 2013. Plan will make provision for all of these requirements. General Manager Operations is to ensure that resources are available to meet the objectives of the plan.
F18 Progressive rehabilitation must commence within twelve (12) months of areas become available within the operational land, and must be in accordance with the current Plan of Operations.	Rehabilitation Management Plan to be developed by 30 June 2013.	Rehabilitation Management Plan to be developed by 30 June 2013. Plan will make provision for all of these requirements. General Manager Operations is to ensure that resources are available to meet the objectives of the plan.
Post mine landuse plan **F19** The holder must develop and submit to the administering authority a Post Mine Land Use Plan (PMLUP) with the	Post Mine Land Use Plan is attached as Appendix E.	Post Mine Land Use Plan is attached as Appendix E

EA Condition	Control Strategy	Action Program
initial Plan of Operations and update and resubmit the plan with each subsequent Plan of Operations. The PMLUP must describe how the rehabilitation objectives in Table F1: Rehabilitation Requirements will be achieved: a) schematic representation of final land form inclusive of drainage features; b) drainage design; c) erosion controls proposed on reformed land; d) geotechnical, geochemical and hydrological studies; e) chemical, physical and biological properties of soil and water; f) proposed revegetation methods inclusive of plant species selection, re-profiling, respreading soil, soil ameliorants/amendments, surface preparation and method of propagation; and **g)** a rehabilitation monitoring program		
Rehabilitation Management Plan **F20** Complete a rehabilitation management plan for disturbed areas and submit a report to the administering authority by 30 June 2013 proposing acceptance criteria prior to the commencement of mining activities. The rehabilitation management plan must, at a minimum: a) develop design criteria for rehabilitation of each domain; b) identify success factors and completion criteria for each domain; c) identify three (3) reference sites to be used to develop rehabilitation success criteria; d) describe the monitoring of reference sites inclusive of statistical design; e) detail rehabilitation methods applied to each domain; f) contain landform design criteria including end of mine design; g) detail how landform design will be consistent with the surrounding topography; h) provide schematic representation of final landform inclusive of: i) drainage design and features;	Rehabilitation Management Plan to be developed by 30 June 2013.	Rehabilitation Management Plan to be developed by 30 June 2013.

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j) slope designs; k) cover design; l) erosion controls proposed on reformed land; m) explain planned native vegetation rehabilitation areas and corridors; n) describe rehabilitation monitoring and maintenance requirements to be applied to all areas of disturbance; o) develop a contingency plan for rehabilitation maintenance or redesign; p) describe end of mine landform design plan and post mining land uses across the mine.		
Rehabilitation Monitoring Program **F21** Once rehabilitation has commenced, the holder of the environmental authority must conduct rehabilitation monitoring as proposed in a Rehabilitation Monitoring Program on a yearly basis, which must include sufficient spatial and temporal replication to enable statistically valid conclusions as established under the rehabilitation program.	Rehabilitation Monitoring Plan is attached as Appendix C	Rehabilitation Monitoring Plan is attached as Appendix C.
F22 The Rehabilitation Monitoring Program must be developed and implemented by a person possessing appropriate qualifications and experience in the field of rehabilitation management, nominated by the environmental authority holder.	The Rehabilitation Monitoring Plan was developed by a person with appropriate skill in rehabilitation including monitoring	The Rehabilitation Monitoring Plan was developed by a person with appropriate skill in rehabilitation including monitoring
F23 Verification of rehabilitation success, determined by the rehabilitation success criteria developed as per condition F20 is to be carried out as follows: a) the minimum sampling intensity must be specified for the monitoring of progressive rehabilitation; b) justification of the suitability of the minimum sampling intensity must be provided; c) monitoring must include sufficient replication to enable statistical analysis of results at an acceptable power; and **d)** undertaken at twelve monthly intervals.	Success verification to include these requirements	Rehabilitation monitoring procedures in Rehabilitation Monitoring Plan to include these requirements
F24 The Rehabilitation Monitoring Program must be included in the Plan of Operations and updated with each	Rehabilitation monitoring plan is provided in Appendix C	Rehabilitation Monitoring Plan will provide an updated monitoring plan – this will be provided

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subsequent Plan of Operations, describing: a) how the rehabilitation objectives as per the Rehabilitation Management Plan will be achieved; and b) verification of rehabilitation success as per condition F23.		to the Administering Authority
Post Closure Management Plan **F25** A Post Closure Management Plan for the site must be prepared at least 18 months prior to the final coal processing on site and implemented for a nominal period of: a) At least thirty (30) years following final coal processing on site; or **b)** A shorter period if the site is proven to be geotechnically and geochemically stable and it can be demonstrated to the satisfaction of the administering authority that no release of contaminants from the site will result in environmental harm, and revegetation has established and is self-sustaining.	Not relevant during the term of this plan	Not relevant during the term of this plan
F26 The Post Closure Management Plan must include the following elements: a) Operation and maintenance of: i. Wastewater collection and reticulation systems. ii. Wastewater treatment systems. iii. The groundwater monitoring network. iv. Final cover systems. v. Vegetative cover. b) Monitoring of: i. Surface water quality. ii. Groundwater quality. iii. Seepage rates. iv. Erosion rates. v. The integrity and effectiveness of final cover systems. **vi.** The health and resilience of native vegetation cover.	Not relevant during the term of this plan	Not relevant during the term of this plan
Voids	Rehabilitation Management Plan shall be	Current Final Void Plan will be updated when

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F27	Residual voids must not cause any serious environmental harm to land, surface waters or any recognised groundwater aquifer, other than the environmental harm constituted by the existence of the residual void itself and subject to any other condition within this environmental authority..	based on all voids being closed in a way that will prevent serious environmental harm.	mine plans change. Financial assurance calculations shall be based on voids being closed in a way that will prevent serious environmental harm.
F28	Complete an investigation into backfilling of final voids and submit a report to the administering authority by 30 June 2014 for review and comment. The report must propose acceptance criteria to meet the outcomes identified in condition F16. On acceptance of the criteria proposed in the Void Management Plan, the holder must apply to amend the environmental authority so that the criteria are to be specified in the environmental authority. The investigation must at a minimum include the following: a) Design criteria developed for the complete backfilling and rehabilitation of the final void including progressive backfilling of the void during operations. b) A study of the final landform capability to support native flora and fauna. **c)** Proposal/s for end of mine void rehabilitation success criteria and final void backfilling volumes.	Rehabilitation Management Plan shall be based on all voids being backfilled.	Baralaba Central Final Void Plan will be updated as per condition F28 and submitted to administering authority. Baralaba North Final Void Plan will be developed and submitted by 30 June 2014. The Rehabilitation Management Plan shall be developed to meet the requirements of this condition.

4.7 Schedule G – Regulated Structures

EA Condition	Control Strategy	Action Program
Assessment of hazard category **G1** The hazard category of any structure must be assessed by a suitably qualified and experienced person: a) in accordance with the Man ual for Assessing Hazard Categories and Hydraulic Performance of Dams (EM365); and b) in any of the following situations: i. prior to the design and construction of the structure; or ii. prior to any change in its purpose or the nature of its stored contents; and **iii.** in accordance with the Manual for assessing Hazard Categories and Hydraulic Performance of Dams.	RPEQ to be engaged to complete hazard assessment	RPEQ to be engaged to complete hazard assessment of all dams triggered by the Manual for Assessing Hazard Categories and Hydraulic Performance of Dams EM365General Manager Operations to ensure resources are available for assessment.
G2 A hazard assessment report and certification must be prepared for any structure assessed and the report may include a hazard assessment for more than one structure.	RPEQ to be engaged to complete hazard assessment	RPEQ to be engaged to complete hazard assessment. General Manager Operations to ensure resources are available for assessment.
G3 The holder must, on receipt of a hazard assessment report and certification, provide to the administering authority one paper copy and one electronic copy of the hazard assessment report and certification.	Copies will be provided as required	Copies will be provided as required
G4 Certification must be provided by the suitably qualified and experienced person who undertook the assessment, in the form set out in the Manual for Assessing Hazard Categories and Hydraulic Performance of Dams (EM635).	A RPEQ with appropriate competency will be used to complete the assessment	A RPEQ with appropriate competency will be used to complete the assessment and the certification provided to the administering authority.
G5 The holder must take reasonable and practical measures so that each dam associated with the mining activity is designed, constructed, operated and maintained in accordance with accepted engineering standards and is fit for the purpose	Qualified engineering staff shall be employed on the mine to ensure appropriate operation.	Qualified engineering staff shall be employed on the mine to ensure appropriate operation. The RPEQ report shall provide guidance on operation and maintenance of the structures.

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for which it is intended.		
Design and construction of a regulated structure **G6** All regulated structures, excluding structures listed in condition G37, must be designed by, and constructed under the supervision of, a suitably qualified and experienced person in accordance with the requirements of the Manual for Assessing Hazard Categories and Hydraulic Performance of Dams (EM635).	A RPEQ with appropriate competency will supervise design and construction	A RPEQ with appropriate competency will supervise design and construction
G7 Construction of a regulated structure, excluding structures listed in condition G37, is prohibited unless the holder has: a) submitted a hazard category assessment report and certification to the administering authority; b) commissioned a suitably qualified and experienced person to prepare a design plan for the structure; and **c)** received the certification from a suitably qualified and experienced person for the design and design plan and the associated operating procedures in compliance with conditions G6 to G13 of this authority.	A RPEQ with appropriate competency will supervise design and construction	A RPEQ with appropriate competency will supervise design and construction. No construction of regulated structures will occur with the requirements of condition G7 being met.
G8 Certification must be provided by the suitably qualified and experienced person who oversees the preparation of the design plan, in the form set out in the Manual for Assessing Hazard Categories and Hydraulic Performance of Dams (EM635).	Certification will be provided	Certification will be provided
G9 Regulated structures, excluding structures listed in condition G37, must: a) be designed and constructed in accordance with and conform to the requirements of the Manual for Assessing Hazard Categories and Hydraulic Performance of Dams; b) be designed and constructed with due consideration given to ensuring that the design integrity would not be compromised	A RPEQ with appropriate competency will supervise design and construction	A RPEQ with appropriate competency will supervise design and construction

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	on account of: i. floodwaters from entering the regulated dam from any watercourse or drainage line; and **ii.** wall failure due to erosion by floodwaters arising from any watercourse or drainage line.		
G10	The design plan for a regulated structure, excluding structures listed in condition G37, must include, but is not limited to: a) certification that the design plan: i) is in accordance with the Manual for Assessing Hazard Categories and Hydraulic Performance of Dams, including subsidiary certifications if necessary; and ii) addresses the requirements in condition G10(b) to (h) b) A design report which provides: i) a description of all the documents which constitute the design plan; ii) a statement of: c) the applicable standards including engineering criteria, industry guidelines, relevant legislation and regulatory documents, relied upon in preparing the design plan; and d) all relevant facts and data used in preparing the design plan, including any efforts made to obtain necessary facts and data, and any limitations or assumptions to facts and data used in preparing the design plan; e) the hazard category of the regulated structure; and f) setting out the reasoning of the suitably qualified and experienced person who has certified the design plan, as to how the design plan provides the necessary required	Design plan will include the required elements	A RPEQ with appropriate competency will supervise design and development of the design plan. The design plan for all regulated structures excluding those listed in condition G37 will contain the requirements of condition G10.

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performance; i) documentation of hydrological analyses and estimates required to determine all elements of the design including volumes and flow capacities; ii) detailed criteria for the design, operation, maintenance and decommissioning of the regulated structure, including any assumptions; iii) design, specification and operational rules for any related structures and systems used to prevent failure scenarios; g) Drawings showing the lines and dimensions, and locations of built structures and land forms associated with the regulated structure; h) Consideration of the interaction of the pit design with the levee or regulated dam design; i) An operational plan that includes: i) normal operating procedures and rules (including clear documentation and definition of process inputs in the DSA allowance); ii) contingency and emergency action plans including operating procedures designed to avoid and/or minimise environmental impacts including threats to human life resulting from any overtopping or loss of structural integrity of the regulated structure; j) A plan for the decommissioning and rehabilitation of the regulated structure at the end of its operational life; k) Details of reports on investigations and studies done in support of the design plan; **l)** h) Any other matter required by the suitably		

EA Condition		Control Strategy	Action Program
	qualified and experienced person.		
G11	Certification by the suitably qualified and experienced person who supervises the construction must be submitted to the administering authority on the completion of construction of the regulated structure, and state that: a) the 'as constructed' drawings and specifications meet the original intent of the design plan for that regulated structure; and, **b)** b) construction of the regulated structure is in accordance with the design plan.	Certification will be provided	A RPEQ with appropriate competency will supervise design and construction. The RPEQ's certification will be submitted to the administering authority as per condition G11.
G12	Where a regulated dam is to be managed as part of an integrated containment system and the Design Storage Allowance (DSA) volume is to be shared across the integrated containment system, the design and operating rules for the system as a whole must be documented in a system design plan that is certified by a suitably qualified and experienced person.	A RPEQ with appropriate competency will develop the operating rules as a component of the design process	A RPEQ with appropriate competency will develop the operating rules as a component of the design process
G13	The system design plan must contain: a) the design plans, and b) the 'as constructed' plans, and c) the operational rules for each individual regulated dam that forms part of the integrated system, and d) the standards of serviceability and accessibility of water transfer equipment or structures, and **e)** the operational rules for the system as a whole.	The plan will contain the required elements	A RPEQ will supervise drafting of the plan and will ensure the requirements are included
Operation of a regulated structure **G14**	Operation of a regulated structure is prohibited unless: a) the holder has submitted to the administering authority: i. one paper copy and one electronic copy of the design plan and certification of the	Structures shall not be operated until advice is received from RPEQ advising that it is appropriate to do so.	RPEQ shall be engaged to audit site against requirements prior to commencement of use.

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'design plan' in accordance with condition G10, and ii. a set of 'as constructed' drawings and specifications, and iii. certification of those 'as constructed drawings and specifications' in accordance with condition G11, and iv. where the regulated structure is to be managed as part of an integrated containment system for the purpose of sharing the DSA volume across the system, a copy of the certified system design plan. b) the requirements of this authority relating to the construction of the regulated structure have been met; and **c)** Relevant details for the dam have been included in Table G1: Location of regulated structures and Table G2: Basic Details of Regulated Dams of this authority.		
G15 Each regulated structure must be maintained and operated in a manner that is consistent with the current design plan, the current operational plan, and the associated certified 'as constructed' drawings for the duration of its operational life until decommissioned and rehabilitated.	Structures will be operated in accordance with design requirements	RPEQ to provide operations manual for structures RPEQ to audit on compliance with operations manual on annual basis.
G16 The holder must take reasonable and practicable control measures to prevent the causing of harm to persons, livestock or wildlife through the construction and operation of a regulated structure. Reasonable and practicable control measures may include, but are not limited to: a) the secure use of fencing, bunding or screening; and **b)** escape arrangements for trapped livestock and fauna.	All reasonable and practicable control measures will be taken to prevent causing of harm to persons, livestock or wildlife during construction and operations of regulated structures.	All reasonable and practicable control measures will be taken to prevent causing of harm to persons, livestock or wildlife during construction and operations of regulated structures. This will include fencing where appropriate or escape arrangements and regular inspections.
Mandatory reporting level **G17** The Mandatory Reporting Level (the MRL) must	Gauge board will be installed	Gauge board will be installed and maintained.

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	be marked on a regulated dam in such a way that during routine inspections of that dam, it is clearly observable.		
G18	The holder must, as soon as practical, and within forty-eight (48) hours of becoming aware, notify the administering authority when the level of the contents of a regulated dam reaches the MRL.	Administering authority will be notified	Monitoring of regulated structure capacities will be included in routine monitoring program. General Manager Operations shall ensure Administering Authority are notified as required.
G19	The holder must, immediately on becoming aware that the MRL has been reached, act to prevent the occurrence of any unauthorised discharge from the regulated dam.	Competent persons to be employed on site to determine appropriate action.	Competent persons to be employed on site to determine appropriate action. A person or Persons shall be employed on site with clear delegated responsibility for management of structures.
Annual inspection report **G20**	Each regulated structure must be inspected each calendar year by a suitably qualified and experienced person.	An RPEQ shall complete an annual audit	An RPEQ shall complete an annual audit
G21	At each annual inspection, the condition and adequacy of all components of the regulated structure must be assessed: a) against the most recent hazard assessment report and design plan (or system design plan); b) against recommendations contained in previous annual inspections reports; c) against recognised dam safety deficiency indicators; d) for changes in circumstances potentially leading to a change in hazard category; e) for conformance with the conditions of this authority; f) for conformance with the 'as constructed' drawings; g) for the adequacy of the available storage in each regulated dam, based on an actual observation or observations taken after 31	An RPEQ shall complete an annual audit and complete a report.	An RPEQ shall complete an annual audit and complete a report as per condition G21.

EA Condition	Control Strategy	Action Program
May each year but prior to 1 November of that year, of accumulated sediment, state of the containment barrier and the level of liquids in the dam (or network of linked containment systems); **h)** for evidence of conformance with the current operational plan.		
G22 A suitably qualified and experienced person must prepare an annual inspection report containing details of the assessment and including recommended actions to ensure the integrity of the regulated structure.	An RPEQ shall complete an annual audit and complete a report.	An RPEQ shall complete an annual audit and complete a report as per condition G22.
G23 The suitably qualified and experienced person who prepared the annual inspection report must certify the report in accordance with the Manual for Assessing Hazard Categories and Hydraulic Performance of Dams (EM635).	An RPEQ shall complete an annual audit and complete a report.	An RPEQ shall complete an annual audit and complete a report.
G24 The holder must: a) upon receipt of the annual inspection report, consider the report and its recommendations and take action to ensure that the regulated structure will safely perform its intended function; and **b)** within twenty (20) business days of receipt of the annual inspection report, notify the administering authority in writing, of the recommendations of the inspection report and the actions being taken to ensure the integrity of each regulated structure.	General Manager Operations or delegate to review RPEQ report	General Manager Operations or delegate shall review RPEQ report. General Manager Operations to ensure resources are made available to rectify any defects noted in the RPEQ report that present an unacceptable risk.
G25 A copy of the annual inspection report must be provided to the administering authority upon request and within ten (10) business days.	Report to be provided to administering authority	Report to be provided to administering authority
Design storage allowance **G26** On 1 November of each year, storage capacity must be available in each regulated dam (or network of linked containment systems with a shared DSA volume), to meet the Design Storage Allowance (DSA) volume for the dam (or network	Gauge boards will be installed with Max Nov 1 level clearly indicated. Water levels to be included in routine monitoring.	Gauge boards will be installed with Max Nov 1 level clearly indicated. Water levels to be included in routine monitoring as defined in the Environmental Monitoring Program

EA Condition	Control Strategy	Action Program
of linked containment systems).		Competent persons to be employed on site to determine appropriate action if insufficient capacity is likely. A person or Persons shall be employed on site with clear delegated responsibility for management of structures.
G27 The holder must, as soon as possible and within forty-eight (48) hours of becoming aware that the regulated dam (or network of linked containment systems) will not have the available storage to meet the DSA volume on 1 November of any year, notify the administering authority.	Administering authority will be notified.	Administering authority will be notified.
G28 The holder must, immediately on becoming aware that a regulated dam (or network of linked containment systems) will not have the available storage to meet the DSA volume on 1 November of any year, act to prevent the occurrence of any unauthorised discharge from the regulated dam or linked containment systems.	Gauge boards will be installed with Max Nov 1 level clearly indicated. Water levels to be included in routine monitoring.	Gauge boards will be installed with Max Nov 1 level clearly indicated. Water levels to be included in routine monitoring as defined in the Environmental Monitoring Program. Competent persons to be employed on site to determine appropriate action if insufficient capacity is likely. A person or Persons shall be employed on site with clear delegated responsibility for management of structures.
Performance review **G29** The holder must assess the performance of each regulated dam or linked containment system over the preceding November to May period based on actual observations of the available storage in each regulated dam or linked containment system taken prior to 1 July of each year.	RPEQ to address this in annual report	RPEQ to address this in annual report
G30 The holder must take action to modify its water management or linked containment system so as to ensure that the regulated dam or linked containment system will perform in accordance with the requirements of this authority, for the	RPEQ to make recommendation in annual report	RPEQ to make recommendation in annual report. Competent persons to be employed on site to determine appropriate action based on recommendations.

EA Condition	Control Strategy	Action Program
subsequent November to May period. *Note: Action may include seeking the necessary approvals for physical modification of a regulated dam.*		A person or Persons shall be employed on site with clear delegated responsibility for management of structures.
Transfer arrangements **G31** The holder must provide a copy of any reports, documentation and certifications prepared under this authority, including but not limited to any Register of Regulated Structures, hazard assessment, design plan and other supporting documentation, to a new holder and the administering authority on transfer of this authority.	Reports shall be provided in the event of EA transfer.	Reports shall be provided in the event of EA transfer.
Decommissioning and rehabilitation **G32** Prior to the cessation of the environmentally relevant activity, each regulated structure must be decommissioned such that: 1) ongoing environmental harm is minimised by the regulated structure: i) becoming a safe site for humans and animals at the completion of rehabilitation; or ii) becoming a stable landform, that no longer contains flowable substances and minimises erosion impacts; or iii) not allowing for acid mine drainage; or iv) being approved or authorised under relevant legislation for a beneficial use; or v) being a void authorised by the administering authority to remain after decommissioning; and **2)** the regulated structure is compliant with all other relevant rehabilitation requirements of this authority.	No decommissioning of structures planned during term of the plan.	No decommissioning of structures planned during term of the plan.
Regulated structures location and performance **G33** Each regulated structure named in Column 1,	Locations to be verified by survey.	Locations to be verified by survey.

EA Condition		Control Strategy	Action Program
	Table G1: Location of regulated structures must be wholly located within the control points noted in Columns 2 and 3, Table G1: Location of regulated structures, below, for that structure.		
G34	Each regulated dam named in Column 1 of Table G2: Basic Details of Regulated Dams, must be consistent with the details noted in Columns 2 through to and including 7 of Table G2: Basic Details of Regulated Dams, below, for that dam.	Details to be verified through as-built survey.	Details to be verified through as-built survey.
G35	Each regulated dam named in Column 1 of Table G1: Location of regulated structures, must meet the hydraulic performance criteria noted in Columns 2 through to and including 4 of Table G3: Hydraulic Performance of Regulated Dams, below, for that dam.	Structures have been designed by RPEQ considering the relevant criteria.	Structures have been designed by RPEQ considering the relevant criteria
G36	Each regulated levee named in Column 1 of Table G1: Location of regulated structures, must be consistent with the details noted in columns 2 through to and including 6 of Table G4: Basic Details of Regulated Levees, below, for that levee.	Details to be verified through as-built survey.	Details to be verified through as-built survey.

4.8 Schedule H – Flood Protection

EA Condition	Control Strategy	Action Program
Flood Protection Levee **H1** The design plan in accordance with condition G10 must include: a) Drawings describing the location and dimensions of the levees and the mining excavations in the vicinity of the levees, including confirmation the levees meet the specified design requirements according to hazard category assessment undertaken as part of condition G1 ; b) Documented procedures for surveillance of the levee and any adjacent mining excavation slopes, to detect and report to the administering authority any ground movement that compromises or may potentially compromise the integrity of the levee; and **c)** Consideration of the results of flood modelling of alternative levee locations and the justification for the chosen location in terms of best practice environmental management.	RPEQ to ensure design plan meets requirements	RPEQ to ensure design plan meets requirements
H2 The flood protection levee authorised under this environmental authority must be constructed and maintained such that: a) It does not result in increased erosion of the bank or bed of the Dawson River Anabranch; b) It does not significantly impact upon riparian or existing remnant vegetation; and **c)** The levee itself will not erode in any flood events up to AEP 1 in 1,000 event.	RPEQ shall design to the required standards. Annual review by RPEQ to ensure performance is as required.	RPEQ to ensure design plan meets requirements
Flood Protection Levee - Surveillance and Remedial Works **H3** The condition of constructed levees, including the surface area between the non-river side of the toe	To be included in the annual RPEQ inspection report for regulated structures.	To be included in the annual RPEQ inspection report for regulated structures.

EA Condition		Control Strategy	Action Program
	of the levee and the end wall crest of the open-cut mining pit, must be monitored for surface cracks and must at a minimum be inspected and assessed, by a suitably qualified and experienced person, at least once per year between the months of May and October inclusive (i.e. during the 'dry' season and before the onset of the 'wet' season), and at any other time if alarming, unusual or otherwise unsatisfactory conditions are observed.		
H4	For each flood protection levee annual inspection, two copies of the surveillance report, including any recommendations for remedial works, must be provided to the administering authority within twenty (20) business days of the date of inspection.	Reports will be provided as required.	Reports will be provided as required.
H5	Remedial works identified as being required for the flood protection levee during the inspections and assessments conducted under condition H3, must be notified in writing to the administering authority within five (5) business days of the completion of the inspections, and commenced within twenty- eight (28) days unless otherwise agreed in writing by the administering authority.	RPEQ inspection report shall include defects and recommended remedial work. Notifications will be made as required.	RPEQ inspection report shall include defects and recommended remedial work. Notifications will be made as required. Competent persons to be employed on site to determine appropriate action based on recommendations. A person or Persons shall be employed on site with clear delegated responsibility for management of structures.
H6	The annual return for this environmental authority shall be accompanied by a report, by a suitably qualified and experience person, that certifies that the documented procedure for surveillance of the levee has been applied and that there has been no erosion, cracking or vertical or horizontal deformation that has impacted on the integrity of the levee, and that the levee has been maintained in accordance with the certified design plan.	Requirements to be included in the annual RPEQ assessment report.	Requirements to be included in the annual RPEQ assessment report and supplied with the annual return

APPENDIX

PLAN OF OPERATIONS
Wonbindi North

Appendix A – Topsoil Inventory
Appendix B – Erosion and Sediment Control Plan
Appendix C – Rehabilitation Monitoring Plan
Appendix D – Emergency and Contingency Response Plan
Appendix E – Post Mine Land Use Plan
Appendix F – Environmental Audit Statement

APPENDIX A

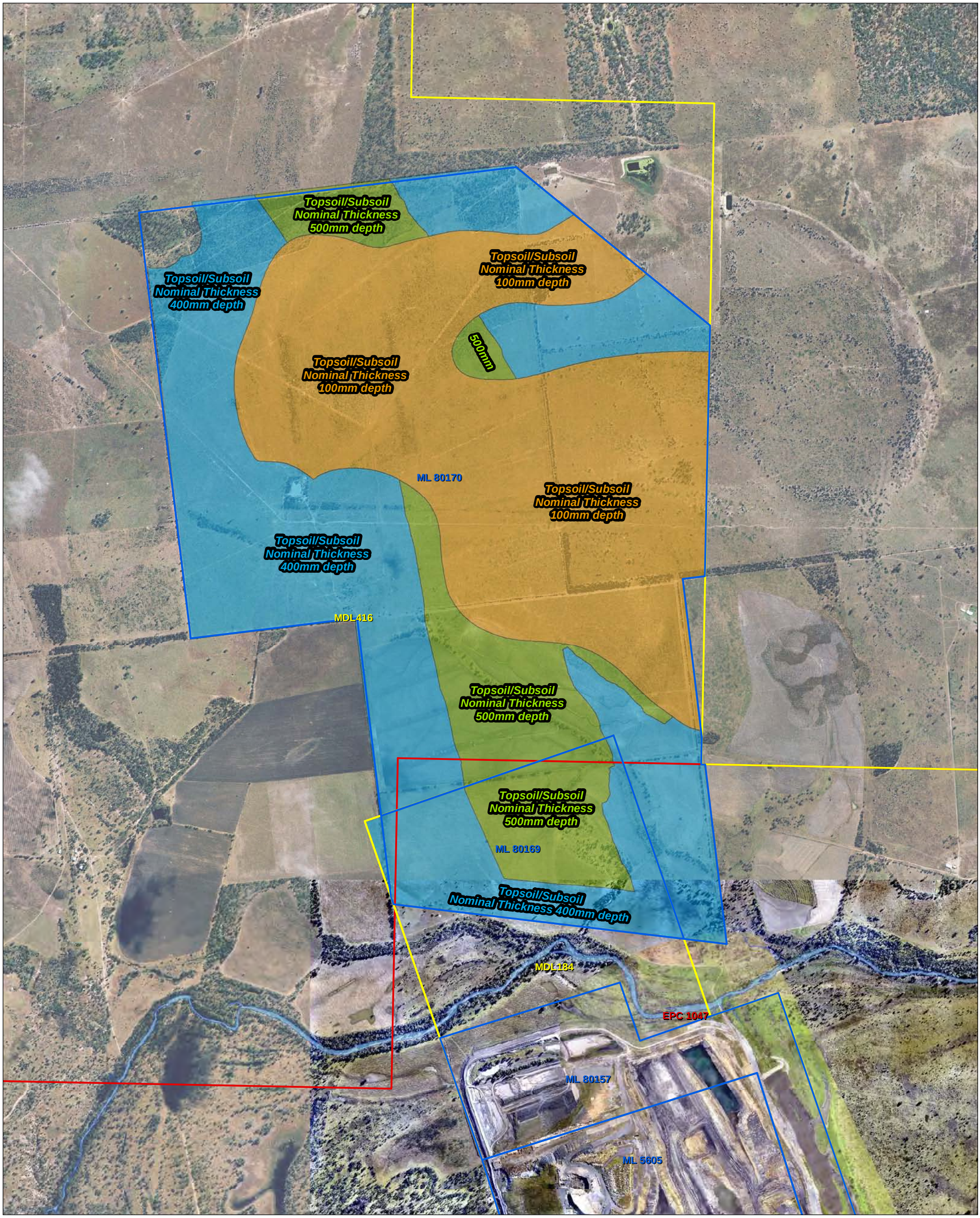
TOPSOIL INVENTORY

Cockatoo Coal Limited

TOPSOIL INVENTORY

The following is a summary of the amount proposed to be stripped and used in the plan period (November 2013 – 31st December 2015). The following figures show the proposed stripping regime for Baralaba North.

Topsoil Inventory Wonbindi Coal - (ML80170)		
Topsoil (m3)	**Current (November 2013)**	**Proposed (August 2014)**
Stockpiled	0	1144333
Used in Rehabiliation	0	0
Planned for Stripping	1144333	
Available for Stripping	-	-
Required for Rehabilitation	-	-
Substitute Required	-	-



PROJECT

BARALABA

DISCLAIMER:
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N

0 200 400 600 800

Meters

TITLE

Topsoil/Subsoil Nominal Thickness

REV	DESCRIPTION	DATE
0	Original map output	26/09/2013
1	modifications	Date
2	modifications	Date

SCALE **1:20,000**

SIZE A3

DATUM

PROJECTION

CURRENT ISSUE SIGNATURES

DRAWN	PCH
CHECKED	MAH
APPROVED	CE

Legend

ML.....

MLA.....

MDL.....

EPC.....

Cockatoo Coal Limited

STATUS **CONFIDENTIAL**

PROJECT NO BBN

DRAWING NO BBN_012_130912_19_00

Path: N:\Baralaba\Baralaba_North\PROJECTS\1309\BBN_012_130904_PlanOfOps_Plans\BBN_012_130912_19_00_PlanOfOps_TopSoilStripDepth_A4P.mxd

APPENDIX B

EROSION and SEDIMENT CONTROL PLAN

Cockatoo Coal Limited

Erosion and sediment control program

Baralaba Coal Mine | ML 5065, ML 5580, ML 5581, ML 5582, ML 5590, ML 80157, ML 80169 and ML 80170

Prepared for Cockatoo Coal Limited | 15 April 2013

Level 2, 66 Hunter Street Sydney NSW Australia 2000 **Phone** +61 2 9300 3333 **Fax** +61 2 9221 6333

Erosion and sediment control program

Final

Report B13018RPA | Prepared for Cockatoo Coal Limited | 15 April 2013

Prepared by	**Tim Rohde**	Approved by	**Rob Janssen**
Position	Practice leader, Rehabilitation, closure and soils	Position	Manager Queensland
Signature		Signature	
Date	11 September 2013	Date	11 September 2013

Document Control

Version	Date	Prepared by	Reviewed by
Draft A	19 March 13	T. Rohde	R. Janssen
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Final V1	11 September 13	C. Ellice	R. Janssen

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Appendices

Tables

1 Introduction

1.1 General

The Baralaba coal mine includes Baralaba central, Baralaba north and Wonbindi north located on mining lease (ML) 5065, ML 5580, ML 5581, ML 5582, ML 5590, ML 80157, ML 80170 and ML 80169.

Activities at the Baralaba coal mine include:

- continued open cut mining operations on ML 5605 and ML 80157 until the end of mine life (March 2014);
- commence an open cut mine on ML 80169; and
- commence an open cut mine on ML 80170.

Activities on the land subject to the mineral resource authority are subject to conditions of approval issued under environmental authority (EA) permit numbers EPML00223213 and EPML00617113.

1.2 Scope and purpose

This erosion and sediment control program relates to erosion and sediment control activities during different stages of the mining activity (ie construction, operation and closure) at the Baralaba coal mine.

The purpose of the erosion and sediment control plan is to assist Baralaba coal mine:

- minimise erosion and the release of sediment to receiving waters;
- minimise contamination of stormwater; and
- achieve compliance with EA permits.

The erosion and sediment control program does this by providing:

- procedural steps that must be implemented during the different stages of the mining activity;
- incident response procedures; and
- administrative procedures including:
    - monitoring;
    - reporting;
    - review; and
    - role responsibilities.

2 Structures and design

2.1 Relevant guidelines

This plan has been developed with due regard for the following guidelines:

- *Best Practice Erosion and Sediment Control*, 2008, International Erosion Control Association;
- *EPA Best Practice Urban Stormwater Management – Erosion and Sediment Control*, 2008, Queensland Government;
- *Urban Stormwater Quality Plan Guidelines*, 2010, Queensland Government; and
- *Soil Erosion and Sediment Control Engineering Guidelines for Queensland Construction Sites*, 1996, Institution of Engineers Australia.

2.2 Control structures

A description of erosion and sediment control structures applicable mining activities is provided in Table 2.1. This list is not meant to be exhaustive and tailored solutions may need to be developed to achieve erosion and sediment control objectives.

Table 2.1 Erosion and sediment control structures

Control structures	Description
Erosion and sediment control during clearing	Use erosion control measures such as: • restrict clearing to areas essential for the works; • windrow vegetation debris along the contour; • minimise length of time soil is exposed; • divert clean water run-off away from disturbed areas; and • direct run off from cleared areas to sediment dam(s).
Erosion and sediment control for exposed subsoil	Minimise length of time subsoil is exposed and direct run off from exposed areas to sediment dam(s). Use erosion control measures such as: • bonded fibre matrix; • composite blankets; • erosion control blankets; • gravelling; • mulching; • revegetation; • soil binders and surface stabilisers; • surface roughening; • sediment fences; • check dams; • grass filter traps; • rock filter traps; • compost/mulch berms;

Table 2.1 Erosion and sediment control structures

Control structures	Description
	• drop inlet protection; and • gypsum application on exposed dispersive soils.
Contour cultivation	All cultivation used to prepare the rehabilitation area should be on the contour. On steep slopes, this approach requires the land to be terraced or benched.
Contour deep ripping or furrowing	Contour deep ripping or furrowing should be used to relieve soil compaction and improve water infiltration on exposed dispersive subsoils and the dispersive topsoil stockpile. This measure should be undertaken in conjunction with gypsum application.
Contour or levee banks	Earth mounds or similar structures are the most common physical control measures. The size of these structures is determined by the size of their catchment area. These structures should not be constructed out of dispersive or highly erodible materials.
Absorption and pondage banks	Absorption or pondage banks are similar in design to contour banks but laid out such that they pond water - thereby causing greater infiltration and less run-off. They are applicable only to low slopes (less than 1%) and should be avoided in materials which becomes dispersive when saturated. They should not be used on spoil dumps.
Diversion banks	Diversion banks are commonly used to reduce or eliminate the catchment to the heads of gullies. They need to be located such that they spill water to stable areas - preferably away from the work site.
Spillways/grassed waterways	Spillways/grassed waterways are used to confine run-off from any or all of the above structures into a stable vegetated flow path. Because these structures effectively take all excess runoff, they should be installed first and well vegetated prior to the construction of diversion structures. Supplementary irrigation water may be required to sustain the vegetation.
Lined waterways	Additional treatment and special precautions may be required to protect waterways from erosion. The on-site suitability of the following available treatment measures should be assessed: • jute mesh may be used to line channels; • rip-rap or stone pitching involves the use of stone; • concrete filled bags with an underlying filter blanket of sand and gravel; and • gabions and mattresses (rock filled wire baskets).
Sediment ponds	Sediment ponds are an interim measure to confine the movement of soil. They act as settling areas to ensure that eroded soil does not pass beyond that area. Ideally their role in erosion control should diminish over time as the project is rehabilitated or stabilised by other measures.

2.3 Design criteria

Erosion and sediment control structures should comply with the design criteria outlined in Table 2.2.

Table 2.2 Design criteria

Sediment control structure	Purpose	Design capacity
Upslope diversion drains	Reduce runoff from undisturbed areas onto disturbed areas	Peak flow calculated for 1 in 10 year critical duration rainfall event
Downslope collection drains	Intercept and convey disturbed area runoff water to sediment dams/sumps	Peak flow calculated for 1 in 10 year critical duration rainfall event
Sediment dams	Containment of sediment laden runoff from disturbed areas with more than 150 m^3/yr estimated soil loss	Settling Zone: Capacity to store the runoff produced from the 80th percentile, 5-day rainfall event Sediment Zone: Two months calculated soil loss estimated using the

Table 2.2 Design criteria

Sediment control structure	Purpose	Design capacity
		revised universal soil loss equation
Sediment fences and/or straw bale filters	Retention/filtration of suspended sediments	Limit flow to less than 50L/s in the design 1 in 10 year critical duration rainfall event

3 Mitigation measures

3.1 General

Implementation of the erosion and sediment control program must be done in consideration of and in conjunction with other Baralaba coal mine management plans including the *Topsoil Management Plan*, *Post Mine Land Use Plan* and *Rehabilitation Monitoring Plan*.

The following general erosion and sediment control measures must be employed at the Baralaba coal mine:

- implement the measures recommended in the Baralaba coal mine management plans listed above;
- achieve compliance with conditions of approval outlined in the EA permits; and
- rehabilitate disturbed areas as soon as practical.

3.2 Erosion and sediment control plans

Erosion and sediment control plans (ESCP) must be prepared for construction and rehabilitation works. ESCPs must be approved by the principal prior to works commencing. The ESCP will include as a minimum:

- plans of the site clearly showing surface water discharge points, erosion and sediment control structures and catchment boundaries;
- calculation of the predicted erosion and sediment capture in the control structures and detailed design;
- schedule for maintenance of control structures;
- proposed disposal site for captured sediment; and
- decommissioning and rehabilitation of control structure sites post construction.

Erosion and sediment control structures must be designed and installed as per relevant guidelines including *Best Practice Erosion and Sediment Control* (2008) and *Soil Erosion and Sediment Control Engineering Guidelines for Queensland Construction Sites* (1996).

If works are being done in stages, the ESCP must be reviewed, updated and approved prior to the commencement of each stage.

3.2.1 Review and approval

ESCPs will be quality reviewed/independently verified by an appropriately qualified person prior to being submitted to the principal for approval.

An appropriately qualified person is a person who is for example, a member of the Australian Society of Soil Science or the Australian Institute of Mining and Metallurgy or a certified professional in erosion and sediment control.

3.3 Construction and operations

3.3.1 Design and planning

Construction and operation design and planning measures include:

- an approved *Ground Disturbance Permit* (COK_FRM_002) is required prior to clearing or disturbing land;
- clearing or disturbing land is to be done in accordance with the conditions outlined in the *Ground Disturbance Permit*;
- the area of clearing will be minimised, as far as practical, and marked out with pegs/flagging;
- clearing of land will be done progressively so as to minimise the area of land exposed to erosive forces;
- when planning construction works, erosion and sediment control structures will be designed (ie a ESCP for rehabilitation works) and implemented prior to works occurring;
- the contractor responsible for preparing the ESCP for construction works is required to comply with the requirements outlined in Section 3.2 and subsection thereof;
- some construction works (eg earthworks) should be avoided, as far as practical, during high rainfall events;
- erosion and sediment control materials are to be stored onsite prior to clearing; and
- contractor(s) undertaking the construction works will be responsible for the installation and maintenance of measures detailed in the ESCP for construction.

3.3.2 Traffic and vehicles

Measures to minimise erosion caused by site traffic include:

- drivers will follow onsite speed limits at all times;
- movement of vehicles will be restricted to access tracks and designated haul roads;

- tracks and access roads will be clearly indicated through onsite signage/markings and highlighted on site plans;
- erosion and sediment control measures will be installed on tracks and access roads and maintained as required; and
- maintenance and cleaning vehicles, plant or equipment must be done in an area where runoff can be contained and treated.

3.3.3 Topsoil management

Topsoil stripping must be done in accordance with Baralaba coal mine *Topsoil Management Plan*.

If stripped topsoil is not to be placed onto an existing topsoil stockpile then the plan must include erosion and sediment control for the new stockpile site or emplacement area.

i Dispersive soils

The appropriate management of dispersive soils is a high priority for erosion and sediment control as these soils have the highest potential to elevate suspended solids in surface water runoff.

The *Topsoil Management Plan* requires the contractor to do a topsoil stripping assessment ahead of clearing. The topsoil stripping assessment includes the requirement to identify the dispersive characteristics of soils and requires the calculation of calcium to magnesium (Ca:Mg) ratio, cation exchange capacity (CEC), ESP and Emerson aggregate stability.

Soils with ESP values in the medium to high range (ie 6 to > 15) and with Mg:Ca ratio >1, have greater susceptibility to dispersion and could result in elevated levels of suspended solids in surface water runoff if not managed appropriately.

The application of gypsum to dispersive soils will improve aggregate stability. Where practical, half the recommended dosing rate should be applied to the surface of the soil material prior to stripping. The other half should be applied to the top-dressed material immediately after spreading. Alternatively gypsum should be applied to the soil surface after its spreading and incorporated into the soil by ripping.

The use and application rate of gypsum should be determined on a site by site basis prior to topsoil stripping. The application rate of gypsum can be determined by measuring the ratio of soluble sodium to calcium and magnesium ions or exchangeable sodium percentage (ESP) in the topsoil.

The gypsum application rates prescribed for the Baralaba coal mine are based on research and publications by the Australian Government Grains Research and Development Corporation. The recommended application rates are:

- ESP ≥6 but ≤10 – 2.5t/ha;
- ESP ≥10 but ≤15 – 5t/ha; and
- ESP >15 - >5t/ha.

3.3.4 Surface water management

i Drains and bunds

Drains and bunds will be installed in accordance with the contractor's ESCP. Bunds and drains will be used to direct surface water runoff away from disturbed areas and to direct surface water runoff from disturbed areas to erosion and sediment control structures.

ii Sediment dams

Surface water runoff will be controlled by diverting any surface water runoff away from cleared areas and the pits to sediment dams. This will minimise the release of sediment from the mining lease.

If the freeboard volume in sediment dams approaches design capacity between rainfall events, dewatering should occur.

Options for dewatering include recycling water for mine activities (eg dust suppression, irrigation or moisture conditioning of earthworks) and transfer to mine water storages (eg pit or regulated mine water dam).

Provided the water has not been mixed with mine affected water it is permissible to allow water from sediment and erosion control structures to discharge over land (preferably grassed areas) where sufficient buffer exists to prevent the migration of sediment laden water directly into a watercourse.

The contractor's ESCP will show the location of sediment dams for construction activities.

Uncontaminated sediment removed from erosion and sediment control devices will be stockpiled and used for landscaping and rehabilitation. Appropriate erosion and sediment control structures will be installed on the stockpile.

iii Run of mine pad

Runoff from the run of mine (ROM) pad will be captured to prevent contamination of surrounding land and prevent runoff into sediment dams. This captured runoff will be recycled for mine activities or transferred to mine water storages.

iv Flood levees

A 1:1,000 year annual exceedance probability (AEP) flood levee has been constructed around the mining activities on Baralaba central mine. A 1:1,000 year AEP flood levee will be built around the proposed mine on Baralaba north/Wonbindi north mines.

The flood levees prevent the erosive force of a major flood from impacting on mine affected areas and ensure surface water runoff is contained within the mine boundary.

If construction is to be undertaken outside of the flood levee system, then the ESCP for the construction works must include sufficient detail on how the worksite will mitigate the potential for erosion caused by flooding.

3.4 Rehabilitation and closure

Final landforms at closure will be constructed based on the information in the *Post Mine Land Use Plan* and the *Rehabilitation Management Plan*. The final land surface of the landforms would be constructed using stockpiled topsoil and following the information in the *Topsoil Management Plan*.

The final landform will require surface water management to minimise the erosion caused by the movement of water across the landform. Surface water management will include contour drains, drop drains and sediment dams.

The measures listed below apply to reshaping the landform, topsoil spreading and seeding, prior to protective vegetation being established.

3.4.1 Design and planning

Rehabilitation design and planning measures include:

- work area footprints will be planned out prior to works occurring and the footprint will be minimised as far as practical;
- when planning rehabilitation works, particularly of elevated landforms, erosion and sediment control structures will be designed (ie a ESCP for rehabilitation works) and implemented prior to works occurring;
- the contractor preparing the ESCP for rehabilitation works is required to comply with the requirements outlined in Section 3.2 and subsection thereof;
- rehabilitation construction works will not be undertaken in months of the year with known high rainfall averages; and
- the contractor undertaking the rehabilitation works will be responsible for the installation and maintenance of measures detailed in the ESCP for rehabilitation.

3.4.2 Topsoil management

Topsoil management measures important for rehabilitation and closure include:

- a *Topsoil Management Plan* has been developed to ensure that the critical role of topsoil in rehabilitation works is recognised and observed by all site personnel;
- treat topsoil as per the requirements within the *Topsoil Management Plan*;
- relocate topsoil in a separate stockpile from any subsoil material;
- topsoil stockpiles will have sediment fences and/or diversion drains, preferably around the perimeter and as a minimum down gradient ;
- all stockpile areas will be located within the general area of disturbance; and
- topsoil stockpile slopes should be maintained at a slope of no greater than 1:3 and at a height of no greater than 3 m.

3.4.3 Erosion control of elevated landforms

Elevated landforms will be protected by the establishment of a protective vegetation cover (ie as part of rehabilitation works), the construction of graded banks, rock-lined waterways, drop structures and diversion banks. If necessary, perimeter drains will be installed around the toe of the dump.

Whilst still active appropriate sediment and erosion controls as per *Best Practice Erosion and Sediment Control* (2008) and *Soil Erosion and Sediment Control Engineering Guidelines for Queensland Construction Sites* (1996) will be implemented around the spoil dump(s).

Vegetation will be established as soon as practicable to prevent slope face degradation during rehabilitation works.

3.4.4 Management of rehabilitated areas prior to germination

Measures to manage rehabilitated areas prior to germination include:

- seeding activities will be timed to ensure best possible germination rates are achieved (ie not prior to heavy rainfall and not during winter when rainfall is generally low;
- where bare earth is to remain untouched for more than 14 days, earth diversion banks upslope, cover crops, fast growing grass species and/or mulching, or other sediment containment measures will be undertaken;
- where bare earth is to remain for less than 14 days, sediment fences and temporary perimeter banks are appropriate for daily protection;
- sediment and erosion control devices (ie sediment fences) will not be removed until disturbed areas have been stabilised and there is at least 70% ground cover;
- perimeter bunds will be constructed around disturbed areas to divert external catchment flows around these areas;
- exposed surfaces will be ripped and left rough to minimise erosive potential;
- check dams, bunds, and/or cut-off drains are to be implemented across the contour to reduce the erosive potential of runoff on disturbed areas; and
- surface levels will be graded to ensure all stormwater runoff is directed through erosion and sediment controls and into the onsite water management system.

4 Administration

4.1 Monitoring and maintenance

4.1.1 General

Regular monitoring of construction, operation and rehabilitation areas of the Baralaba Coal Mine will occur.

Contractor(s) conducting construction and rehabilitation works will be responsible for monitoring and maintaining surface water diversion structures and erosion control measures implemented through the approved ESCP for the works.

Routine inspections of all construction, operation and rehabilitation areas, drainage structures and temporary sediment and erosion controls will be done every month during the life of the mine and until the completion criteria has been achieved. In addition, inspection of these areas will be done prior to expected rainfall and after significant rainfall to ensure the measures outlined in Section 3.3 and Section 3.4 are achieved and are performing. An appropriately qualified person will undertake these inspections.

4.1.2 Construction and operations

Periodic site drainage assessments will also occur across the site, particularly whenever any major change to the operation has been implemented or planned. If any new drainage works are deemed necessary, then a drainage action plan will be prepared and implement by the Baralaba coal mine.

4.1.3 Rehabilitation and closure

During rehabilitation works, vegetation coverage and diversity and soil loss will be monitored as per the methodology listed in the *Rehabilitation Monitoring Plan*.

Monitoring of rehabilitated landforms will also include an assessment of erosion control success on an annual basis. This will include reporting of instability caused by erosion, piping failures or geotechnical failures. Remedial actions in the case of failure will involve backfilling, reshaping and redirection of surface water flows that may have initiated the failures and revegetation.

If rehabilitation works are significantly damaged by erosion, they will be repaired and rehabilitated.

4.2 Corrective actions

The following corrective actions are to be employed by the Baralaba coal mine where required:

- revision of construction, operation and rehabilitation activities as required;
- erosion and sediment control devices will be cleared, repaired or replaced whenever inspections show signs of non-compliance or ineffective capability or capacity;
- where erosion and sediment control devices are found not to be in accordance with this plan or relevant guidelines, work in the affected area will cease and corrective actions taken prior to recommencing works;

- an incident report will be filled out if any non-conformances with this plan or a contractor's ESCP for construction or rehabilitation are found;
- in the event of an environmental incident, appropriate response measures will be implemented to ensure environmental harm from the event is minimised (ie restoration of erosion, repairing sediment and erosion control structures);
- all non-conformances will be corrected as soon as possible and strategies identified, evaluated and implemented to reduce the likelihood of the incident/accident re-occurring; and
- all non-conformances and corrective actions will be closed out as soon as practicable.

4.3 Records

The inspection checklist at Appendix **Error! Reference source not found.** will be used to record details of inspections undertaken during construction, operation and rehabilitation works. Inspection records will be maintained at the Baralaba coal mine so that they can be used for future management (eg identify areas where there is the potential for erosion and sedimentation to occur and remedy any erosion and sediment control issues).

4.4 Reporting

4.4.1 Internal

All incidents resulting in visual degradation will be reported to Baralaba coal mine management as soon as possible after becoming aware of the environmental incident.

4.4.2 Regulatory authority

Baralaba coal mine General Manager Operations, or his approved delegate, will notify EHP in writing within 24 hours of becoming aware of an incident that has potential to cause or threaten to cause material or serious environmental harm. This notification is required in writing via the EHP form *Duty to Notify of Environmental Harm* EM468.

4.5 Review

This document will be reviewed annually or earlier if circumstances require it. The review will consider:

- evaluation of performance criteria listed in Section 4.5.1;
- opportunities for improvement identified in inspection checklist records;
- reports of environmental incidents;
- any amendments to relevant legislation , policy and guidelines;
- any changes to mine plans, mining activities or construction/mining/rehabilitation works contractors at the site; and
- the findings of new research and trials (eg from the Central Queensland Mine Rehabilitation Group).

4.5.1 Program performance criteria

The performance of the erosion and sediment control program will be evaluated during the annual review. Relevant performance criteria to be considered during the annual review are:

- there will be no significant decrease in water quality in the sediment pond systems and drains as a result of erosion of sediment from rehabilitation activities at Baralaba coal mine;
- no significant build-up of sediment in the sediment pond system and drains as a result of erosion of sediment from rehabilitation activities at Baralaba coal mine;
- no degradation of water quality and biological integrity of the receiving environment;
- turbidity and suspended solid levels not to exceed the EA permit conditions for mine affected water release limits;
- no evidence of sediment being deposited offsite; and
- no failures of erosion and sediment control devices.

4.6 Training

Relevant Baralaba coal mine personnel will be trained in erosion and sediment control procedures/techniques including the contents of this document and relevant publications (ie *Best Practice Erosion and Sediment Control*, 2008 and *Soil Erosion and Sediment Control Engineering Guidelines for Queensland Construction Sites*, 1996).

4.7 Role and responsibilities

The role and responsibilities for the implementation of the actions in the erosion and sediment control program are outlined in Table 4.1.

Table 4.1 Role and responsibilities

Role	Responsibility
General manager operations or representative	Management of Baralaba coal mine.
	Ensure resources are available to implement the contents of this plan.
	Facilitate erosion and sediment control program review.
	Report environmental incidents to EHP.
Environment manager	Implement the contents of this plan.
	Train staff in environmental awareness, site issues and requirements of the erosion and sediment control program.
	Facilitate the monitoring and implementation of measures outlined in the erosion and sediment control program.
	Reports non-conformances with the erosion and sediment control program to General manager operations and ensure corrective actions are closed out.
	Advise General manager operations and other management on EA permit requirements and provide advice to assist with achieving compliance.
	Investigate environmental incidents and liaise with EHP where necessary/as requested by the General manager operations.

Table 4.1 Role and responsibilities

Role	Responsibility
Employees	Be familiar with the contents of the erosion and sediment control program and consider its implementation in relation to works.
	Undertake erosion and sediment control works in accordance with measures and administrative requirements outlined this erosion and sediment control program or an approved ESCP for construction or rehabilitation.
	Report visual degradation or apparent non-conformance with this erosion and sediment control program or approved ESCP for construction or rehabilitation works within the same work shift as noticed.
	Undertake corrective action as soon as practicable.
Contractors	Be familiar with the contents of the erosion and sediment control program and consider its implementation in relation to works.
	Prepare ESCP for construction and rehabilitation works in accordance with the requirements of the erosion and sediment control program.
	Undertake works in accordance with approved ESCP.
	Report any non-conformance/environmental incidents as within the same work shift as noticed.
	Undertake corrective actions as soon as practical.

Appendix A

Inspection checklist

SITE INSPECTION CHECKLIST

LOCATION . . . . . .

PERSON CONDUCTING INSPECTION . . . . . **DATE** . . . . . .

SIGNATURE . . . . . .

Legend: ***4 OK*** ***7 Not OK*** ***N/A Not applicable***

Item	Consideration	Assessment/Comment
1	Works been planned prior to soil disturbance (ie: plans marked up, footprints limited, etc?	
2	Rehabilitation/revegetation occurring as soon as practical.	
3	Key personnel trained in erosion and sediment control procedures.	
4	The site is clear of litter and unconfined rubbish.	
5	Adequate stockpiles of emergency ESC materials exist onsite.	
6	Site dust is being adequately controlled.	
7	Appropriate drainage and sediment controls have been installed prior to new areas being cleared or disturbed.	
8	Up-slope “clean” water is being appropriately diverted around/through the site.	
9	Drainage lines and pond systems are free of soil scour and sediment deposition.	
10	No areas of exposed soil are in need of erosion control.	
11	Earth batters are free of “rill” erosion.	
12	Movement of vehicles restricted to access tracks and designated haul roads.	
13	Soil stockpiles are protected from wind, rain and stormwater flow with appropriate drainage and erosion controls.	
14	Sediment fences are free from damage.	
15	Sediment-laden stormwater is not simply flowing “around” the sediment fences or other sediment traps.	
16	Sediment controls placed up-slope/around stormwater inlets are appropriate for the type of inlet structure.	
17	All sediment traps are free of excessive sediment deposition.	
18	The settled sediment layer within a sediment basin is clearly visible through the supernatant prior to discharge such water.	
19	All reasonable and practicable measures are being taken to control sediment runoff from the site.	
20	All soil surfaces are being appropriately prepared (i.e. pH, nutrients, roughness and density) prior to revegetation.	
21	Stabilised surfaces have adequate soil coverage.	
22	The site is adequately prepared for imminent storms.	
23	All ESC measures are in proper working order.	
24	evidence of sediment being deposited offsite.	

APPENDIX C

REHABILITATION MONITORING PLAN

Cockatoo Coal Limited

Rehabilitation monitoring program

Baralaba Coal Mine | ML 5065, ML 5580, ML 5581, ML 5590, ML 80157, ML80169 and ML 80170

Prepared for Cockatoo Coal Limited | 17 April 2013

Level 2, 66 Hunter Street Sydney NSW Australia 2000 **Phone** +61 2 9300 3333 **Fax** +61 2 9221 6333

Rehabilitation monitoring program

Final

Report B13018RP1 | Prepared for Cockatoo Coal Limited | 17 April 2013

Prepared by	**Timothy Rohde**	Approved by	**Robert Janssen**
Position	Practice leader, rehabilitation, closure and soils	Position	Manager Queensland
Signature		Signature	
Date	13 September 2013	Date	13 September 2013

Document Control

Version	Date	Prepared by	Reviewed by
Draft A	28 March 13	T. Rohde	R. Janssen
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Tables

Figures

1 Introduction

1.1 General

The Baralaba coal mine includes Baralaba central, Baralaba north and Wonbindi north located on mining lease (ML) 5065, ML 5580, ML 5581, ML 5582, ML 5590, ML 80157, ML 80170 and ML 80169.

Activities at the Baralaba coal mine include:

- continued open cut mining operations on ML 5605 and ML 80157 until the end of mine life (March 2014);
- commence an open cut mine on ML 80169; and
- commence an open cut mine on ML80170.

Activities on the land subject to the mineral resource authority are subject to conditions of approval issued under environmental authority (EA) permit numbers EPML00223213 and EPML00617113.

1.2 Scope

This rehabilitation monitoring plan (the plan) relates to key indicators that should be monitored in the post-mining landscape to evaluate whether the post-mining landscape is meeting the success criteria.

This is a progressive plan that will be implemented as areas become available through rehabilitation of mining activities. It is expected that it will be updated periodically to include newly rehabilitated areas.

1.2.1 Environmental authority compliance

Table 1.1 describes relevant environmental authority conditions for the Baralaba coal mine and how they are met within this plan.

Table 1.1 How this plan address the environmental authorities

Condition	Description	Section of this plan and description of how the condition is satisfied
F20	Relevant sections of this condition are: b) identify success factors and completion criteria for each domain; c) identify three reference sites to be used to develop rehabilitation success criteria; and j) describe rehabilitation monitoring and maintenance requirements to be applied to all areas of disturbance	Success criteria are described in Section 2 Reference sites are described in Section 3.3 Reporting and maintenance is described in Section 7.1
F21	Once the rehabilitation has commenced, the holder of the environmental authority must conduct rehabilitation monitoring as proposed in the rehabilitation monitoring program on a yearly basis, which must include sufficient spatial and temporal replication to enable statistically valid conclusions as established under the rehabilitation program.	The monitoring schedule is described in Section 6
F23	Verification of rehabilitation success, determined by the rehabilitation success criteria developed as per **condition F20** is to be	The monitoring method is described in Section 4

Table 1.1 How this plan address the environmental authorities

Condition	Description	Section of this plan and description of how the condition is satisfied
	carried out as follows: • the minimum sampling intensity must be specified for the monitoring of progressive rehabilitation; • justification of the suitability of the minimum sampling intensity must be provided; • monitoring must include sufficient replication to enable statistical analysis of results as an acceptable power; and • undertaken at 12 monthly intervals.	
F24	The rehabilitation monitoring program must be included in the *Plan of Operations* and updated with each subsequent plan of operations, describing: • how the rehabilitation objectives as per the *Rehabilitation Management Plan* will be achieved; and • verification of rehabilitation success as per **condition F23**.	The rehabilitation objectives and their relationship to success criteria and monitoring are described in Section 2.

2 Success criteria

The goal, objectives and indicators for rehabilitation at the Baralaba coal mine are defined in the environmental authorities.

The goal is to achieve a rehabilitated landform which is:

- safe;
- non-polluting;
- stable; and
- self-sustaining.

The objectives and indicators are described in Table 2.1.

Table 2.1 Rehabilitation objectives and indicators

Objectives	Indicators
Site is safe for humans and animals	A risk assessment of the surface facilities areas is to be undertaken at closure to ensure the site is safe, non-polluting and in a state which is conducive to the desired post-mining land use.
Water quality protected	Water quality is not impacted post-mining
Contaminated land	All areas contaminated by hydrocarbons or other chemicals used during the life of the mine are to be excavated and disposed of appropriately.
Minimise erosion	Topsoil is to be replaced on disturbed areas to the minimum specified depth.
Vegetation cover	A minimum vegetation cover of 70% across all previous surface facility areas will be required. Areas not covered by vegetation will be minimised and vegetation growth is to be promoted if required.

Table 2.1 Rehabilitation objectives and indicators

Objectives	Indicators
Species composition (flora)	The species composition will be similar to appropriate reference sites chosen based on their current land use, soil type, vegetation community type and health.
Community structure	Vegetation community structure (groundcover, understorey and overstorey) will be similar to appropriate reference sites chosen based on their current land use, soil type, vegetation community type and health.
Species diversity (fauna)	Faunal species diversity at mine closure will be similar to current species diversity as documented in the *Baseline Fauna Surveys and Environmental Management Plans for Baralaba north and Wonbindi Coal Mines* or representative of similar undisturbed habitats across the site.

The environmental authorities for Baralaba coal mine do not include completion or success criteria for rehabilitation objectives. Performance criteria have been prepared by Cockatoo Coal Limited and these have been reported in the *Rehabilitation Management Plan*.

The closure strategy is described in the *Post Mine Land Use Plan* and the *Rehabilitation Management Plan*.

Information about rehabilitation monitoring is from previous Baralaba coal mine rehabilitation monitoring plans or has been developed through the preparation of this plan. The rehabilitation monitoring methods are further described in Section 4.

3 Monitoring locations

3.1 Current on-site

Table 3.1 summarises current monitoring locations at Baralaba coal mine. The summary is presented as:

- surface water;
- groundwater; and
- vegetation.

Table 3.1 Current on-site monitoring locations

Analysis type	Northing (GDA 94)	Easting (GDA 94)
Surface water		
Baralaba central pit (CP2)	7326934	784879
Mine Dam 1	783756	7325355
	783702	7325548
	783944	7325436
	783979	7325325
Baralaba Central Pit (CP2)	785310	7325310

Table 3.1 Current on-site monitoring locations

Analysis type	Northing (GDA 94)	Easting (GDA 94)
	784880	7325290
	784280	7326670
	784790	7326830
Monitoring Point A1	7323969	785939
Monitoring Point DR3	7333836	785706
Groundwater		
PZ07	783667	7325338
PZ08	783560	7325721
PZ09	783460	7326064
PZ07B	783662	7325336
PZ10	784370	7329249
PZ11	783385	7327308
PZ12S	784194	7327528
PZ14S	782822	7331499
PZ12D	784199	7327529
PZ14D	782768	7331493
PZ13	784010	7327324
PZ15	To be provided	To be provided
PZ16	To be provided	To be provided
PZ17-PZ23	To be provided	To be provided
PZ24-PZ26	To be provided	To be provided
PZ27-PZ29	To be provided	To be provided
Vegetation		
1	7325900.761	783675.5156
2	7325775.839	783670.2364
3	7325659.952	78759.5069
4	7325659.826	783885.9979
5	7325738.315	783842.9104
6	7325874.046	783796.1584

3.2 Future on-site location

As mining and progressive rehabilitation commences on the Baralaba north/Wonbindi north mine additional monitoring location will be added for the following assessments:

- contaminated land;
- erosion;
- topsoil;
- land capability; and
- vegetation.

The additional items listed above, are currently not monitored on site but are required to evaluate whether progressive rehabilitation is meeting the nominated success criteria listed in Table 2.1.

3.3 Reference sites

In accordance with condition F20 in the environmental authorities, reference site monitoring is to be done at three reference sites. Three reference sites have been identified.

Table 3.2 Reference sites

Site ID	Description	Easting	Northing
Site 1	East of Coomoo Rd (Road Reserve)	0774539	7326851
Site 2	East of Baralaba – Woorabinda Rd (Road reserve)	0785087	7324881
Site 3	Austin's property (lightly grazed)	0785888	7331955

The criteria that were used to select reference sites are as follows:

- access is permissible;
- comparable vegetation to the revegetation objectives of the rehabilitated landform; and
- similar landscape conditions (ie soil type, slope and aspect).

The reference sites will be monitored for:

- erosion;
- topsoil; and
- vegetation.

The method to be used for monitoring the reference sites are described in Section 4.

4 Monitoring methods

This section of the plan only describes methods for analysis required to determine whether rehabilitated domains are meeting the success criteria. Responsibility for monitoring assessment of results and reporting is described in Section 5 and the frequency of assessment is described in Section 6.

4.1 As built survey

An as built survey of final landforms will be completed by site survey staff. The survey will be completed with sufficient accuracy to allow the development of a one meter digital elevation model.

4.2 Surface water

Surface water monitoring for the operational mine is described in the *Baralaba Coal Mine Receiving Environment Management Program.*

The surface water monitoring and management program will be reviewed and revised annually during the life of the mine. Under the environmental authorities, Baralaba coal mine is required to report to EHP the outcome of each review including a response to recommended actions. This means that the surface water monitoring and management program will be adapted over time to suit the requirements of monitoring for rehabilitation success criteria.

4.3 Groundwater

Groundwater monitoring for the operational mine is described in the *Baralaba Coal Mine Groundwater Monitoring and Management Program.*

The groundwater monitoring and management program will be reviewed and revised as described for surface water in Section 4.2.

4.4 Contaminated land

The operational site will maintain a contaminated land register. The register will include the location of recorded spills, type of contaminant and the estimated volume of contaminant spilled. The register will be reviewed prior to decommissioning of the infrastructure domain. Contamination clean-up will be included in the decommissioning plan.

4.5 Erosion

4.5.1 Set-up and sampling

Erosion monitoring will be completed on all re-contoured surfaces. This is to be performed along existing sloped transects on rehabilitated spoil dumps or reference sites, at the same time as the vegetation assessment.

The procedure is to be performed across slope. That is along the contour not orientated towards the crest and toe of the slope.

The method involves laying a 150 m tape measure along the ground starting from the first peg of the transect. The tape must be secured at the beginning and pulled firm to ensure that it lies as close as possible to the horizontal. The transect design is illustrated in Figure 4.1.

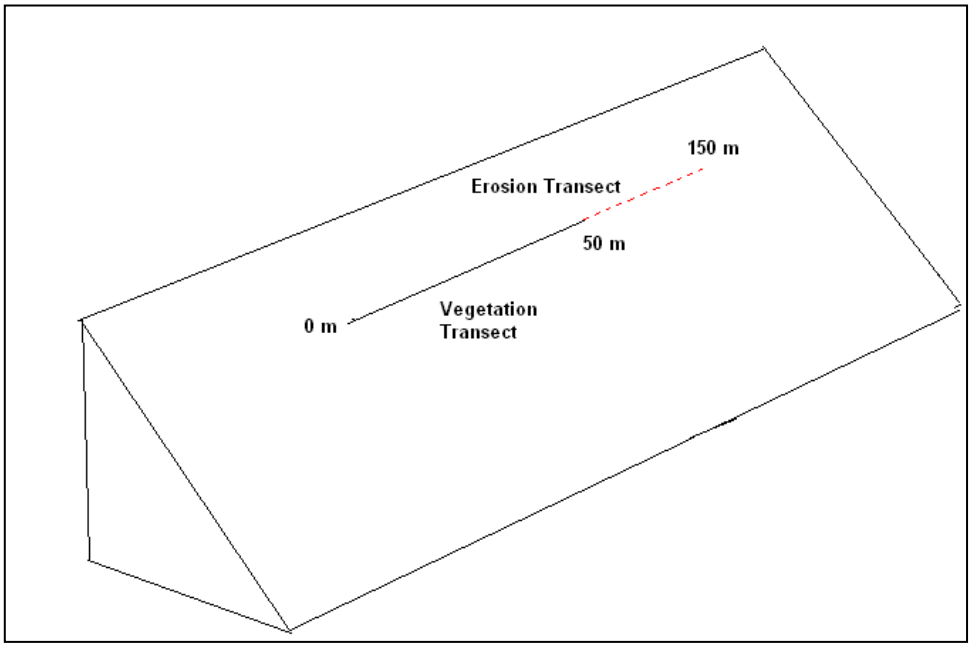

Figure 4.1 Erosion monitoring transect

The density of sampling has not yet been determined but will include a combination of upper slope areas, mid-slope areas and toe slope areas. The density of sampling will be determined by Baralaba coal mine management, based on what is practical to achieve and what EHP will accept.

4.5.2 Procedure

The monitoring procedure is:

- walk along the transect and identify any gullies (ie. rills that are more than 30 cm deep);
- for each gully, measure the deepest point at which the tape crosses the gully (depth) and the distance from the "0" peg at which it occurs;
- measure the total width of the gully (again, where tape crosses the gully); and
- take a photo from the nearest previous peg of the whole gully and record the details in the data sheet.

Where the transect does not cross any gullies, but there are significant gullies elsewhere on the slope, then the following procedure should be followed:

- select a number of gullies. The gully transect should not aim to go through the deepest part of the gully but should be randomly selected;
- five meters prior to the start of a gully and 5 m past the end of a gully (around the slope) a star picket should be inserted. These positions should be logged using GPS;
- for the identified gully, measure the deepest point (depth) and the distance from the starting star picket at which it occurs;

- measure the total width of the gully; and
- take a photo from the star picket of the whole gully and record the details on the erosion data sheet.

4.6 Topsoil and spoil

4.6.1 Sample density

The sample collection density for topsoil and spoil sampling is:

- one sample location per 15ha. If the area is less than 15ha than the minimum number of sample locations is one;
- sample locations should extend to 0.5 m below ground level or to the maximum depth of topsoil. Whichever is deepest; and
- samples should be taken at 0.1 m increments below ground level for the full topsoil thickness.

4.6.2 Analysis of physical properties

The assessment should follow the method described in the *Baralaba Coal Mine Topsoil Management Plan* and include the analysis of:

- electrical conductivity (EC);
- chloride content;
- calcium to magnesium (Ca:Mg) ratio;
- cation exchange capacity (CEC);
- exchangeable sodium percentage (ESP);
- Emerson aggregate stability; and
- particle size distribution.

Particulate size distribution was not included in the *Baralaba Coal Mine Topsoil Management Plan*. It is required for the calculation of plant available water capacity (PAWC). PAWC is a measure of the maximum amount of water that can be held in the pores of the soil and is available for vegetation. It is required for determining land capability class.

Samples will be sent to a NATA accredited laboratory for analysis.

4.6.3 Analysis of chemical properties

Analysis will be as described in Table 4.1. The table also provides justification for why each analysis is required.

Table 4.1 Chemical analysis of topsoil and spoil

Test	Reason for inclusion
pH	Measurement of pH is probably the most commonly made test. It is regarded as a useful indicator of other soil properties (e.g. values >8.5 usually indicate high exchangeable sodium levels and the presence of carbonates) and of the need for amendment with lime. Some plants tolerate a wide range of pH, while some are sensitive to acidity and some to alkalinity. The availability of some nutrients would be affected by soil pH.
Carbonate Content	Carbonate may exist in soil as predominately either calcite or dolomite. Its presence, which may vary from trace amounts to high percentages of the soil, is of significance because of its effect on the general physical condition, especially on consistence. When present in large amounts as fine-earth carbonate it can modify soil texture. It can constitute a potential source of calcium for the replacement of exchangeable sodium, thus improve stability.
Soluble Ca, Mg, Na, K, CO_3, HCO_3, SO_4	Knowledge of soluble cations and anions and their relative proportions is valuable in assessing saline and alkaline soils and their response to various treatments. Chloride is usually the principal anion in extracts of soil and it is specifically toxic to some plants. Other anions may also be toxic to plants. Bicarbonate is a normal constituent of saline and sodic soil extracts. Both CO_3 and HCO_3 have a tendency to precipitate the divalent cations Ca and Mg, resulting in an increase in the ratio of Na to Ca-Mg in the soil solution. This favours the absorption of Na by the exchange complex and the development of unfavourable sodic-soil conditions.
Bicarbonate Phosphorous (Caldwell method)	If the amount of phosphorous in soil is too small then yield is jeopardised, but increasing reserves to very high levels is an unnecessary expense. Thus the concept of a critical level in soil is necessary.
Nitrogen	As above
Potassium	As above
Organic Matter	Organic matter is important in maintaining soil structure, in slightly increasing the soil's water holding capacity and holding a small store of N, P, S and trace elements in organic forms. These cannot be taken up directly by plant roots but have first to be converted by soil microbes to inorganic (ionic) forms identical to those supplied in fertilisers.
Total digest for molybdenum, manganese, iron, copper, zinc, boron, chloride, sodium, cobalt and selenium	Although only required in small amounts, trace elements (or micronutrients) are essential for plant growth. These nutrients often act as catalysts in chemical reactions. It is possible to have toxicities of trace elements, as well as deficiencies. A deficiency may reduce plant growth. An excess of a trace element, although not common, may be toxic to the plant and may cause an imbalance, reduced yield, impaired quality or increased susceptibility to disease.

4.7 Land capability

4.7.1 Sample density

Land capability is determined from the assessment of physical and chemical properties of soil and spoil as described in Section 4.6.2 and Section 4.6.3. There is no additional sampling required for the assessment of land capability.

4.7.2 Analysis

The analysis used to identify land capability will follow guidelines established by Land Resources Branch (1990), which is the basis for land suitability assessment (DME, 1995). Land capability assessments for each soil type can be undertaken for grazing and/or cropping land uses.

Land capability is assessed applying eleven key indicators (limiting factors). The limiting factors and diagnostic criteria are described in Table 4.2.

Table 4.2 Land capability assessment criteria

Limiting Factor	Diagnostic Criteria		Comment
Plant available water capacity	Cropping	• pH • Cl- anion concentration	Table 2.3 from DME (1995)
	Grazing	• ESP • EC	
Nutrient deficiency	Cropping	• Bicarbonate P • Exchangeable K	Table 2.2 and Table 2.3 from DME (1995)
	Grazing	• Bicarbonate P	
Salinity	Cropping	• EC	
	Grazing	• Cl- anion concentration	
Soil physical factors	Cropping	• Soil texture	
	Grazing	• Ped size	
Erosion	Cropping	• Sodocity	
	Grazing	• Slope	
Workabaility	Cropping	• Soil texture • Ped size	
	Grazing	• Not applicable / no criteria	
Susceptibility to flooding	Cropping	• Flood return period	
	Grazing		
Microrelief	Cropping	• Presence / absence and size of meloholes	
	Grazing		
Wetness	Cropping	• Geomorphology	
	Grazing	• ESP	
Topography	Cropping	• Presence / Absence of gullies	
	Grazing		
Rockiness	Cropping	• Boulder, Cobbles, Gravel %	
	Grazing		

Notes: *1. Soil texture is determined from particle size distribution.*

2. Slope is determined from the digital elevation model.

3. Flood return period is determined from the Baralaba Coal Mine Water Management Plan.

4. Erosion indicators are determined from the erosion assessment.

4.8 Strategic cropping land

4.8.1 Sample density

Strategic cropping land is determined from the assessment of physical and chemical properties of soil and spoil described in Section 4.6.2 and Section 4.6.3. There is no additional sampling required for the assessment.

This assessment is to be only carried out on the area used for topsoil stockpiling during operation. It is not required to be undertaken until after all topsoil stockpiles have been removed and the area rehabilitated by ripping and seeding.

4.8.2 Analysis

EHP (formerly DERM) have proposed criteria for identifying strategic cropping land in the document *Protecting Queensland's strategic cropping land - Proposed strategic cropping land criteria* (DERM 2011). The criteria were developed to reliably and consistently identify Queensland's best cropping land—land that is suitable for a range of crops in most seasons.

Strategic cropping lands are assessed based on eight criteria. The criteria are described in Table 4.3.

Table 4.3 Strategic cropping land criteria

Criteria	Criteria and thresholds – Western cropping land
Slope	≤3%
Rockiness	≤20% for rocks >60 mm diameter
Gilgai micro-relief	<50% of land surface being Gilgai micro-relief of >500 mm in depth
Soil depth	≥600 mm
Soil wetness	Has favourable drainage (no waterlogged layers within 300 mm of the ground surface)
Soil pH	For non-rigid soils, the soil at 300 mm and 600 mm soil depth must be greater than pH 5.0
	For rigid soils, the soil at 300 mm and 600 mm soil depth must be within the range of pH 5.1 to pH 8.9, inclusive
Salinity	Chloride content <800 mg/kg within 600 mm of the soil surface
Soil water storage	≥100 mm to a soil depth or soil physico-chemical limitation of ≤1000 mm

4.9 Vegetation

4.9.1 Set-up and sampling

To ensure consistency and repeatability of the monitoring programme, permanent sites need to be established within the rehabilitation area. Star pickets are a cost effective and durable material to use for this purpose.

The site design is illustrated in Figure 4.2 and the sampling procedure is described in Table 4.4. A field data sheet has been provided as Appendix A.

At each site a central star picket is located and four additional star pickets are located at the four compass points (ie north, east, south and west) five metres from the central star picket. The star pickets should be pushed into the ground up to a permanently visible and unchangeable point (ie a painted line or engraving) so that ground level is at the marked point.

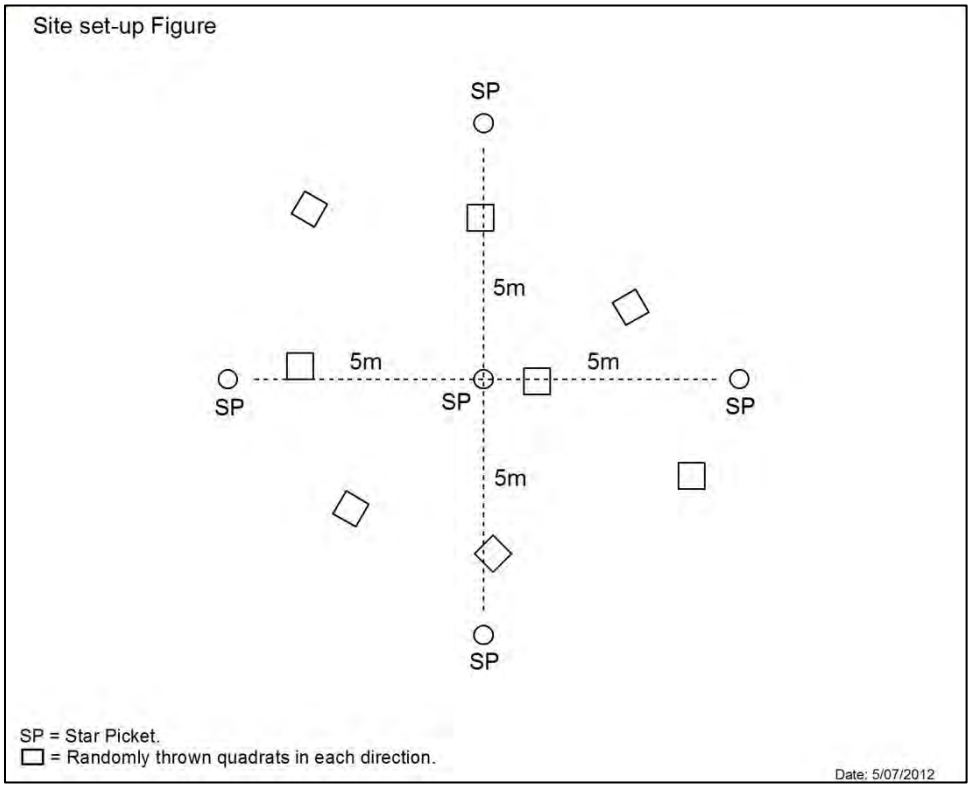

Figure 4.2 Monitoring plot set-up

Eight one square metre quadrats are assessed at each site and the procedure for determining their location is described in Table 4.4. Only one quadrat is required for the process, not eight.

Table 4.4 Vegetation measuring and sampling procedure

Step	Equipment required	Procedure
Step 1 – photographing the site	Camera	Stand at the central star picket Take four photos at each compass point (ie facing N, E, S, W) Record photo numbers on field sheet Each star picket can also be numbered with the site number and the first photograph can be taken of the star picket number for ease of referencing photos
Step 2 – general site notes	None	Record estimate of overall ground cover Note if any evidence of soil erosion Note if any evidence of use by fauna (ie. sightings of fauna, scats, hair, grazed vegetation) Record any woody vegetation growing in the monitoring plot or in the vicinity of the monitoring plot
Step 3 – measure soil loss	Tape measure	At each of the four compass point star pickets, measure the distance from the ground to the previously determined mark (ie hole). For the first time this is carried out the distances will all be zero and is not necessary to be completed.
Step 4 – measuring ground cover and species	1m quadrat Camera	Measure ground cover and species at eight quadrat locations: Stand at the centre star picket, facing north Randomly throw the quadrat towards north (aim to be within the external star pickets)

Table 4.4 Vegetation measuring and sampling procedure

Step	Equipment required	Procedure
		Take a photo of the quadrat and record photo number on data sheet Within the quadrat measure: estimate total ground cover percentages (vegetation, bare earth, rock, woody debris); species present and their relative percentage (of the vegetation cover, not the total quadrat); and repeat at all eight compass points – N, NE, E, SE, S, SW, W, NW.
Step 5 (in conjunction with Step 4) – measuring biomass	Scissors/secateurs Bag Oven	Choose a quadrat from Step 4 which is representative of the percentage of groundcover across that site Collect all vegetation within the quadrat back in office/laboratory – dry the vegetation at 105 degrees Celsius for 48 hours Weigh dry vegetation to determine kg/ha dry vegetation mass

Vegetation monitoring will be completed on all re-contoured surfaces. As for erosion monitoring, the density of sampling has not yet been determined but will include a combination of upper slope areas, mid slope areas and toe slope areas. The density of sampling will be determined by Baralaba coal mine management, based on what is practical to achieve and what EHP will accept.

4.9.2 Previous recommendation

The vegetation monitoring method described above is based on the method described in the previous Baralaba coal mine rehabilitation monitoring plan and was considered to be a simplified method suitable for monitoring rehabilitation areas with limited species diversity and structural development.

The previous rehabilitation monitoring plan recommended a more detailed monitoring method be implemented when the rehabilitation area develops a more complex vegetation structure. The method recommended is the *BioCondition monitoring methodology* described by the Queensland Herbarium (DEHP, 2011).

This recommendation should be considered during future review of the rehabilitation monitoring plan which will occur annually.

5 Quality assurance

Monitoring, data assessment and reporting will be done by a suitably qualified person. This could be Baralaba coal mine staff (eg environment officer) or external consultant(s).

All monitoring data files will be stored at the Baralaba coal mine.

Baralaba coal mine will be responsible for reviewing monitoring data, analysis, reports and managing consultants.

Aspects to consider when reviewing the data, analysis and reports include quality assurance/quality control of data, fluctuating trends in data from previous years, accuracy of figures and graphs and general conclusions made about rehabilitation progress.

6 Schedule

In accordance with the Baralaba coal mine environmental authorities rehabilitation monitoring will be undertaken on an annual basis.

Strategic cropping land assessment will only be undertaken on the old topsoil stockpile area and will not commence until the stockpiles are deleted.

Surface water monitoring will be in accordance with the *Receiving environment management plan*.

Groundwater monitoring will be in accordance with the *Groundwater management and monitoring plan*.

The duration of monitoring post-closure will be determined in consultation with EHP.

7 Administration

7.1 Maintenance

The rehabilitation monitoring program will be reviewed annually to align with condition F20 of the environmental authorities. The rehabilitation monitoring program report will identify maintenance issues and contingency for redesign when appropriate. The need for maintenance or redesign will be assessed against the monitoring success criteria.

A schedule for maintenance or redesign will be included in the *Rehabilitation Management Plan*.

7.2 Corrective actions

The following corrective actions are to be employed by the Baralaba coal mine where required:

- revision of construction, operation and rehabilitation activities as required;

- an incident report will be filled out if any non-conformances with this plan are found;
- in the event of an environmental incident, appropriate response measures will be implemented to ensure environmental harm from the event is minimised;
- all non-conformances will be corrected as soon as possible and strategies identified, evaluated and implemented to reduce the likelihood of the non-conformance re-occurring; and
- all non-conformances and corrective actions will be closed out as soon as practicable.

7.3 Records

An inspection checklist will be developed to create an auditable trail of what monitoring has been completed and where.

7.4 Reporting

7.4.1 Internal

All non-conformances with the conditions for rehabilitation in the environmental authorities will be reported to Baralaba coal mine management as soon as possible after becoming aware of the non-conformance. For example, this might include slope failure and exceedance of water quality trigger limits.

7.4.2 Regulatory authority

Baralaba coal mine General manager operations, or his approved delegate, will notify EHP in writing within 24 hours of becoming aware of an incident that has potential to cause or threaten to cause material or serious environmental harm. This notification is required in writing via the EHP form *Duty to Notify of Environmental Harm* EM468.

7.5 Review

This document will be reviewed annually or earlier if circumstances require it. The review will consider:

- evaluation of success criteria listed in Section 2 ;
- opportunities for improvement identified in inspection checklist records;
- reports of environmental incidents;
- any amendments to relevant legislation , policy and guidelines;
- any changes to mine plans, mining activities or construction/mining/rehabilitation works contractors at the site; and
- the findings of new research and trails (eg from Australian Coal Association Research Program (ACARP)).

7.6 Training

Relevant Baralaba coal mine personnel will be trained in rehabilitation monitoring procedures/techniques including the contents of this document and other relevant publications.

7.7 Role and responsibilities

The role and responsibilities for the implementation of the actions in the rehabilitation monitoring program are outlined in Table 7.1.

Table 7.1 Role and responsibilities

Role	Responsibility
General manager operations or representative	Management of Baralaba coal mine
	Ensure resources are available to implement the contents of this plan
	Facilitate rehabilitation monitoring program review
	Report environmental incidents to EHP
Environment manager	Implement the contents of this plan
	Establish rehabilitation reference monitoring sites in accordance with EA conditions F20
	Train staff in environmental awareness, site issues and requirements of the monitoring program
	Facilitate the monitoring and implementation of measures outlined in this plan
	Reports non-conformances to General manager operations and ensure corrective actions are closed out
	Advise General manager operations and other management on EA permit requirements and provide advice to assist with achieving compliance
	Investigate environmental incidents and liaise with EHP where necessary/as requested by the General manager operations
Employees	Be familiar with the contents of this plan
Contractors	Be familiar with this plan

References

Department of Environment and Resource Management, 2011, *Protecting Queensland's strategic cropping land - Proposed strategic cropping land criteria* [online] Available from: < http://www.nrm.qld.gov.au/land/planning/pdf/strategic-cropping/scl-guidelines.pdf > [Accessed: 27 March 2013]

Department of Mines and Energy, 1995, *Technical Guidelines for the Environmental Management of Exploration and Mining in Queensland – Land Suitability Assessment Techniques* [online] Available from: <http://www.epa.qld.gov.au/register/p01206ae.pdf> [Accessed: 27 March 2013]

Land Resources Branch, 1990, *Guidelines for agricultural land evaluation in Queensland*. Queensland Department of Primary Industries Information Series QI90005

Appendix A

Vegetation and erosion field data sheets

REHABILITATION MONITORING FIELD DATA SHEET

Date:		Time:		Site :	
General Site Notes:					
Soil Level:	N: _____mm	S: _____mm	E: _____mm	W: _____mm	

QUADRAT 1		QUADRAT 2	
Ground Cover	%	Ground Cover	%
Vegetation		Vegetation	
Rock		Rock	
Bare		Bare	
Leaf Litter		Leaf Litter	
Species and %		Species and %	

QUADRAT 3		QUADRAT 4	
Ground Cover	%	Ground Cover	%
Vegetation		Vegetation	
Rock		Rock	
Bare		Bare	
Leaf Litter		Leaf Litter	
Species and %		Species and %	

QUADRAT 5		QUADRAT 6	
Ground Cover	%	Ground Cover	%
Vegetation		Vegetation	
Rock		Rock	
Bare		Bare	
Leaf Litter		Leaf Litter	
Species and %		Species and %	

REHABILITATION MONITORING FIELD DATA SHEET

QUADRAT 7		QUADRAT 8	
Ground Cover	**%**	**Ground Cover**	**%**
Vegetation		**Vegetation**	
Rock		**Rock**	
Bare		**Bare**	
Leaf Litter		**Leaf Litter**	
Species and %		**Species and %**	

PHOTOS	
North:	**East**
South	**West**

APPENDIX D

EMERGENCY and CONTINGENCY RESPONSE PLAN

Cockatoo Coal Limited

Baralaba Central/ North

Emergency Response Plan

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1 PURPOSE

The purpose of this Plan is to detail the Cockatoo Coal arrangements for the management and response to all reasonably foreseeable emergencies which may occur on or adjacent to Cockatoo Coal Mining tenements in Queensland, where Cockatoo Coal may be the lead response agency or participate in the emergency response.

2 SCOPE

The requirements of this Emergency Preparedness Plan shall form the Emergency Response SOP for the Cockatoo Coal Mining Tenements in Queensland including the local site offices, exploration drilling sites/locations, workshop area and excavations, where Cockatoo Coal is considered to be the “operator” and subsequently has legislative obligations through the SSE.

This Plan details the scope of activities and arrangements for the management and response to a reasonably foreseeable emergency.

These requirements shall apply to all persons (employees, contractors and visitors) who work or attend the Cockatoo Mining or Exploration Tenements.

No guidelines will ever provide a complete set of instructions or address every aspect of what is an unpredictable course of events. However, by following this procedure it will ensure that an emergency or crisis is dealt with rapidly and in the most efficient way possible, reducing the impact or potential threat to people, the Environment our Stakeholders, the Community and our company.

The Emergency Preparedness Plan provides each person likely to be involved in an emergency, crisis or issue with directions on the action they should take in order to:

- Deal with the immediate situation and control recovery;
- Investigate how the situation occurred; and

Ensure action is taken to assist in prevention of further similar events.

3 ACRONYMS AND DEFINITIONS

CCL	Cockatoo Coal Limited
Duty Card	A set of instructions outlining the duties of the responsible people and sequence of actions that shall be taken in the case of an emergency.
Emergency	Any event which causes harm or ill health, damage to property or the environment, damage to

	company profile or a combination of these. Such events may include; • Fire or explosion (including bomb threats); or • Fall into water, personal injury or acute illness; or • Ground movement, collapse or entrapment; or • Natural phenomenon; or • Exposure to / spill hazardous substances; or • Vehicle/equipment incident; or • Significant mechanical failure or structural failure; or • An incident that exposes a member of the public to risk; or • An incident that threatens the public image of the company
Emergency Communications Log (~Event Log)	A record sheet for recording details of the emergency. This record is to be presented at the debriefing and shall be used to compile the final emergency management report and improvement plan.
Emergency Control Room	The nominated location on the project site from which the emergency is managed and coordinated.
Emergency Procedure	The procedure that is activated in the event of an emergency arising or if a person feels that a situation may develop into an emergency situation.
Emergency Management Team	Site management personnel with allocated, specific responsibilities to undertake in the event of an emergency.
Emergency Management Team Leader	Person (nominally the CCL SSE) who convenes the Emergency Management Team and controls and coordinates the emergency response from the Emergency Control Room
On-scene Commander	Appointed person allocated to the role of coordinating rescue and responding to all emergency situations. Takes control of the incident scene and coordinates the emergency response from the scene of the incident.
OCE	Open cut examiner - the role of an OCE is a statutory role under section 59 of the *Queensland Coal Mining Safety & Health Act 1999*.
Serious Incident (SI)	An event or a series of events that causes or has the potential to cause a significant adverse effect on the health and safety of a person, damage to the environment, the community or our company.

4 RESPONSIBILITIES

4.1 Site Senior Executive (SSE)

Shall ensure that:

- The required actions specified within this procedure are effectively implemented and applied across all of our Queensland Mining tenements;
- Adequate resources are provided to maintain compliance with the requirements of this procedure;

- Appoint an appropriately experienced and qualified person to the role of “On-scene Commander”, ensuring that the appointed person has appropriate knowledge, experience and training to competently fulfil the requirements of the role;
- A risk assessment is conducted to identify all reasonably foreseeable emergencies, and that identified controls and resources are implemented;
- Training, supervision and monitoring are provided to the persons appointed to the roles identified this procedure; and
- The application and requirements of this procedure are periodically audited and reviewed.

4.2 Manager / OCE’s / Superintendents / Supervisors

Shall ensure that:

- They comply with the requirements of this procedure;
- Workers receive training and instruction to enable them to comply with this procedure; and
- All work undertaken within their area of responsibility is conducted in accordance with the requirements of this plan.

4.3 All Coal Mine Workers, Employees and Contractors

Shall ensure that:

- They comply with the requirements of this plan; and
- In an emergency, all personnel, including employees, contractors and their employees and visitors to the project, shall follow the instructions of and act as directed by, members of the Emergency Management Team and/or external emergency services personnel.

4.4 Duty Card Holders

In addition to the requirements for all mine workers, those assigned responsibilities under the Duty Card system shall:

- Be familiar with the Emergency Plan and Duty Cards relevant for the work areas under their direction; and
- Arrange annual “desk top” and practical drills in conjunction with external services support to verify content and application of Duty Card system.

5 PROCEDURE

5.1 Emergency Preparedness

5.1.1 Fire

The Queensland fire season typically occurs from late winter to early summer. Prior to the fire season pre-emptive programs will be implemented to mitigate the hazard of fire including:

- review any annual fire programs;
- maintain and upgrade access tracks and asset protection zones around infrastructure;
- preparedness checks;
- update fire response procedures and key contacts;
- evaluate any fire risks and identify priority protection areas;
- review the adequacy of staff training, plant and equipment and personnel protective equipment stores; and
- reduce fire fuels (eg planned burns, slashing, grazing, herbicide application).

During the fire season site management will monitor weather and warnings (ie fire weather warning) for the local area and maintain preparedness levels relevant to risk.

Hot work includes grinding, welding, thermal or oxygen cutting or heating and other related heat-producing or spark producing operations. Hot work will be done in accordance with the approved hot works standard for the site. Fire-watching (continuous and thorough inspection) will be done in the area of the hot work.

Before hot work commences near dry grass or bush, the immediate area shall be cleared or wetted sufficiently to prevent a grass or bush fire. Similarly, if working adjacent to or above timber, the timber will be protected by wetting or other suitable means.

5.1.2 Flood

The design and construction of flood levees has been certified by a registered professional engineer in Queensland (RPEQ).

There will be regular monitoring and maintenance of the flood levees. Site personnel will inspect the flood levees every quarter and before and after significant rainfall. The flood levees will also be inspected annually by an RPEQ.

Monitoring and maintenance will ensure that no erosion, cracking or vertical or horizontal deformation has impacted on the integrity of the levee, and that the levee has been maintained in accordance with the certified design plan.

Site management will monitor river heights at Moura, Bindaree and Baralaba and will maintain preparedness levels relevant to the level of risk. These preparedness levels are based on Dawson River observations at Baralaba and are described in the table below:

River level (m)	AHD	Actions
8.5 – 11	79.784 – 82.284	**Shutdown** No personnel are to enter the site until a risk assessment involving representatives from CCL, mine contractor, pumping crews and OCE is conducted.
7.5 – 8	78.784 – 79.284	**On notice** 8 m ensure all equipment is clear of flood danger zones. 8 m selected personnel on site for care and maintenance activities. 6.75 m all personnel except selected crews to depart site and await further instructions.
5.5 – 8	76.784 – 78.284	**On standby** 7 m move equipment above RL 86.5. 6.75 notify OCE of river height and forecasts.
0 – 5	71.284 – 76.284	**Normal operation** 5.0 m regular inspection of Anabranch. 4.5 m regular OCE inspections 4.0 m daily TARP meeting beyond this level incorporating CCL, mine contractor, pumping crews, IMS and OCE.

5.2 Emergency Notification

5.2.1 Emergency Notification Using Radio Communication

Follow these two way Radio Emergency Procedures. In a slow clear voice call:

EMERGENCY, EMERGENCY, EMERGENCY

All other work related, radio traffic must cease immediately (Radio Silence).

On being answered, state:

- "Your **NAME** and or **Call Sign**"
- "**LOCATION** of the EMERGENCY"
- "**NATURE** and **CIRCUMSTANCES** of the EMERGENCY"
- "**HOW MANY PEOPLE ARE INVOLVED**"

if personnel are involved, trapped or threatened and how many

whether fire is involved or likely to result

stand by for instructions;

provide assistance, if possible.

Normal radio traffic will not resume until the general all clear is given. Anyone breaking into an Emergency procedure shall be instructed that there is an "EMERGENCY IN PROGRESS" and that the channel is to be kept clear.

Any person can activate the emergency procedure. In the event of an emergency situation or event occurring, the person identifying the situation shall immediately activate the emergency procedure as described above. This action involves the On-Scene Commander answering the call. In the event that the On-Scene Commander does not respond immediately the OCE / Manager / Supervisor shall answer the call.

The On-Scene Commander on hearing the emergency call shall immediately decide which Emergency Service to call based on the information given as well as ensuring radio silence to manage the situation. The On-Scene Commander shall then travel to the incident scene and manage and control all aspects of the emergency.

The person, who has activated the emergency procedure, if competent, should assist where possible to aid in managing the emergency situation until further assistance arrives.

5.2.2 Emergency Notification Using Telephone Communications

Dial 000 (or 112 as secondary, if unable to reach 000) for emergency services assistance, if required. The operator will ask what service you require **Fire – Ambulance – Police**, remember preservation of life is first priority.

On being connected to the emergency service state:

- **the exact location and address**
- **the nature of the emergency**
- **the number of casualties and extent of injuries, if known**
- **if a fire is a likely result**

DO NOT HANG UP UNTIL TOLD TO DO SO

After initiating the emergency with the emergency services the site must be notified by using the radio emergency procedure described in 5.1 above.

A list of emergency telephone numbers and contact numbers for key personnel shall be displayed near all office / desk telephones and issued to individual Contractors for inclusion / attachment with their existing Emergency Contact List.

These numbers shall include:

- Cockatoo Coal Project Management Team (key contacts) – working hours and mobile telephone numbers
- Contractors' Site Managers / Representatives – working hours and mobile telephone numbers
- Queensland Fire & Rescue Service (QFRS)
- Queensland Ambulance Service (QAS)
- Police
- Doctor / Hospital
- Poisons Centre
- SES
- Community Liaison

5.3 General Arrangements

5.3.1 Risk Assessment

A Risk Assessment has been conducted to determine reasonably foreseeable emergency situations and to identify what resources (eg. fire fighting equipment, rescue equipment, etc.) are required to provide coverage for identified emergency situations which may arise at a specific project site or for a specific scope of work.

For all emergency response situations, unless it is necessary to act immediately to save a person's life, a risk assessment shall be conducted prior to commencing any emergency response actions.

The risk assessment shall be facilitated by the On-Scene Commander and shall include persons who will form part of the emergency response efforts as participants in the risk assessment.

The intent of conducting a risk assessment prior to commencing emergency response actions is to identify and control any hazards which may place any persons and/or equipment in danger by being involved in emergency response actions.

5.3.2 Fire Fighting Equipment

Firefighting equipment which is identified as required for coverage of an emergency situation in risk assessments shall be maintained by the appointed On-scene Commander.

Firefighting equipment may include fire suppression systems, fire extinguishers/hose reels, etc. and should be maintained in "ready-to-go" status in a location determined within the requirements of site/activity specific Emergency Response Plans or arrangements.

5.3.3 Meeting Points

A designated meeting point/s shall be nominated as a part of all site/activity specific Emergency Response Plans.

The meeting point/s should be marked on site maps/plans and communicated to all relevant persons/emergency response groups as the point at which all external emergency services shall be met and escorted to the scene of the emergency.

Meeting points may include designated/pre-arranged helicopter landing areas, or other access/meeting points for specific project locations.

5.3.4 Radio / Telephone Communications

As radio and/or telephone communications will be the main means of communications in the event of an emergency, it is essential that Emergency Response Plans contain procedures for radio use and telephone use during an emergency.

Emergency Response Plans should require all persons not involved in the emergency to maintain radio silence so as to allow radio communications between the On-scene Commander, Emergency Management Team and Leader, and other services/personnel involved in the emergency to flow uninterrupted.

The On-scene Commander shall be in control of radio communications during an emergency.

5.3.5 Contact Lists

Various personnel will need to be contacted during an emergency. To facilitate this, emergency response telephone listings / emergency contact lists shall form part of area/activity specific Emergency Response Plans.

As a minimum, the following persons/roles shall be included in all emergency phone lists:

- SSE;
- Appointed On-scene Commander;
- Site general office contact details; and
- External emergency services contact details (e.g. police, fire, ambulance).

5.3.6 Emergency Control Room

In the event of an emergency a designated room (nominally the Baralaba Coal Mine Conference Room) with additional communication facilities and copies of the Duty Cards will be made available for use as the Emergency Control Room. If the conference room is under threat from the emergency, an alternative location shall be chosen by the Incident Controller.

Potential locations that may be utilised as an Emergency Control Room's mentioned above are to be equipped with an emergency kit containing the following:

- A copy of this Emergency Preparedness Plan
- Current plans of the Mine Safety Plan
- Electrical supply circuit drawings
- Clocks (1 each of real time and lapsed time are preferred)
- Site Chemical Inventory (Via ChemAlert)
- Contact List – internal and external

- CCL Corporate Crisis Management Plan
- Full set of Duty Cards & clipboards
- Telephone line
- 6 x 2-way radio's & chargers
- Emergency lighting or torches and spare batteries

5.4 Response

5.4.1 On-Scene Commander

The On-scene Commander shall immediately respond to the emergency call and call Emergency services. The On-scene Commander shall then proceed immediately to the incident scene and coordinate the emergency as this occurs. If the On-scene Commander is unavailable then the Emergency Management Team Leader shall appoint another person to this role.

Duty Card 1 shall apply

5.4.2 Emergency Control Room

The Emergency Control Room is used to provide assistance to the On-scene Commander by answering and making calls for the On-scene Commander and logging these calls.

Duty card 2 shall apply

5.4.3 First Aid Personnel

The closest available First Aid Personnel shall respond immediately to the emergency location. Where required an escort shall be requested and a meeting place confirmed.

Duty Card 3 shall apply

Duty Card 3A shall apply if the Rescue Helicopter is requested / required

5.4.4 Escort Vehicle

The Escort Vehicle is assigned by the On-scene Commander & the primary role is to escort emergency services to the incident scene.

Duty Card 4 shall apply

5.4.5 Emergency Management Team Response

The Emergency Management Team Members shall immediately travel to the Emergency Control Room. When they have arrived on site they will commence the overall management and control of the emergency situation as listed in the relevant duty cards as issued by Emergency Team Leader. Where there is a shortage of Team Members then dual roles will need to be coordinated until other assistance can be arranged.

Duty Card 5 shall apply

5.4.6 Emergency Management Team Leader

The Emergency Management Team Leader (CCL SSE) shall immediately travel to the Emergency Control Room. In the event that the nominated Emergency Management Team Leader is absent from site, the nominated seconder takes responsibility.

Duty Card 6 shall apply

NOTE: When the Emergency Management Team Leader has arrived at the Emergency Control Room and has been briefed on the situation a decision will be made on the allocation of the remaining Duty Cards. (This decision shall be based on the severity of the incident)

5.4.7 OCE / Manager / Superintendent Supervisor Providing Initial Response to the Incident Scene

The OCE / Manager / Superintendent / Supervisor(s) who provide immediate and initial response and attendance at the emergency scene shall manage the incident scene until the On-scene Commander arrives.

Duty Card 7 shall apply

5.5 Responding to an Emergency

5.5.1 Response at the Incident Scene

These Roles & Responsibilities supplement any requirements for key personnel

Personnel covered by these Roles & Responsibilities are:

- Persons on site directly involved in the incident
- Persons in the vicinity of the incident who may be witness to the incident
- Persons who have directly witnessed the incident
- Persons in the vicinity of the incident who may be required to give assistance
- CCL SSE, Health and Safety Manager, OCE, Superintendent, Supervisor or Contractor Manager

Personnel involved in or in the vicinity of an emergency shall:

- Activate the site emergency procedure
- Attend to any injured personnel within their competencies
- Contact their immediate or indirect supervisor
- Remain at the scene, unless required to move for medical or safety reasons
- Not move equipment (unless to make safe)
- Make the area secure and safe without compromising safety and health standards
- Assist the area supervisor, First Aid personnel and/or On-scene Commander as required
- Provide accurate details of the incident and accurate and factual witness statements

On-Scene Commander Shall:

- Immediately make their way to the incident location by the most efficient means
- Ensure risk assessments are implemented to ensure the safety and security of people and assets
- Control the emergency scene and coordinate the emergency response with the Emergency Management Team
- Immediately ensure person(s), equipment and area are made safe
- If required ensure emergency procedure is activated
- Secure the immediate and adjacent areas and restrict entry of people and equipment
- Not move equipment (unless to make safe)
- Commence the investigation process
- Ensure that all written statements are taken from the persons involved
- Remain with injured person/s
- Consult external emergency services personnel regarding injured person/s

- External emergency services personnel will direct On-scene Commander as to whether transport offsite to a regional Hospital is required
- Allocate a Supervisor to accompany any injured person/s to hospital
- Ensure injured persons family are notified

5.5.2 Alternate Communication Requirements

Note: If calls are unanswered the Emergency Control Room will answer the calls, ensure you call the Emergency Control Room periodically to receive updates.

Site Management shall be notified if the emergency relates to any items below:

1. Any incident which may result in adverse effects to the environment external to the mine lease.
2. The entrapment of a person.
3. An electric shock to a person.
4. A fire on a vehicle or plant.
5. A following incident that endangers the safety or health of a person—
   a) a fire;
   b) an inrush;
   c) an unplanned movement of, or failure to stop, a vehicle or plant;
   d) a failure of electrical equipment or an electrical installation;
   e) the exposure of a person to a hazardous substance;
   f) the unplanned immersion of a person in liquid;
   g) an unplanned movement of earth;
   h) a structural failure of equipment;
   i) a collision involving a vehicle or plant.

5.6 Duty to notify under the environmental protection act 1994

Emergency events that cause or threaten serious or material environmental harm must be reported quickly to the administering authority (Department of Environment and Heritage Protection), as well as to local governments so appropriate action can be taken to prevent or limit possible environmental harm.

Serious environmental harm is defined in the *Environmental Protection Act 1994* as environmental harm (other than environmental nuisance):

a) that is irreversible, of a high impact or widespread; or
b) caused to an area of high conservation value or special significance; or

c) that causes actual or potential loss or damage to property of an amount of, or amounts totalling, more than $50,000; or
d) that results in costs of more than $50,000 being incurred in taking appropriate action to:
    i. prevent or minimise harm; and
    ii. rehabilitate or restore the environment to its condition before the harm.

Material environmental harm is defined in the *Environmental Protection Act 1994* as environmental harm (other than environmental nuisance):

a) that is trivial or negligible in nature, extent or context; or
b) that causes actual or potential loss or damage to property of an amount of, or amounts totalling, more than $5,000 but less than $50,000; or
c) that results in costs of more than $5,000 but less than $50,000 being incurred in taking appropriate action to:
    i. prevent or minimise the harm; and
    ii. rehabilitate or restore the environment to its condition before the harm.

Events that threaten serious or material environmental harm are notifiable events. The duty to notify that arises from a notifiable event is referred to as the duty to notify harm.

If site personnel cause or become aware of a notifiable event, they must notify site management. If site personnel report a notifiable event to site management, then site management has a duty to provide written notice of the event to the administering authority using a duty to notify form (EM468 at Appendix B).

In addition to notifying the administering authority and local government, site management should also notify the owners or occupiers of affected land as soon as practical after becoming aware of an event that occurs or spreads outside the mining lease boundary. This can be done via written notification or public notice (eg radio or television broadcast).

5.7 Emergency Response Telephone Listing

In the event of a significant emergency the On-scene Commander shall contact the CCL SSE or direct the Emergency Control Room personnel to make contact. Please note that if the SSE is not contactable they shall work down the list.

When the person is contacted, state:

“There has been an incident at the Baralaba Coal Mine lease. An emergency has been declared, please report to the Emergency Control Room at the Site Office as soon as possible”

Note: All information in this Directory is private and confidential.

The information is to be used in the case of emergency requiring personnel to be contacted. Under no circumstances is the information to be used or distributed for any other purpose.

The emergency contact number list is available in Emergency Contact Directory.

5.8 All Clear Procedure

The "All Clear" can only be issued by the **Emergency Management Team Leader**.

The "All Clear" is issued when the Emergency Management Team Leader (EMTL) is satisfied that the emergency situation is under full control, all personnel have been accounted for and the area is safe to be handed over to operations personnel to commence the recovery and business resumption phase.

Once the EMTL is satisfied that the situation has been controlled and no further emergency response effort is required, the following will be undertaken:

- EMTL reviews the situation and determines that control can be handed back to operations personnel. Consideration must be given to securing and protecting the incident scene pending investigation. Photographs of the incident area should be taken as soon as possible.
- Names of personnel involved in the initial emergency and subsequent response shall be recorded for purposes of collating information after the event.
- EMTL records date/ time of decision to issue the "All Clear".
- EMTL formally issues the "All Clear" and notifies external agencies accordingly.

5.9 Debriefing

Debriefing of all personnel involved with an emergency provides an opportunity for exchange of experiences / views in which the effectiveness of emergency response can be reviewed.

The objective is to assess the efficiency of the emergency response operation and associated procedures as they were applied to the particular emergency.

The debrief process should be conducted at the conclusion of all emergency situations, and provide the opportunity for discussions in which:

- The incident is discussed in a full and frank manner;
- Positive aspects of the management of the incident are discussed
- Opportunities for improvement are highlighted.

The Emergency Management Team Leader is responsible for nominating a time and location for the de-briefing to take place.

For any prolonged emergency or an emergency in which a fatality is involved, it is critical to have a professional counsellor present at the debriefing and to arrange follow up meetings with each individual concerned.

Feedback and key learnings shall be documented for future reference and review.

After the debriefing has taken place, a review process needs to be initiated. This should involve managers, OCE's, supervisors, Duty Card holders, H&SSR's and Health & Safety (H&S) personnel.

H&S personnel are to prepare a report in which both positive and negative issues arising from the incident are detailed and recommendations for changes to the Emergency Plan are clearly defined. This report shall be submitted to the SSE for approval of changes to the Emergency Plan.

H&S personnel are responsible for making the approved revisions to the Emergency Preparedness Plan. Whenever alterations are made to the Plan, training must be arranged for all relevant personnel.

5.10 Critical Incident Response Counselling

A critical incident is a traumatic event that causes people to experience strong emotional reactions. Examples of critical incidents are:

- Witnessing death or serious physical injury caused by traffic and machinery accidents, burns, etc.;
- The unexpected death or suicide of a relative, friend or co-worker;
- Involvement as a victim or observer of armed robbery, assaults or other serious crimes;
- The loss of valued possessions by theft, fire and other accidents.

In circumstances such as a major emergency where the services of counselors are required on site, the Health and Safety Manager will contact the EAP provider.

When contacting the EAP provider for critical incident response, the following information must be given:

- The organisation's name;
- A brief description of the critical incident;
- Where and when the critical incident occurred;
- The number of people involved;
- Flight or road travel arrangements;
- Accommodation;
- The involvement of other emergency services; and

- The availability of an area where debriefing can be conducted privately and without interruption.

The counselor will then proceed to the site to initiate counseling procedures.

5.11 Notification of Next of Kin

If an injury at work results in a person not being able to get home at the time his/her family is expecting him/her; or is of such nature that it is deemed appropriate, then his/her family should be notified by the following people: *[Note: This must only be done with the consent of the injured person. If the injured person, due to the nature of their injuries cannot give verbal or symbolic (nodding, blinking) consent, e.g. they are unconscious, then consent is to be implied.]*

- Minor Injury : OCE / Shift Supervisor / H&S Personnel
- Serious Injury : SSE / Health and Safety Manager
- Fatality : Police

Note: In the event of a fatality, the Police are responsible for notifying next of kin. Follow-up shall be made by the SSE, in consultation and conjunction with critical incident counsellors.

The person(s) notifying any Next of Kin should observe the following guidelines:

- You must be in an emotionally fit state to do so.
- Timing is important. It is best to visit/notify immediately after the incident.
- If possible notification of a serious injury or follow up after a fatality should be conducted in person.

In the event of a serious injury the SSE is responsible for ensuring that the members of the family are offered transport by the Company (eg. taxi), to the Hospital, and that professional arrangements are offered to care for any children remaining at home.

If the injury results in a lengthy period away from work or hospitalisation, then H&S Personnel are responsible for arranging company representatives to visit the injured person(s) and be aware of his/her progress and should assist with any problems relating to the injury.

5.12 Emergency Drills

Drills shall be periodically conducted, not exceeding a 12 monthly basis, to assess the adequacy and effectiveness of the Emergency Plan. Planning of frequency and scope of drills should be based upon:

- Status of the site's operational capacity;
- Advice from external agencies;
- Legislative compliance;
- Feedback and lessons learnt from previous drills or actual emergencies.

The Health and Safety Manager is responsible for ensuring that emergency drills are periodically conducted in all work areas.

The area / department managers and/or supervisors are responsible for co-ordinating the emergency drills in the areas under their direction.

H&S personnel are responsible for assisting in conducting drills and implementing recommendations.

The scenarios used in emergency drills must be realistic and based upon current operating conditions. The primary event (fire, spill, etc) is to be determined based on the objective of the exercise.

5.13 Media Response Procedure

5.13.1 Media Response Procedures

All media releases, statements and other communications must be approved by the CCL SSE and External Affairs;

- Discourage employees from commenting on the incident to the media and the public unless they have been formally authorised to do so. When authorised, only proven and known facts are to be stated;
- DO NOT release the names of any casualties to next of kin, the media or the public before authorisation by External affairs team;
- Discretion shall be exercised when dealing with the media, with consideration given to:
    - Security;
    - Stakeholder contact / communication;
    - Legal and other sensitive issues; and
    - Providing accurate and appropriate information.

5.13.2 General Guidelines

Media (as well as relatives, general public and other outsiders) will form their impressions of the incident and the Company as much on the way their inquiries are handled as on the facts they are told. It is therefore very much in the Company's interest to appear helpful and responsive.

Key Principles:

- Remember that human life and welfare comes above all else;
- Provide as much information as you can following the points listed in the Media Response Procedures above. If you are unable to give a satisfactory reply, offer to call back when you have more information. Make sure all promises to call back are kept;
- Avoid passing the call to another person unless you are sure the caller will get a satisfactory response from that individual;
- Be polite, helpful and as cooperative as possible;
- Never lose your temper;
- Avoid speculation;
- Avoid long-winded replies. Remember that the electronic media want 10-30 second grabs and the rest is edited out. Be crisp and concise;
- Update the message as time progresses;
- Provide facts and figures where applicable;
- Determine what deadlines the media have and try to accommodate them;
- Make no firm or legally binding commitments in respect to compensation;
- Consider an avoidance strategy for questions you are unwilling or incapable or answering;
- Although you will need to demonstrate sensitivity and compassion, you must consciously work at appearing "in control"; and
- Avoid technical jargon.

6 COMMUNICATION / TRAINING

All personnel affected by the content of this document, including those persons who will be allocated duty card responsibilities, will receive formal instruction on the requirements of this Plan and other documents relevant to responding to an emergency.

Members of the Emergency Response Team members shall receive the training and competencies detailed in the site training needs analysis, as a minimum these shall include:

- Fire Fighting
- First aid
- Hazchem
- Responding to inland oil spills.

7 RECORDS

A record shall be maintained of all formal risk assessment activities carried out until such time as the assessment is superseded or the hazard / risk no longer exists.

Records relating to training and instruction provided in the requirements of this Plan shall be maintained in accordance with the Training Scheme.

Records of all documentation completed during an emergency response situation shall be maintained for the life of the project.

8 REVIEW CRITERIA

This document shall be reviewed as follows:

- When there is a change of method and/or technology that may affect the accuracy of this document; or
- When there has been a significant event to which this document was relevant; or
- As a result of audit findings.

9 REFERENCES

- Qld Coal Mining Safety & Health Act 1999;
- Qld Coal Mining Safety & Health Regulations 2001;

10 ATTACHMENTS

Appendix A - Site Specific Emergencies.

11 APPENDIX

Site specific emergencies on the mine lease could include the following:

- Collapse (of a person);
- Laceration;
- Falls;
- Fires;
- Flood;
- Major Accident;
- Power Line Contact;
- Environmental Incidents;
- Fatal Accident;
- Fall into Water; and
- Vehicle / Equipment Incident.

Collapse of a Person

If pulse and breathing are not present within 3 minutes, brain damage could occur. Stay calm as you follow the DRABC action plan.

Commence CPR and raise Emergency procedure.

Danger. (To yourself)

Response. (Check patient)

Airway. (check for obstruction)

Breathing. (Look, Listen and Feel.)

Compressions. (start CPR)

"CPR" - 2 breaths to 30 compressions

- rate of compressions is 100 per minute

- compress breastbone 4 to 5cm (~ 1/3 of chest depth)

Laceration

Loss of blood and bleeding could endanger the life of the casualty

- Apply direct pressure to the wound, sterile if possible;
- If bleeding continues, add extra dressings, never remove the original dressing; and
- Elevate the injured body part, and keep the casualty as calm as possible.

Falls

Causality complains of pain in a limb after a fall or impact type injury:

- Keep the casualty calm and in a comfortable position;
- Call for medical aid to assist.
- Splint the injured limb before moving.

Fires

- Initiate emergency procedure & ask for assistance.
- If possible extinguish the fire without endangering yourself;
- Remove all persons to a safe distance and prevent non-essential personnel from entering the area.
- On-Scene Commander will take control of the situation, ensuring all persons are accounted for:

  a. If evacuation is required personnel must make their way to the nominated evacuation Muster Assembly area and await further instructions.
  b. A head count will be performed at the muster point.
  c. If personnel are not accounted for an immediate search must be organised by the On-scene Commander.

Flood

- Initiate emergency response procedures.
- Ensure all personnel have been moved to a safe area and prevent personnel from entering flood waters.
- On-scene commander will take control of the situation, ensuring all personnel are accounted for:

  a. If evacuation is required personnel must make their way to the nominated evacuation Muster Assembly area and await further instructions.
  b. A head count will be performed at the muster point.
  c. If personnel are not accounted for an immediate search must be organised by

the On-scene commander.

Major Incident

- Initiate emergency procedures.
- Without placing yourself at risk take steps to prevent the incident escalating.
- Do not move injured persons unless they are in direct danger of further injury.
- Supervisor will report immediately to the incident and control the situation.
- All persons must be accounted for.

Power Line Contact

Follow the emergency procedure for notification of the incident. If equipment is touching power lines it may be alive.

- Remain a safe distance from incident scene.
- Be alert to possibility of a tyre explosion on rubber tyred equipment.
- Beware of downed electrical wires.
- Are persons in the vehicle safe? Ensure they stay in equipment until power is isolated.
- If in doubt about time of incident, evacuate the area in case of tyre explosion.
- DO NOT touch equipment or lines, stay well clear.
- Await official confirmation by a suitably qualified electrician that all power supply is isolated.

In order to safely evacuate an operator from a machine which has made contact with power lines:

- Inform the operator to stay on equipment, in cabin, until all power is isolated.
- When power is isolated, remove operator as follows:
  - Park a similar sized truck nose to nose about 30cm (1 foot) from affected truck
  - Operator of affected to truck leave via the inner deck door;
  - Jump across to the deck of the other truck – try not to touch both trucks at the same time; and
  - Avoid climbing on the ground.
- If the situation requires quick exit
  - Climb down to bottom step;
  - Jump out and away from the truck – **don't touch truck and ground at the same time;**
  - Walk quickly away in a direct line away from the front of the vehicle.

Tyres which have had electrical current passing through them may be seriously weakened and the risk of tyre explosion is dramatically increased. The vehicle must be shut down and the operator evacuated.

Blast Fumes

- Evacuate personnel to outside the fume cloud path.
- Exposed personnel are to report to the site supervisor and follow the site medical plan.
- After the fume cloud has dissipated, check the area for affected animals.

General Environmental Spills

- Assess the risks and decide whether the incident can be managed internally or if fire or medical attention is needed.
- Report spills to the area supervisor. Advise of the risks. The supervisor will call for assistance using the emergency procedure if required.
- Alert all occupants and clear the area if appropriate.
- Establish ventilation and remove ignition sources.
- Consult the material safety data sheet (MSDS) for treatment requirements.
- Locate the nearest spill kit and personal protective equipment (PPE).
- Stop the source, providing it is safe to do so.
- Contain any spill with appropriate spill material.
- Prevent spills from infiltrating the ground or entering drains or water course. The outer edge of the spill should be dammed with rags, blankets, sand bags, mops and/or absorbent booms.

Substance type	Spill kit absorbent or treatment	PPE
Petrol, diesel, lubricant, coolant and hydraulic fluid	Absorb spilled substance with kitty litter, sand, earth or vermiculite	PVC gloves. Half face respirator with organic vapour cartridge (filter complying with AS/NZS 1715 and AS/NZS 1716). Safety glasses or face shield complying with AS/NZS 1337.
Strong acid	The spillage should be contained with earth or sand and or neutralised with	Neoprene gloves

	commercial acid neutralisers. Alternatively, special non leaching absorbents/materials suitable for strong concentrations of acids or alkaline may be used instead. Spill kits containing soda ash (sodium bicarbonate) can be sprinkled liberally over the spill. Do not use rags or sawdust to clean up oxidising acid spills.	
Strong alkali	The spillage should be contained with earth or sand and or neutralised with commercial acid neutralisers. Alternatively, special non leaching absorbents/materials suitable for strong concentrations of acids or alkaline may be used instead. Ensure that no contact occurs between spilled material and aluminium or zinc.	Neoprene gloves
Pesticide, herbicide	Contain and absorb liquid spills with kitty litter.	PVC gloves. Full-face shield or chemical safety goggles. Half face respirator with combined dust and organic vapour cartridge. Use of suitable rubber boots or rubber overshoes when cleaning up spills if

		contact is likely.
Solvent or paint	Spills of organic solvents (e.g., turpentine and methylated spirits) should be absorbed using dry earth, sand or a proprietary product suitable for the absorption of the liquid. Commercial solvent neutralisers, such as Solusorb ™, may act to reduce vapours and raise the flashpoint of the mixture.	PVC gloves. Half face respirator with organic vapour cartridge.

Table 11.1 Spill Table

- Spill response material is available at various locations on site.
- Treat the affected area with spill kit absorbent or treatment
- Spills mixed with water should be pumped out and disposed of into an area for treatment pre-arranged with the SSE and environmental representative.
- Off-lease spills into running waterway should be reported to the Manager – Planning and Approvals or his delegate so downstream users can be notified. Install booms to minimise further movement of contaminants downstream. Arrange for clean-up of contaminated material including banks if necessary.
- Sampling should be conducted in accordance with AS 4482.1-2005 : Guide to the investigation and sampling of sites with potentially contaminated soil – non-volatile and semi-volatile compounds. Photographic monitoring of the spill site and downstream environment is recommended.
- Remove contaminated material by placing into labelled drums or a skip.
- Contaminated material must be disposed of as per SDS requirements (as applicable).

Fuel or Hazardous Substance Spills

- Initiate emergency procedures.
- Isolate power supply, extinguish all naked lights.
- Remove all vehicles from the area.
- Evacuate all personnel to the emergency assembly area near offices.
- Assess the situation in consultation with local emergency services.
- Barricade the area
- Establish a decontamination area upwind of the incident
- Determine what types and quantities of chemicals involved
- Obtain MSDS and hazardous materials information
- The correct equipment and products shall be used to isolate, contain, neutralise, collect, or remove the chemical concerned.
- All chemical refuse from the incident will be disposed of according to Environmental Protection Authority requirements and Material Safety Data Sheet directions.
- If required liaise with the Poisons Information Centre on phone number 13 11 26.

Fatal Incident

In the event of a fatality the following procedure will apply:

The CCL SSE shall:

- Notify the Police and seek approval to remove the deceased to a suitable location removed from the emergency and further danger.
- Where possible, ensure the deceased are properly identified.
- The relevant company manager will access the personal files of the deceased and collect relevant information re next of kin and religious faith etc.
- Compile a detailed statement of events surrounding the fatality based on available information including:
  - Name and occupation of deceased
  - Time of accident
  - Nature of fatal injury
  - Cause
  - Witnesses
- This statement will be used as the basis for the company report to the Mines Inspectorate and the Police (as required).
- Begin to make the necessary arrangements for company representation to provide assistance to the deceased's next of kin and family with funeral arrangements and other matters.

Bomb Threat

If a phone call is received issuing a bomb threat or chemical/biological threat, remain calm and follow the Action in the Event of a Bomb Threat.

Vehicle / Equipment Incident (Fuel truck rollover on mining lease)

- Initiate emergency procedure & ask for assistance.
- Do not move injured persons unless they are in direct danger of further injury.
- Remove all other persons to a safe distance and prevent non-essential personnel from entering the area.
- If safe to do so, check for fuel leaks and isolate/contain the leak.
- On-Scene Commander will take control of the situation, ensuring all persons are safe.

APPENDIX E

POST MINE LAND USE PLAN

Cockatoo Coal Limited

Post mine land use plan

Baralaba Coal Mine | ML 5065, ML 5580, ML 5581, ML 5582, ML 5590, ML 80157, ML 80169 and ML 80170

Prepared for Cockatoo Coal Limited | 8 April 2013

Level 2, 66 Hunter Street Sydney NSW Australia 2000 **Phone** +61 2 9300 3333 **Fax** +61 2 9221 6333

Post mine land use plan

Final

Report B13018RP1 | Prepared for Cockatoo Coal Limited | 8 April 2013

Prepared by	**Timothy Rohde**	Approved by	**Robert Janssen**
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Signature		Signature	
Date	08 April 2013	Date	08 April 2013

Document Control

Version	Date	Prepared by	Reviewed by
Rev A	19 March	T Rohde	R Janssen
Rev B	26 March	R Janssen	C Ellice (Cockatoo Coal)
Rev C	28 March	T Rohde	R Janssen

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Figures

1 Introduction

1.1 General

The Baralaba coal mine includes Baralaba central, Baralaba north and Wonbindi north located on mining lease (ML) 5065, ML 80157, mining lease application (MLA) 80170 and MLA 80169.

Activities at the Baralaba coal mine include:

- continued open cut mining operations on ML 5605 and ML 80157 until the end of mine life (March 2014);
- commence an open cut mine on MLA 80169; and
- commence an open cut mine on MLA80170.

Activities on the land subject to the mineral resource authority are subject to conditions of approval issued under environmental authority (EA) permit numbers MIN100860309 and MIN101813010.

1.2 Scope and purpose

This post mine land use plan (the plan) relates to how the final landform will be constructed including surface water management, erosion control, topsoil application, vegetation and final land capability for the Baralaba coal mine.

This is a progressive plan that will be implemented as areas become available for rehabilitation. It is expected that it will be updated periodically (ie with each Plan of Operations) to include changes such as improved revegetation methods, refining acceptance criteria or updates to the mine plan.

The plan is necessarily conceptual. Where gaps are identified within the plan they are summarised in Section **Error! Reference source not found.** and form a continual improvement register.

1.2.1 Environmental authority compliance

The post mine land use plan is a requirement of the EA permits (condition F19). Table 1.1 describes how requirements of condition F19 have been satisfied.

Table 1.1 Condition F19 requirements

Condition element	Description	Section of this plan and description of how the element is satisfied
F19(a)	Schematic representation of final landform inclusive of drainage features	Section 3**Error! Reference source not found.** • description of final landforms for each main domain at closure
F19(b)	Drainage design	Section 4 • surface water elements are presented as Section 4. This includes some elements of

Table 1.1 Condition F19 requirements

Condition element	Description	Section of this plan and description of how the element is satisfied
		Condition F19(e)
F19(c)	Erosion control proposed on reformed land	Section 6
F19(d)	Geotechnical, geochemical and hydrological studies	Section 2 • description of pre-mining studies and potential closure impacts
F19(e)	Chemical, physical and biological properties of soil and water	Section 5 • description of soil; and • water is covered in Section 4
F19(f)	Proposed revegetation methods inclusive of plant species selection, re-profiling, respreading soil, soil ameliorants/amendments, surface preparation and method of propagation	Section 7 • description of vegetation; and • soil is covered in Section 5
F19(g)	A rehabilitation monitoring program	Section 9

2 Mine domains and impacts

2.1 Domains

Open-pit mining will result in one of three domains as a result of the type of disturbance. These include:

- voids – these are a result of open-pit mining, the removal of overburden and extraction of coal;
- elevated landforms – these are spoil dumps. They are either in-pit or ex-pit and result from the pre-stripping of overburden which is end-dumped onto the spoil dumps; and
- infrastructure – all other surface disturbance and may include the mine industrial area, run-of-mine (ROM) pad, roads, sediment dams, flood levee and other disturbed areas.

The planned domain area of disturbance is described in Table 2.1 .

Table 2.1 Domain area of disturbance

Domain	Voids		Elevated landforms		Infrastructure	
Tenure	Baralaba central mine	Baralaba north/Wonbindi north mine	Baralaba central mine	Baralaba north/Wonbindi north mine	Baralaba central mine	Baralaba north/Wonbindi north mine
Projective surface area (ha)	0	70	220	670	110	125
Total (ha)	70		890		235	

A total projected surface area of 1,195 ha will be disturbed over the mine life prior to closure.

The predicted configuration of the project at closure is shown in Figure 3.1 for Baralaba Central mine and Figure 3.2 for Baralaba North/Wombindi North mine. It should be noted that a number of sub-domains have been combined on the basis of their expected impacts and presented in Table 2.1.

Impacts of mining activities are described in Section 2.2 for soil, geochemistry and geotechnical stability.

2.2 Impacts

The following impacts apply to mining activities at the Baralaba coal mine. Land capability for the Baralaba coal mine site, post-mining is described in Section 8.

2.2.1 Soil

A soil survey has been completed for the Baralaba north/Wonbindi north mine. The results of the investigation have been reported in *Soil mapping, stripping recommendations and pre-mining land suitability for Stage 2 of the Baralaba Coal Mine Lease* and *Extension* and *Pre-mining Agricultural Land Suitability and Soil Reuse Recommendations - Wonbindi North area, Baralaba, Queensland*. The following is a summary of the investigations. The purpose of the summary is to describe the impacts of open-pit mining on the soil landscape.

Coal extraction will be by open-pit mining. The extraction process will result in a highly disturbed landscape. The Baralaba coal mine has developed topsoil stripping plans and topsoil management plans which outline how topsoil will be stripped ahead of open-pit mining and its subsequent reinstatement as the open-pit advances. The advancing pit will result in both in-pit and ex-pit spoil dumps that will be available for progressive rehabilitation.

The soil landscape pre-mining is typical of alluvial flood plains. It is characterised by deep soil profiles made up of both topsoil and subsoil. A portion of the project is considered to be prime crop producing soil and has been mapped as potential strategic cropping land (SCL).

The soil landscape post-mining will not be typical of alluvial plains. The final landform will be elevated resulting in slope angles up to 14.5%. The post-mining soil profile will be shallow, largely consisting of topsoil stripped during pre-mining earthworks. Subsoil will be selectively stripped and may not be reinstated on all landforms post-mining.

It is generally accepted that the post-mining landform will not be consistent with the SCL criteria. The project will only reinstate SCL under the topsoil stockpile area, where the soil profile will remain generally undisturbed (see *Topsoil Management Plan* for full details. SCL is discussed further in Section 8.

2.2.2 Geochemistry

Spoil will be end-dumped onto either in-pit or ex-pit spoil dumps. Spoil is the overburden that is pre-stripped from above the coal, and interburden (ie the material between target coal seams). It is blasted, resulting in fractured rock pieces. The pieces when placed in the spoil dump allow free infiltration of rainwater and diffusion of oxygen. This free interaction with oxygen and water may lead to contaminants being transported from the spoil dumps to the receiving environment.

A geochemistry assessment for the Baralaba north/Wonbindi north mine has been completed. The results of the investigation have been reported in *Geochemical Assessment of Spoil and Potential Coal Reject Materials*. The following is a summary of the investigation. The purpose of the summary is to describe the impacts of open-pit mining on the final landform.

The spoil generated by the project will have a very high factor of safety with respect to potential acid generation. There will be excess alkalinity and the spoil will generate low to medium salinity surface runoff and seepage. Spoil will comprise over 99% of all mineral waste generated by the project. Management of the alkaline mineral waste materials will not pose any significant environmental issues post-mining.

The majority of coal seam roof and floor materials (ie potential coal reject materials) will not pose a significant risk of developing acid conditions. The high excess alkalinity and low sulfur content of the roof and floor samples suggests that the magnitude of any localised acid generation, if it occurs, will be very small.

Whilst a very small proportion of coal reject materials may have a small capacity to generate acid, these materials will be mixed with alkaline coal reject materials at the in-pit rejects disposal area and covered with inert spoil. It is unlikely to produce acid rock drainage.

Total metal and metalloid concentrations are expected to be low and below the applied health-based investigation levels. However, the multi-element results indicate that some spoil materials may produce leachate containing slightly elevated concentrations of soluble Molybdenum (Mo) and potentially Selenium (Se), which is common for spoil materials at coal mines in the Bowen Basin.

2.2.3 Geotechnical

Geotechnical investigations have been conducted by PSM Consult Pty Ltd to ascertain optimum slope design angles for the proposed extended mine operations. It is likely that further investigation will be required throughout the project life cycle to aid closure planning.

Action 1 – as sections of the project are rehabilitated, stability will be assessed with ongoing erosion monitoring and vegetation assessment.

3 Final landforms

The proposed final landforms for the project are shown in Figure 3.1 for Baralaba north and Baralaba central mine and Figure 3.2 for Wonbindi north mine.

Minor description of hydrology, topsoil and erosion control measures are described in this section to aid description of the landform. Further detail of hydrology, topsoil and erosion are described in Section 4, Section 5 and Section 6 respectively.

3.1 Residual void

3.1.1 Baralaba Central

There will be no residual void in Baralaba central mine because it will be completely backfilled. The void will be backfilled with an in-pit spoil dump. Design for this in-pit spoil dump has been submitted to EHP.

3.1.2 Baralaba North (ML80169)

There will be no residual void in Baralaba North mine lease because it will be completely backfilled. The void will be backfilled with an in-pit spoil dump.

3.1.3 Wonbindi North (ML80170)

Void backfilling will commence at the southern end of the open-pit and progress towards the north. Backfilling will be developed as an in-pit spoil dump. The final backfilled landform will be an elevated structure up to 50 m above ground level. Backfilling of the void will be undertaken progressively, as sufficient space becomes available.

A residual void is planned for the northern section of the Wonbindi north mine. The void will be located outside of the 1,000 year AEP flood event level of the Dawson River flood plain.

Action 2 – There is currently no design beyond conceptual for the residual void at closure. Pre-feasibility level design must be completed at least 5 years prior to closure. Detailed design must be completed at least 3 years prior to closure. The assessment must include a detailed assessment of consolidation to determine surcharge heights for backfill. Final Void Plan will be submitted by 30 June 2014.

3.2 Elevated landforms

To create stable landforms, the design parameters of the elevated landforms will be:

- reshaped slopes at a grade of 1:7 (~14.5%) with a maximum effective slope length of 130 m;
- drainage berms (10 m wide) installed on the side slopes to limit effective slope lengths;
- vertical height of final landforms will be no more than 50 m above ground level;
- installation of erosion and drainage structures to direct water off the elevated plateau, down the slopes and around the base of the dumps into sediment collection ponds; and
- the top of the dump will be gently sloped and shaped to direct water off the dumps.

3.2.1 Baralaba Central

The Baralaba Central leases will have one large elevated landform which will be the out of pit spoil dump joined to the backfilled void with elevated spoil dump over the top.

3.2.2 Baralaba North

One in-pit spoil dump that will backfill the entire open-pit void. The flood levee will be removed at closure. The in-pit spoil dump will be protected by toe protection if required.

3.2.3 Wonbindi North

One in-pit spoil dump that will partially backfill the open-pit void. The void is outside of the 1:1000 AEP. Construction of the in-pit spoil face is discussed in Section 3.1; and one ex-pit spoil dump.

Action 3 – There is currently conceptual design for elevated landforms. Final designs will be completed in future iterations of this plan. The basis of design will be determined based on surcharge heights developed

from Baralaba central mine. Design will be confirmed in the Rehabilitation Management Plan to be submitted in 2013 and the backfilling void management plan in 2014.

3.3 Infrastructure areas

All infrastructure areas associated with the Baralaba coal mine will be removed, on-sold or disposed of as appropriate. The land will be re-contoured, topsoiled, ripped and seeded. All disturbed areas will be rehabilitated with an appropriate seed mix to enable revegetation.

The MIA is predominately flat.

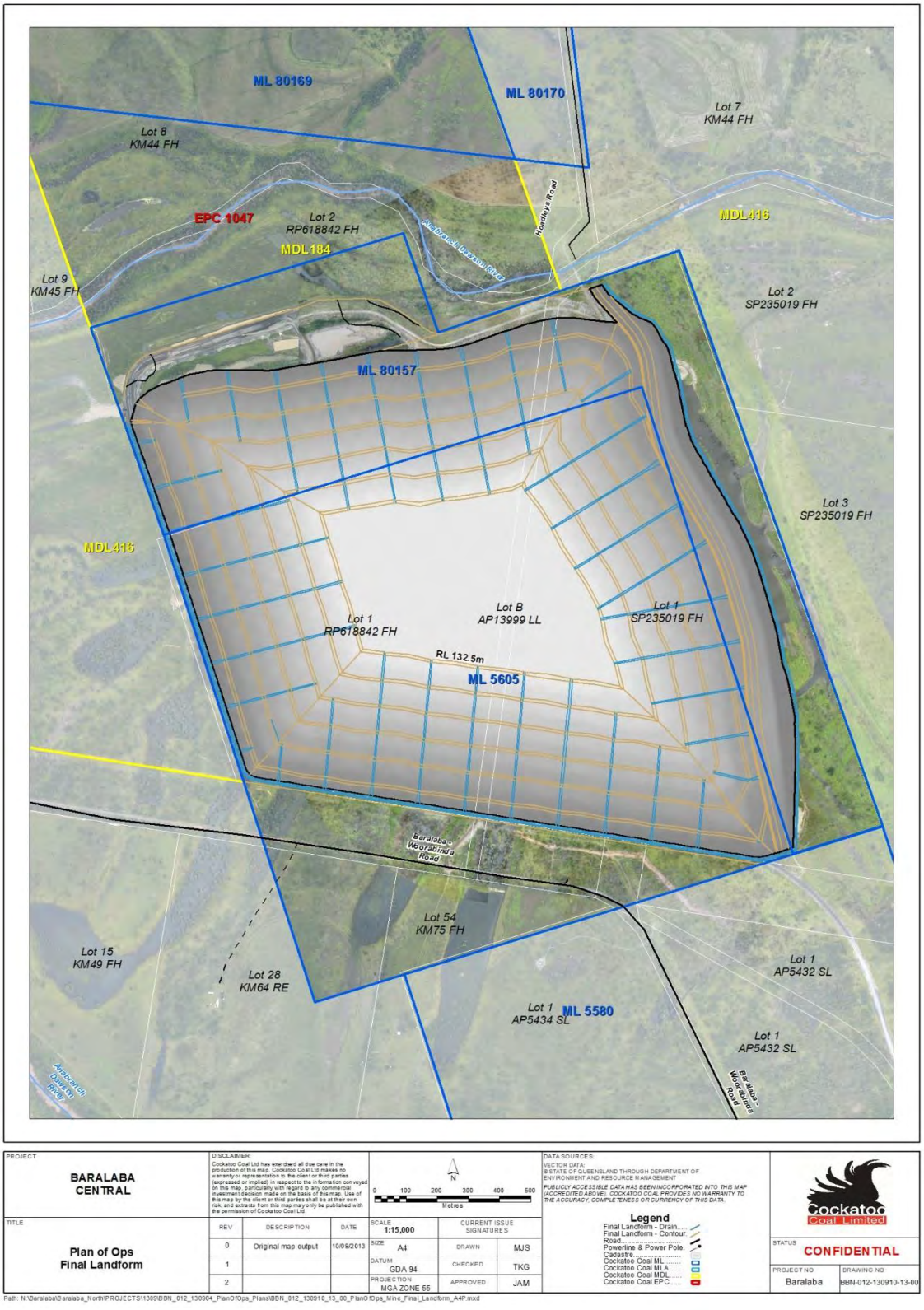

Figure 3.1 Baralaba Central Mine - Final Landform

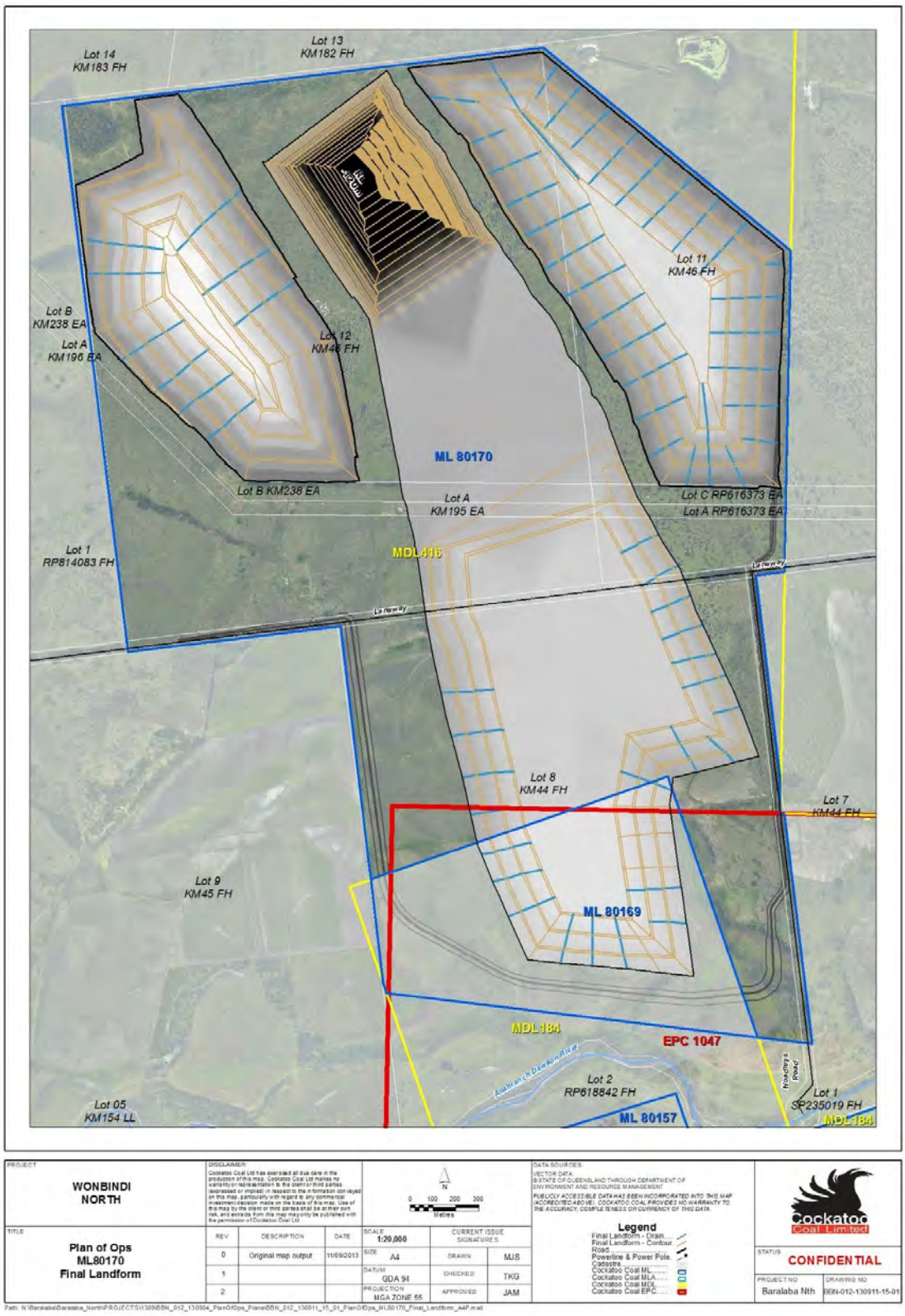

Figure 3.2 **Baralaba North/Wonbindi North - Final Landform**

4 Hydrology

4.1 Water balance

Comprehensive modelling of the long-term site water balance was carried out by BECA. The water balance has been developed for operational conditions.

In reality, the mine site will evolve over the life of mine and the structure of the final landforms and volumes of the dams may also evolve.

Action 4 – The water balance for the Baralaba coal mine will be annually reviewed and will include the expected final landforms and water management structures.

4.2 Water storages

4.2.1 Baralaba Central

At closure there will be no operating regulated dams. If Mine Dam 1 still exists, it will be de-commissioned and rehabilitated. Some sediment dams may be located as part of the site drainage system.

4.2.2 Wonbindi North (ML80170)

At closure there will be no operating regulated dams. The mine dams will be de-commissioned and rehabilitated. Some sediment dams may be located as part of the site drainage system.

4.3 Water management

Surface water runoff is controlled by diverting any surface water runoff around the pits and transferred into mine water dams (described in Section 4.2). To ensure that sediment is not discharged offsite, regular inspections of all sediment control structures will be carried out as per the *Erosion and Sediment Control Program*.

A surface water monitoring program is carried out on a regular basis as per the requirements of the EA permits. This involves sampling from a number of locations for a variety of parameters, including; heavy metals, nutrients, hydrocarbons, suspended solids and physico-chemical elements (ie pH and conductivity).

At the end of mine life, some of the water management structures may be retained as sediment basins.. Any that are no longer required will be re-contoured if necessary and deep ripped and seeded with an appropriate seed mix.

Post-mining the following water management principles will be used on site:

- pre-mining surface water drainage patterns will be maintained where practical to do so;
- unaffected surface water will be diverted around disturbed areas wherever practical; and

Action 5 – At closure all regulated dams will be de-commissioned. Where dams must be used, they must include spillway design.

5 Topsoil

An assessment of topsoil for the Baralaba coal mine has been completed and is described in Section 2. Each soil sub-type has stripping depth recommendations for both topsoil and subsoil. Prior to clearing, the stripping depth recommendations will be assessed to ensure that topsoil resources are confirmed.

All land clearing activities will be conducted on a progressive basis, with only areas required for mining activities cleared. Clearing of vegetation will be conducted using dozers.

Topsoil will be stripped from areas to be disturbed by mining or associated infrastructure using dozers or scrapers, and will be stockpiled for later use in rehabilitation. The depth of stripping will average approximately 300 mm, varying from location to location depending on the soil characteristics as identified in the soil surveys.

A topsoil management plan has been developed for the Baralaba coal mine and outlines control strategies to ensure that the topsoil resource is appropriately managed.

Action 6 – The topsoil inventory is updated for each annual submission of the plan of operations. This will facilitate early identification of potential issues such as topsoil deficits or poor quality. This action may result in secondary requirements such as a plan for spoil improvement for direct seeding.

6 Erosion

6.1 Residual pit void

The residual open-pit void will include perimeter bunding to exclude access to the domain. Final pit wall slope angles will be determined in the residual void investigations. Slopes will be internally draining into the residual pit-void. There will be no erosion control on these internal void slopes.

6.2 Elevated landforms

Elevated landforms will be created from out-of-pit spoil dumps and the spoil placement over backfilled pits. Progressive rehabilitation of these areas will be carried out when final spoil placement is achieved.

To create stable landforms that limit erosion potential, the design parameters of the elevated landforms will be:

- reshaped slopes at a grade of 1:7 (~14.5%) with a maximum effective slope length of 130 m;
- drainage berms (10 m wide) installed on the side slopes to limit effective slope lengths;
- vertical height of final landforms will be no more than 50 m above ground level;
- installation of erosion and drainage structures to direct water off the elevated plateau, down the slopes and around the base of the dumps into residual open-pit void;

- the top of the dump will be gently sloped and shaped to direct water off the dumps and towards the final pit void;
- reshaped slopes will be spread with topsoil and ripped on the contour;
- an appropriate seed mix (pasture seed with a selection of native trees and shrubs) will be applied to topsoiled slopes. Fertiliser will be used if necessary; and
- to establish erosion control, priority will initially be given to establishment of pasture species.

Surface water runoff will be controlled on-site to prevent uncontrolled sediment laden water from flowing onto surrounding land or into natural water courses. Surface water will be diverted into the open-pit void where possible.

6.3 Infrastructure areas

The run-of-mine pad will be removed and the land re-contoured, topsoiled, ripped and seeded. The roads, windrows, car park, and hardstand areas will be deep ripped to a depth of 300-500 mm, where possible and topsoiled. The crushing and screening plant area will be removed from site and the land will be topsoiled, ripped and seeded.

All other disturbed areas will be rehabilitated by ripping any compacted areas and seeding with appropriate seed mix.

The mine site workshop, office, septic system, power supply and wash-down may be considered suitable for post-mining. This potential will be assessed at the mine closure stage.

The flood levee will be removed. The disturbed area will be rehabilitated by ripping any compacted areas and seeding with appropriate seed mix.

Infrastructure areas are generally flat and may require minor earthworks to control run-off and sediment. Where appropriate, preference will be given to diverting run-off towards the open-pit void.

Action 7 – There is currently conceptual design for water and erosion control for mine domains. Actions 2 and 3 must include contour drain, and drop drain design including construction drawings. This action must also be considered when updating the site water balance (action 4).

7 Vegetation

7.1 General

Vegetation establishment will be promoted by harvesting and spreading of native seed. The species selected in the seed mix will be representative of local species. A survey of species local to the area and suitable for use on mine site rehabilitation areas has been conducted.

Fertiliser will be used if found to be necessary once testing of the cover material for nutrient composition has been undertaken. Testing for nutrient composition is an action required in the *Topsoil Management Plan*.

Rehabilitation works will not be carried out in the months of known high average rainfall to reduce erosion risk. Seeding events are to be timed to occur when low-moderate rainfall is predicted.

7.2 Plant species for rehabilitation

A list of plant species to be used for establishing native trees and shrubs has been provided in Table 7.1. This list was composed from local area survey data and species identified in local regional ecosystems. The species on this list include groundcovers suitable for rapid stabilisation and erosion control and native trees and shrubs consistent with returning the landform to a nature conservation area.

Action 8 - A rehabilitation trial using the potential species listed in Table 7.1 will be conducted.

Table 7.1 Proposed rehabilitation species

Species	Seeding rate (kg/ha)
Small trees (minimum of four species)	
Callitris endlicheri	0.1
Acacia rhodoxylon	0.25
Acacia catenulate	0.25
Acacia shirleyi	0.25
Acacia salicina	0.25
Eucalyptus exserta	0.08
Corymbia dallachiana	0.08
Lysiphyllum carronii	1.0
Shrubs (minimum of four species)	
Alphitonia excels	0.25
Petalostigma pubescens	0.5
Eremophila mitchellii	0.2
Acacia blakei	0.25
Allocasuarina luehmannii	0.15
Carissa ovate	0.4
Acacia excels	0.25
Atalaya hemiglauca	0.4
Acacia leiocalyx	0.25
Persoonia falcate	0.1

Table 7.1 Proposed rehabilitation species

Species	Seeding rate (kg/ha)
Acacia decora	0.25
Breynia oblongifolia	0.4
Alstonia constricta	0.05
Ground cover (minimum of four species)	
Themeda triandra	2
Heteropogon contortus	2
Bothriochloa ewartiana	1
Bothriochloa decipiens	1
Cynodon dactylon	6
Lomandra multiflora	2
Lomandra longifolia	2
Lomandra confertifolia	2
Chrysopogon fallax	2
Neptunia gracilis	1

7.3 Weed management

The existing weed management plan will be implemented to prevent the spread of weeds off-site and the introduction of new weeds onto the site. Weed control will be implemented in key areas as required and any weeds present will be controlled.

Weed management will be maintained for a period, yet to be decided, after mine closure.

8 Land capability

8.1 Pre-mining

The Baralaba coal mine is located within an anabranch of the relatively flat alluvial flood plain of the Dawson River. The general area contains a series of ephemeral water courses which become minor streams only during flood flows. Average slope of land is less than 5%.

Land in the Baralaba district has been disturbed by land clearing for rural industries. The pre-mining land suitability was identified by the Department of Mines and Energy as Class 2 for beef cattle grazing. Class 2 land suitability is described as 'suitable land with minor limitations', which means that it is suitable for the proposed use (cattle grazing) but which may require minor changes in management to sustain the use.

8.1.1 Strategic cropping land

A detailed description of the project impact on SCL is described in the relevant SCL protection description for the Baralaba north and Wonbindi north projects.

Existing disturbance on Baralaba central mine is not subject to SCL assessment criteria.

8.2 Post-mining

The post-mining landscape will not be typical of the site or region pre-mining. The final landform will include:

- elevated structures with slopes up to 14.5% compared to 5% pre-mining;
- most of the void will be backfilled with unconsolidated fractured rock pieces compared to the consolidated geology prior to mining;
- a residual void will remain in the northern section of the Wonbindi north mine compared to an alluvial plan prior to mining; and
- the reinstated soil profile will be shallow compared to the deep alluvial soils prior to mining, some of which is mapped as likely SCL.

The altered final landform post-mining will require alternative landuse. The post-mining land use will be nature conservation. A nature conservation area is defined as being comparable in species diversity and structure to an area of remnant vegetation situated on a similar landform to that of the rehabilitation areas.

Baralaba coal mine will be rehabilitated with pasture species, native trees and shrubs.

Post-mining the land suitability class for beef cattle grazing will be Class 4 on flat areas and Class 5 on sloping land. Class 4 is described as marginal land requiring major inputs to ensure sustainability, but the benefits do not justify the use of the land and it is therefore considered to be unsuited for the land use. Class 5 is described as unsuitable land with extreme limitations and is therefore unsuited and cannot be used. Table 8.1 summarises the post-mining land use and suitability for each domain.

Table 8.1 Post-mining land use for each domain

Domains Item	Voids	Elevated landform – flat surfaces	Elevated landform - slopes	Infrastructure
Post-mine land use	Nature conservation area	Nature conservation area	Nature conservation area	Cattle grazing
Post-mine land description	Final void to be completely backfilled.	Establish a landform and revegetate with pasture species to control erosion. Allow the establishment of native trees and shrubs.	Establish a landform and revegetate with pasture species to control erosion. Allow the establishment of native trees and shrubs.	Establish a landform and revegetate with pasture species which may support cattle grazing and will be compatible with the surrounding “new” landform.
Post-mine land classification	Class 4 land suitability	Class 4 land suitability	Class 5 land suitability	Class 4 land suitability

8.2.1 Strategic cropping land

The Baralaba coal mine will impact on SCL soil in the following general ways:

- some mixing of topsoil and subsoil, particularly at boundaries of horizons during stripping;

- alteration of the salinity/alkalinity and soil water storage capacity of the reinstated profile;
- reinstated/rehabilitated soil profiles will likely be less than 750mm, the minimum soil depth for SCL in the western cropping zone. This is because subsoil will only be stripped as an opportunity activity. There is not enough topsoil to reinstate the minimum thickness required for SCL ;
- reinstated/rehabilitated slopes will exceed 5%, the maximum slope criteria for the western cropping zone; and
- reinstated/rehabilitated slopes may fail on surface rockiness.

The project has made a commitment to reinstate SCL located under the proposed topsoil stockpiles. This will be achieved by:

- the underlying subsoil will be cultivated or ripped and returned to a level of compaction equivalent to that of adjacent undisturbed soils;
- soil horizons will be selectively replaced to a standard consistent with horizons in adjacent undisturbed soil; and
- for two years following the completion of works yearly monitoring will be undertaken. The monitoring program is described in *Rehabilitation Monitoring and Management Plan*.

Action 9 - It will be essential to prove that SCL has been reinstated. Cockatoo Coal Limited will trial the return of selected rehabilitation areas within the project site to dryland cropping.

9 Rehabilitation monitoring

Rehabilitation monitoring will be done in accordance with the *Baralaba Coal Mine Rehabilitation Monitoring Plan*.

10 Review and improvement

10.1 Review

The effectiveness of the post mine land use plan will be reviewed in conjunction with the overall rehabilitation program. The review will be done at least every five years or as otherwise directed by Baralaba coal mine management/regulatory authorities.

The frequency of review will be annual from five years before closure.

The review will reflect changes in environmental requirements, technology and operational procedures. The review will include assessment of progress of action items listed in Section 10.2. The review may include updating the action list to identify further items if knowledge gaps are identified.

Results of the assessments will be incorporated into future rehabilitation planning to continually improve the success of the program.

10.2 Improvement actions

Table 10.1 lists actions that must be implemented to improve understanding of post-mining land use at Baralaba coal mine. The responsibility for implementing these actions rests with the Baralaba coal mine, general manager operations or delegate.

Table 10.1 Improvement actions

Action number	Description
1	*As sections of the project are rehabilitated, stability will be assessed with ongoing erosion monitoring and vegetation assessment*..
2	There is currently no design beyond conceptual for the residual void at closure. Pre-feasibility level design must be completed at least 5 years prior to closure. Detailed design must be completed at least 3 years prior to closure. The assessment must include a detailed assessment of consolidation to determine surcharge heights for backfill. *Final Void Plan will be submitted by 30 June 2014.*
3	There is currently conceptual design for elevated landforms. Final designs will be completed in future iterations of this plan. The basis of design will be determined based on surcharge heights developed from Baralaba central mine. Design will be confirmed in the Rehabilitation Management Plan to be submitted in 2013 and the backfilling void management plan in 2014.
4	The water balance for the Baralaba coal mine will be annually reviewed and will include the expected final landforms and water management structures.
5	Preference at closure should be given to water storage that do not include regulated dams. The updated water balance should include an options analysis to minimise surface water in dam structures. Preference should be given to creating internal drainage with all surface water discharging to the residual pit void. Where dams must be used, they must include spillway design. Discharge of excess water must comply to EHP conditions described in Final Model Water Conditions for Coal Mine in the Fitzroy Basin.
6	The topsoil inventory is updated for each annual submission of the plan of operations. This will facilitate early identification of potential issues such as topsoil deficits or poor quality. This action may result in secondary requirements such as a plan for spoil improvement for direct seeding.
7	There is currently conceptual design for water and erosion control for mine domains. Actions 2 and 3 must include contour drain, and drop drain design including construction drawings. This action must also be considered when updating the site water balance (action 4).
8	A trial will be conducted using the potential species listed in Table 7.1.
9	It will be essential to prove that SCL has been reinstated. Cockatoo Coal Limited will trial the return of selected rehabilitation areas within the project site to dryland cropping.

APPENDIX F

ENVIRONMENTAL AUDIT STATEMENT

Cockatoo Coal Limited

2 Audit of Proposed Financial Assurance

A review of financial assurance liability was completed and rates used are consistent with third party mine planning estimates and plant manufacturers production rates.

While a rehabilitation plan is yet to be approved, underlying assumptions for landform design and rehabilitation outcomes are considered reasonable.

The audit has determined that no performance discount is applicable as the holders of the EA have not operated a mine in Queensland previously and hence have no auditable track record of past performance.

SUMMARY

The total estimated rehabilitation cost i.e. the gross financial assurance including maintenance, monitoring and GST at December 2015 is $29,176,802.

No performance discount has been applied.

The net financial assurance has been prepared in accordance *"Guideline Mining: Calculating financial assurance for mining projects, 120822 – EM585 – Version 2"*. The net financial assurance required is $29,177,000 (rounded to nearest thousand).

CERTIFICATION STATEMENT

'I Craig Thamm, being aware that it is an offence under s. 480 of the Environmental Protection Act 1994 to provide false or misleading information, state that:

i. I am authorised to sign on behalf of the person (meaning a corporation or individual) holding the environmental authority;
ii. all information provided is true and complete;
iii. I understand that information given with this plan of operations and audit statement could become available to the public in accordance with the Environmental Protection Act 1994 and Right to Information Act 1992.'

---------- 14 October 2014

Auditor's Signature **Date**

ENVIRONMENTAL AUDIT STATEMENT

FOR

PLAN OF OPERATIONS – Wonbindi North

Environmental Authority EPML00617113

1 November 2013 to 31 August 2014

This audit statement is made in accordance with s234(3) of the EP Act 1994.

Requirement	Details
Auditors Name	Craig Thamm
Auditors Credentials	Bachelor of Engineering (Env) Approx 20 years experience in environmental, safety and project management in the mining industry and civil construction industries
Relationship with EA holder	Consultant
Date of Audit	Conducted in conjunction with audit for EA MIN100860309 for Baralaba Central/North. Various aspects completed at various time from Nov 2012 and Sep 2013 (environmental compliance audits existing operations) to September-November 2013 (financial assurance requirements).
Audit Method	While this is a replacement plan of operations, the works described in the previous plan are yet to be commenced. Hence this audit is limited to the financial assurance as there are no on-ground activities upon which compliance can be assessed. The Audit method for the financial assurance is described in section 2 following.
Project Name	Wonbindi North
EA Number	EPML00617113
Mining Tenements	ML80170

1 Audit of Action Program in Plan of Operations

The action program outlined in the Plan will ensure that the conditions of the EA are met and that there will not be any significant non-compliance issues. It is significant that the entire mining operation will be enclosed in a flood protection levee up to 10m above the natural surface designed to the level higher than the 1000 year flood. This ensures that environmental impacts such as those associated with water releases are confined to the mining lease within the levee.

7/11/13

2 Audit of Proposed Financial Assurance

A review of financial assurance liability was completed. The review was not completed using a single third party quotation but rather a cost-build-up using cost rates and production data from a variety of sources. Specific data sources included (but were not necessarily limited to:

- Australian Structured Finance Pty Ltd (for Liebherr hydraulic excavators acquisition);
- Caterpillar Financial Australia Limited (for various mobile plant acquisition);
- Orionstone (for various mobile plant hire)
- Manufacturers handbooks for plant production rates (e.g. Caterpillar, Hitachi, Komatsu etc)
- MEC Mining (for labour and other miscellaneous costs).

The rates used are consistent with mining budgets for the actual mine development and as such are considered an accurate reflection of actual rehabilitation liability.

While a rehabilitation plan is yet to be approved, underlying assumptions for landform design and rehabilitation outcomes are considered reasonable.

The audit has determined that no performance discount is applicable as the holders of the EA have not operated a mine in Queensland previously and hence have no auditable track record of past performance.

SUMMARY

The total estimated rehabilitation cost i.e. the gross financial assurance including maintenance, monitoring and GST at 31 August 2014 is $15,575,879.

No performance discount has been applied.

The net financial assurance has been prepared in accordance *"Guideline Mining: Calculating financial assurance for mining projects, 120822 – EM585 – Version 2"*. The net financial assurance required is $15,575,879.

CERTIFICATION STATEMENT

'I Craig Thamm, being aware that it is an offence under s. 480 of the Environmental Protection Act 1994 to provide false or misleading information, state that:

i. I am authorised to sign on behalf of the person (meaning a corporation or individual) holding the environmental authority;
ii. all information provided is true and complete;
iii. I understand that information given with this plan of operations and audit statement could become available to the public in accordance with the Environmental Protection Act 1994 and Right to Information Act 1992.'

7 November 2014

Auditor's Signature **Date**