

Application form

Environmental Protection Act 1994

Application to amend a progressive rehabilitation and closure plan schedule (PRCP schedule) or joint PRCP schedule and environmental authority

This approved form is to be used when applying for a progressive rehabilitation and closure plan schedule (PRCP schedule) amendment or a joint PRCP schedule and Environmental Authority (EA) amendment under section 224 to 226B of the Environmental Protection Act 1994 (EP Act).

IMPORTANT NOTE: Before completing this application form it is recommended that you:

- Read the [Guideline - Progressive Rehabilitation and Closure Plans \(ESR/2019/4964\)](#), which explains the information required in a PRCP schedule.
- Have a pre-lodgement meeting. To request a pre-lodgement meeting, please fill out and lodge the form [Application for pre-lodgement services \(ESR/2015/1664\)](#).

This application form is split in to three parts. The table below provides details of which parts must be completed for the different applications.

Application type	Parts that must be completed
PRCP schedule amendment	Part 1 – Amendment application information Part 3 – Declaration and payment of fees
Joint PRCP schedule and EA amendment	All parts

If you require assistance in answering any part of this form, or have any questions about your application, please contact the relevant business centre. Contact details are at the end of this form.

Privacy statement

The Department of Environment, Science and Innovation (the Department) is collecting the information on this form in accordance with and as authorised by Chapter 5 of the Environmental Protection Act 1994 (EP Act). Some of the information may be disclosed to the Department of Resources and Queensland Treasury for the purpose of processing this application.

Pursuant to section 540 of the EP Act, the Department is required to maintain a register of certain documents and information authorised under the EP Act. A copy of this document will be kept on the public register. The register is available for inspection by members of the public who are able to take extracts, or copies of the documents from the register. Documents that are required to be kept on the register are published in their entirety, unless alteration is required by the EP Act. There is no general discretion allowing the Department to withhold documents or information required to be kept on the public register. For more information on the Department's public register, search 'public register' at www.qld.gov.au. For queries about privacy matters please email privacy@des.qld.gov.au or telephone 13 74 68.



Application to amend a PRCP schedule or joint PRCP schedule and EA

Part 1—Amendment application information

All sections within Part 1 must be completed for all amendment application types.

Section 1 – Environmental authority and PRCP schedule number	
Environmental authority number this PRCP schedule relates to.	EPML00900113
PRCP schedule reference number.	PRCP_EPML00900113_V1

Section 2 – Applicant details	
Details of the applicant are to be provided in this section. The person nominated as the application contact will receive correspondence relating to this application.	
NAME / COMPANY NAME*	TRADING NAME (*IF AN ORGANISATION)
SYNTECH RESOURCES PTY LTD	CAMEBY DOWNS MINE
REGISTERED BUSINESS ADDRESS / RESIDENTIAL ADDRESS (NOT A POST OFFICE BOX) *	POSTAL ADDRESS (*WHERE DIFFERENT)
DARLING PARK – TOWER 2, LEVEL 18, 201 SUSSEX STREET SYDNEY NSW 2000	PO BOX 972, CHINCHILLA QLD 4413
ABN / ACN (*IF AN ORGANISATION)	NAME OF APPLICATION CONTACT*
095 102 971	LES MERTON
EMAIL*	TELEPHONE*
LES.MERTON@YANCOAL.COM.AU	0427963066
☒ INDICATE IF YOU WANT TO RECEIVE CORRESPONDENCE VIA EMAIL ☐ INDICATE IF THERE ARE JOINT HOLDERS OF THE ENVIRONMENTAL AUTHORITY. IF THERE ARE JOINT HOLDERS, PROVIDE THE ADDITIONAL CONTACT DETAILS AS AN ATTACHMENT.	

Section 2.1 – Agent details	
If there is an agent acting on behalf of the applicant, details of the agent are to be provided. An agent could be a consultant or contactor for the applicant.	
Is this form being completed by an agent for the applicant? *	☐ Yes – Provide details below ☐ No – Go to next section
NOTE: If an agent is nominated, please provide evidence of appointment by the authority holder/s.	
NAME / COMPANY NAME	TRADING NAME
Insert.	Insert.
REGISTERED / RESIDENTIAL ADDRESS	POSTAL ADDRESS (WHERE DIFFERENT)
Insert.	Insert.
ABN / ACN (IF AN ORGANISATION)	CONTACT NAME
Insert.	Insert.
EMAIL	TELEPHONE

Application to amend a PRCP schedule or joint PRCP schedule and EA

Insert.	Insert.
Section 3 – Major or Minor Amendment, PRCP schedule	
The administering authority decides if an application is a minor amendment or a major amendment and will send you a notice of the decision. A single assessment level decision will be made, and a single decision notice issued, where an application is made to amend both the EA and PRCP schedule at the same time. If the application is a major amendment, an assessment fee of 30% of the annual fee for your environmental authority is required to be paid. The assessment of your amendment application will not proceed until the assessment fee is paid. No additional assessment fees apply if your application is determined to be a minor amendment. By considering what type of amendment your application is likely to be, you will have a better idea of whether the assessment fee will be payable. For further information see the Guideline - Major and minor amendments (ESR/2015/1684) and section 223 of the EP Act. If you have questions regarding whether your amendment will be a minor or major amendment you are encouraged to arrange a pre-lodgement meeting with the administering authority. Only an indication can be given as to whether the proposed changes are likely to be a minor or major amendment, at a pre-lodgement meeting as this decision can only be made when the actual application is submitted.	
Is the application for a major or minor amendment to the PRCP schedule?	☐ Major amendment for a PRCP schedule. ☒ Minor amendment (PRCP threshold).
Would approval of the amendment application for the PRCP schedule result in the PRCP schedule to which the application relates being inconsistent with the relevant EA?	☒ No – Go to next section. ☐ Yes – This application must be a joint PRCP schedule and EA amendment application.
The amendment to the PRCP schedule must not be inconsistent with the EA, otherwise you must apply to amend your EA.	

Section 4 – Major or Minor Amendment, EA	
Is this application for a joint PRCP schedule and EA amendment?	☒ No – Go to next section. ☐ Yes – Provide details below.
Is the application for a major or minor EA amendment?	☐ Major amendment for an EA. ☐ Minor amendment for an EA (threshold).

Section 5 – Website address		
Provide the website address for the application notice and application documents.	Insert.	
If this application is for a joint EA and PRCP schedule amendment, will the application notice and application documents for both amendments be published together?	☒ No. ☐ Yes.	
Provide details of the contact person if technical assistance is required.	NAME LES MERTON	TELEPHONE 07 4665 8621
	EMAIL	

Application to amend a PRCP schedule or joint PRCP schedule and EA

LES.MERTON@YANCOAL.COM.AU

Section 6 – Describe the proposed amendment

Provide a detailed description of your proposed amendment. Include justification of how your proposed amendment meets the criteria for a major or minor amendment and attach any supporting information to this application. If the amendment is to add or delete a location, tenure or activity, or to change the threshold of an activity, provide details below.

Minor changes to RA area boundaries per DESI audit finding from 29/04/2024. These changes meet the requirements of a 'minor' amendment per ESR/2015/168, being that:

- 15 (a) – it does not change a post-mining land use (PMLU) or non-use management area (NUMA);
 (b) does not affect whether a stable condition will be achieved for land under the schedule; or
 (c) does not change the way a PMLU will be achieved, or a NUMA will be managed, in a way likely to result in significantly different impacts on environmental values compared to the impacts on the values under the schedule before the change; or
 (d) does not relate to a new mining tenure for the schedule; or
 (e) does not change when a rehabilitation milestone or management milestone will be achieved by more than 5 years after the time stated in the schedule when it was first approved; or
 (f) does not extend the day by which rehabilitation of land to a stable condition will be achieved.

☐ I HAVE ATTACHED ADDITIONAL DETAILS FOR THIS SECTION AND PROVIDED DETAILS BELOW.

Include information regarding where the additional details are located Section 2

Section 7 – Describe the land that will be affected by the proposed amendment

Describe if the activity will be carried out within the existing designated areas of the environmental authority/PRCP schedule or a new area.

RA1a – minor change to polygon boundary due to change in footprint of RA8a post reshaping
 RA8a – minor change to polygon boundary due to reshaping to meet landform criteria
 RA11a – minor change to polygon boundary due to change in footprint of RA8a post reshaping

☒ I HAVE ATTACHED ADDITIONAL DETAILS FOR THIS SECTION.

Section 8 – Environmental values

Attach a document that provides an assessment of the likely impact of the proposed amendment on all environmental values (EVs) listed. Note: Where there is no impact stated, justification must be included as to why this is the case.

Environmental Values

- | | | | |
|--------------------------------------|-----------------------------------|-----------------------------------|-----------------------------------|
| ☐ Water | ☐ Wetlands | ☐ Land use | ☐ Acoustic |
| ☐ Groundwater | ☐ Land | ☐ Air | ☐ Waste |

☐ I HAVE ATTACHED A DOCUMENT THAT PROVIDES AN ASSESSMENT OF LIKELY IMPACTS ON EVs.

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Note that the EP Act, s226A(1)(f) states the information required relating to impacts on EVs which include:

- (i) a description of the environmental values likely to be affected by the proposed amendment; and
- (ii) details of any emissions or releases likely to be generated by the proposed amendment; and
- (iii) a description of the risk and likely magnitude of impacts on the environmental values; and
- (iv) details of the management practices proposed to be implemented to prevent or minimise adverse impacts; and
- (v) if a PRCP schedule does not apply for each relevant activity - details of how the land the subject of the application will be rehabilitated after each relevant activity ends.

Section 9 – Site contact

Would you like to nominate a site contact?

☒ No – Go to next section

☐ Yes – Provide details below

SITE CONTACT NAME

Insert.

POSITION

Insert.

EMAIL

Insert.

TELEPHONE

Insert.

☐ INDICATE IF YOU WANT THE SITE CONTACT TO RECEIVE CORRESPONDENCE VIA EMAIL

A site contact is an alternative contact nominated by the legal entity which holds, or will in future hold, a relevant authority issued by the department. The department may direct correspondence relating to actual or potential compliance matters to the site contact.

PRCP schedule amendment information

Section 10 – Proposed amendment(s)				
Provide information about the proposed amendment(s) below. Only complete the parts of this section that are relevant to the application. Please attach an additional sheet to this application form if there is not enough space in this section.				
Final site design				
Reference	Amendment	Current (if amending)	Proposed	Justification
RA1a	Amend	Amend	Choose an item.	To align with actual Rehabilitation Area footprints
RA8a	Amend	Amend	Choose an item.	To align with actual Rehabilitation Area footprints
RA11a	Amend	Amend	Choose an item.	To align with actual Rehabilitation Area footprints
Milestone and Milestone Criteria				
Reference	Amendment	Current (if amending)	Proposed	Justification
RM7 f)	Amend	Survivorship of hiko or native tubestock greater than or equal to 70%, 12 months after planting.	Survivorship of hiko or native tubestock (if planted as part of RM7 e) greater than or equal to 70%, 12 months after planting.	The proposed change does not change the milestone requirements, however provides clarity of interpretation for milestones RM7 f)
Insert milestone or milestone criteria reference.	Choose an item.	Insert current milestone or milestone criteria to be amended.	Insert proposed milestone or milestone criteria.	Provide justification for the proposed amendment.
Insert milestone or milestone criteria reference.	Choose an item.	Insert current milestone or milestone criteria to be amended.	Insert proposed milestone or milestone criteria.	Provide justification for the proposed amendment.
Timeframes				
Reference	Amendment	Current (if amending)	Proposed	Justification

Insert the reference for the milestone to which the timeframe relates.	Choose an item.	Insert current date.	Insert proposed date.	Provide justification for the proposed amendment.
Insert the reference for the milestone to which the timeframe relates.	Choose an item.	Insert current date.	Insert proposed date.	Provide justification for the proposed amendment.
Insert the reference for the milestone to which the timeframe relates.	Choose an item.	Insert current date.	Insert proposed date.	Provide justification for the proposed amendment.

Section 11 – Amend Conditions

Do you wish to amend the condition(s) of the PRCP schedule?	☒ No – Go to next section. ☐ Yes – Provide details below.
Provide details of: (a) condition number(s); (b) proposed change; and (c) justification for the change.	
Provide details.	

Section 12 – Spatial Information

Does this application propose to amend the final site design of the current approved PRCP schedule?	☐ No – Go to next section. ☒ Yes – This section applies.
Include spatial information, as required in the Guideline – Progressive Rehabilitation and Closure Plans (ESR/2019/4964) . See Attachment 1 of this form for details on how spatial information must be submitted	☒ Spatial information has been submitted.

Section 13 - PRCP schedule

The proposed PRCP schedule must comply with section 126D of the EP Act, and be written in accordance with the [Guideline – Progressive Rehabilitation and Closure Plans \(ESR/2019/4964\)](#).

Include an updated PRCP schedule prepared using the [PRCP schedule template \(ESR/2019/5103\)](#).

☒ Yes
☐ No

Section 14– Non-use management areas (NUMA)

Does this application propose to include a new or amend a current approved NUMA(s)?

☒ No – Go to next section.
☐ Yes.

Has a public interest evaluation been carried out by a qualified entity for the proposed NUMA(s)?

☐ No – Go to next section.
☐ Yes.

Has the proposed NUMA(s) changed since the public interest evaluation was carried out?

☐ No – Go to next section.
☐ Yes – Provide details below.

How has the proposed NUMA(s) changed since the public interest evaluation was carried out?

Insert.

Section 15 – Rehabilitation planning part

An amendment application for a PRCP schedule must be accompanied by an amended rehabilitation planning part of the PRC plan that complies with section 126C of the EP Act in relation to the proposed amendment. This includes updating the rehabilitation planning part in relation to the proposed amendment to meet the information requirements described in the [Guideline – Progressive Rehabilitation and Closure Plans \(ESR/2019/4964\)](#), in accordance with section 126C(1) of the EP Act.

For each requirement below, insert a reference to the section of the PRC plan which satisfies the requirement.

Justification must be provided for any requirement for which the response is Not Applicable (NA).

If more space is required, please attach a separate sheet.

Rehabilitation plan Requirement	Requirement met?	Rehabilitation Plan Section No.	Justification
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	(Yes / NA)		
Project description			
Describe the following in relation to the proposed amendment:			
each resource tenure, including the area of each tenure, to which this application relates;	Yes	3.1.1.3	Insert.
the relevant activities to which this application relates;	Yes	3.1.1.5	Insert.
the likely duration of the relevant activities	Yes	3.1.1.3	Insert.
Include a detailed description, including maps, of how and where the relevant activities are to be carried out.	Yes	Multiple	Insert.
Consultation			
Include details of the consultation undertaken by the applicant in developing the proposed amended PRCP schedule.	Yes	3.2	Insert.
Include details of how the applicant will undertake ongoing consultation in relation to the rehabilitation to be carried out under the plan.	Yes	3.2	Insert.
Post-mining land use (PMLU)			
State the extent to which each proposed post-mining land use identified in the proposed PRCP schedule is consistent with the outcome of consultation with the community in developing the proposed PRCP schedule.	Yes	3.3.1	Insert.
State the extent to which each proposed post-mining land use identified in the proposed PRCP schedule is consistent with any strategies or plans for the land of a local government, the State or the Commonwealth.	Yes	3.3.2	Insert.

Non-use management area (NUMA)			
State the extent to which each proposed non-use management area identified in the PRCP schedule is consistent with the outcome of consultation with the community in developing the proposed PRCP schedule.	Yes	3.4.1	Insert.
State the extent to which each proposed non-use management area identified in the PRCP schedule is consistent with any strategies or plans for the land of a local government, the State or the Commonwealth.	Yes	3.4.2	Insert.
For each proposed non-use management area, state the reasons the applicant considers the area cannot be rehabilitated to a stable condition because of a matter mentioned in section 126D(2).	NA	Insert.	There have been no changes to the final voids compared to the approved layout in EA EPML00900113 and the Rehabilitation Operational Management Plan (Syntech, 2020).
For each proposed NUMA listed in the line above, include copies of reports or other evidence relied on by the applicant for each proposed non-use management area.	NA	Insert.	Insert.
Rehabilitation and management methodology			
<i>Note: Section 3.5 of the Guideline – Progressive Rehabilitation and Closure Plans (ESR/2019/4964) outlines the range of information that must be included as appendices to the rehabilitation planning part of the PRC plan.</i>			
For each proposed post-mining land use, state the proposed methods or techniques for rehabilitating the land to a stable condition in a way that supports the rehabilitation milestones under the proposed PRCP schedule.	Yes	3.5	Insert.

For each proposed non-use management area, state the proposed methodology for achieving best practice management of the area to support the management milestones under the proposed PRCP schedule for the area.	Yes	3.5.5	Insert.
Risk assessment			
Identify the risks of a stable condition for land described as a post-mining land use not being achieved, and how the applicant intends to manage or minimise the risks.	Yes	3.6	Insert.
PRCP Guideline			
Include any other information prescribed by the administering authority in the Guideline – Progressive Rehabilitation and Closure Plans (ESR/2019/4964) .	Yes	The PRCP Plan	Insert.
Other information			
Include the other information the administering authority reasonably considers necessary to decide whether to approve the proposed PRCP schedule amendment.	NA	Insert.	Insert.

Part 2—EA amendment information

Part 2 only applies if your application is for a joint PRCP schedule and EA amendment, you must complete all sections in this part. If you are applying for a PRCP schedule amendment only, do not complete Part 2.

Section 16 – Type of application	
Does this application relate to a joint PRCP schedule and EA amendment application?	☒ No – Part 2 does not apply to you, do not complete the sections in this part. ☐ Yes – Complete all of the sections in this part.

Section 17 – Checklist questions	
An application to amend an EA is not appropriate in all circumstances. If you answer Yes to any of the preliminary questions below, you cannot use this application form to amend your EA. If you answer No to all of the preliminary questions, you may continue to use this application form to amend your EA.	
Is the amendment to correct a clerical or formal error?	☐ Yes ☐ No
If yes, you cannot use this form. This request should be made in writing directly to the administering authority (no fees apply).	
Is the amendment to add an ERA to an amalgamated project authority and the proposed activity does not form part of the single integrated operation conducted under the authority?	☐ Yes ☐ No
If yes, you cannot use this form. You will need to apply for a new environmental authority.	
Is the amendment to add an ERA to the EA and the addition of the ERA would result in the EA not meeting the definition of an 'ERA project'?	☐ Yes ☐ No
If yes, you cannot use this form. You will need to apply for a new environmental authority.	
Is the amendment to remove or amend a condition requiring compliance with the eligibility criteria, and is a result of changes to the activity?	☐ Yes ☐ No
If yes, you cannot use this form. Please make a site-specific application for a new environmental authority. Note: If the required amendment to the eligibility criteria condition is a result of factors beyond your control such as residential encroachment, rather than a change to the activity, you can use this form. The amendment will be a major amendment.	
Is the amendment to amalgamate two or more environmental authorities?	☐ Yes ☐ No
If yes, you cannot use this form. Please use either the form Application to amalgamate two or more environmental authorities into an amalgamated corporate authority (ESR/2015/1734) .	
Is the amendment to amend estimated rehabilitation cost only?	☐ Yes ☐ No
If yes, you cannot use this form. Please use the form Application for a decision on the estimated rehabilitation cost (ESR/2018/4426) .	
Is the proposed amendment to add a prescribed ERA, other than an ancillary activity, to an environmental authority for a resource project?	☐ Yes ☐ No
If yes, you cannot use this form. You can apply using the standard, variation or site-specific application forms.	
Is the amendment for a partial surrender of an environmental authority for a mining activity?	☐ Yes ☐ No
If yes, you cannot use this form. Please use the form Application for surrender or partial surrender of an environmental authority (resource activity) (ESR/2015/1751) .	

Section 18 – EA Amendment Options	
Tick all that apply	
I would like to amend the EA:	☐ Activities – includes changes to thresholds. ☐ Conditions – includes conversion to standard conditions and variations. ☐ Locations – removal/addition or activity locations.

Section 19 – Amend Activities				
Do you wish to amend activities under the EA, including removing ERAs, adding ERAs or changes to threshold(s)?			☐ No – Go to next section. ☐ Yes – Provide details below.	
Section 19.1 – Removing ERA(s)				
Does the proposed amendment remove an ERA from the EA?			☐ No – Go to section 19.2 ☐ Yes – Continue on below	
Section 19.1 - Details of the ERA(s) to be removed.				
Provide a list of all the ERAs that are to be removed from the EA and identify whether the ERA has commenced.				
ERA number	Threshold	Name of ERA	Has the ERA commenced?	
Insert.	Insert.	Insert.	☐ Yes ☐ No	
Insert.	Insert.	Insert.	☐ Yes ☐ No	
Insert.	Insert.	Insert.	☐ Yes ☐ No	
Insert.	Insert.	Insert.	☐ Yes ☐ No	
Insert.	Insert.	Insert.	☐ Yes ☐ No	
☐ I HAVE ATTACHED DETAILS OF ADDITIONAL ERA(s) TO BE REMOVED.				
Section 19.2 – Adding ERA(s)				
Does the proposed amendment add an ERA to the EA?			☐ No – Go to next section ☐ Yes – Continue on below	
Provide details of which ERA(s) you wish to add. If the ERA has eligibility criteria and standard conditions, identify whether you can comply with them. Select “N/A” where there are no eligibility criteria and standard conditions for that ERA. If you cannot comply with all of the applicable standard conditions, select “No” and attach details of the standard conditions you cannot comply with				
ERA number	Threshold	Name of ERA	I can comply with the eligibility criteria	I can comply with all the standard conditions
Insert.	Insert.	Insert.	☐ Yes ☐ N/A	☐ Yes ☐ No
Insert.	Insert.	Insert.	☐ Yes ☐ N/A	☐ Yes ☐ No

Insert.	Insert.	Insert.	☐ Yes ☐ N/A	☐ Yes ☐ No
Insert.	Insert.	Insert.	☐ Yes ☐ N/A	☐ Yes ☐ No
Insert.	Insert.	Insert.	☐ Yes ☐ N/A	☐ Yes ☐ No

☐ I HAVE ATTACHED DETAILS OF ADDITIONAL ERA(s) TO BE ADDED.

☐ I HAVE ATTACHED DETAILS OF THE STANDARD CONDITIONS THAT I CANNOT COMPLY WITH.

If you cannot comply with the eligibility criteria as a result of the proposed amendment, then an amendment to the relevant eligibility criteria condition will also be required. The department will only approve an amendment of the eligibility criteria condition if it is a result of factors beyond your control such as residential encroachment, rather than a change to the activity.

Section 20 – Single Integrated Operation Confirmation	
Will the activities be undertaken as a single integrated operation?	☐ Yes ☐ No
PROVIDE DETAILS OF THE ACTIVITIES THAT WILL BE OPERATED AS A SINGLE INTEGRATED OPERATION AND SUPPORTING INFORMATION SHOWING THEY ARE A SINGLE INTEGRATED OPERATION: Insert.	
Single integrated operation occurs when all of the below criteria are met: (a) the activities are carried out under the day-to-day management of a single responsible individual, for example, a site or operations manager; (b) the activities are operationally interrelated; (c) the activities are, or will be, carried out at one or more places; and (d) the places where the activities are carried out are separated by distances short enough to make feasible the integrated day-to-day management of the activities.	

Section 21 – Seek to vary conditions	
Are you looking to vary the condition(s) of the EA?	☐ No – Go to next section. ☐ Yes – Provide details below.
IMPORTANT NOTE: The administering authority considers what is necessary or desirable when setting the conditions of an environmental authority. Seeking to vary the conditions is likely to change the environmental risk of an activity and will require an assessment of the environmental values. If this is not provided, the application may not be valid.	
Provide details of: (a) condition number(s); (b) proposed change; and (c) justification for the change.	
Insert.	
☐ I HAVE ATTACHED ADDITIONAL DETAILS FOR THIS SECTION.	
If the activities were assessed as part of a coordinated project declared under the <i>State Development and Public Works Organisation Act 1971</i> , you are only able to amend Coordinator General conditions if the Coordinator General's evaluation report for the project has lapsed. If you are unsure if the Coordinator General's evaluation report has lapsed, contact the Department of State Development for more information.	

Section 22– Amend location(s)		
Does the proposed amendment relate to the location where the ERA(s) are undertaken, including adding a location, removing a location or changing a location? This section is not applicable to changes in monitoring locations, infrastructure locations ect. unless the new location is outside the currently authorised area for the environmental authority. Amendments to change the location of monitoring or infrastructure where the monitoring or infrastructure location is still within the currently authorised area are considered amendments to vary conditions		☐ No – Go to next section. ☐ Yes – Provide details below.
ERA number and threshold	Tenure(s)	Add or remove
Insert.	Insert.	Select.
Insert.	Insert.	Select.
Insert.	Insert.	Select.
Insert.	Insert.	Select.
Insert.	Insert.	Select.
Insert.	Insert.	Select.
Insert.	Insert.	Select.
☐ I HAVE ATTACHED DETAILS OF ADDITIONAL LOCATIONS FOR THIS SECTION.		

Section 23 – Compliance with any eligibility criteria	
Are there any eligibility criteria for the activity(s)?	☐ No – Go to next section. ☐ Yes – Provide details below.
State whether each relevant activity will, if the amendment is made, comply with any eligibility criteria for the activity.	
Insert.	
Include a declaration (below) that the above statement is correct	
I Insert. (INSERT <u>NAME</u>, <u>POSITION</u> AND <u>COMPANY NAME</u> OF PERSON MAKING THE STATEMENT) • make the statement by or for the holder of the environmental authority; • confirm that, to the best of my knowledge, all information provided as part of this statement, including attachments, is true, correct and complete. • understand that it is an offence under section 480 of the <i>Environmental Protection Act 1994</i>, to give the administering authority information that I know, or ought reasonably know, is false or misleading in a material particular; • understand that under section 480A of the <i>Environmental Protection Act 1994</i> that, if I am required to give a document to the administering authority, it is an offence to give a document that I know, or ought reasonably to know, contains incomplete information in a material particular; • confirm that, to the best of my knowledge, this statement, including attachments, does not include false, misleading or incomplete information; • confirm that, to the best of my knowledge, I have not knowingly failed to reveal any relevant information or document to the administering authority; • confirm that, to the best of my knowledge, all information provided in this statement, including attachments, address the relevant matters and are factually correct; • confirm that the opinions expressed in this statement, including attachments, are honestly and reasonably held; and • understand that all information supplied as part of this statement, including attachments, can be disclosed publicly in accordance with the <i>Right to Information Act 2009</i> and the <i>Evidence Act 1977</i>.	
SIGNATURE	DATE Click or tap to enter a date.
Only a person with appropriate environmental expertise and/or experience in planning and executing site operations should sign this statement. This person may be the environmental authority holder, a full time employee of the environmental authority holder or a consultant to the environmental authority holder.	

Section 24 – Environmental Offsets	
Will the ERA(s) being applied for cause, or be likely to cause, a significant residual impact to a prescribed environmental matter (other than a matter of local environmental significance)?	☐ No – Go to next section. ☐ Yes – Provide details below.
☐ Yes - Attach supporting information that: • details the magnitude and duration of the likely significant residual impact on each prescribed environmental matter (other than matters of local environmental significance) for the entire activity; • demonstrates that all reasonable measures to avoid and minimise impacts on each of those matters will be undertaken; • includes a notice of election, if it has not already been submitted; and • if the activity is to be staged, details of how the activity is proposed to be staged.	
An environmental offset may be required for an ERA where despite all reasonable measures to avoid and minimise impacts on certain environmental matters, there is still likely to be a significant residual impact on one or more of those matters. You must verify the presence, whether temporary or permanent, of those environmental matters. For more information refer to the State Significant Impact Guideline at the Queensland Government website, at: www.qld.gov.au/environment/pollution/management/offsets/index.html.	

Section 25 – Regional Interest Areas	
Is the resource activity located anywhere within an area of regional interest?	☐ No – Go to next section. ☐ Yes – Provide details below.
If yes - Which area of regional interest, has or will require a regional interest development approval (RIDA)? ☐ Priority agricultural areas (PAAs) ☐ Priority living areas (PLAs) ☐ Strategic environmental areas (SEAs) ☐ Strategic cropping area (SCA) ☐ No RIDA required, I am an exempt activity.	
If you have applied or been approved for a RIDA, provide the application reference:	Insert.
A regional interests development approval (RIDA) is required when a resource activity is proposed in an area of regional interest under the <i>Regional Planning Interests Act 2014</i>. Further information, including application forms, can be found on the Department of State Development, Infrastructure, Local Government and Planning website at www.statedevelopment.qld.gov.au.	

Section 26 – Matters of National Environmental Significance	
Would the carrying out of the proposed ERA, or where relevant the ERA project, be likely to have a significant impact on any matters of national environmental significance?	☐ No – Go to next section. ☐ Yes – Provide details below.
Are the impacts covered by transitional provisions for the <i>Environmental Protection and Biodiversity Conservation Act 1999</i> (EPBC Act)	☐ No – Provide details below ☐ Yes – Provide details in an attachment
Has the proposal been referred to the Federal Government Environment Minister or a delegate for formal assessment and approval?	☐ No – Go to next section. ☐ Yes – Provide details below.

If Yes - Has an approval issued under the EPBC Act required an environmental offset for the same, or substantially the same, impact and the same, or substantially the same, matters of national environmental significance?	☐ No – Go to next section. ☐ Yes – Provide details below.
If Yes - Are there any matters of national environmental significance which are assessed under the EPBC Act which are the same, or substantially the same as any matters of national environmental significance, but that were not conditioned in the approval?	☐ No – Go to next section. ☐ Yes – Provide details below.
☐ I HAVE ATTACHED DETAILS OF MATTERS OF NATIONAL ENVIRONMENTAL SIGNIFICANCE INCLUDING ANY APPLICABLE TRANSITIONAL PROVISIONS. ☐ I HAVE ATTACHED A COPY OF THE EPBC ACT APPROVAL.	
There are currently nine matters of national environmental significance (MNES) which have been defined in the <i>Environmental Protection and Biodiversity Conservation Act 1999 (Cth)</i> . To determine whether the proposed ERA(s) will have a significant impact on MNES and for referral requirements, please refer to the guidance provided by the Federal Government's Department of Environment on www.australia.gov.au and www.environment.gov.au .	

Section 27 – ANZSIC Code	
Provide the ANZSIC code for the resource activity.	
☐ 1101 Black coal mining ☐ 1102 Brown Coal Mining ☐ 1311 Iron ore mining ☐ 1312 Bauxite mining ☐ 1317 Silver-lead-zinc ore mining ☐ 1200 Oil and gas extraction ☐ Other (provide details): Insert.	☐ 1313 Copper ore mining ☐ 1314 Gold ore mining ☐ 1315 Mineral sand mining ☐ 1316 Nickel ore mining ☐ 1319 Metal ore mining (other metallic mineral ores)
The Australian and New Zealand Industrial Classification (ANZSIC) is used by the Australian Bureau of Statistics. It is required to be displayed in the public register.	

Section 28 – Environmental Impact Statement	
Has a decision been made that an environmental impact statement (EIS) will be required for the proposed amendment activity?	☐ No - Provide details below ☐ Yes - Provide details below
☐ I HAVE ATTACHED THE DECISION.	
Has an EIS process that includes the proposed amendment been completed?	☐ No – Go to next section. ☐ Yes – Provide details below.
If yes - Has the EIS assessment report lapsed under section 59A of the EP Act?	☐ No - Provide details below ☐ Yes – Go to next section
I have assessed the environmental risks of the proposed amendment and consider them to be: ☐ The same as was assessed in the EIS process. ☐ Different to what was assessed in the EIS process.	
☐ I HAVE ATTACHED THE ASSESSMENT OF THE ENVIRONMENTAL RISKS OF THE PROPOSED AMENDMENT.	
For further information refer to the guideline: Triggers for Environmental Impact Statements under the <i>Environmental Protection Act 1994</i> for mining, petroleum and gas activities. This guideline is available at www.qld.gov.au , using the search term 'triggers for environmental impact statements'.	

Section 29 –Environmental Impact Statement Triggers *	
Is the application to amend/alter an existing mine?	☐ No - Continue below ☐ Yes - Answer questions 1-6
Is the application for petroleum and gas activities?	☐ No – Go to next section ☐ Yes – Answer questions 7-9
For proposals to amend/alter an existing mine	
1. Is the proposed amendment for an increase in the annual extraction of more than 100% or 5 million tonnes per year (whichever is the lesser)? <i>NOTE: Only answer this question if the current ERA project is for an existing mine extracting between 2–10 million tonnes per year of run of mine (ROM) ore or coal; otherwise select N/A.</i>	☐ Yes ☐ No ☐ N/A
2. Is the proposed amendment for an increase in annual extraction of more than 50% or 10 million tonnes per year (whichever is the lesser)? <i>NOTE: Only answer this question if the current ERA project is for an existing mine extracting over 10 million tonnes per year of ROM ore or coal; otherwise select N/A.</i>	☐ Yes ☐ No ☐ N/A
3. Is the proposed amendment for an increase in annual extraction of greater than 25%? <i>NOTE: Only answer this question if the current ERA project is for an existing mine extracting over 20 million tonnes per year of ROM ore or coal extraction; otherwise select N/A.</i>	☐ Yes ☐ No ☐ N/A
4. Would the proposed amendment involve an extension into and significant impact on a Category A or B environmentally sensitive area, which is not already authorised by the State?	☐ Yes ☐ No
5. Would the proposed amendment involve a substantial change in mining operations—such as from underground to open cut, or (for underground mining) a change in operations from one causing little subsidence to one likely to cause substantial subsidence?	☐ Yes ☐ No
6. Would the proposed amendment introduce a novel or unproven resource removal process, technology or activity?	☐ Yes ☐ No
For petroleum and gas activities	

7. Would the proposed amendment involve a total disturbance area of greater than 2,000 hectares at any one time during the life of the proposed project? This includes areas occupied by well pads (single or multi-directional), access tracks and roads, water storages, and process plants?	☐ Yes ☐ No
8. Would the proposed amendment involve the construction of a high pressure pipeline over a distance of 300 kilometres or greater?	☐ Yes ☐ No
9. Would the proposed amendment involve the construction of a liquefied natural gas plant?	☐ Yes ☐ No
☐ I HAVE ATTACHED DETAILS OF HOW THE CRITERION IS TRIGGERED INCLUDING DETAILS OF THE IMPACT.	
* EIS refers to both the EIS process under the <i>EP Act</i> and the EIS process under the <i>State Development and Public Works Organisation Act 1971</i>. * There are numerous criteria used to make the EIS decision, for further information about the EIS process is available at www.qld.gov.au, using the search term 'environmental impact statements'.	

Section 30 – Waste Attach a document that provides details of the proposed measures for minimising and managing waste generated by any amendment(s) to the relevant activity.
☐ I have attached a document that provides the required information; or ☐ If waste is to be managed according to an existing waste management plan, provide the name of the plan and the relevant page or section numbers below: Insert.

Section 31 – Underground water rights	
Does the proposed amendment involve changes to the exercise of underground water rights?	☐ No – Go to next section. ☐ Yes – Provide details below.
☐ I have attached a document that details: - The areas in which underground water rights are proposed to be exercised; - For each aquifer affected, or likely to be affected, by the exercise of underground water rights: - a description of the aquifer; - an analysis of the movement of underground water to and from the aquifer, including how the aquifer interacts with other aquifers and surface water and - a description of the area of the aquifer where the water level is predicted to decline because of the exercise of underground water rights; and. - the predicted quantities of water to be taken or interfered with because of the exercise of underground water rights during the period in which resource activities are carried out. - The environmental values that will, or may, be affected by the exercise of underground water rights and the nature and extent of the impacts on the environmental values; - Any impacts on the quality of groundwater that will, or may happen because of the exercise of underground water rights during or after the period in which resource activities are carried out; and - Strategies for avoiding, mitigating or managing the predicted impacts on the environmental values of the impacts on the quality of groundwater.	

For more information about exercising underground water rights or the associated requirements refer to the guideline [Requirements for site-specific and amendment applications - underground water rights \(ESR/2016/3275\)](#)

Section 32 – Estimated Rehabilitation Cost (ERC)

Do you currently have estimated rehabilitation cost funds held as part of the approved environmental authority?	☐ No – Go to next section. ☐ Yes – Provide details below.
---	--

- ☐ I will not need to change the estimated rehabilitation cost in relation to this amendment.
- ☐ I will be applying for a new estimated rehabilitation cost decision if this amendment application is approved.

Section 33 – Compliance and enforcement tools or site management plan

Is this land currently subject to an environmental enforcement order (EEO), environmental protection order (EPO), transitional environmental program (TEP) or a site management plan (SMP)?	☐ No – Go to next section. ☐ Yes (EEO) - provide details below. ☐ Yes (EPO) - provide details below. ☐ Yes (TEP) - provide details below. ☐ Yes (SMP) - provide details below.
---	---

PROVIDE THE REFERENCE NUMBER AND BRIEF DETAILS INCLUDING: DESCRIPTION OF LAND; LOT AND PLAN NUMBERS; AND LOCAL GOVERNMENT AREA.

Insert.

Section 34 – Environmental Management Register

Is any part of the land currently recorded in, or has previously been removed from, the environmental management register?	☐ No – Go to next section. ☐ Yes – Provide details below.
--	--

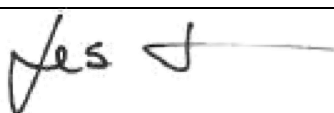
- ☐ The land is currently in the environmental management register.
- ☐ The land has been removed from the environmental management register.
- You must attach evidence (e.g. Notice) advising that the details have been removed.

Part 3—Declaration and payment of fees

All sections within Part 3 Declaration and payment of fees must be completed, regardless of the amendment application type.

Section 35 – Payment of fees	
Application fee:	\$ 367.40
☒ Email the completed application with a request to pay the application fee by Bpoint. Please do not email your credit card details – we will send you a link to pay securely by credit card by Bpoint.	
An application fee is payable at the time the application is made. Information on the fee can be located in the information sheet Fees for permits for environmentally relevant activities (ERAs) (ESR/2015/1721). Where the proposed amendment is determined by the administering authority to be a major amendment, an assessment fee of 30% of the annual fee for the authority at the time of application, is also payable. The assessment fee is payable once notification of the assessment level decision is issued. The assessment fee must be paid before the assessment of the amendment application can proceed. The supplementary annual fee is payable where the amendment is approved and results in the aggregate environmental score (and hence the annual fee) for the EA increasing. The supplementary annual fee is a pro-rata adjustment to the annual fee for the period from when the amended EA takes effect to the next anniversary day for the EA. This is payable within 20 business days after the approval date. The supplementary annual fee can be calculated using the Fee calculator (ESR/2015/1731).	

Section 36 – Declaration
Note: If you have not told the truth in this application you may be prosecuted.
I declare that: • I am the holder of the environmental authority, or authorised signatory for the holder of the environmental authority. • The information I have provided is true and correct to the best of my knowledge. • I understand that under section 480 of the EP Act, it is an offence to give the administering authority or an authorised person a document that contains information that I know, or ought reasonably know, to be false or misleading in a material particular. • I understand that under section 480A of the EP Act, if I am required to give a document to the administering authority, it is an offence to give a document that I know, or ought reasonably to know, contains incomplete information in a material particular. • I understand that failure to provide sufficient information may result in the application being refused. I understand that an incomplete application may be invalid. Invalid applications will be returned without processing and will only be processed if resubmitted with all invalidating issues addressed. • I understand that all information supplied on or with this application form may be disclosed publicly in accordance with the <i>Right to Information Act 2009</i> and the <i>Evidence Act 1977</i>. • If the proposed amendment is made, the relevant activities will continue to comply with the ERA Standard (eligibility criteria and standard conditions) for all eligible ERAs, or where they cannot comply, I have indicated otherwise in my application and provided the required supporting information. • If the proposed amendment is made I will continue to comply with all conditions of my environmental authority as well as any relevant provisions in the <i>Environmental Protection Act 1994</i>. • If the proposed amendment is made I will comply with all conditions and milestones of my PRCP schedule as well as any relevant provisions in the <i>Environmental Protection Act 1994</i>.

I understand that I am responsible for managing the environmental impacts of these activities, and that approval of this application is not an endorsement by the administering authority of the effectiveness of management practices proposed or implemented.		
Where an agreement is in place between all holders of the environmental authority, one holder can sign on behalf of the other joint holders. Please tick the checkbox below.		
☒ I HAVE AUTHORITY TO SIGN THIS FORM ON BEHALF OF ALL THE JOINT HOLDERS OF THE ENVIRONMENTAL AUTHORITY.		
Applicant's or authorised signatory's signature		
FULL NAME Les Merton	POSITION Environment & Community Superintendent	COMPANY / ORGANISATION Yancoal
SIGNATURE 		DATE 26/03/2025
Joint holder(s) signature if applicable		
NAME, POSITION AND COMPANY NAME Insert.	SIGNATURE	DATE Select.
NAME, POSITION AND COMPANY NAME Insert.	SIGNATURE	DATE Select.
OR ☐ I HAVE ATTACHED A DOCUMENT THAT PROVIDES THE REQUIRED INFORMATION FOR ALL JOINT HOLDERS.		
Where the environmental authority holder is a company, this form must be signed by an authorised person for that company. Where there is more than one holder of the environmental authority, this declaration is to be signed by all holders, unless there is an agreement between all holders that one can sign on behalf of the other(s). If you are signing on behalf of the environmental authority holder(s) you must provide a letter of authorisation.		

Submission and definitions

Submission	
Please submit your completed application to:	
Post	Permit and Licence Management Department of Environment, Science and Innovation GPO Box 2454 BRISBANE QLD 4001
Enquiries	Website: www.business.qld.gov.au Phone: 1300 130 372 (Option 4) Business Centre, Coal Email: CRMining@des.qld.gov.au Business Centre, Minerals Email: ESCairns@des.qld.gov.au
Applications and enquiries should not be submitted to individual officers. The latest version of this publication can be found at Application to amend an environmental authority (ESR/2015/1733) .	

Definitions of terms used in this form	
(Where there is inconsistency between the definition of terms used here and the terms used in the EP Act, the terms in the EP Act apply)	
Available for improvement	In relation to land in an improvement area, means land in the area is not being mined, other than land to which any of the following applies– (a) the land is being used for operating infrastructure or machinery for mining, including, for example, a dam or water storage facility; (b) the land is identified in the PRCP schedule or the application for an environmental authority relating to the schedule as containing a probable or proved ore reserve that is to be mined within 10 years after the land would otherwise have become available for improvement; (c) the land is required for the mining of a probable or proved reserve mentioned in paragraph (b).
Available for rehabilitation	For a rehabilitation area, means land in the area is not being mined, unless– (a) the land is being used for operating infrastructure or machinery for mining, including, for example, a dam or water storage facility; or (b) the land is identified in the PRCP schedule or the application for an EA relating to the schedule as containing a probable or proved ore reserve, under section 126D(6) of the EP Act, that is to be mined within 10 years after the land would otherwise have become available for rehabilitation; or (ba) the land is required for the mining of a probable or proved reserve mentioned in paragraph b); or (c) the land contains permanent infrastructure identified in the proposed PRCP schedule as remaining on the land for a post-mining land use.
Eligibility criteria	For an environmentally relevant activity, means eligibility criteria that are in effect for the activity under – (a) An ERA standard; or (b) A code of environmental compliance; or (c) A regulation in respect of a mining activity.
Environmentally relevant activity (ERA)	A resource activity or a prescribed ERA.
ERA Project	A prescribed ERA project or a resource project.
ERA Standard	For an environmentally relevant activity, means the eligibility criteria and/ or the standard conditions set by the administering authority.
Improvement area	For a non-use management area, means an area of land in the non-use management area to which a management milestone relates.

Land outcome document	For land, means the following documents relating to the land– (a) an environmental authority for a resource activity on the land; (b) a document made under a condition of an environmental authority mentioned in paragraph (a), if– (i) the document relates to the management of a void within the meaning of section 126D of the EP Act on the land, or the rehabilitation of the land; and (ii) the document was received by the administering authority before the assent date; and (iii) the administering authority has not, within 20 business days after the assent date, given notice to the environmental authority holder that the document is insufficient in a material particular relevant to a matter mentioned in subparagraph (i); and (iv) before the assent date, the document has not been superseded; (c) a document made under a condition of an environmental authority mentioned in paragraph (a), if– (i) the document relates to the management of a void within the meaning of section 126D of the EP Act on the land, or the rehabilitation of the land; and (ii) the environmental authority requires the document to be given to the administering authority on a stated day that is on or after the assent date, or does not state a day when the document must be given; and (iii) the document is received by the administering authority within three years after the assent date; and (iv) the administering authority does not, within 20 business days after receiving the document, give the environmental authority holder a notice that the document is insufficient in a material particular relevant to a matter in subparagraph (i); (d) a report evaluating an EIS under the <i>State Development and Public Works Organisation Act 1971</i>, section 34D; (e) an EIS assessment report; (f) a written agreement between the holder of an environmental authority mentioned in paragraph (a) and the State that is in force on the assent date
Major amendment	For an environmental authority or PRCP schedule, means an amendment that is not a minor amendment.
Management milestone	For a non-use management area, means each significant event or step necessary to– (a) achieve best practice management of the area; and (b) minimise risks to the environment.
Minor amendment	For an environmental authority or PRCP schedule, means an amendment that is –

	(a) for an environmental authority – (i) a condition conversion; or (ii) a minor amendment (threshold); or (b) for a PRCP schedule – a minor amendment (PRCP threshold).
Minor amendment (PRCP threshold)	For a PRCP schedule, means an amendment that – (a) does not change a post-mining land use or non-use management area; or (b) does not affect whether a stable condition will be achieved for land under the schedule; or (c) does not change the way a post-mining land use will be achieved, or a non-use management area will be managed, in a way likely to result in significantly different impact on environmental values compared to the impacts on the values under the schedule before the change; or (d) does not relate to a new mining tenure for the schedule; or (e) does not change when a rehabilitation milestone or management milestone will be achieved by more than 5 years after the time stated in the schedule when it was first approved; or (f) does not extend the day by which rehabilitation of land to a stable condition will be achieved.
Minor amendment (threshold)	For an environmental authority, means an amendment that the administering authority is satisfied— (a) is not a change to a condition identified in the authority as a standard condition, other than— (i) a change that is a condition conversion; or (ii) a change that is not a condition conversion but that replaces a standard condition of the authority with a standard condition for the environmentally relevant activity to which the authority relates; or (iii) a change that will not result in a change to the impact of the relevant activity on an environmental value; and (b) does not significantly increase the level of environmental harm caused by the relevant activity; and (c) does not change any rehabilitation objectives stated in the authority in a way likely to result in significantly different impacts on environmental values than the impacts previously permitted under the authority; and (d) does not significantly increase the scale or intensity of the relevant activity; and (e) does not relate to a new relevant resource tenure for the authority that is— (i) a new mining lease; or (ii) a new petroleum lease; or

	(iii) a new geothermal lease under the Geothermal Energy Act; or (iv) a new GHG injection and storage lease under the GHG storage Act; and (f) involves an addition to the surface area for the relevant activity of no more than 10% of the existing area; and (g) for an environmental authority for a petroleum activity— (i) if the amendment involves constructing a new pipeline— the new pipeline does not exceed 150km; and (ii) if the amendment involves extending an existing pipeline—the extension does not exceed 10% of the existing length of the pipeline; and (h) if the amendment relates to a new relevant resource tenure for the authority that is an exploration permit or GHG permit—the amendment application under section 224 seeks an amended environmental authority that is subject to the standard conditions for the relevant activity or authority, to the extent it relates to the permit.
Non-use management area	Means an area of land the subject of a PRC plan that cannot be rehabilitated to a stable condition after all relevant activities for the PRC plan carried out on the land have ended.
Post-mining land use	For land the subject of a PRC plan, means the purpose for which the land will be used after all relevant activities for the PRC plan carried out on the land have ended.
PRC plan	For land the subject of a mining lease, means a progressive rehabilitation and closure plan for the land that consists of – (a) the rehabilitation planning part of the PRC plan; and (b) the PRCP schedule for the PRC plan, including any conditions imposed on the schedule.
PRCP schedule	For a PRC plan, means a schedule of the plan that – (a) complies with section 126D of the EP Act; and (b) is approved under chapter 5, part 5, division 2 of the EP Act, with or without conditions.
Prescribed ERA	An environmentally relevant activity that is not a resource activity and is prescribed under section 19 of the EP Act.
Prescribed ERA project	All prescribed ERAs carried out, or proposed to be carried out, as a single integrated operation.
Registered suitable operator	A person who, or a corporation which, under section 318I of the EP Act has been assessed as being suitable to carry out an ERA and has been listed on the suitable operator register.

Rehabilitation area	For land the subject of a post-mining land use, means an area of the land to which a rehabilitation milestone for the post-mining land use relates.
Rehabilitation milestone	For the rehabilitation of land, means each significant event or step necessary to rehabilitate the land to a stable condition.
Resource activity	An activity that is any of the following: (a) a geothermal activity (b) a greenhouse gas (GHG) storage activity (c) a mining activity (d) a petroleum activity.
Resource project	Resource activities carried out, or proposed to be carried out, under 1 or more resource tenures, in any combination, as a single integrated operation.
Single integrated operation	Occurs when all of the below criteria are met: (a) the activities are carried out under the day-to-day management of a single responsible individual, for example, a site or operations manager; (b) the activities are operationally interrelated; (c) the activities are, or will be, carried out at one or more places; and (d) the places where the activities are carried out are separated by distances short enough to make feasible the integrated day-to-day management of the activities.
Underground water rights	Means any of the following: (a) underground water rights within the meaning of the <i>Mineral Resources Act 1989</i> ; (b) underground water rights within the meaning of the <i>Petroleum and Gas (Production and Safety) Act 2004</i> ; (c) underground water rights within the meaning of the <i>Petroleum Act 1923, section 87(3)</i> .

Attachment 1—Spatial data requirements for PRC plan

Attachment 1 provides guidance on the required content of spatial information (shapefiles) for the submission of a proposed amendment to a PRCP schedule. Spatial information is only required to be submitted with an amendment application where the application proposes to amend the final site design of the current approved PRCP schedule. This attachment should be read in conjunction with the department's [Guideline - Spatial Information Submission \(ESR/2018/4337\)](#). The following sections provide information about the required fields and attributes for datasets.

Required files—Table 1

If the application proposes to amend the final site design of the current approved PRCP schedule, you must submit shapefiles detailing the following in relation to the proposed amendment:

- the location and maximum extent of disturbance footprint for the mine life
- the PMLU and NUMAs for the area within the resource tenure(s)
- the rehabilitation and improvement areas within the resource tenure(s)
- any sensitive receptors
- extent of a floodplain
- existing rehabilitation.

A minimum of one (1) shapefile must be submitted for a PRC plan, detailing all the above-listed information, as outlined within Table 1. Each file must be named in accordance with the requirements outlined within the department's [Guideline - Spatial Information Submission \(ESR/2018/4337\)](#).

A spreadsheet containing the schema (in Table 2) and a shapefile template for PCR plan are available on the department's website at www.des.qld.gov.au, using the search term "submission of spatial information".

Table 1: Shapefile checklist

File	Spatial information requirement	Schema	Example file name (e.g. using submission date of 30 June 2020)
1	PRC plan - polygon	Table 2	EPPR00372556_PRCP_PY_30062020.zip

Where:

PY = polygon (geometry)

Table 2: Schema for PCR plan

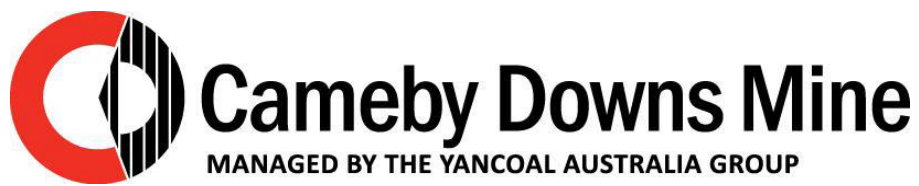
Field Name	Type	Length	Definition	Domain Values ¹	Domain Value Description	Mandatory/ Optional
PERMIT_REF	TEXT	50	The alpha-numeric environmental authority number relevant to the spatial information (if this PRC plan does not relate to an existing EA, please provide the relevant application number instead).			Mandatory
PROCESS	TEXT	4	The relevant process spatial data is being submitted for	PRCP	Progressive rehabilitation and closure plan	Mandatory
SITE_NAME	TEXT	254	Site name relating to the environmental authority.			Mandatory
SITE_ID	TEXT	20	This field contains a unique identifier for the spatial feature, which has been generated by the applicant.			Mandatory
FEATURE	TEXT	10	This field contains the land use feature on site which this polygon or point is describing. Select the relevant option of either post-mining land use, rehabilitation area, non-use management area, improvement area, maximum disturbance footprint, sensitive receptor, existing rehabilitation or floodplain using the codes specified.	PMLU	Post-mining land use	Mandatory
				REHAB_AREA	Rehabilitation area	Mandatory
				NUMA	Non-use management area	Mandatory if the PRC plan schedule proposes or changes a non-use management area
				IMPRV_AREA	Improvement area	Mandatory if the PRC plan schedule proposes or changes a non-use management area
				FOOTPRINT	Maximum disturbance footprint over mine life	Mandatory
				SR	Sensitive receptor	Mandatory

¹ If blank, populate based on Attribute type & definition

				EX_REH	Existing rehabilitation	Mandatory if the application is for an existing EA and there is existing rehabilitation undertaken
				FLDP	Floodplain	Mandatory if there is a floodplain located within the EA boundary
FEAT_DESC	TEXT	254	Feature description		This field provides a description of the feature identified in 'FEATURE'.	Mandatory
PMLU_TYPE	TEXT	10	This field provides a description of the post mining land use type. If PMLU_TYPE is 'Other' additional information in the comments field is required.	GRAZ	Grazing	Mandatory for each PMLU.
				NAT_ECO	Native ecosystem	
				WTR_ST	Water storage	
				REC	Recreation	
				HB_ECS	Habitat and ecosystem services	
				AGRI	Agriculture	
				FOR	Forestry	
				CROP	Cropping	
				PERM_INFRA	Permanent infrastructure	
				IND	Industrial	
				LNDFL	Landfill	
				Oth	Other	
DATE_SUBMT	DATE	dd/mm/yyyy	Date of submission. This field identifies the date the spatial information was submitted.		Date of submission	Mandatory
SOURCE	TEXT	5	This field identifies the source of the spatial information and the capture methodology for the spatial information provided.	DIG	Digitising (Tracing over Ortho Imagery)	Mandatory
				GPSD	GPS Differential Survey	
				GPSND	GPS Non Differential Survey	
				RTK	Real-Time Kinematic (RTK) Survey	
				UK	Unknown	

AREA_HA	DOUBLE	N/A	This field indicates the area in Hectares. (Polygon only)			Mandatory if GEOMETRY = polygon.
COMMENTS	TEXT	254	A free text field has been provided to include any additional information the proponent wishes to provide in relation to the data.			Mandatory if PMLU_TYPE = Oth

CAMEBY DOWNS MINE
PROGRESSIVE REHABILITATION AND CLOSURE PLAN



March 2025
Document No. CDM-ENV-MP-201-003
Version 5.0

DOCUMENT CONTROL

Title of the Project	Cameby Downs Mine
Document Title	Progressive Rehabilitation and Closure Plan – Rehabilitation Planning Part
Document ID Number	CDM-ENV-MP-201-003
Tenure Number(s)	EA EPML00900113 ML 50233, ML 50258, ML 50259, ML 50260 and ML 50269
EA Holder Name	Syntech Resources Pty Ltd T/A Cameby Downs Mine
EA Holder Contact	Les Merton (Environment & Community Superintendent)
EA Holder Contact Details	(07) 4665 8621

VERSION HISTORY

Version	Description	Date of Submission
1	Draft for Initial Review	1 May 2021
2	Final	25 June 2021
3	Updated to address DES Information Request	February 2022
4	Updated to address DES Comments	April 2022
5	Updated figures for PRCP Minor Amendment Application	March 2025

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3 REHABILITATION PLANNING PART

3.1 PROJECT PLANNING

On 30 June 2020, the Queensland Department of Environment and Science (DES), pursuant to section 754 of the *Environmental Protection Act 1994* (the EP Act), issued Syntech Resources Pty Ltd (Syntech) a Progressive Rehabilitation and Closure Plan Transition Notice (PRCP Transition Notice). The PRCP Transition Notice requires Syntech to prepare a Progressive Rehabilitation and Closure (PRC) Plan for the Cameby Downs Mine (CDM) which satisfies the requirements of sections 126C and 126D of the EP Act by 30 June 2021.

The CDM is an approved and operating open cut coal mine located approximately 360 kilometres (km) west-north-west of Brisbane, alongside the Warrego Highway approximately 16 km north-east of the township of Miles in the Western Downs Regional Council (WDRC) local government area (Figure 1). The CDM is owned and operated by Syntech and managed by Yancoal Australia Limited (Yancoal) in accordance with Environmental Authority (EA) EPML00900113.

In 2018, Syntech prepared and submitted a Major EA Amendment for the CDM Continued Operations Project (and associated Environmental Values Assessment [EVA]). The Continued Operations Project was approved in 2019. Figure 2 provides an overview of the approved layout of the CDM (i.e. including the Continued Operations Project). As part of the Continued Operations Project, Syntech defined the post-mining land uses (PMLUs) and non-use management areas (NUMAs) that would be achieved for the CDM.

In accordance with the *Guideline – Progressive Rehabilitation and Closure Plans* (ESR/2019/4964) (DES, 2021) (the PRCP Guideline), the approved PMLUs, NUMAs and associated rehabilitation requirements (including outcomes for the land and associated criteria for achieving these outcomes) from the Continued Operations Project have been transitioned into this PRC Plan and the PRCP Schedule.

The objective of this PRC Plan is to provide a roadmap for progressive rehabilitation and closure of the CDM to achieve a safe, stable and non-polluting final landform which satisfies the requirements of sections 126C and 126D of the EP Act and other relevant legislation.

This PRC Plan and the associated PRCP Schedule supersede the existing Rehabilitation Operational Management Plan (Syntech, 2020) and Plan of Operations (1 April 2019 to 31 March 2021) (Syntech, 2019).

3.1.1 Project Description

3.1.1.1 Type of Mining Operation

The CDM is an open cut coal mine, with truck and shovel operations.

3.1.1.2 Duration of Mining Operations

The CDM has been operating for approximately 10 years, with mining of overburden commencing in July 2010. The coal handling and preparation plant (CHPP) was commissioned in November 2010, with first product coal railed in December 2010.

Operations are approved to continue until 2093 (i.e. 75 years from the date EA EPML00900113 was amended to include the Continued Operations Project).

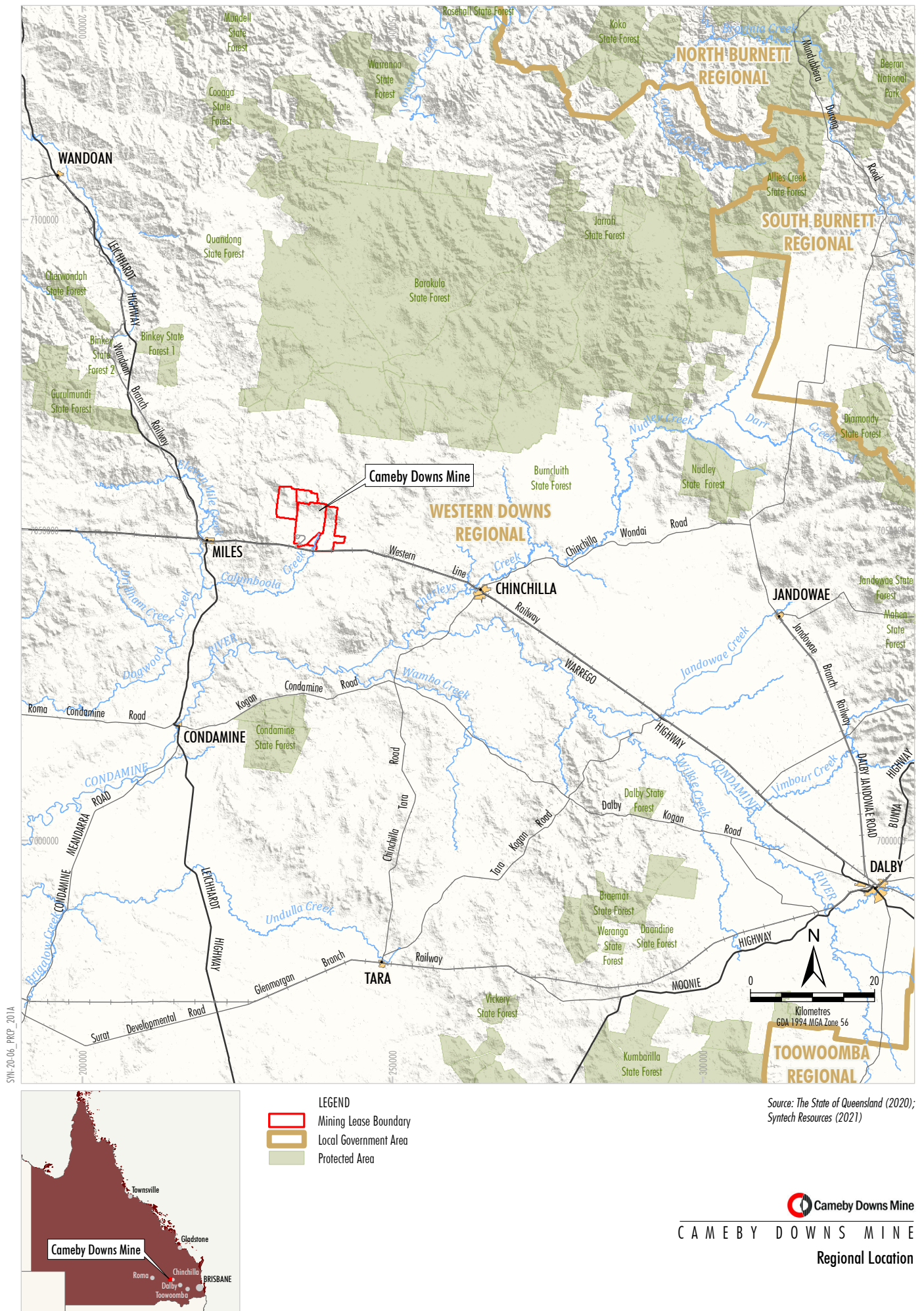


Figure 1

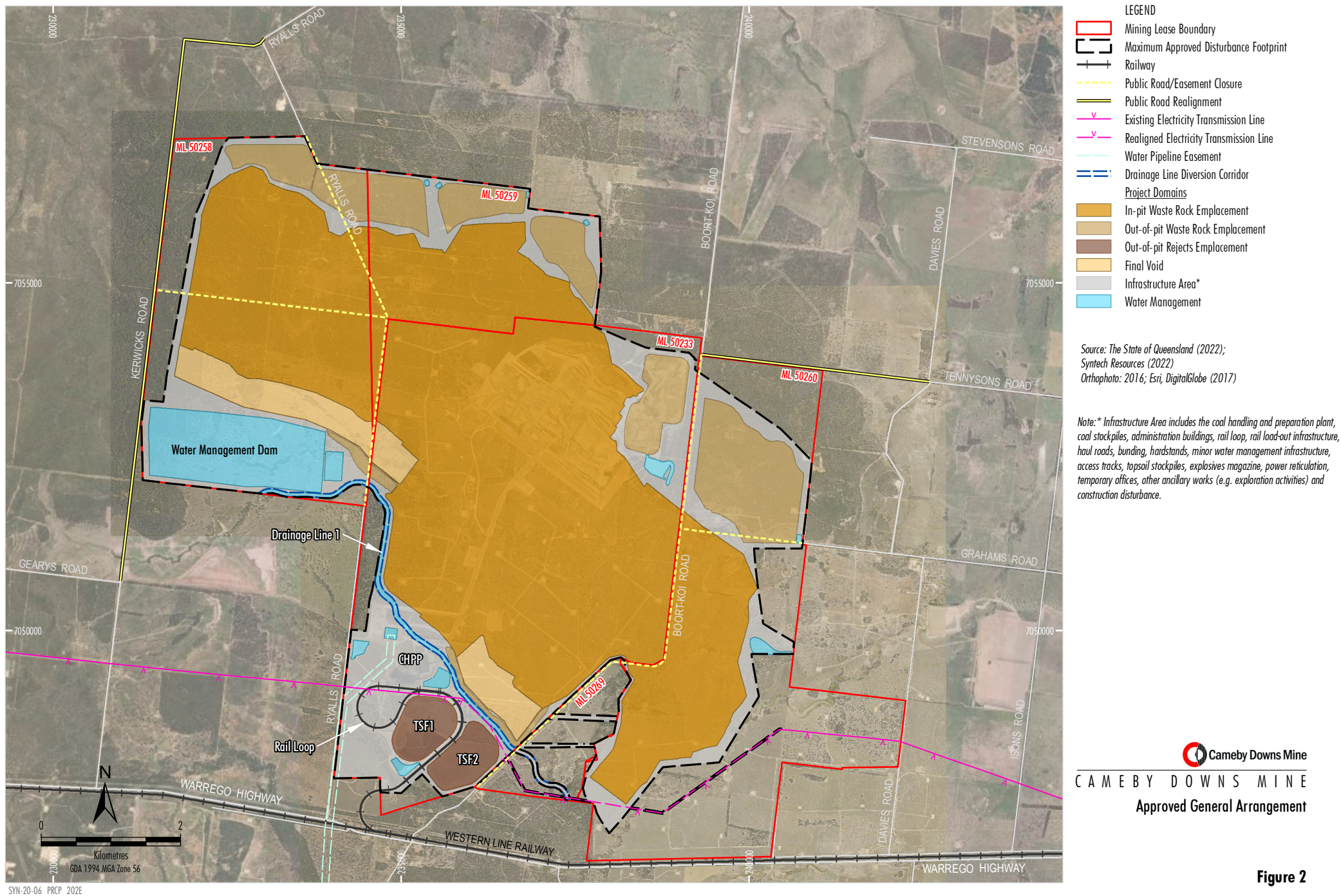


Figure 2

3.1.1.3 Mining Tenements

Table 1 identifies the CDM tenements and their status, and identifies overlapping Exploration Permit for Coal (EPC) tenures.

Table 1
Relevant Mining Tenements

Permit	Holder	Granted	Expiry	Area (ha)	Overlapping Mining Tenure
Mining Lease (ML) 50233	Syntech	1 August 2008	31 July 2038	2,722.2	EPC 732 ¹
ML 50258	Syntech	26 April 2019	31 July 2038	1,550.0	EPC 732 ¹
ML 50259	Syntech	26 April 2019	31 July 2038	663.8	EPC 732 ¹
ML 50260	Syntech	26 April 2019	31 July 2038	1,690.0	EPC 1165 ²
ML 50269	Syntech	26 April 2019	31 July 2038	190.8	EPC 1165 ²

¹ EPC 732 is held by Syntech.

² EPC 1165 is held by Metrocoal Limited (49%) and Sino Coal Resources Pty Ltd (51%).

Syntech has an agreement in place with Metro Mining Limited and Sino Coal Resources for the overlapping EPC tenements.

In addition to overlapping mining tenures, the CDM also has overlapping petroleum tenements (Table 2).

Table 2
Overlapping Petroleum Tenements

Petroleum Tenure	Holder of Petroleum Tenure	Overlapping Mining Lease
Exploration Permit for Petroleum (EPP) 676	Australian CBM Pty Ltd	ML 50233 ML 50259 ML 50260 ML 50269
EPP 747	Arrow Energy Pty Ltd (70%) and Arrow CSG (Australia) Pty Ltd (30%)	ML 50233 ML 50258
Petroleum Lease (PL) 472	BG International (Aus) Pty Ltd (80%) and QGC Pty Ltd (20%)	ML 50233 ML 50259 ML 50260 ML 50269
PL 458	BG International (Aus) Pty Ltd (80%) and QGC Pty Ltd (20%)	ML 50260 ML 50269

3.1.1.4 *Primary Mine Features and Infrastructure*

The primary mine features and infrastructure associated with the CDM include:

- open cut truck and shovel mining operations at a mining rate of 3.8 million tonnes per annum run of mine (ROM) coal;
- processing of ROM coal at the CHPP;
- disposal of waste rock, comprising of overburden and interburden, in-pit or in out-of-pit waste rock emplacements as mining progresses;
- disposal of coal rejects (coarse rejects and fine rejects/tailings) in dedicated in-pit and out-of-pit rejects emplacement structures and in a final void;
- loading of product coal using rail loading infrastructure;
- transport of product coal via the existing rail system from the CDM to the Port of Brisbane and opportunistic transport via road to domestic customers;
- construction and operation of ancillary infrastructure in support of mining operations, including:
 - satellite mine service and infrastructure areas;
 - haul and access roads;
 - workshops;
 - diesel storage tanks;
 - electricity supply and communications infrastructure; and
 - water management infrastructure;
- closure of existing, and construction of new, local roads;
- realignment of existing 132 kilovolts electricity transmission line;
- 24-hour seven-days per week operations over a 75-year mine life;
- peak operational workforce of approximately 160 people;
- ongoing exploration activities within mining tenements;
- other associated minor infrastructure, plant and activities, where required; and
- progressive rehabilitation, as well as ultimate rehabilitation of the entire CDM area once the site has been decommissioned.

3.1.1.5 Environmentally Relevant Activities

Environmentally Relevant Activities (ERAs) (defined under the EP Act) are activities that will, or have the potential to, release contaminants into the environment which may cause environmental harm.

In accordance with EA EPML00900113, the CDM is approved to conduct the ERAs described within Table 3 until 2093 (i.e. 75 years from the date EA EPML00900113 was amended to include the Continued Operations Project).

Table 3
Approved Resource Activity Environmentally Relevant Activities

Relevant Mining Lease	Environmentally Relevant Activity	Description
50233 50258 50259 50260 50269	Schedule 3, 13	Mining Black Coal
	Ancillary 31	Ancillary – Mining processing, 2 Processing, in a year, the following quantities of mineral products, other than coke, (b) more than 100,000 tonnes (t).
	Ancillary 60	Ancillary – Waste disposal, 1 Operating a facility for disposing of, in a year, the following quantity of waste mentioned in subsection (1)(a), (a) less than 50,000 t.
	Ancillary 63	Ancillary – Sewage Treatment Plant, 1 Operating sewage treatment works, other than no-release works, with a total daily peak design capacity of, (b-i) more than 100 but not more than 1500EP if treated effluent is discharged from the works to an infiltration trench or through an irrigation scheme.

3.1.1.6 Relevant Legislation and Guidelines

Environmental Protection Act 1994

Table 4 provides a reconciliation of the relevant requirements of sections 126C and 126D of the EP Act and where they have been addressed in this PRC Plan.

Table 4
Reconciliation of Sections 126C and 126D of the EP Act

Sections 126C and 126D of the EP Act	Section of this PRC Plan
Section 126C – Requirements for PRC Plan	
(1) A proposed PRC plan must	-
(a) be in the approved form; and	This PRC Plan
(b) describe the following –	-
(i) each resource tenure, including the area of each tenure, to which the application relates;	Section 3.1.1.3
(ii) the relevant activities to which the application relates;	Section 3.1.4.1
(iii) the likely duration of the relevant activities; and	Section 3.1.4.1
(c) include –	-
(i) a proposed PRCP schedule that complies with section 126D; and	Attachment 2
(ii) a detailed description, including maps, of how and where the relevant activities are to be carried out; and	Sections 3.1.3 and 3.1.4, Figures 10 to 22 and Attachment 2
(iii) details of the consultation undertaken by the applicant in developing the proposed PRC plan; and	Section 3.2.1
(iv) details of how the applicant will undertake ongoing consultation in relation to the rehabilitation to be carried out under the plan; and	Section 3.2.2
(d) state the extent to which each proposed post-mining land use for land, or non-use management area, identified in the proposed PRCP schedule for the plan is consistent with –	-
(i) the outcome of consultation with the community in developing the plan; and	Sections 3.3.1 and 3.4.1
(ii) any strategies or plans for the land of a local government, the State or the Commonwealth; and	Sections 3.3.2 and 3.4.2
(e) for each proposed post-mining land use for land, state the applicant's proposed methods or techniques for rehabilitating the land to a stable condition in a way that supports the rehabilitation milestones under the proposed PRCP schedule; and	Section 3.5
(f) identify the risks of a stable condition for land mentioned in paragraph (e) not being achieved, and how the applicant intends to manage or minimise the risks; and	Section 3.6
(g) for each proposed non-use management area, state the reasons the applicant considers the area can not be rehabilitated to a stable condition because of a matter mentioned in section 126D(2); and	NA ¹
(h) for each matter mentioned in paragraph (g), include copies of reports or other evidence relied on by the applicant for each proposed non-use management area; and	NA ¹
(i) for each proposed non-use management area, state the applicant's proposed methodology for achieving best practice management of the area to support the management milestones under the proposed PRCP schedule for the area; and	Section 3.5
(j) include the other information the administering authority reasonably considers necessary to decide whether to approve the PRCP schedule for the plan.	This PRC Plan
(2) The matters mentioned in subsection (1), other than the matter mentioned in subsection (1)(c)(i), are the rehabilitation planning part of the proposed PRC Plan.	-

Table 4 (Continued)
Reconciliation of Sections 126C and 126D of the EP Act

Sections 126C and 126D of the EP Act	Section of this PRC Plan
Section 126D – Requirements for proposed PRCP schedule	
(1) A proposed PRCP schedule must—	Attachment 2
(a) for the area of each resource tenure described in the PRC plan, state—	
(i) the proposed post-mining land use for the land; or	
(ii) that the applicant considers the land to be a non-use management area; and	
(b) for each proposed post-mining land use mentioned in paragraph (a)(i), state—	
(i) each rehabilitation milestone required to achieve a stable condition for the land; and	
(ii) when each rehabilitation milestone is to be achieved; and	
(c) for each non-use management area mentioned in paragraph (a)(ii), state—	
(i) each management milestone for the area; and	
(ii) when each management milestone is to be achieved; and	
(d) include maps showing the land mentioned in paragraphs (a), (b) and (c).	
(2) The PRCP schedule may state that land is a non-use management area only if—	NA ¹
(a) carrying out rehabilitation of the land would cause a greater risk of environmental harm than not carrying out the rehabilitation; or	NA ¹
(b) both of the following apply—	NA ¹
(i) the risk of environmental harm as a result of not carrying out rehabilitation of the land is confined to the area of the relevant resource tenure;	NA ¹
(ii) the applicant considers, having regard to each public interest consideration, that it is in the public interest for the land not to be rehabilitated to a stable condition.	NA ¹
(3) Despite subsection (2), if land the subject of the proposed PRCP schedule will contain a void situated wholly or partly in a flood plain, the schedule must provide for rehabilitation of the land to a stable condition.	NA ^{1, 2}
(4) For subsection (1)(b)(ii), the PRCP schedule must provide for each rehabilitation milestone to be achieved as soon as practicable after the land to which it relates becomes available for rehabilitation.	Section 3.5.1 and Attachment 2
(5) For subsection (4), land is available for rehabilitation if the land is not being mined, unless—	Attachment 2
(a) the land is being used for operating infrastructure or machinery for mining, including, for example, a dam or water storage facility; or	
(b) the land is identified in the proposed PRCP schedule or the application for an environmental authority for relevant activities to which the schedule relates as containing a probable or proved ore reserve that is to be mined within 10 years after the land would otherwise have become available for rehabilitation; or	
(ba) the land is required for the mining of a probable or proved ore reserve mentioned in paragraph (b); or	
(c) the land contains permanent infrastructure identified in the proposed PRCP schedule as remaining on the land for a post-mining land use.	

¹ In accordance with section 754(3) of the EP Act, Syntech is not required to comply with a requirement under section 126C(1)(g) or (h) or 126D(2) or (3) for the proposed PRCP Schedule for the plan in relation to land as an outcome for the land has been identified under a land outcome document (EA EPML00900113 and the Rehabilitation Operational Management Plan [Syntech, 2020], made under a condition of EA EPML00900113), and the outcome for the land is the same as, or substantially similar to, the outcome for the land if it were a non-use management area under a PRCP Schedule.

² Section 126D(3) of the EP Act does not apply to the CDM as the approved final voids in the proposed PRCP Schedule are not situated wholly or partly in a flood plain.

Environmental Protection Regulation 2019

Schedule 8A of the *Environmental Protection Regulation 2019* (the EP Regulation) provides details of the objective assessment for particular PRCP Schedule decisions. The administering authority must consider whether the PRCP Schedule achieves each objective stated in Part 3 of Schedule 8A of the EP Regulation.

Based on the definitions provided in section 750 of the EP Act, the EA for the CDM (EA EPML00900113) and the Rehabilitation Operational Management Plan (Syntech, 2020) (made under a condition of EA EPLM00900113) are land outcome documents. Accordingly, section 213 of the EP Regulation outlines the following transitional provisions that apply:

213 Carrying out PRCP objective assessment for particular PRCP schedule decision

- (1) *This section applies if, under section 754 of the Act, the administering authority has given a mining EA holder a notice requiring the holder to give the administering authority a proposed PRC plan.*
- (2) *Schedule 8A, part 3, table 1 does not apply for conducting a PRCP objective assessment of the proposed PRCP schedule for the plan to the extent that—*
 - (a) *a land outcome document provides for an outcome for the land the subject of the proposed PRCP schedule; and*
 - (b) *the outcome for the land is the same as or substantially similar to the outcome for the land as if it were a post-mining land use or non-use management area under the plan.*
- (3) *Also, the PRCP objective and PRCP performance outcomes stated in schedule 8A, part 3, table 2, entry for 'Rehabilitation Milestones' do not apply for conducting a PRCP objective assessment of the proposed PRCP schedule for the plan to the extent that—*
 - (a) *a land outcome document states criteria for achieving an outcome provided for in the document for land; and*
 - (b) *the same or substantially similar criteria are proposed in the plan for the outcome.*
- (4) *In addition, the PRCP objective and PRCP performance outcomes stated in schedule 8A, part 3, table 3, entry for 'Management Milestones' do not apply for conducting a PRCP objective assessment of the proposed PRCP schedule for the plan to the extent that—*
 - (a) *a land outcome document states criteria for achieving an outcome provided for in the document for land; and*
 - (b) *the same or substantially similar criteria are proposed in the plan for the outcome.*

...

In summary, the outcomes for the land, and associated criteria for achieving these outcomes, that are identified in EA EPML00900113 and the Rehabilitation Operational Management Plan (Syntech, 2020), are not subject to assessment under the EP Regulation (as the land outcomes provided in this PRC Plan are the same as, or substantially similar to, those contained in the land outcome documents).

Progressive Rehabilitation and Closure Plans Guideline

The PRCP Guideline assists applicants in developing a PRC Plan as part of a site-specific application for a new mining activity and for existing EA holders who will be required to develop a PRC Plan under section 754 of the EP Act.

The PRC Plan (the rehabilitation planning part of the PRCP) must meet the information requirements in sections 126C and 126D of the EP Act (unless otherwise stated) (Table 4) and must be written in accordance with the PRCP Guideline. The PRCP Schedule (Attachment 2) operates separately to the EA and contains milestones and conditions that relate to the completion of progressive rehabilitation and mine closure. Both the EA and the PRCP Schedule apply to the entire life of the mining activities, irrespective of when the underlying tenure expires. As per section 202E of the EP Act, where there is an inconsistency between an EA and a PRCP Schedule, the EA prevails to the extent of the inconsistency (DES, 2019).

Section 126C(1)(a) of the EP Act requires that ‘A PRC Plan must be in the approved form’. The approved form for a PRC Plan is provided by the DES Application Form *Submission of a progressive rehabilitation and closure plan* (ESR/2019/4957) (herein referred to as the PRCP Application Form). Section 6 of the PRCP Application Form provides a checklist which has been reproduced in Table 5.

This PRC Plan has been structured to be consistent with the requirements outlined in Appendix 1 of the PRCP Application Form. The structure of this PRC Plan is summarised below:

- Section 3.1:** Provides an overview of the objective of this PRCP, details of relevant legislation and an introduction to the CDM, including site location details and a description of the CDM.
- Section 3.2:** Provides information on stakeholder consultation including a community consultation register and community consultation plan.
- Section 3.3:** Describes the justification for the PMLU and details of each nominated PMLU.
- Section 3.4:** Describes the justification for the NUMA and details of each nominated NUMA.
- Section 3.5:** Includes information describing how the proposed rehabilitation and management methodologies have been developed and will be implemented.
- Section 3.6:** Provides details of the risk assessment undertaken to identify the risk of a stable condition for land not being achieved and also provides a risk treatment plan outlining how the risks will be managed or minimised.
- Section 3.7:** Provides a monitoring and maintenance program that identifies and describes the monitoring systems that will be undertaken to demonstrate a milestone and milestone criteria have been achieved.
- Section 3.8:** Lists the references cited in this PRC Plan.

Table 5
Progressive Rehabilitation and Closure Plan – Checklist

PRC Plan Requirement	Requirement Met? (Yes/NA)	Relevant Section Number	Justification ²
Project Description			
Describe the following:	-	-	-
• each resource tenure, including the area of each tenure to which the application relates;	Yes	Section 3.1.4.1	-
• the relevant activities to which the application relates;	Yes	Section 3.1.4.1	-
• the likely duration of the relevant activities.	Yes	Section 3.1.4.1	-
Include a detailed description, including maps, of how and where the relevant activities are to be carried out.	Yes	Sections 3.1.3 and 3.1.4, Figures 10 to 22 and Attachment 2	-
Consultation			
Include details of the consultation undertaken by the applicant in developing the proposed PRC plan.	Yes	Section 3.2.1	-
Include details of how the applicant will undertake ongoing consultation in relation to the rehabilitation to be carried out under the plan.	Yes	Section 3.2.2	-
Post-mining Land Use			
State the extent to which each proposed post-mining land use identified in the proposed PRCP Schedule for the plan is consistent with the outcome of consultation with the community in developing the PRC plan.	Yes	Section 3.3.1 and Attachments 1 and 2	The PMLU identified in the PRCP Schedule is consistent with EA EPML00900113 and the Rehabilitation Operational Management Plan (Syntech, 2020).
State the extent to which each proposed post-mining land use identified in the proposed PRCP Schedule for the plan is consistent with any strategies or plans for the land of a local government, the State or the Commonwealth.	Yes	Section 3.3.2 and Attachments 1 and 2	
Non-use Management Area³			
State the extent to which each proposed non-use management area identified in the PRCP Schedule for the plan is consistent with the outcome of consultation with the community in developing the PRC plan.	Yes	Section 3.4.1 and Attachments 1 and 2	The NUMAs identified in the PRCP Schedule are consistent with EA EPML00900113 and the Rehabilitation Operational Management Plan (Syntech, 2020).
State the extent to which each non-use management area identified in the PRCP Schedule for the plan is consistent with any strategies or plans for the land of a local government, the State or the Commonwealth.	Yes	Section 3.4.2 and Attachments 1 and 2	
For each proposed non-use management area, state the reasons the applicant considers the area cannot be rehabilitated to a stable condition because of a matter mentioned in section 126D(2).	NA	Attachments 1 and 2	
For each matter mentioned in the requirement above, include copies of reports or other evidence relied on by the proponent for each proposed non-use management area.	NA	Attachments 1 and 2	-

Table 5 (Continued)
Progressive Rehabilitation and Closure Plan – Checklist

PRC Plan Requirement ¹	Requirement Met? (Yes/NA)	Relevant Section Number	Justification ²
Rehabilitation and Management Methodology⁴			
For each post-mining land use, state the applicant's proposed methods or techniques for rehabilitating the land to a stable condition in a way that supports the rehabilitation milestones under the proposed PRCP Schedule.	Yes	Section 3.5.1	-
For each non-use management area, state the applicant's proposed methodology for achieving best practice management of the area to support the management milestones under the proposed PRCP Schedule for the area.	Yes	Section 3.5.1	-
Risk Assessment			
Identify the risks of a stable condition for land described as a post-mining land use not being achieved, and how the applicant intends to manage or minimise the risks.	Yes	Section 3.6	-
PRCP Guideline			
Include any other information prescribed by the administering authority in the Guideline – Progressive Rehabilitation and Closure Plans (ESR/2019/4964).	Yes	This PRC Plan	-
Include the spatial information required in the Guideline – Progressive Rehabilitation and Closure Plans (ESR/2019/4964).	Yes	Section 3.1.3 and Figures 10 to 22	-
Other Information			
Include the other information the administering authority reasonably considers necessary to decide whether to approve the PRCP Schedule.	Yes	This PRC Plan	-
PRCP Schedule⁵			
Include a PRCP Schedule prepared using the PRCP Schedule template (ESR/2019/5103).	Yes	Attachment 2	-
Include maps showing all of the land mentioned in the PRCP Schedule, as it relates to being progressively rehabilitated.	Yes	Section 3.1.3 and Figures 10 to 22	-

¹ As per the requirements of *Submission of a progressive rehabilitation and closure plan* (ESR/2019/4957).

² Justification must be provided for any requirements for which the response is Not Applicable (NA).

³ Note for Transitional PRC plans: *The holder is not required to comply with the requirements under section 126C(1)(g) or (h) or 126D(2) or (3) for the proposed PRCP schedule for the plan in relation to land if a land outcome document identifies the outcome for the land as the same, or substantially similar to, the outcome for the land if it were a non-use management area.*

⁴ Note: section 3.5 of the PRCP Guideline outlines the range of information that must be included as appendices to the rehabilitation planning part of the PRC plan.

⁵ The proposed PRCP Schedule must comply with section 126D of the EP Act, and be written in accordance with the PRCP Guideline. The administering authority will assess the proposed PRCP Schedule in conjunction with the rehabilitation planning part of the PRC plan and other application documents, and decide whether to approve the proposed PRCP Schedule, with or without conditions, or refuse the proposed PRCP Schedule.

3.1.2 Baseline Information

In 2018, Syntech completed the CDM Continued Operations Project EVA (Syntech, 2018). Studies undertaken for the EVA that are relevant to this PRC Plan and PRCP Schedule include:

- Surface Water Assessment (WRM Water & Environment [WRM], 2018a) (Appendix A).
- Flood Study (WRM, 2018b) (Appendix B).
- Groundwater Assessment (Australasian Groundwater and Environmental Consultants [AGE], 2018) (Appendix C).
- Terrestrial Flora Assessment (Ecosure, 2018a) (Appendix D).
- Terrestrial Fauna Assessment (Ecosure, 2018b) (Appendix E).
- Aquatic Ecology Assessment (DPM Envirosciences, 2018) (Appendix F).
- Soil Resources Review (LRS Environmental, 2018) (Appendix G).
- Contaminated Land Assessment (Environmental Earth Sciences, 2017) (Appendix H).
- Rejects Management Concept Study (Engeny Water Management [Engeny], 2018) (Appendix I).

To further support the studies undertaken for the EVA and to address the requirements of the PRCP Guideline, a contemporary Mine Waste Geochemical Characterisation (Geo-Environmental Management Pty Ltd [GEM], 2021) (Appendix J) was undertaken.

3.1.2.1 Site Topography

Terrain within the CDM area is comprised of low sandstone hills in the north and gently undulating plains in the south. Elevation in the CDM area ranges from approximately 320 metres Australian Height Datum (mAHD) in the vicinity of Drainage Line 1, to approximately 370 mAHD in the north (Figure 2) (Syntech, 2018).

Overall, slopes (generally of less than two percent) and drainage lines trend in a south-southeast direction towards Columboola Creek located south of the Warrego Highway. The topography to the north gently slopes northwards along drainage lines towards Punch-Bowl Creek. The local terrain is predominantly cleared pasture containing patches (varying in size) of both remnant and regrowth vegetation (Syntech, 2018).

3.1.2.2 Climate

The CDM site has a sub-tropical climate regime with distinct wet (October to March) and dry (April to September) seasons. The average daily minimum and maximum temperatures at Miles (approximately 16 km south-west of the CDM) range between 4 degrees Celsius (°C) (in July) and 33°C (in January).

The average monthly rainfalls at the CDM exhibit distinctly wet (October to March) and dry (April to September) seasons during the year, with a dry season low of 29.0 millimetres (mm) in August and a wet season high of 94.8 mm in January. The wet season average monthly rainfalls (53.2 mm to 94.8 mm) are significantly higher than the equivalent dry season average monthly rainfalls (29.0 mm to 38.6 mm). The recorded mean annual rainfall at the Miles Post Office site over the 128-year period is approximately 650 mm.

The average annual pan evaporation at the CDM site is estimated to be 1,885 mm, which is approximately three times the average annual rainfall. The evaporation rate is high throughout the year, with the highest evaporation rates occurring in the months between October and March. Evaporation rates are generally much higher than rainfall in all months.

Although understanding of climate change has improved markedly over the past several decades, climate change projections are still subject to uncertainties such as (Commonwealth Scientific and Industrial Research Organisation [CSIRO], 2015):

...scenario uncertainty, due to the uncertain future emissions and concentrations of greenhouse gases and aerosols; response uncertainty, resulting from limitations in our understanding of the climate system and its representation in climate models; and natural variability uncertainty, the uncertainty stemming from unperturbed variability in the climate system.

In Australia, the climate is projected to become warmer and drier.

Climate change may result in changes to rainfall patterns, runoff patterns and river flow. Based on the *Climate Change Projections for the central slopes* (CSIRO, 2015) the following changes are predicted at the CDCOP from 2090 onwards based on the RCP8.5 results:

- 80% of climate change models predicted that annual rainfall would change by between -23% (reduce by 145 mm) and 18% (increase by 113 mm); and
- 80% of climate change models predicted that annual evapotranspiration would change by between 9.8% (increase by 185 mm) and 18.1% (increase by 341 mm).

The potential implications of climate change to the residual void water balance and on design flood levels were considered in the CDM Continued Operations Project EVA (Syntech, 2018).

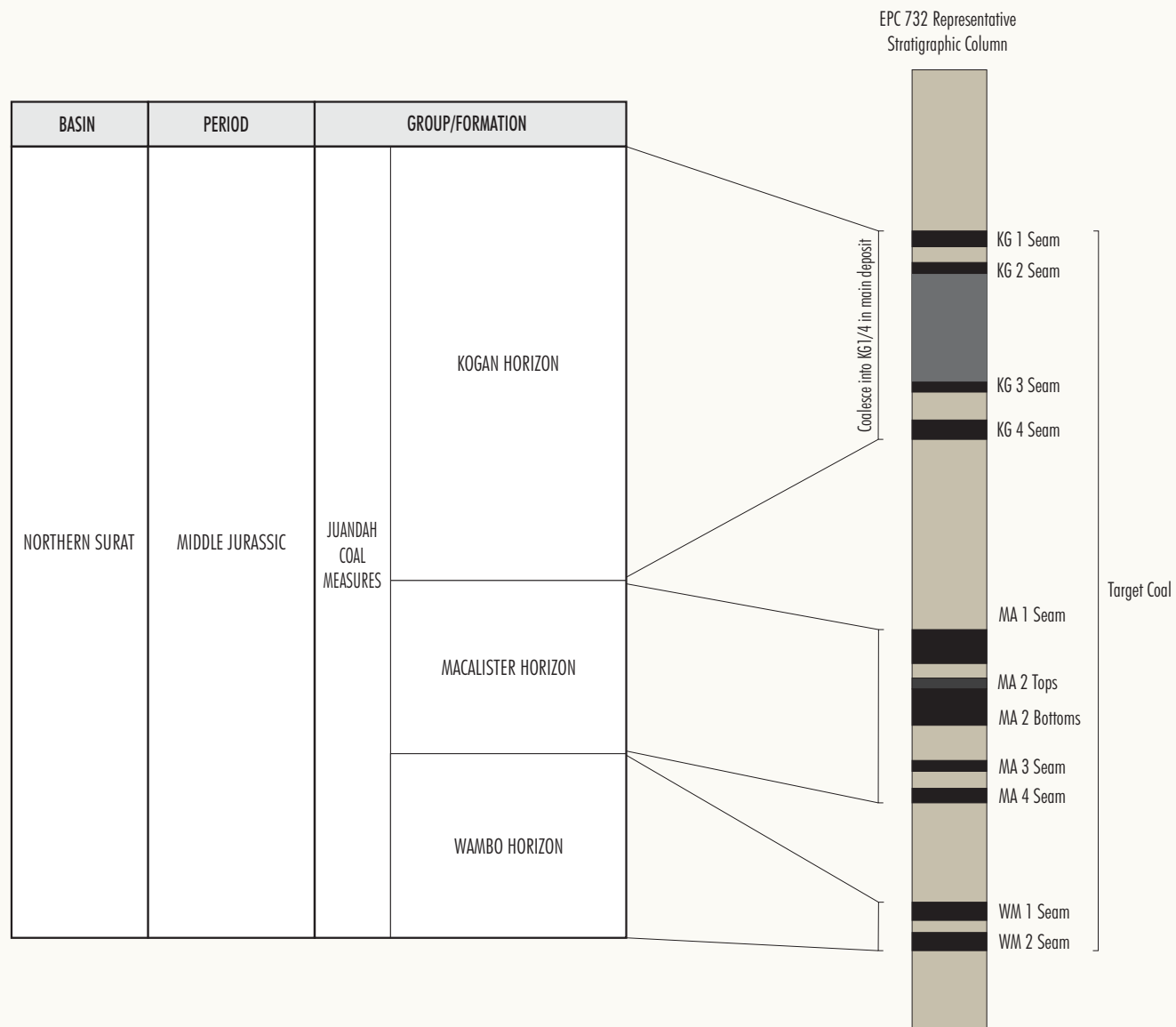
3.1.2.3 Geological Setting

The CDM is located on the eastern flank of the northern Surat Basin, which stratigraphically overlies the Bowen Basin. The Surat Basin comprises Jurassic to Cretaceous aged sandstones, siltstones and mudstones deposited in a predominantly fluvio-lacustrine depositional environment.

The main stratigraphic units occurring within the CDM area and immediate surrounds, from youngest to oldest, including corresponding hydrogeological systems are (Figure 3):

- Quaternary / Tertiary (unconsolidated alluvial sediments) – ephemeral groundwater where present.
- Late Jurassic (Springbok Sandstone [i.e. lowermost unit of the Kumbarilla Beds]) – unsaturated in the CDM area.
- Middle Jurassic (Walloon Coal Measures) – confined aquifer associated with coal seams between overburden/interburden aquitards.
- Early/Middle Jurassic (Hutton Sandstone and Precipice Sandstone) – confined aquifers at depth.

The physical and chemical properties of each of the above hydrogeological systems (where available) are described in the following subsections and are discussed further in Appendix C.



Source: Syntech (2017); JB Mining Services (2009)

Note: Indicative depth only. Coal seam depth varies over the Project area.

Figure 3

Quaternary Sediments

Quaternary sediments associated with the Condamine River and its tributaries unconformably overlie the Springbok Sandstone and Tertiary Sediments (where present). The Condamine River alluvium is a broad term used to describe the alluvial and sheetwash deposits of the Condamine River and its tributaries.

Exploration drilling data indicates that, where present, the Quaternary sediments across the CDM area are thin and unsaturated. The Quaternary sediments comprise silty clay to sandy clay. Groundwater recharge to the Quaternary sediments occurs via direct rainfall. Where saturated, groundwater discharge is via downward leakage to the underlying hydrogeological systems.

Localised disconnected zones of saturated Quaternary alluvium may be present along Columboola Creek, approximately 1 km south-west of the CDM. Where groundwater is present in the alluvium, the flow direction is from north to south and follows topography away from the CDM.

Quaternary sediments are also associated with the Condamine River and its associated tributaries approximately 17 km south of the CDM. The Quaternary sediment consists primarily of thin sheetwash deposits of silty clay to sandy clay which are disconnected from the Condamine River alluvium.

No groundwater supply bores within the CDM or surrounds target the Quaternary sediments, due to the limited extent and general lack of saturation or reliable water supply in these sediments.

Tertiary Sediments

Tertiary sediments are present in the north-eastern part of the CDM and unconformably overlie the older Jurassic units of the Surat Basin.

The Tertiary cover is generally thin and comprises deeply weathered clayey sub-labile to quartzose sandstone, sandy claystone, laminated siltstone and minor conglomerate.

Groundwater recharge to the Tertiary sediments also occurs via direct rainfall. Where saturated, groundwater discharge is via downward leakage to the underlying hydrogeological systems.

No groundwater supply bores within the CDM or surrounds target the Tertiary sediments, due to the limited extent and general lack of saturation or reliable water supply in these sediments.

Springbok Sandstone

The Springbok Sandstone (i.e. lowermost unit of the Kumbarilla Beds) outcrops in the north-eastern corner of the CDM and sub-crops below the Quaternary sediments elsewhere. The Springbok Sandstone gently dips and thickens to the south-west and comprises clayey lithic sub-labile to very lithic sandstone, calcareous in part, interbedded with carbonaceous mudstone and siltstone. Pre-Tertiary weathering has chemically altered the sediments resulting in silicified, kaolinised and ferruginised sandstone.

Exploration drilling indicates the Springbok Sandstone is generally unsaturated within the CDM. The Springbok Sandstone will become saturated as the unit dips below the regional water table to the south-west.

Recharge of the Springbok Sandstone occurs via direct rainfall in outcropping areas and diffuse rainfall seepage through the thin overlying Quaternary sediments. Regional groundwater flow in the Springbok Sandstone is down dip, towards the south-west. Where saturated, discharge is via downward leakage to underlying sediments and down gradient of the CDM.

To assist with understanding groundwater usage within and surrounding the CDM, ENRS conducted a bore census in October 2017 (ENRS, 2017).

There were no known groundwater users identified within the CDM or surrounds during the bore census targeting the Springbok Sandstone.

Walloon Coal Measures

The Walloon Coal Measures are separated into three stratigraphic units. The uppermost unit at the CDM is the Juandah Coal Measures, with the Tangalooma Sandstones and Taroom Coal Measures forming a thick confining aquitard between the Juandah Coal Measures and the underlying Hutton Sandstone and Precipice Sandstone. The Juandah Coal Measures comprise lithic, labile sandstone interbedded with siltstone, mudstone and coal. Coal deposition is more frequent towards the top of the unit.

The Juandah Coal Measures contain the main economic coal seams for the CDM, and are up to 220 metres (m) thick within the CDM. The Juandah Coal Measures starts at depths of between 30 metres below ground level (mbGL) to 125 mbGL within the CDM area.

Exploration drilling has identified three coal horizons and 12 individual coal seams within the Juandah Coal Measures, including:

- Kogan (KG 1, KG 2, KG 3, and KG 4);
- Macalister (MA 1, MA 2 Tops, MA2 Bottoms, MA 3, and MA 4); and
- Wambo (WM 1, WM 2, and WM 3). Note that WM 3 is not shown on Figure 3.

The Macalister Coal seams comprise the main economic resource for the CDM, supplemented by the overlying Kogan Coal seams and underlying Wambo Coal seams. The target resource has been estimated at approximately 250 Mt of proven and probable in-situ thermal coal reserves.

Regionally, the Walloon Coal Measures (including the Juandah Coal Measures) is separated from the overlying Springbok Sandstone by an aquitard approximately 15 m thick (Office of Groundwater Impact Assessment [OGIA], 2016).

The main water bearing units of the Walloon Coal Measures are the coal seams which comprise approximately 10% of the total thickness of the unit (OGIA, 2016). Hydraulic conductivity within the Walloon Coal Measures is generally associated with secondary porosity through fractures, and cleats within the coal seams.

3.1.2.4 Site Hydrology and Fluvial Networks

The CDM is located within the mid-reach of the Maranoa-Balonne River Basin, which is part of the headwaters of the Murray-Darling Basin. Locally, the majority of the CDM (southern portion) is located within the upper catchment of Columboola Creek, a tributary of Dogwood Creek. The remaining part of the CDM (northern portion) is located within the upper catchment of Punch-bowl Creek, which is also a tributary of Dogwood Creek. Dogwood Creek is a major tributary of the Balonne River (WRM, 2018a) (Figure 4).

Columboola Creek commences to the south of the CDM and drains in a westerly direction to Dogwood Creek. The majority of the CDM drains to Columboola Creek via three drainage features, namely: Drainage Line 1; Drainage Line 2; and Drainage Line 3. Another drainage feature (Drainage Line 4) reports to Columboola Creek to the south of the CDM. At its confluence with Dogwood Creek, Columboola Creek has a total catchment area of approximately 432 square kilometres (km²) (WRM, 2018a) (Figure 4).

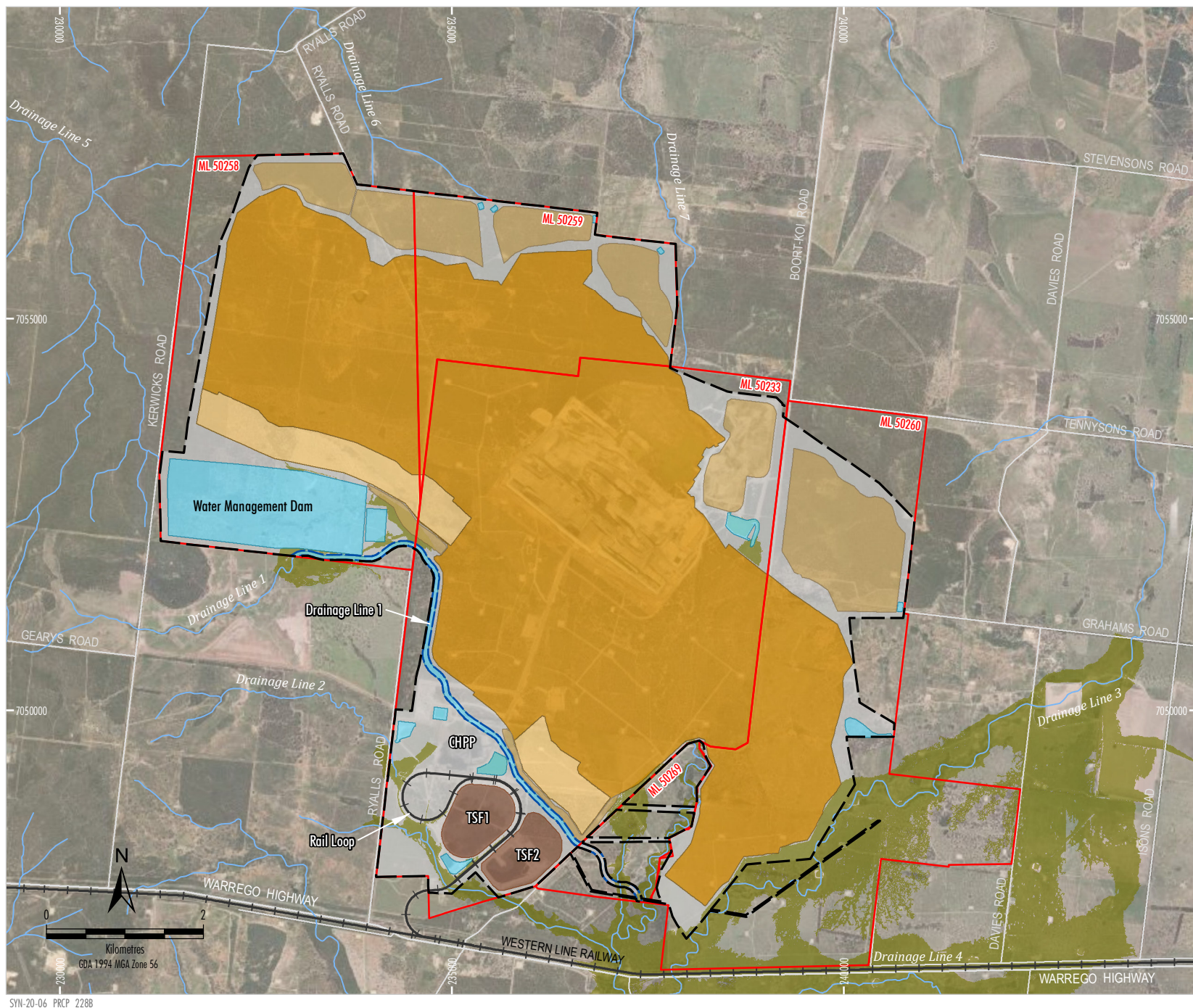


Figure 4

The northern portion of CDM drains to Punch-bowl Creek via three headwater drainage features, namely: Drainage Lines 5, 6 and 7. At its confluence with Dogwood Creek, Punch-bowl Creek has a total catchment area of approximately 124 km² (WRM, 2018a).

Given the ephemeral nature of the drainage features within the CDM area and downstream watercourses, surface water use is generally restricted to stock watering when water is available (WRM, 2018a).

Figure 4 also shows the Queensland Floodplain Assessment Overlay. Of note, there are no final voids located within this area.

3.1.2.5 Groundwater Levels and Properties

Groundwater Levels

Groundwater level data has been collected from the groundwater monitoring bores within the vicinity of the CDM from 2004 to present. Plate 1 presents the groundwater level hydrograph for the groundwater monitoring bores, which screen the MA1 / MA2 coal seams. Groundwater levels are between 290 mAHD and 318 mAHD. As detailed in AGE (2018), the elevated water level readings for CD034C in the order of 330 mAHD is considered an anomaly and not representative of the formation groundwater level following bore construction. Natural groundwater level fluctuations would show a similar trend to the cumulative rainfall deficit. However, all bores show a slight decline relative to the cumulative rainfall deficit and therefore are impacted by either passive drainage to the existing open cut or coal seam gas (CSG) extraction near the CDM.

Additional groundwater level data from selected exploration bores across the CDM area was collected in June 2017 as part of ongoing studies for the Surat Cumulative Management Area by the OGIA and is presented in Appendix C. The data shows groundwater levels in these bores ranging between 292 mAHD and 308.2 mAHD. These boreholes are open holes with surface casing installed typically to the base of weathering. Therefore, the open section most probably intersects groundwater from other coal seam strata above and below the target Macalister (MA1 / MA2) coal seams.

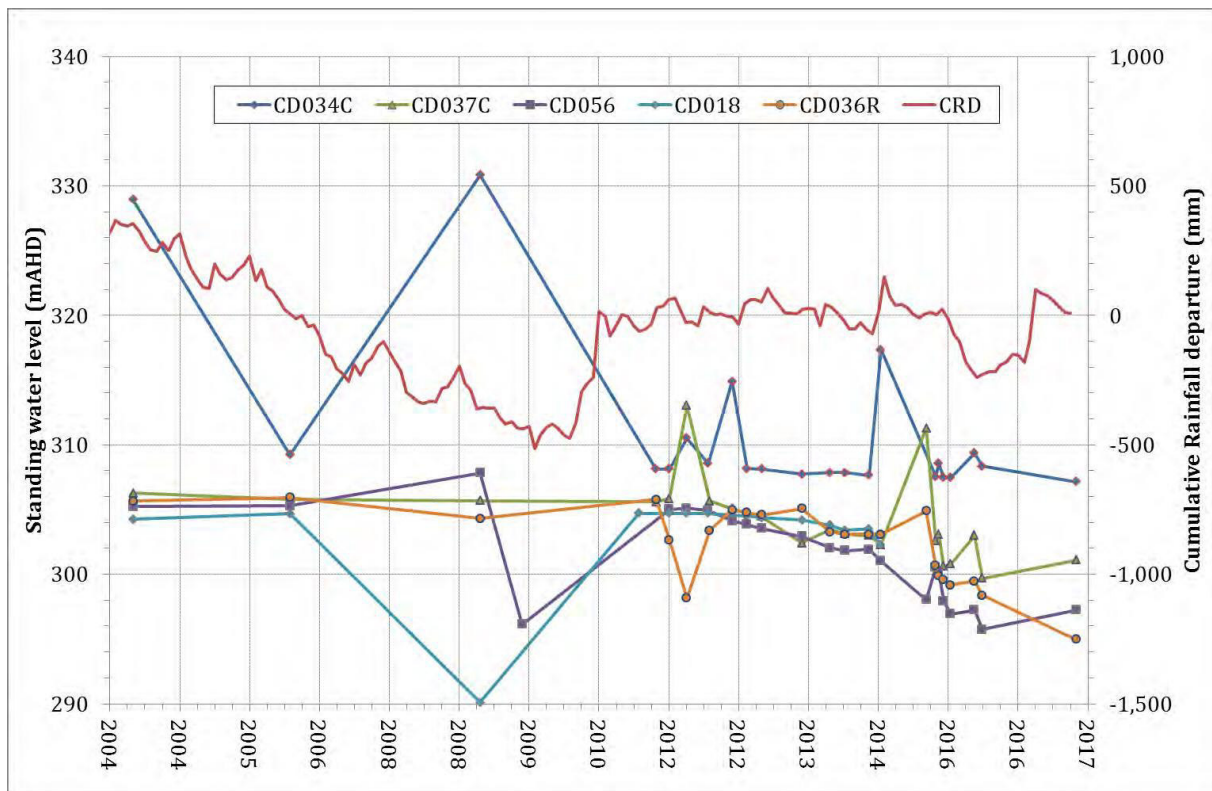
As such, the more elevated groundwater levels between 304 mAHD (CD14C) and 308.2 mAHD (CD419C) are considered a composite of all coal seam groundwater levels and do not reflect groundwater elevation specific to the Macalister (MA1 / MA2) coal seams.

Groundwater Quality

A review of 103 groundwater quality samples was completed by AGE (2018) for the EVA. The data reviewed included information provided by Syntech and from selected exploration bores across the CDM leases as part of ongoing studies for the Surat Cumulative Management Area by the OGIA (2016). The samples were collected between April 2009 and June 2017 from five monitoring bores located within the CDM and five exploration bores selected as part of ongoing studies for the Surat Cumulative Management Area in 2017 (AGE, 2018).

The review indicated that groundwater in the coal seams is brackish to highly saline (median electrical conductivity of 13,790 microSiemens per centimetre [$\mu\text{S}/\text{cm}$]) and, on this basis, is generally unsuitable for livestock watering. Concentrations of dissolved metals were either below the laboratory limit of reporting, or below the respective livestock watering (cattle) or drinking water guidelines (AGE, 2018).

Although groundwater quality in the GAB varies across aquifers, it is generally fresh to brackish and suitable for stock watering purposes, with salinity averaging 1,900 milligrams per litre (mg/L) (OGIA, 2016).



Source: Figure 6.2 in AGE (2018).

Plate 1 – Groundwater Level Hydrographs

Bore Census

A bore census (ENRS, 2017) was conducted across 30 privately-owned properties surrounding the CDM, encompassing an area of more than 150 km² (the bore census area). The bore census sought to identify and validate the presence of groundwater bores/features within the bore census area.

The bore census resulted in the identification (and inspection) of the following:

- one in-use stock groundwater bore (RN123511);
- two monitoring bores:
 - RN168040 (CDM monitoring bore CD036R); and
 - RN168041 (CDM monitoring bore CD018);
- one bore which was unable to be located (RN168059) assumed decommissioned/destroyed; and
- five groundwater bores confirmed to have been decommissioned:
 - RN10725;
 - RN12340;
 - RN13602 & RN168216 (duplicate records, same bore re-drilled);
 - RN13548; and
 - RN168075.

Other monitoring bores located within the CDM were not targeted during the bore census (as they were already known to exist).

The October 2017 bore census concluded that there was no significant use of groundwater by landholders surrounding the CDM, with the nearest water supply bore located approximately 6.5 km south and beyond the predicted zone of groundwater drawdown from the CDM (ENRS, 2017; AGE, 2018).

The predicted depressurised zone in the Walloon Coal Measures due to the CDM would extend a maximum of 5 km towards the south-west. In contrast, cumulative drawdown impacts attributable principally (up to 100%) to CSG impacts extend across much of the model domain (towards the south-east, south and west) (AGE, 2018).

As such, no private-landholder water supply bores are located within the predicted drawdown extents attributable to the CDM (AGE, 2018).

Two registered groundwater bores (registered in the groundwater database) were identified within the predicted zone of depressurisation. These are RN168040 and RN168041, which are the CDM monitoring bores CD036R and CD018 (respectively), both of which are located within the CDM.

3.1.2.6 Soil Types, Properties and Productivity

Soil Types and Properties

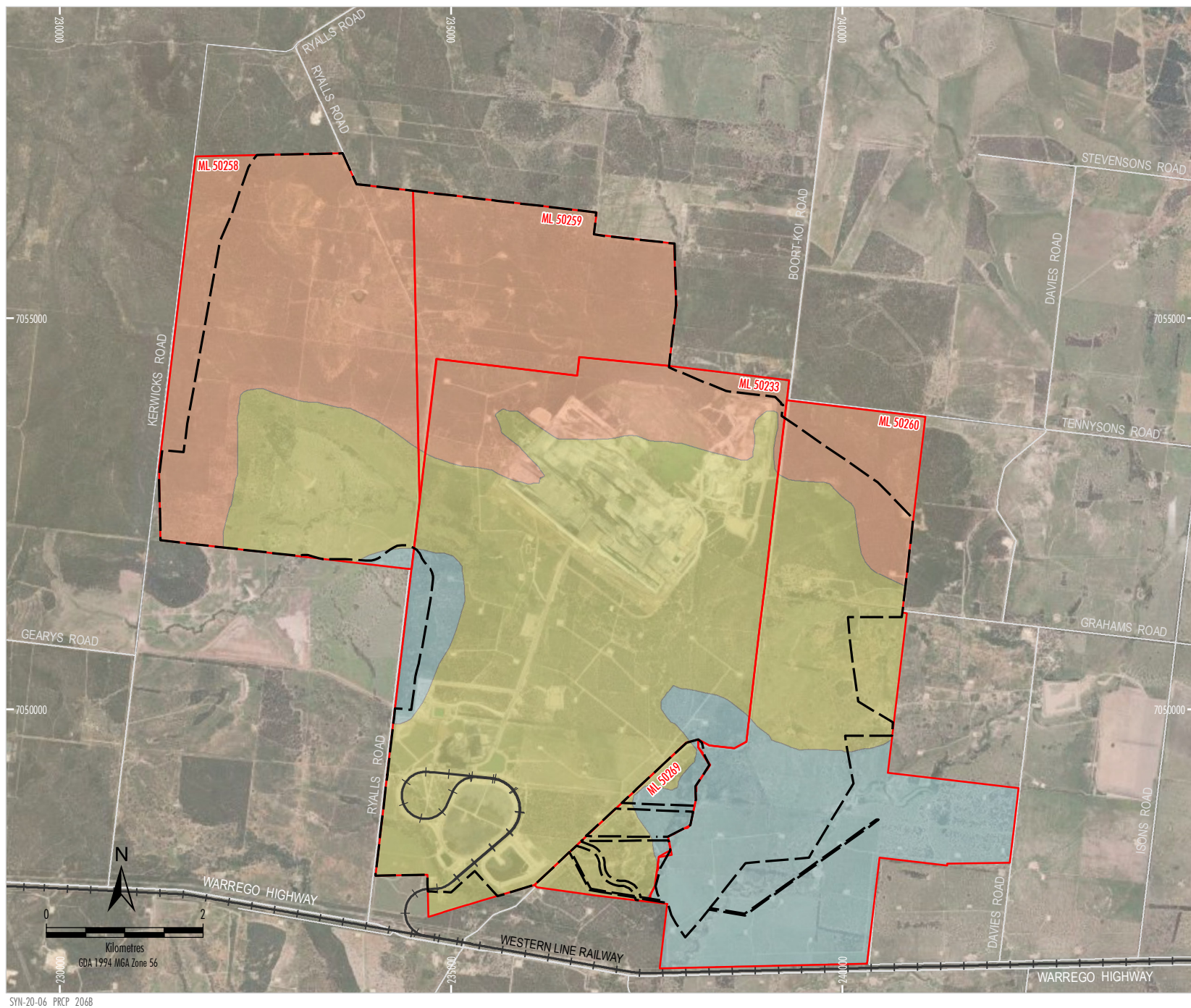
A number of soil investigations have been undertaken at the CDM including by GJR Holdings in 2006, Australasian Resource Consultants Pty Ltd (AARC) in 2012, and LRS Environmental in 2018. The outcomes of these surveys are summarised in the Soil Resources Review (LRS Environmental, 2018) undertaken for the EVA (Appendix G).

GJR Holdings conducted field surveys during 2004 comprising 81 tested soil pits excavated by backhoe to various depths to where an impenetrable layer was reached (generally between 0.3 m to 1.3 m). General soil profile and site condition observations were recorded at all test soil pits with 39 sites subject to detailed field analysis, and 24 samples submitted for laboratory testing. AARC (2013) conducted additional field surveys between 2009 and 2012 comprising of 91 soil auger test sites, with 21 locations subject to laboratory analysis.

AARC (2013) nominated three broad soil units for the CDM, these are (Figure 5):

- Binkey Soil Unit – predominantly shallow sandy duplex soils on low sandstone ridges at the northern side of the site with low levels of plant nutrients and high levels of sodicity in the subsoil.
- Braemar Soil Unit – shallow sandy duplex soils on sandstone derived undulating plains with low levels of plant nutrients and high levels of sodicity in the subsoil.
- Tara Soil Unit – strongly structured deep cracking clays soils developed on the gently undulating plains at the southern side of the site with low to moderate levels of plant nutrients but the surface soils are considered sodic and thus with potential for dispersion.

LRS Environmental (2018) adopted the AARC (2013) soil mapping units for the CDM as part of their assessment. LRS Environmental (2018) also conducted further field surveys. LRS Environmental (2018) conducted soil surveys across 20 locations, using an excavator to create small trenches approximately 2 m by 0.5 m by 0.7-0.8 m. One side of each trench was prepared and analysed to identify depth of root growth at each site. The outcomes of the LRS Environmental (2018) assessment identified two broad groups of soils with prescribed soil stripping depths appropriate for rehabilitation of the CDM. The two soil groups are, the Duplex Soils (Binkey and Braemar Soil Mapping Units) and Cracking Clay Soils (Tara Soil Mapping Unit).



- LEGEND**
- Mining Lease Boundary
 - Maximum Approved Disturbance Footprint
 - Soil Mapping Units**
 - Binkey Soil Management Unit
 - Braemar Soil Management Unit
 - Tara Soil Management Unit

Source: The State of Queensland (2022); Syntech Resources (2018).
 Orthophoto: 2016; Esri, DigitalGlobe (2017)

 Cameby Downs Mine
C A M E B Y D O W N S M I N E
 Soil Unit Mapping

Figure 5

Soil Productivity

CDM was assessed for suitability for light intensity grazing land uses and assigned land suitability classes as outlined by AARC (2012) and Department of Minerals and Energy (1995). The five-class system is based on physical and chemical limiting factors applied directly to specific uses and is described below:

- Class 1 – Suitable land with negligible limitations and is highly productive requiring only simple management practices;
- Class 2 – Suitable land with minor limitations which either reduce production or require more than simple management practices to sustain the use;
- Class 3 – Suitable land with moderate limitations which is moderately suited to a proposed use but which requires significant inputs to ensure sustainable use;
- Class 4 – Marginal land with severe limitations which make it doubtful whether the inputs required to achieve and maintain production outweigh the benefits in the long term; and
- Class 5 – Unsuitable land with extreme limitations that preclude its use.

The land suitability classification identifies limitations of the different soil types present and identifies suitable uses. Land suitability class is determined by the highest ranking limiting factor or a combination of a number of factors. In this survey, the main limiting factors which determined dryland cropping and grazing suitability class include:

- plant available water capacity;
- water erosion;
- nutrient deficiency;
- salinity; and
- soil physical factors.

The pre-mining land suitability classes for the CDM were between Class 3 and Class 5.

Acid Sulphate Soils

The *State Planning Policy 2/02 Planning and Managing Development involving Acid Sulfate Soils* (Queensland Government, 2002) states that acid sulphate soils occur predominantly on coastal lowlands with elevations generally below 5 mAHD.

The elevation in the area ranges from approximately 320 mAHD to approximately 370 mAHD. In addition, soil investigations undertaken at the site indicated that the pH is moderately acidic to neutral and included no observations of corroded shell, jarosite horizons, iron oxide mottling, sulphurous smell or water-logged soils.

Environmental Earth Sciences conducted a Contaminated Land Assessment, including Acid Sulphate Soil Analysis in 2017. Their assessment concluded that the geology, elevation and soil type indicate no risk of acid sulfate soil occurrence at the CDM (Appendix H).

Contaminated Land

A Site Investigation was undertaken for the EVA by Environmental Earth Sciences (2017) in accordance with the *National Environment Protection (Assessment of Site Contamination) Amendment Measure 2013* (National Environment Protection Council [NEPC], 2013) and the *Queensland Auditor Handbook for Contaminated Land Module 5* (Department of Environment and Heritage Protection [DEHP], 2015a).

The Site Investigation (Appendix H) identified evidence of contamination or historical contaminating activities on five properties. All of these locations were considered to be manageable with the implementation of the following measures:

- Former sheep dips and races – further investigation will be undertaken to determine the extent of contamination prior to undertaking activities in these areas. The requirement for remediation or off-site disposal of potentially contaminated soil will be determined based on the findings of the investigation.
- Hydrocarbon contaminated areas – the areas of soil will be excavated and disposed at a licensed facility.
- Burnt-out sheds – will be demolished and disposed at a licensed facility.
- Asbestos – all buildings to be demolished will be assessed for asbestos containing materials prior to demolition. Any asbestos containing materials will be removed by a licensed contractor prior to demolition.

The CDM will potentially disturb areas where evidence of contamination or historical contaminating activities has occurred. In addition, land uses that may result in land becoming contaminated are known as 'Notifiable Activities' and are listed in Schedule 3 of the EP Act. The following Notifiable Activities are relevant to the CDM:

- Notifiable Activity 7 – Chemical storage;
- Notifiable Activity 15 – Explosives production and storage;
- Notifiable Activity 20 – Landfill, disposing of waste (excluding inert construction and demolition waste);
- Notifiable Activity 24 – Mine wastes; and
- Notifiable Activity 29 – Petroleum product or oil storage, storing petroleum products or oil.

General measures to reduce the potential for contamination of land as a result of the CDM would include the following:

- Contractors transporting dangerous goods loads are appropriately licensed in accordance with the provisions of the Australian Code for the Transport of Dangerous Goods by Road and Rail (National Transport Commission, 2017).
- On-site consumable storage areas are designed with appropriate bunding and are operated, where applicable, in compliance with the requirements of *Australian Standard (AS) 1940-2017 The Storage and Handling of Flammable and Combustible Liquids* and *AS 2187.1 Explosives – Storage, Transport and Use – Storage*.
- Fuel and explosive storage areas are regularly inspected and maintained.
- Procedures for storage and use of chemicals and hydrocarbons on site are adhered to.
- General waste is removed to a licensed waste facility.

In addition, the two properties that could not be assessed as part of the Contaminated Land Assessment (i.e. Lots 17 and 19 RP187207) due to access restrictions would be inspected by a Suitably Qualified Person prior to undertaking activities in these properties.

3.1.2.7 *Land Stability*

The pre-mining land uses at the CDM are grazing and remnant vegetation. The stability and level of degradation of the existing site is consistent with other similar land uses in the area.

The site is drained by a network of ephemeral streams. Small amounts of local catchment erosion are present throughout the system. Bank stability is generally good, with 50-80% of the stream banks covered with vegetation (Appendix F). There is some potential for erosion within the system during extreme flooding. Riparian zone widths ranged from 10-15 m throughout the CDM (Appendix F).

3.1.2.8 *Vegetation Communities and Ecological Data*

The CDM is located in the Barakula subregion of the Brigalow Belt Bioregion. This bioregion extends from Townsville in Queensland to the south of Dubbo in central-western New South Wales. There are no Bioregional (vegetated) corridors within the CDM, however Barakula State Forest, located approximately 12 km to the north, is associated with a Bioregional (vegetated) corridor (Department of Environment and Heritage Protection [DEHP], 2015b). There is also another Bioregional (vegetated) corridor to the east of the CDM (DEHP, 2015b).

In a local context, the CDM is situated predominantly in the catchment area of Drainage Line 1. The low-lying portions of the CDM and surrounds are extensively cleared for grazing livestock with patches of remnant and regrowth woodland vegetation. The elevated portions are vegetated with woodland.

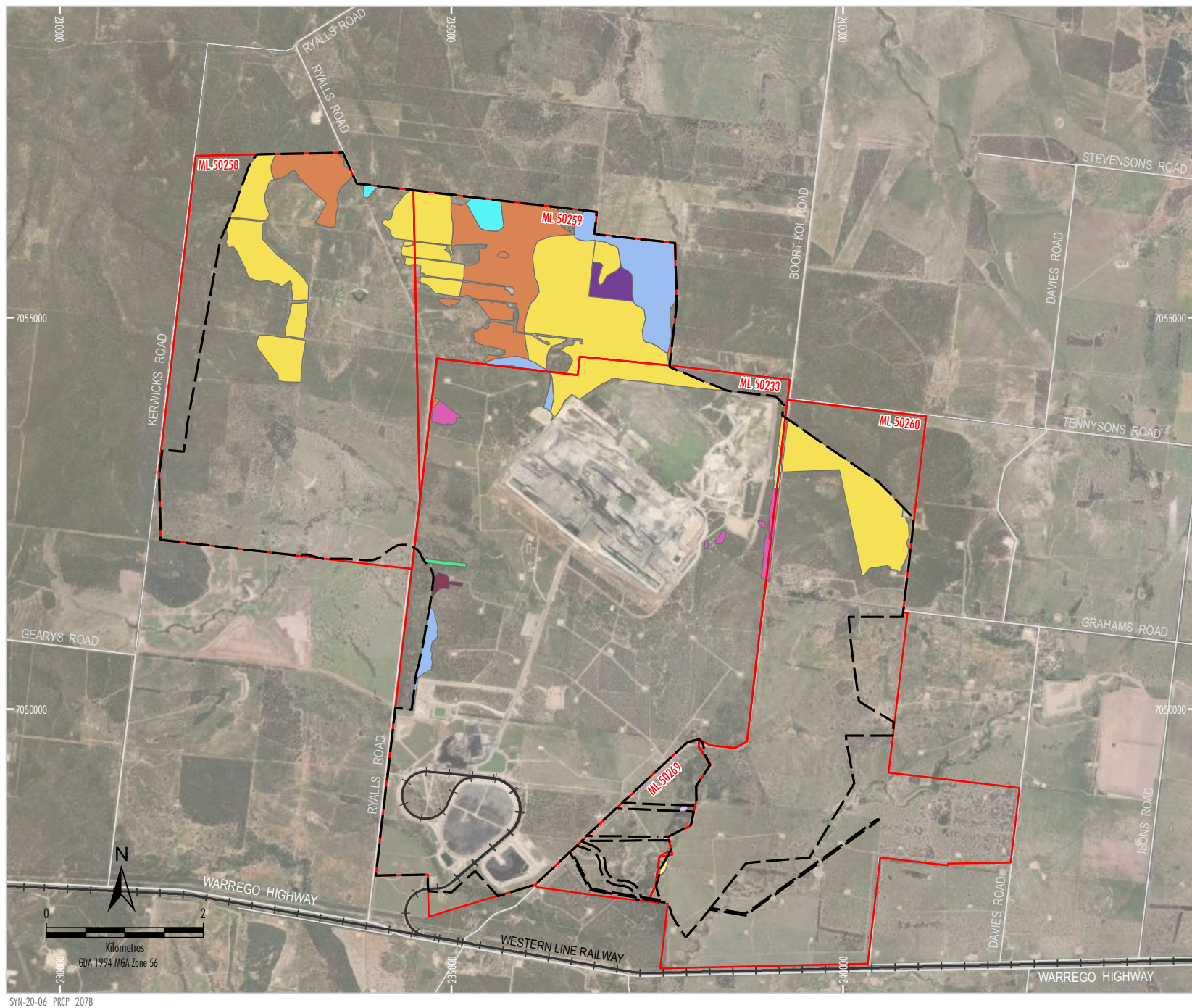
Due to past and ongoing agricultural activities (e.g. clearing, grazing, logging and thinning), approximately 78% (or 3,270 hectares [ha]) of the CDM area was comprised of grasslands and regrowth vegetation (non-remnant) (i.e. prior to mining activities) (Figure 6).

The terrestrial flora and fauna in the CDM area and its surrounds has been the subject of multiple studies since 2004. The first suite of surveys were undertaken by Biodiversity Assessment and Management Pty Ltd (BAAM) within ML 50233 during April and May of 2004 and again during January, October and November of 2005 (BAAM, 2006). These surveys were complimented by further surveys undertaken by AARC in February, April, June and October of 2009 (AARC, 2013).

A range of standard survey methods were undertaken during both surveys, including: Elliott traps, cage traps, pitfall traps, bird surveys, active searching, nocturnal spotlighting, ultrasonic bat call detection, funnel traps and call playback (AARC, 2013; BAAM, 2006).

In 2016 and 2017, Ecosure Pty Ltd (Ecosure) and DPM Envirosiences undertook additional flora and fauna surveys in accordance with contemporary State and Commonwealth survey guidelines. Fauna surveys were undertaken in July and October 2016 and December 2017 and the flora surveys were undertaken in October 2016 and March 2017.

The field survey methodologies included a range of techniques to target conservation significant flora and fauna species listed under the *Nature Conservation Act, 1992* (NC Act) and the *Environment Protection Biodiversity Conservation Act 1999* (EPBC Act).



- LEGEND**
- Mining Lease Boundary
 - Maximum Approved Disturbance Footprint
 - Regional Ecosystems (Ground-truthed)**
 - 11.3.2 - *Eucalyptus populnea* woodland on alluvial plains
 - 11.3.25 - *Eucalyptus tereticornis* or *E. camaldulensis* woodland fringing drainage lines
 - 11.3.25/11.3.4 *Eucalyptus tereticornis* or *E. camaldulensis* woodland fringing drainage lines / *Eucalyptus tereticornis* and/or *Eucalyptus* spp. woodland on alluvial plains
 - 11.4.10 - *Eucalyptus populnea* or *E. woollsiana*, *Acacia harpophylla*, *Casuarina cristata* open forest to woodland on margins of Cainozoic clay plains
 - 11.4.3 - *Acacia harpophylla* and/or *Casuarina cristata* shrubby open forest on Cainozoic clay plains
 - 11.5.1 - *Eucalyptus crebra* and/or *E. populnea*, *Callitris glaucophylla*, *Angophora leiocarpa*, *Allocasuarina luehmannii* woodland on Cainozoic sand plains and/or remnant surfaces
 - 11.5.1/11.5.1a - *Eucalyptus crebra* and/or *E. populnea*, *Callitris glaucophylla*, *Angophora leiocarpa*, *Allocasuarina luehmannii* woodland on Cainozoic sand plains and/or remnant surfaces / *Eucalyptus populnea* woodland with *Allocasuarina luehmannii* low tree layer
 - 11.7.2 - *Acacia* spp. woodland on Cainozoic lateritic duricrust. Scarp retreat zone.
 - 11.7.4 - *Eucalyptus decorticans* and/or *Eucalyptus* spp., *Corymbia* spp., *Acacia* spp., *Lysicarpus angustifolius* woodland on Cainozoic lateritic duricrust
 - 11.7.7 - *Eucalyptus fibrosa* subsp. *nubilis* +/- *Corymbia* spp. +/- *Eucalyptus* spp. woodland on Cainozoic lateritic duricrust
 - 11.7.7/11.7.4 - *Eucalyptus fibrosa* subsp. *nubilis* +/- *Corymbia* spp. +/- *Eucalyptus* spp. woodland on Cainozoic lateritic duricrust / *Eucalyptus decorticans* and/or *Eucalyptus* spp., *Corymbia* spp., *Acacia* spp., *Lysicarpus angustifolius* woodland on Cainozoic later

Source: The State of Queensland (2022); Syntech Resources (2021);
Ecosure (2018)
Orthophoto: 2016; Esri, DigitalGlobe (2017)

 **Cameby Downs Mine**
C A M E B Y D O W N S M I N E
**Ground-truthed Regional
Ecosystem Mapping**

Figure 6

Endangered and Of Concern Regional Ecosystems

A total of nine individual regional ecosystems (REs) were ground-truthed within the CDM area (Table 6; Figure 6), represented by Eucalypt woodlands (mostly Ironbark woodlands) and small occurrences of acacia dominated woodlands (RE 11.4.3, RE 11.4.10 and RE 11.7.2).

The most predominant regional ecosystem is RE 11.7.7. A detailed description of each vegetation community is provided in Appendix D, along with datasheets and photos.

Of the nine regional ecosystems identified, two (RE 11.4.3¹ and RE 11.4.10) have a conservation status of 'Endangered' and two (RE 11.3.2 and RE 11.3.4) have a conservation status of 'Of Concern' under the *Vegetation Management Act, 1999* (VM Act) (Table 6; Figure 7) (Appendix D).

Table 6
Regional Ecosystems

Regional Ecosystem	Short Description	BVG	VM Act Status
RE 11.3.2	<i>Eucalyptus populnea</i> woodland on alluvial plains	17a	Of Concern
RE 11.3.4*	<i>Eucalyptus tereticornis</i> and/or <i>Eucalyptus</i> spp. Woodland on alluvial plains	16c	Of Concern
RE 11.3.25*	<i>Eucalyptus tereticornis</i> or <i>E. camaldulensis</i> woodland fringing drainage lines	16a	Least Concern
RE 11.4.3 ^A	<i>Acacia harpophylla</i> and/or <i>Casuarina cristata</i> shrubby open forest on Cainozoic clay plains	25a	Endangered
RE 11.4.10	<i>Eucalyptus populnea</i> or <i>Eucalyptus woollsiana</i> , <i>Acacia harpophylla</i> , <i>Casuarina cristata</i> open forest to woodland on margins of Cainozoic clay plains	25a	Endangered
RE 11.5.1	<i>Eucalyptus crebra</i> and/or <i>E. populnea</i> , <i>Callitris glaucophylla</i> , <i>Angophora leiocarpa</i> , <i>Allocasuarina luehmmanii</i> woodland on Cainozoic sand plains and/or remnant surfaces	17a	Least Concern
RE 11.7.2	<i>Acacia</i> spp. Woodland on Cainozoic lateritic duricrust. Scarp retreat zone	24a	Least Concern
RE 11.7.4	<i>Eucalyptus decorticans</i> and/or <i>Eucalyptus</i> spp., <i>Corymbia</i> spp., <i>Acacia</i> spp., <i>Lysicarpus angustifolius</i> woodland on Cainozoic lateritic duricrust	12a	Least Concern
RE 11.7.7	<i>Eucalyptus fibrosa</i> subsp. <i>27ubile</i> +/- <i>Corymbia</i> spp. +/- <i>Eucalyptus</i> spp. Woodland on Cainozoic lateritic duricrust	12a	Least Concern

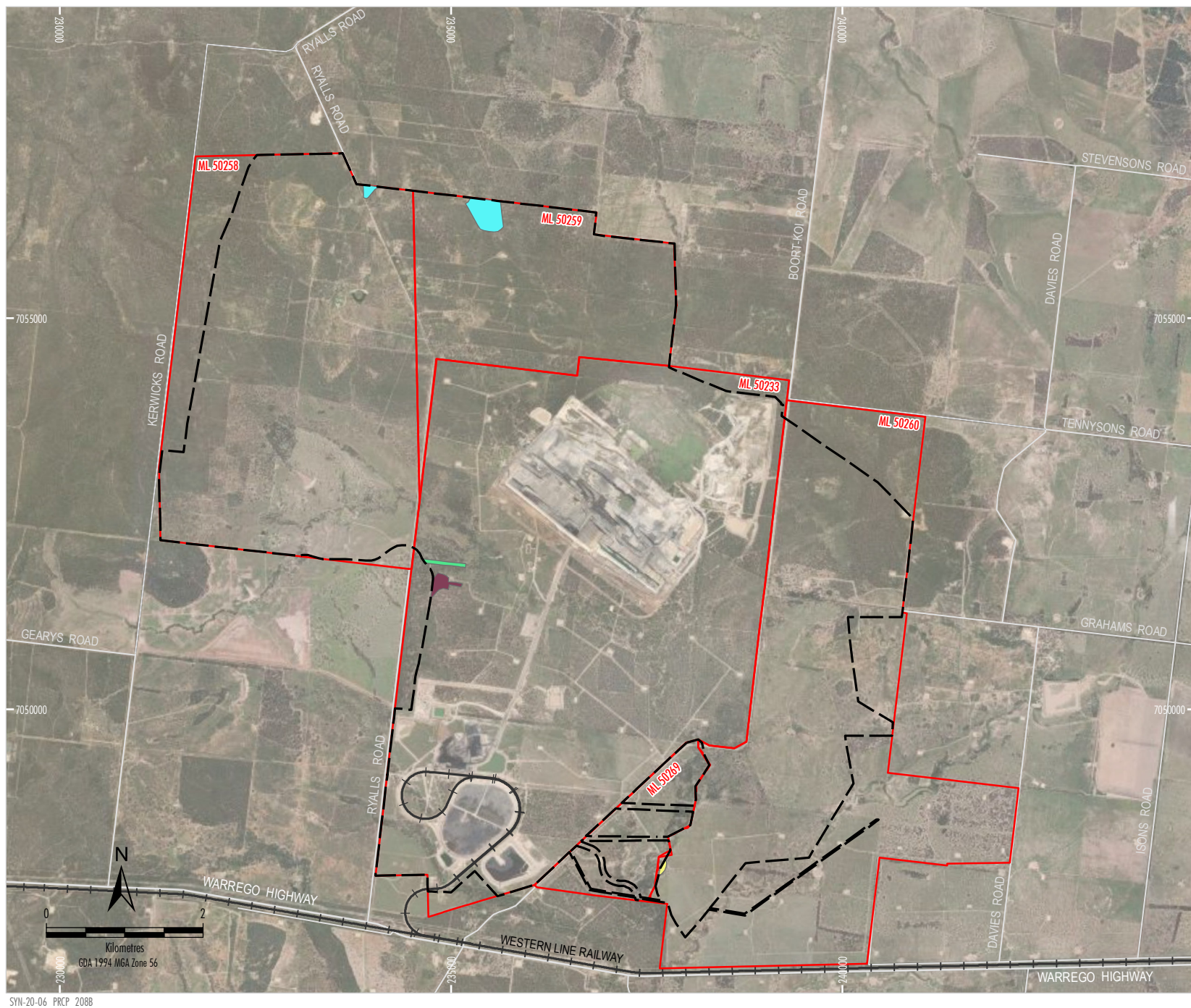
Source: Appendix D.

* The vegetation patch is 0.4 ha in size comprising 50% RE 11.3.25 and 50% RE 11.3.4. As such, 0.2 ha has been assigned to each of RE 11.3.25 and RE 11.3.4 (Ecosure, 2018a).

^A Listed as *Brigalow (Acacia harpophylla Dominant and Co-dominant) Threatened Ecological Community* under the EPBC Act.

BVG = Broad Vegetation Group. VM Act = *Vegetation Management Act 1999*.

¹ RE 11.4.3 (conforming to *Acacia harpophylla* Dominant and Co dominant) Threatened Ecological Community (Brigalow TEC) is the only TEC listed under the EPBC Act to have been recorded in the Project area or surrounds.



- LEGEND**
- Mining Lease Boundary
 - Maximum Approved Disturbance Footprint
 - Regulated Vegetation (Ground-truthed)**
 - 11.3.2 - *Eucalyptus populnea* woodland on alluvial plains
 - 11.3.25/11.3.4 *Eucalyptus tereticornis* or *E. camaldulensis* woodland fringing drainage lines / *Eucalyptus tereticornis* and/or *Eucalyptus* spp. woodland on alluvial plains
 - 11.4.10 - *Eucalyptus populnea* or *E. woollsiana*, *Acacia harpophylla*, *Casuarina cristata* open forest to woodland on margins of Cainozoic clay plains
 - 11.4.3 - *Acacia harpophylla* and/or *Casuarina cristata* shrubby open forest on Cainozoic clay plains

Source: The State of Queensland (2022); Syntech Resources (2018);
Ecosure (2018)
Orthophoto: 2016; Esri, DigitalGlobe (2017)

 **Cameby Downs Mine**
C A M E B Y D O W N S M I N E
Endangered and Of Concern
Regional Ecosystems

Figure 7

Of Concern Regional Ecosystems

RE 11.3.2 (*Eucalyptus populnea* woodland on alluvial plains) occurs as a single patch on a tributary of Drainage Line 6 (Figure 7).

RE 11.3.4 (*Eucalyptus tereticornis* and/or *Eucalyptus spp.* Woodland on alluvial plains) occurs in combination with RE 11.3.25 (River Red Gum Woodland) along Drainage Line 2 (Figure 7).

Endangered Regional Ecosystems

RE 11.4.3 (Brigalow Shrubby Open Forest) was ground-truthed in 2016 by Ecosure (2018a) within ML 50233 as a narrow stand (50 to 80 m wide and 23.5 ha in area) along Ryalls Road (Figure 7). Ecosure (2018a) concluded that although not mapped by the then Department of Science, Information Technology and Innovation (DSITI) (2018a) on the *Remnant Regional Ecosystem Map* as remnant, this community conformed to RE 11.4.3.

RE 11.4.10 (*Eucalyptus woollsiana* woodland) was ground-truthed in 2017 by Ecosure (2018a) as a single small patch (approximately 24 ha) (Figure 7). Ecosure (2018a) concluded that whilst this patch of RE 11.4.10 was previously mapped as regrowth (non-remnant) by DSITI (2018a), BAAM (2006) and AARC (2013), vegetation in ML 50233 had continued to mature since stock was removed from mining areas, and at the time of Ecosure's flora surveys, met the requirements of remnant vegetation as per the definition in Neldner *et al.* (2017).

Ecosure (2018a) also concluded that, due to the sparse presence of Brigalow (*Acacia harpophylla*) within this community (RE 11.4.10), the patch identified does not represent Brigalow TEC.

Conservation Significant Flora Species

No conservation significant flora species listed under the NC Act or EPBC Act have been recorded in the CDM area. One conservation significant flora species was identified outside of the CDM area by Ecosure (2018a), namely a woody herb, *Rutidosia lanata*, which is listed as 'Near Threatened' under the NC Act. This herb was found in RE 11.5.1 (an Ironbark [*Eucalyptus crebra*] Woodland) (Ecosure, 2018a).

Aquatic Flora

Wet season aquatic ecology surveys were previously undertaken at five locations within the CDM area by AARC over the period 19-23 January 2010 (AARC, 2013). Supplementary aquatic ecology surveys were undertaken by DPM Envirosciences (2018a) in July 2016, falling within the AusRivAS 'late wet' sampling season (May to July).

Survey techniques implemented by DPM Envirosciences (2018a) included a combination of AusRivAS protocols to establish descriptions of aquatic habitats and macroinvertebrate communities; presence/absence surveys for aquatic plants (macrophytes); and assessment of aquatic habitat attributes, measurement of in-situ physico chemical water quality, fish survey, turtle survey, and ground truthing mapped lacustrine waterbodies. DPM Envirosciences (2018a) identified two habitat types within the CDM area, Riverine Habitats and Wetland Habitats.

Riverine Habitats

All waterways in the CDM area are ephemeral, with some pools expected to hold water for extended periods (Appendix F). DPM Envirosciences (Appendix F) describes that the waterways in the CDM area provide only marginal aquatic habitat (with a low aquatic habitat rating), with the exception of Drainage Line 1 (and associated pools) which provides moderate aquatic habitat.

Wetland Habitats

DPM Envirosiences (2018a) ground-truthed the lacustrine waterbodies mapped by Queensland Wetlands Mapping (DSITI, 2018c) located within the CDM area as either farm dams or mine water dams (Figure 8). No lacustrine or palustrine wetlands occur in the CDM area (Appendix F).

There are no known, High Ecological Significance (HES) wetlands, springs or seeps within the CDM area and no aquatic Groundwater Dependent Ecosystems (GDEs) have been identified in field studies within the CDM area.

Groundwater Dependent Ecosystems – Terrestrial Vegetation

Groundwater flow within the underlying aquifers is towards the south-west becoming deeper and confined as it moves further from the CDM. Groundwater levels are generally in excess of 35 mBGL and separated from surface waters, limiting potential to support GDEs. There are no springs from these deep confined aquifers within the CDM area or surrounds that would support aquatic GDEs.

Desktop mapping of potential GDEs throughout Queensland (DSITI, 2018b and Bureau of Meteorology [BoM], 2017²) indicated that areas of terrestrial vegetation and aquatic ecosystems in the CDM area and surrounds had potential to be GDEs. Specifically, the desktop GDE mapping (DSITI, 2018b; BoM, 2017) indicates (Appendix D):

- drainage features in the north of the CDM (mainly Drainage Lines 5 and 6 [and associated minor drainage features]) potentially receive surface expression of groundwater (possibly supporting an aquatic ecosystem) and are potentially associated with subsurface presence of groundwater (possibly supporting terrestrial riparian vegetation);
- a patch of terrestrial vegetation in ML 50233 (ground-truthed by Ecosure as RE 11.5.1) is potentially associated with subsurface presence of groundwater; and
- patches of terrestrial vegetation south of ML 50233 are potentially associated with the subsurface presence of groundwater.

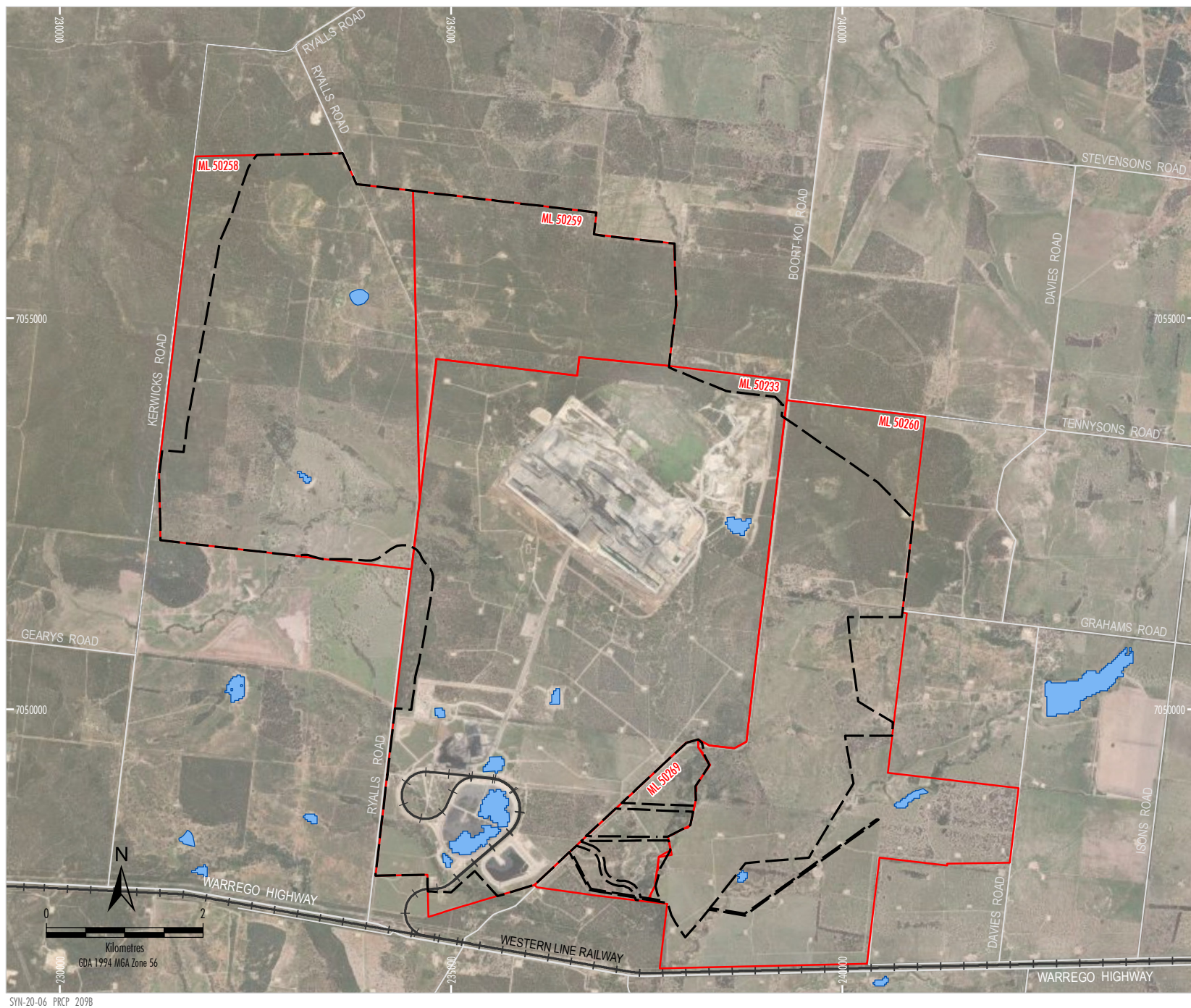
The desktop GDE mapping (DSITI, 2018b and BoM, 2017) of the locality was not based on site specific work and had a moderate confidence level in regard to the potential for GDEs along the drainage features and a low confidence level in regard to the patches of terrestrial vegetation inside and south of ML 50233 (Appendix D).

Based on the findings of the site survey it was established that there are no aquatic GDEs associated with watercourses, wetlands or springs in the CDM area or surrounds (Appendix D).

Environmentally Sensitive Areas

The Environmentally Sensitive Areas (ESA) mapping tool (DEHP, 2014a) does not identify any Category A or C ESAs within the CDM area. However, as described above, two 'Endangered' REs constituting Category B ESAs were ground-truthed by Ecosure (2018a) (i.e. RE 11.4.3 and RE 11.4.10).

² Note: Bureau of Meteorology (2017) mapping is based on the DSITI (2018b) mapping as of June 2017.



LEGEND

- Mining Lease Boundary
- Maximum Approved Disturbance Footprint
- Government Mapped Wetlands

Note: Government mapping has identified some wetlands in mine water storages and the Tailings Storage Facility

*Source: The State of Queensland (2022); Syntech Resources (2018)
Orthophoto: 2016; Esri, DigitalGlobe (2017)*

 **Cameby Downs Mine**
CAMEBY DOWNS MINE
Government Mapped Wetlands

Figure 8

Matters of State Environmental Significance

Matters of State Environmental Significance (MSES) prescribed under the *Environmental Offsets Regulation, 2014* are listed in Table 7 along with an assessment of the relevance to the CDM (Appendices D, E and F).

Table 7
Matters of State Environmental Significance – Flora

Matters of State Environmental Significance			Relevance to the CDM Area
Regulated Vegetation	'Endangered' or 'of concern' regional ecosystems ¹	RE 11.4.3 'Endangered'	This Brigalow Shrubby Open Forest occurs within ML 50233 as a narrow stand (50 to 80 m wide and 23.5 ha in area) along Ryall's Road (Figure 7).
		RE 11.4.10 'Endangered'	This ' <i>Eucalyptus woollsiana</i> Woodland occurs within ML 50233 as a single small patch (approximately 24 ha) (Figure 7).
		RE 11.3.2 'Of Concern'	This Poplar Box Woodland occurs as a single patch on a tributary of Drainage Line 6 (Figure 7).
		RE 11.3.4 'Of Concern'	This Red Gum Woodland occurs in combination with RE 11.3.25 (River Red Gum Woodland) along Drainage Line 2 (Figure 7).
	Regional ecosystems within mapped vegetation management wetlands	The CDM area does not contain any mapped vegetation management wetlands.	
	Regional ecosystems within the defined distance of a vegetation management watercourse	Drainage Lines 1, 2 and 6 (and some related tributaries) in the CDM area are vegetation management watercourses with remnant riparian vegetation.	
Connectivity Areas			Remnant vegetation in the CDM area connects to remnant vegetation outside of the CDM area (Figure 6).
Wetlands and Watercourses			The CDM area does not contain any wetlands or watercourses that are MSES.
Designated Precinct in a Strategic Environmental Area			The CDM area is not in a designated precinct in a strategic environmental area.
Protected Areas			There are no protected areas in the CDM area.
Highly Protected Zones of State Marine Parks			There are no State marine parks in the CDM area.
Marine Plants			Marine plants do not occur in the CDM area.
Legally Secured Offset Areas			No legally secured offset areas occur in the CDM area.

Source: Appendices D, E and F.

¹ RE 11.4.3 equates to the Brigalow TEC listed under the EPBC Act.

Matters of National Environmental Significance

The following Matters of National Environmental Significance (MNES) were considered to be relevant to the Continued Operations Project:

- Listed threatened species or any threatened ecological community.
- Listed migratory species.
- A water resource, in relation to coal/gas/mining.

On 28 September 2018, the Continued Operations Project was referred to the Australian Department of the Environment and Energy (now the Department of Agriculture, Water and the Environment) under the EPBC Act. On 5 February 2019, the Department of the Environment and Energy determined the Continued Operations Project not to be a controlled action (on the basis that there would be no significant impacts to any MNES) and issued EPBC 2018/8304.

3.1.2.9 Fauna Presence and Populations

Terrestrial Fauna Habitat

Prior to mining, the CDM area was predominantly comprised of grasslands and regrowth vegetation (non-remnant) (approximately 78%) (Appendix E). Most of the regrowth consists of juveniles of the dominant species which occurred prior to clearing and fast-growing species such as Acacias and grasses.

Amongst the cleared land are scattered patches of remnant woodland habitat, much of which has been disturbed by past logging and livestock grazing. Some of these remnant woodland patches are Brigalow habitat, although the Brigalow provides limited fauna habitat as it is small, narrow and isolated (Appendix E).

Elevated areas contain the less disturbed woodland habitat (mostly RE 11.7.4) on stony soils with occasional rocky outcrops (Appendix E). Abundant fallen timber occurs in this habitat type.

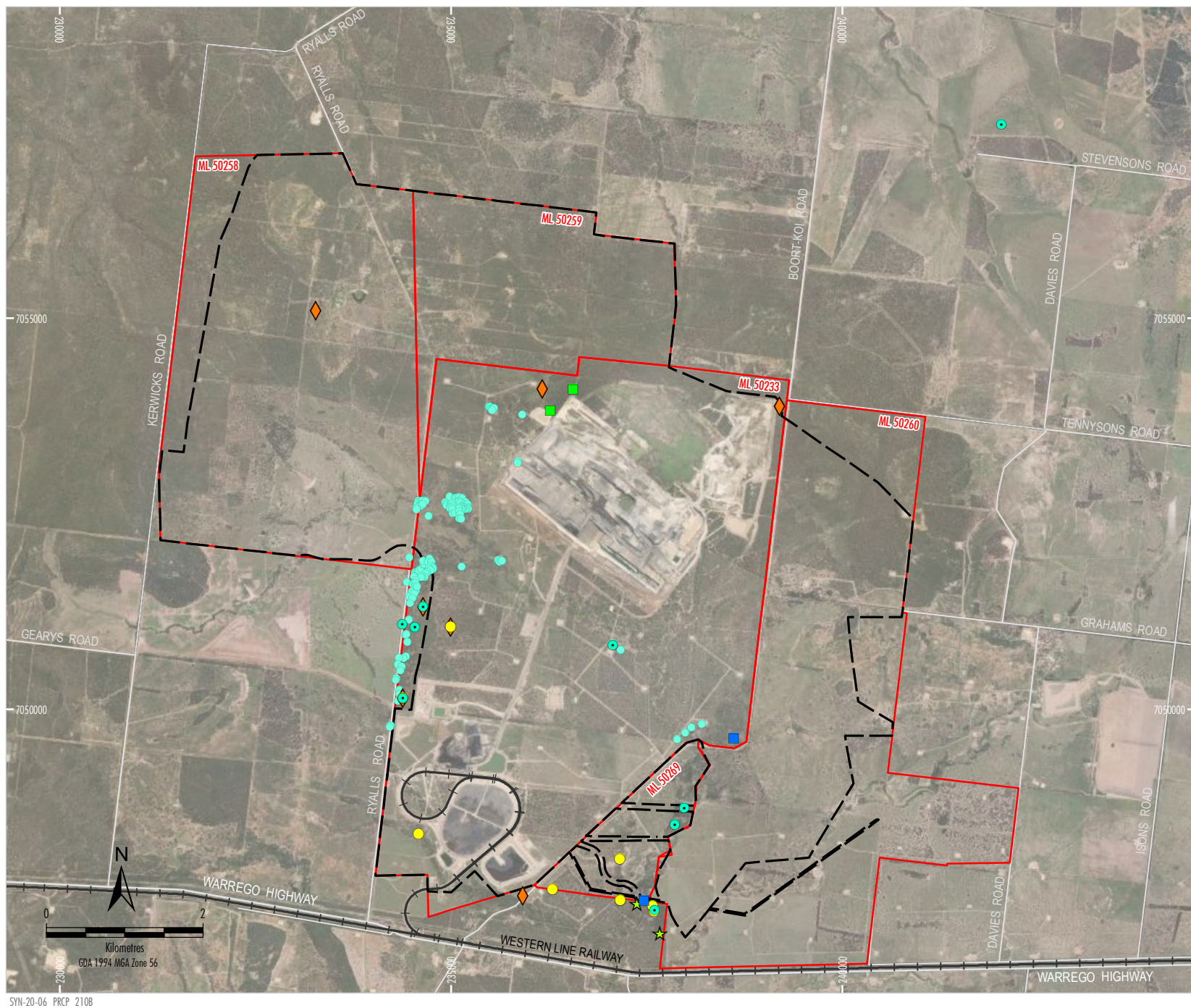
All waterways in the vicinity of the CDM are ephemeral, including Drainage Lines 1 to 7. Riparian woodland habitat is mostly confined to the lower reaches of Drainage Line 1, represented mainly by RE 11.3.25 (River Red Gum Woodland) (Appendix D). The upper reaches of Drainage Line 1 have been subject to previous clearance and thinning.

No natural lacustrine waterbodies or wetlands are present in the CDM area. DPM Envirosciences (Appendix F) ground-truthed lacustrine waterbodies mapped by *Queensland Wetlands Mapping* (DSITI, 2018c) as being either farm dams or mine water dams. These dams provide limited habitat for fauna (Appendix D).

Conservation Significant Fauna Species Listed under the NC Act

Fauna surveys (BAAM, 2006; Ecosure, 2018b) have recorded five threatened fauna species and one Special Least Concern species listed under the NC Act within the CDM and surrounding locality. The identified species were (Figure 9) (Appendix E):

- Yakka Skink (*Egernia rugosa*) – Vulnerable (EPBC Act), Vulnerable (NC Act);
- Grey Snake (*Hemiaspis damelii*) – Endangered (NC Act);
- Short-beaked Echidna (*Tachyglossus aculeatus*) – Special Least Concern (NC Act);
- Glossy Black-cockatoo (*Calyptorhynchus lathamii*) – Vulnerable (NC Act);
- Koala (*Phascolarctos cinereus*) – Vulnerable (EPBC Act), Vulnerable (NC Act); and
- Brigalow Woodland Snail (*Adclarkia cameroni*) – Endangered (EPBC Act), Vulnerable (NC Act).



- LEGEND**
- Mining Lease Boundary
 - Maximum Approved Disturbance Footprint
 - Threatened Species Records
 - Yakka Skink
 - Grey Snake
 - Glossy Black-cockatoo
 - Evidence of Glossy Black-cockatoo
 - ◆ Short-beaked Echidna
 - Koala
 - ★ *Rufidosis lanata*

Source: The State of Queensland (2022); Syntech Resources (2018);
Ecosure (2018)
Orthophoto: 2016; Esri, DigitalGlobe (2017)

 **Cameby Downs Mine**
CAMEBY DOWNS MINE
 Conservation Significant Species Records

Figure 9

Matters of State Environmental Significance

MSES prescribed under the *Environmental Offsets Regulation, 2014* are listed in Table 8 along with an assessment of the relevance to the CDM (Appendices D, E and F).

Table 8
Matters of State Environmental Significance – Fauna

Matters of State Environmental Significance		Relevance to the CDM Area
Protected Wildlife Habitat ¹	Brigalow Woodland Snail	The Brigalow Woodland Snail has been recorded at three locations within the CDM area, and a further 22 locations in the wider locality (Appendix E).
	Yakka Skink	A single Yakka Skink was recorded by BAAM (2006) in 2005 (Figure 9). Most remnant woodland areas in the CDM area represent potential habitat for the Yakka Skink (Figure 6).
	Grey Snake	The Grey Snake has been recorded at a number of locations in the CDM area (Figure 9). Potential habitat for this snake in the CDM area is limited to the riparian areas and patches of Brigalow (Figure 6).
	Glossy Black-cockatoo	The Glossy Black-cockatoo is relatively common in the wider locality and has been recorded in the CDM area (Figure 9).
	Short-beaked Echidna	The Short-beaked Echidna is relatively common in the wider locality and has been recorded in the CDM area (Figure 9).
	Koala	The Koala has been recorded in the more productive habitats (with primary koala food trees) associated with riparian vegetation (e.g. lower reaches of Drainage Line 1) (Figures 6 and 9).
Fish Habitat Areas		There are no areas of declared fish habitat in the CDM area (Appendix E).
Waterways Providing for Fish Passage		Drainage Line 1 provides fish movement.

Source: Appendices D, E and F.

¹ The Yakka Skink and Koala are also listed under the EPBC Act.

Matters of National Environmental Significance

The following MNES were considered to be relevant to the Continued Operations Project:

- Listed threatened species or any threatened ecological community.
- Listed migratory species.
- A water resource, in relation to coal/gas/mining.

On 28 September 2018, the Continued Operations Project was referred to the Australian Department of the Environment and Energy (now the Department of Agriculture, Water and the Environment) under the EPBC Act. On 5 February 2019, the Department of the Environment and Energy determined the Continued Operations Project not to be a controlled action (on the basis that there would be no significant impacts to any MNES) and issued EPBC 2018/8304.

3.1.2.10 Pre-mining Land Use

Major land uses within the Surat Basin predominantly include agriculture, coal mining, CSG production and power generation.

The CDM is located within a rural area that historically has been predominately used for low intensity cattle grazing on unimproved pasture. Aerial imagery dating back to 1956 shows the CDM as predominantly cleared with some tracts of vegetation present in small patches or in narrow stands. More recently (prior to the development of the CDM), the area continued to be used for predominantly cattle grazing purposes. Other more recent land uses include CSG production, rural residences and remnant and regrowth vegetation.

Agricultural land uses on the CDM site include low intensity cattle grazing on unimproved pasture. No horticulture or cropping occurs on the CDM site.

Strategic Cropping Land (SCL) Validation Applications for properties on the CDM site were submitted in January 2013, and the Department of Natural Resources, Mines and Energy (DNRME) determined that the CDM area was non-SCL. Subsequently, the *Regional Planning Interests Act, 2014*, was updated to include additional areas of SCL in MLs 50258 and 50260. An exemption under Chapter 9, Part 3, Division 3 of the *Strategic Cropping Land Act, 2011* was however considered to apply to the CDM and therefore no Regional Interests Development Approval was required.

3.1.2.11 Underlying Landholders

Tenements

As described in Section 3.1.1.3, three underlying Petroleum Leases (PL) exist within the CDM area, PL 472 and PL 458, both held by QGC Upstream Holdings Pty Ltd, and PL 492, held by Arrow CSG (Australia) Pty Ltd. Two EPCs also exist within the CDM area. EPC 732 is held by Syntech, and EPC 1165 is held by Sinocoal Resources Pty Ltd.

No Mineral Development Licences or Mining Lease Applications exist within the CDM area.

Native Title Claims/Applications

According to the Native Title Tribunal (NTT) Register, one Native Title Claim exist within the CDM area on behalf of the Iman People #4 (QCD2024/015).

Two Indigenous Land Use Agreements (ILUAs) currently exist over the CDM area, these are:

- QI2012/116 'Arrow Energy Western Downs Unclaimed Area ILUA' Agreement between Arrow Energy Pty Ltd and the Western Downs Unclaimed Area Native Title Group (registered September 2013); and
- QI2010/006 'Barunggam, Cobble Cobble, Jarowair, Western Wakka Wakka, Yiman and QGC ILUA' Agreement between QGC Pty Limited and representatives of the Barunggam, Cobble Cobble, Jarowair, Western Wakka Wakka and Yiman People (registered December 2010).

Landholders

There are eight rural properties within the CDM area; the Cameby Downs, Avon Downs, Wilga Park, Alexander Downs, Gengyle, Cobar, Boola Downs and Dungaden Properties.

Table 9 below identifies the various Lots on Plan which intersect with the CDM. The primary landholders are Syntech and Mountfield Resources Pty Ltd (both are subsidiaries of Yanzhou Coal Mining Company Limited).

Table 9
Landholders (Lot and DP) within the CDM Area

Lot on Plan	QLD Ref Number	Landholder
87 BWR294	12990165	Cann, Graham Frederick
88 BWR294	18304193	Syntech Resources Pty Ltd
73 BWR294	15500004	Syntech Resources Pty Ltd
72 BWR159	15500003	Syntech Resources Pty Ltd
14 BWR178	16852096	Syntech Resources Pty Ltd
4 BWR149	13205103	Syntech Resources Pty Ltd
9 RP187208	16393122	Syntech Resources Pty Ltd
22 RP187207	16396210	Syntech Resources Pty Ltd
21 RP187207	16396209	Syntech Resources Pty Ltd
20 RP187207	16396208	Syntech Resources Pty Ltd
19 RP187207	16396207	Syntech Resources Pty Ltd
18 RP187207	16396206	Syntech Resources Pty Ltd
17 RP187207	16396205	Syntech Resources Pty Ltd
15 RP187207	16396203	Syntech Resources Pty Ltd
14 RP187207	16396202	Syntech Resources Pty Ltd
13 BWR149	14448188	Mountfield Properties Pty Ltd
2 BWR149	15229006	Mountfield Properties Pty Ltd
65 BWR154	50874914	Mountfield Properties Pty Ltd
64 SP233211	50874914	Mountfield Properties Pty Ltd
1 RP893208	50091551	Mountfield Properties Pty Ltd
2 RP893208	50091552	Mountfield Properties Pty Ltd
3 RP893208	50091553	Mountfield Properties Pty Ltd
4 RP893208	50091554	Mountfield Properties Pty Ltd
5 RP893208	50091555	Mountfield Properties Pty Ltd
16 RP187207	16396204	Mountfield Properties Pty Ltd
13 RP187208	16393126	Mountfield Properties Pty Ltd

3.1.3 Designing for Closure

Transitional PRC Plans are not required to demonstrate how aspects of the mine site have been designed for closure for existing or approved disturbance.

Notwithstanding the above, as a component of mine planning, Syntech reviewed the rehabilitation objectives, rehabilitation practices, and the opportunity for integration of mine rehabilitation areas with the offset strategy.

The review made use of Syntech's operational rehabilitation experience and considered leading guidelines and standards including:

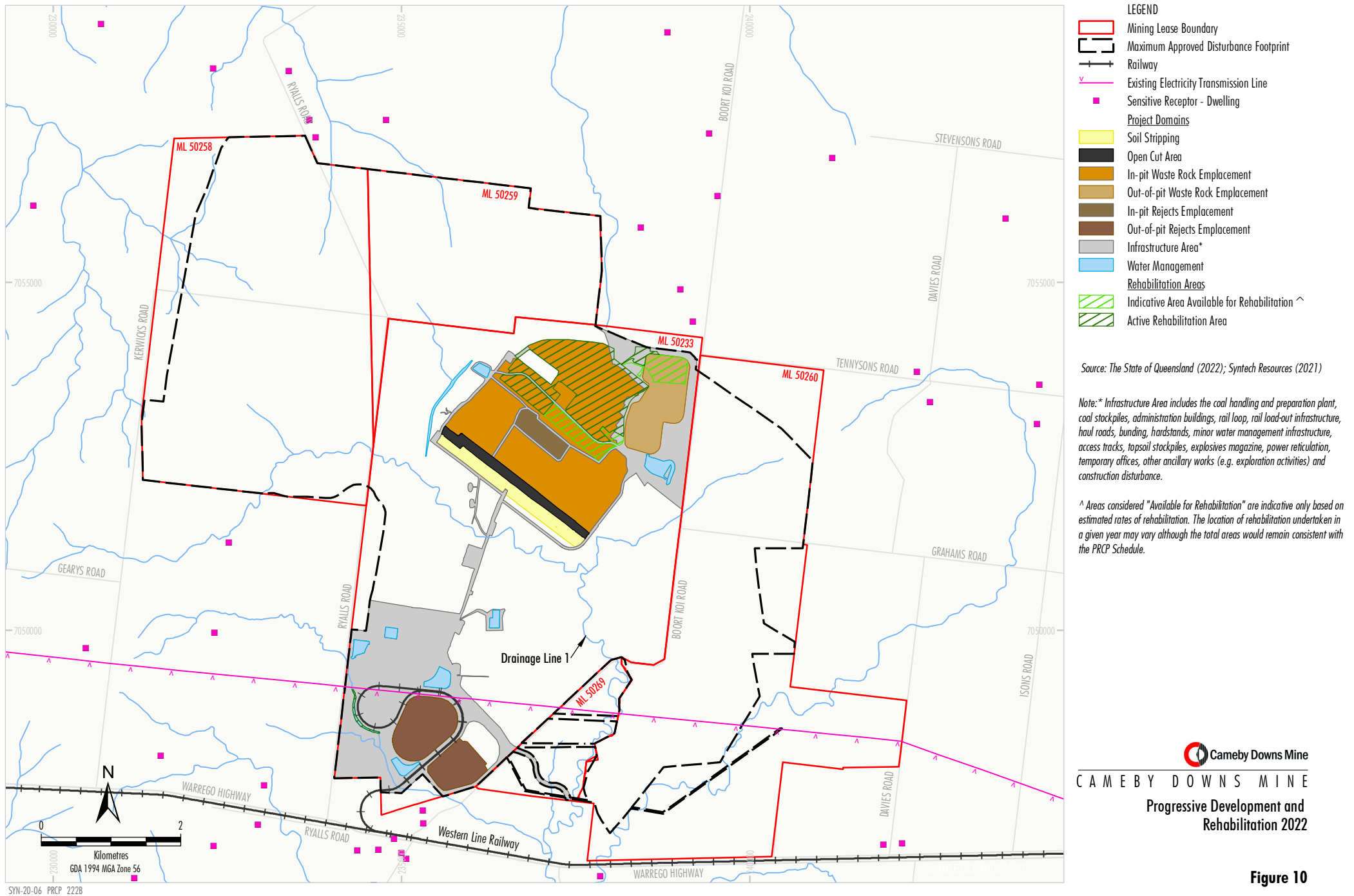
- *Mined Land Rehabilitation Policy* (DES, 2018a);
- *Rehabilitation requirements for mining resource activities* (DEHP, 2014b);
- *Application requirements for activities with impacts to land* (DES, 2018b);
- *Planning for Integrated Mine Closure: Toolkit* (International Council on Mining and Metals, 2008);
- *Strategic Framework for Mine Closure* (Australian and New Zealand Minerals and Energy Council and Minerals Council of Australia, 2000); and
- *Leading Practice Sustainable Development Program for the Mining Industry – Mine Closure* (Department of Industry, Innovation and Science, 2016).

In particular, the CDM has been designed to:

- Be rehabilitated to a safe and stable landform:
 - Waste rock emplacements have been designed with shallow slopes (approximately 1V:10H or up to 1V:3.5H where rock mulch or other stabilisation controls are used).
 - Final void walls would be treated (e.g. benched or blasted) so that they are geotechnically stable.
 - Final void walls would be bunded and or fenced to limit access and be located at least 10 m beyond the area potentially affected by any instability of the open cut pit edge.
- Not cause environmental harm:
 - The final landform would isolate final voids from all flood events, up to and including a Probable Maximum Flood (PMF) event.
 - The two final voids are located beyond the Queensland Floodplain Assessment Overlay extents.
 - Final voids would act as long-term groundwater sinks post-mining, preventing the migration of potentially saline final void water into adjacent aquifers and surface water features.
 - Final void water bodies would equilibrate well below the point at which they would spill to the surrounding environment.
- Sustain post-mining land uses:
 - Mine scheduling has maximised opportunities for progressive backfilling of open cut pits to improve final land use outcomes. Significant volumes of overburden material are proposed to be hauled large distances to completely backfill the majority of the open cut pits.
 - The areas proposed to be disturbed by the Project would be rehabilitated to sustain light intensity grazing with areas of native vegetation. The final voids would provide habitat for native fauna.

Figures 10 to 21 show the progressive development and rehabilitation of the CDM over the life of the mine including the approved final landform. Figure 22 defines specific rehabilitation and improvement areas and Figure 23 shows the approved PMLU (grazing). Progressive stage plans will continue to be developed at regular intervals to inform rehabilitation and operational activities over the life of the CDM.

Further information on the progressive development and rehabilitation of the CDM, including further detail on the rehabilitation/improvement areas is provided in Section 3.1.4.



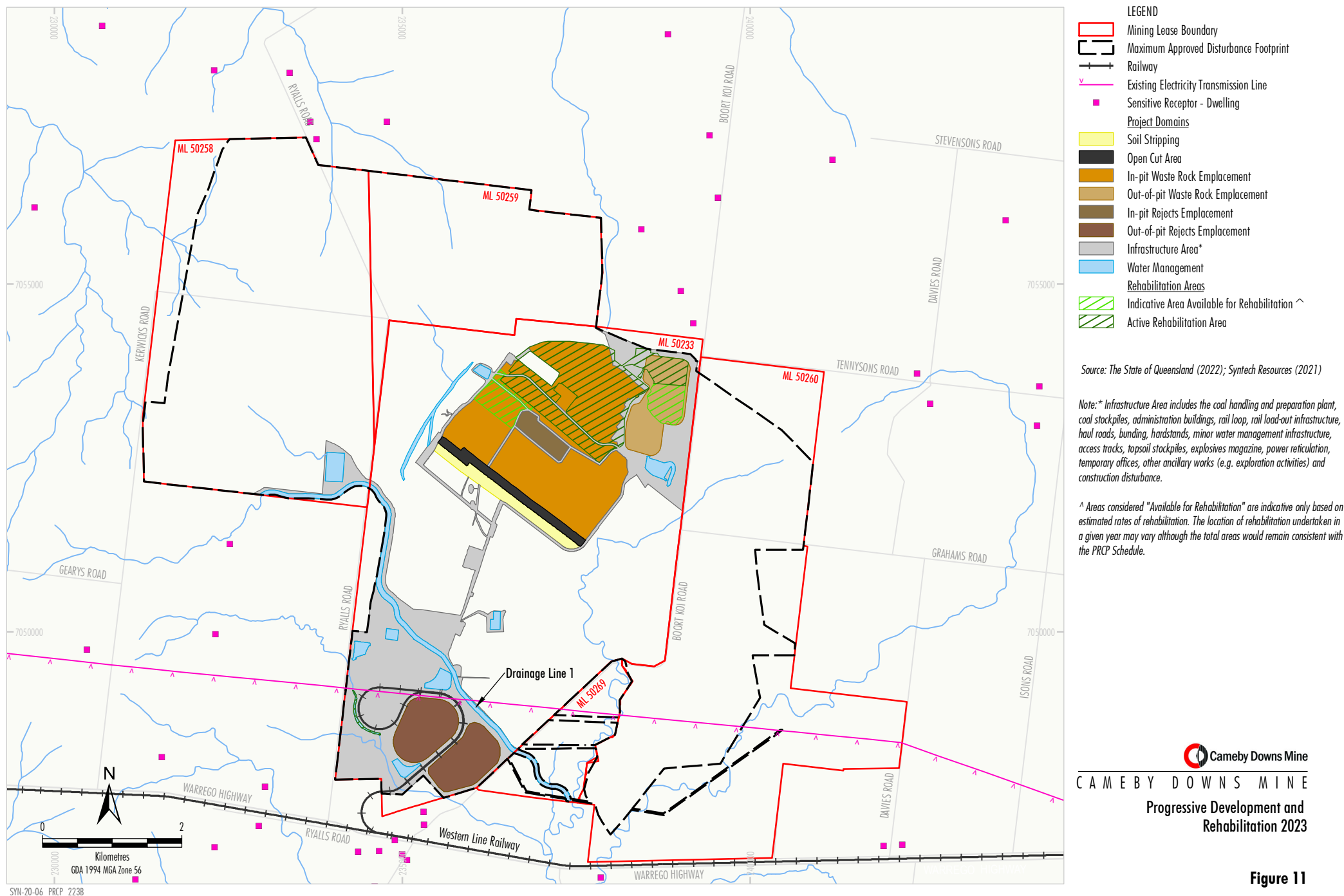


Figure 11

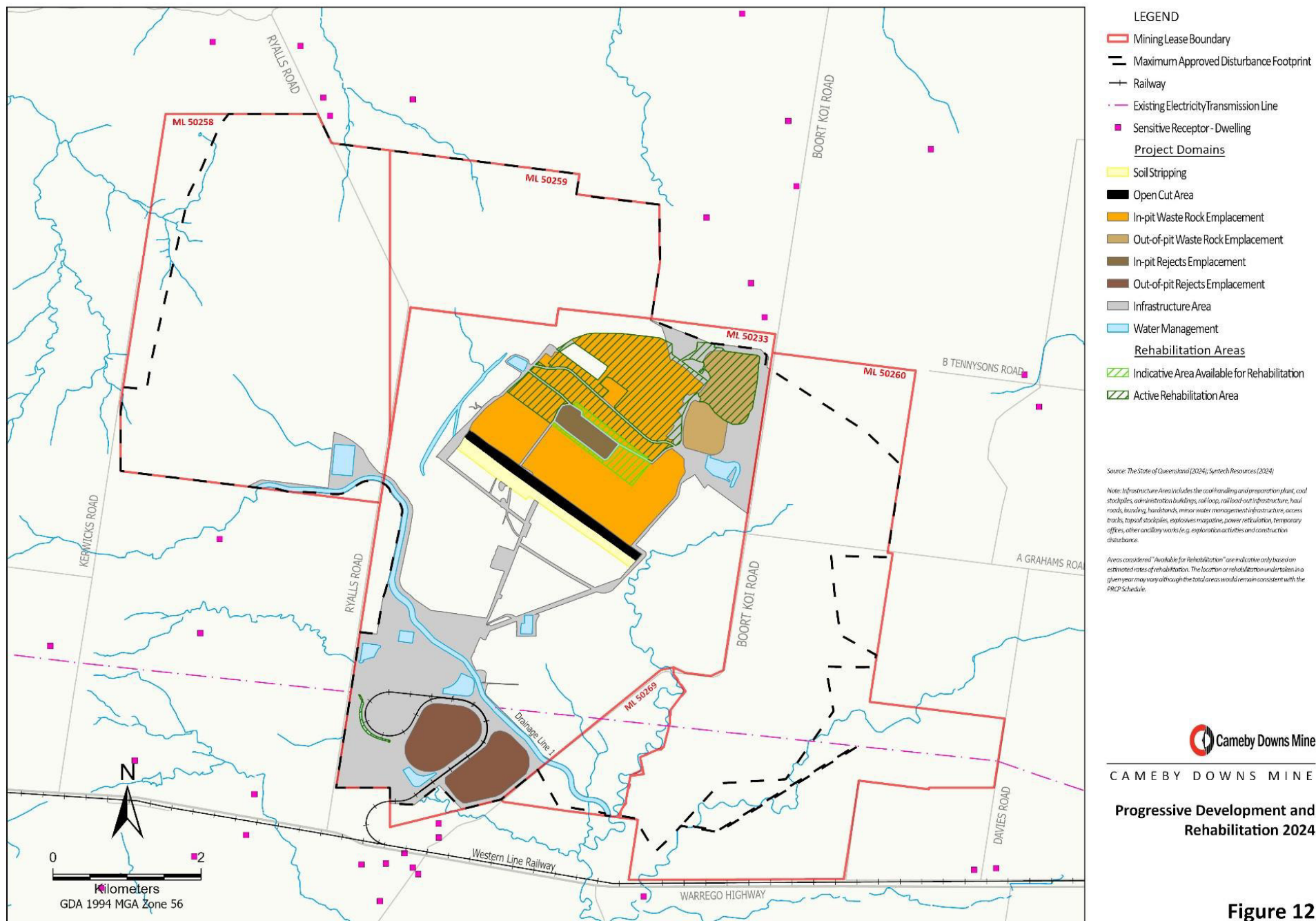


Figure 12

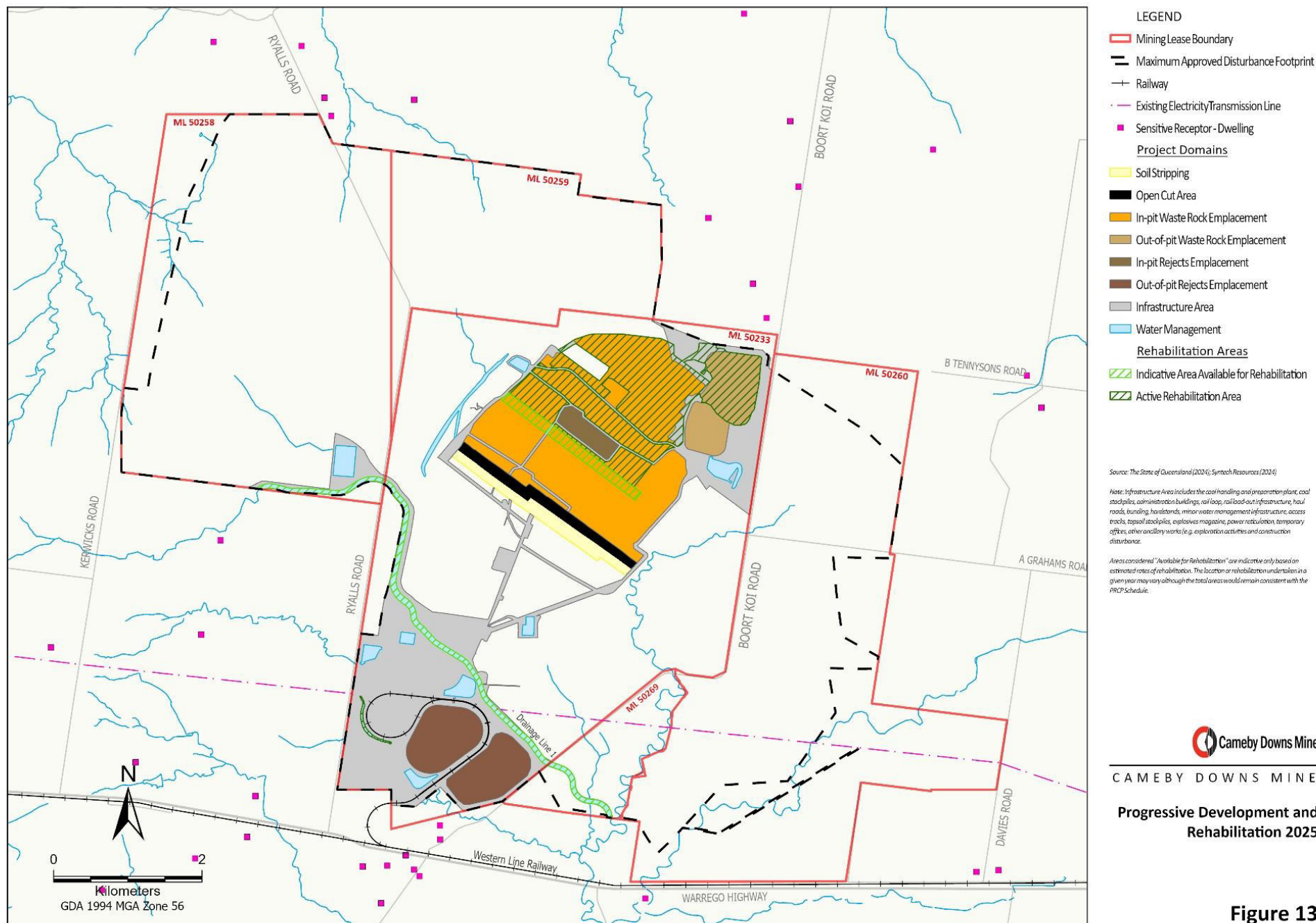


Figure 13

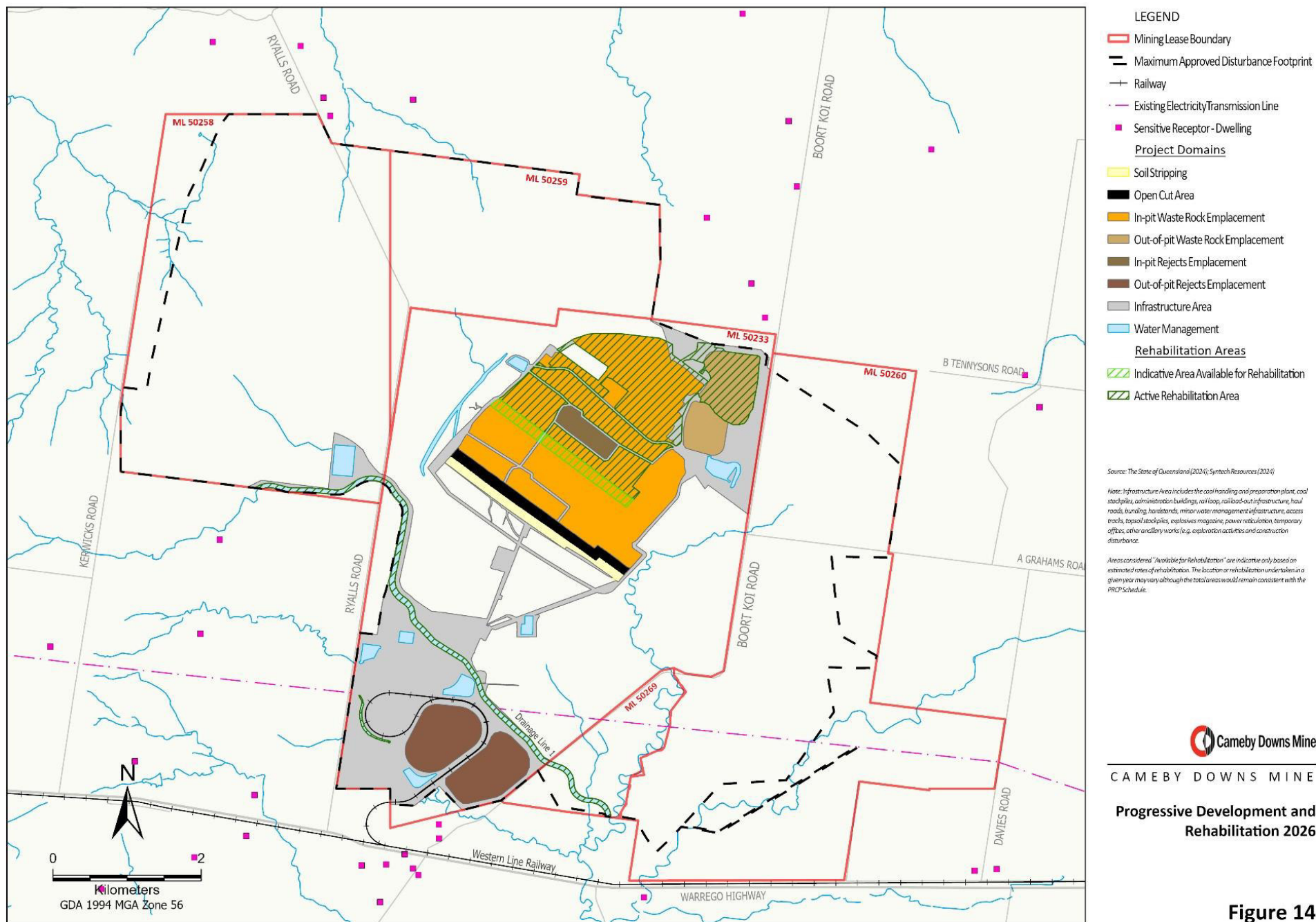
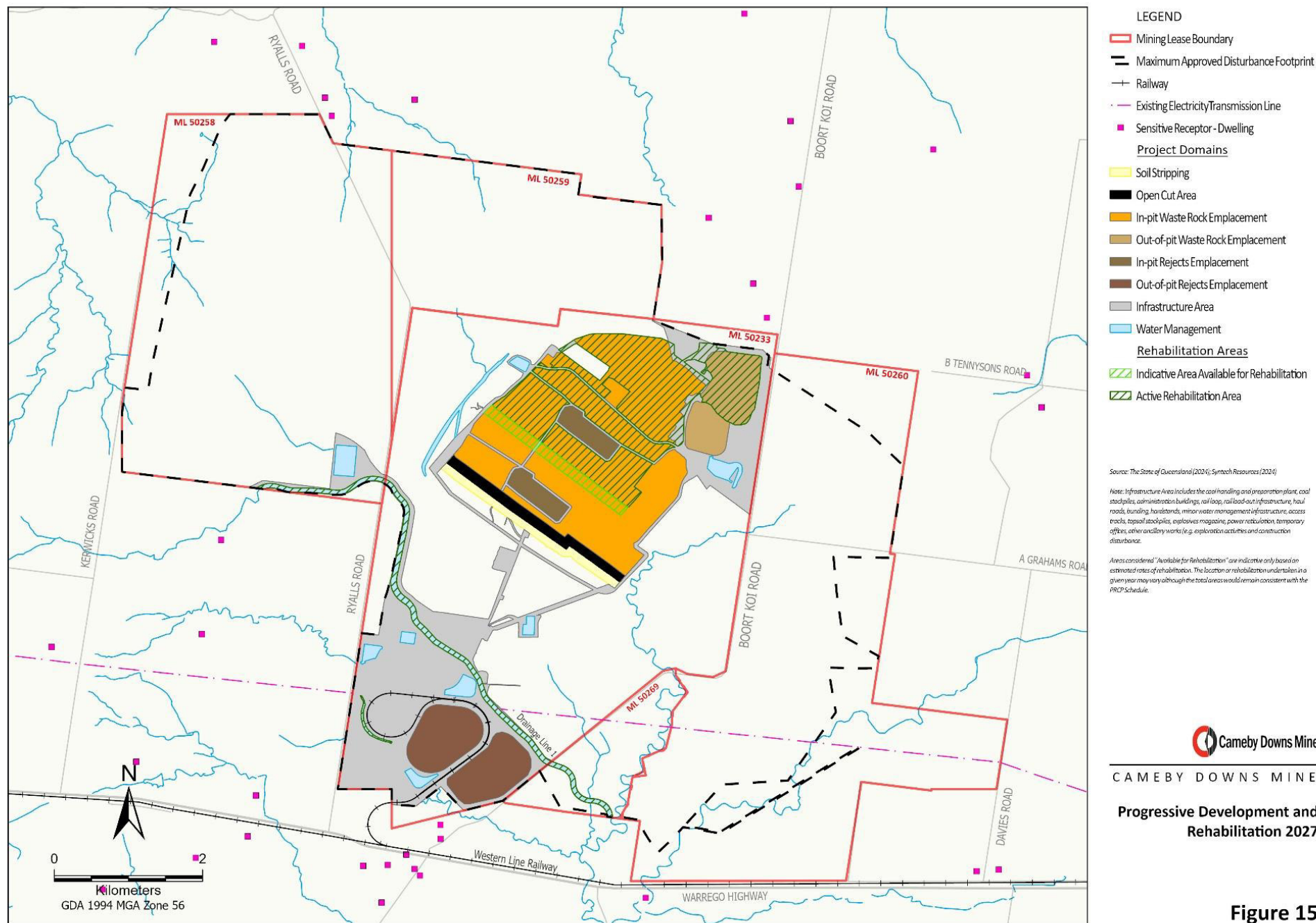


Figure 14



CAMEBY DOWNS MINE

Progressive Development and
Rehabilitation 2027

Figure 15

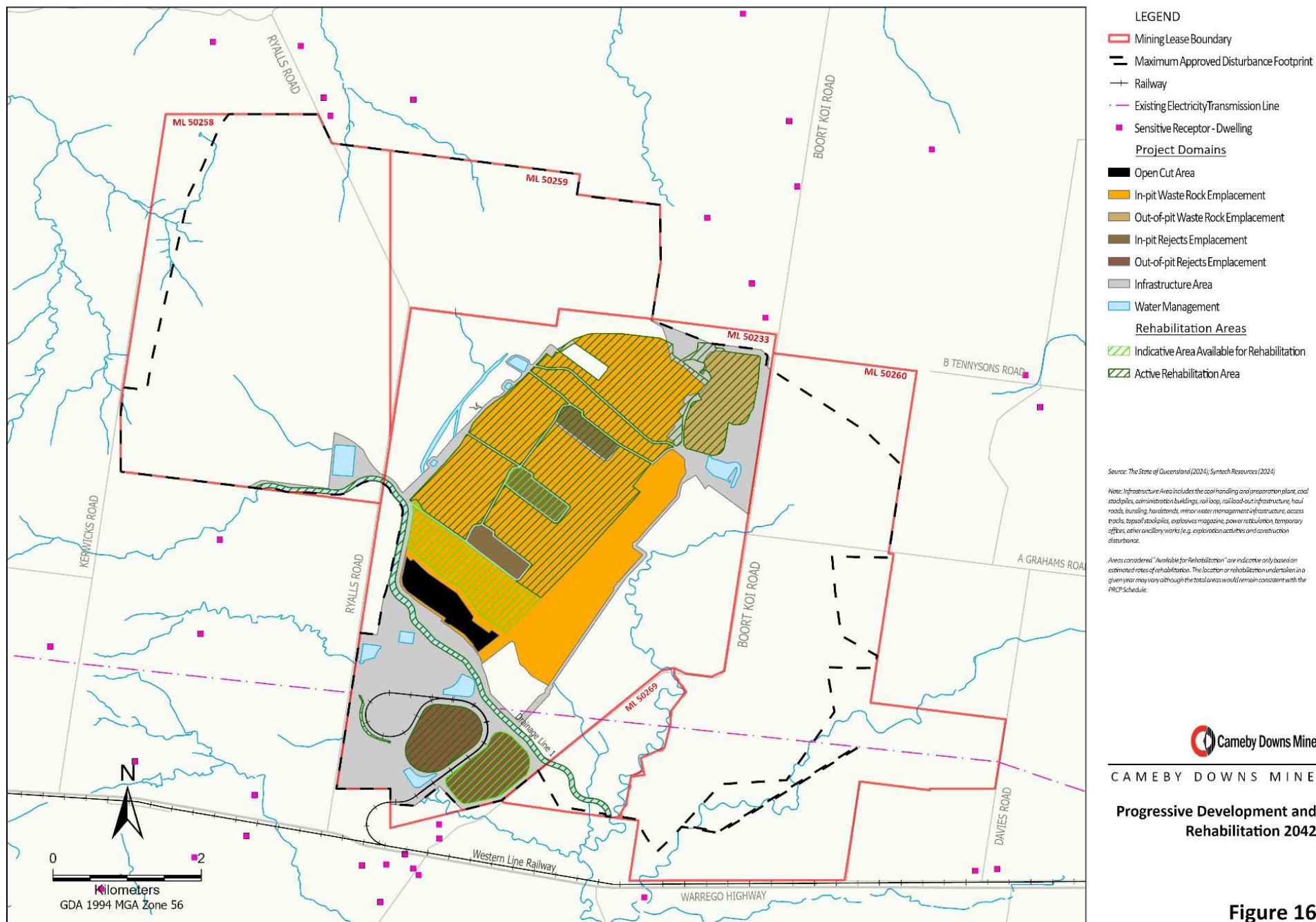


Figure 16

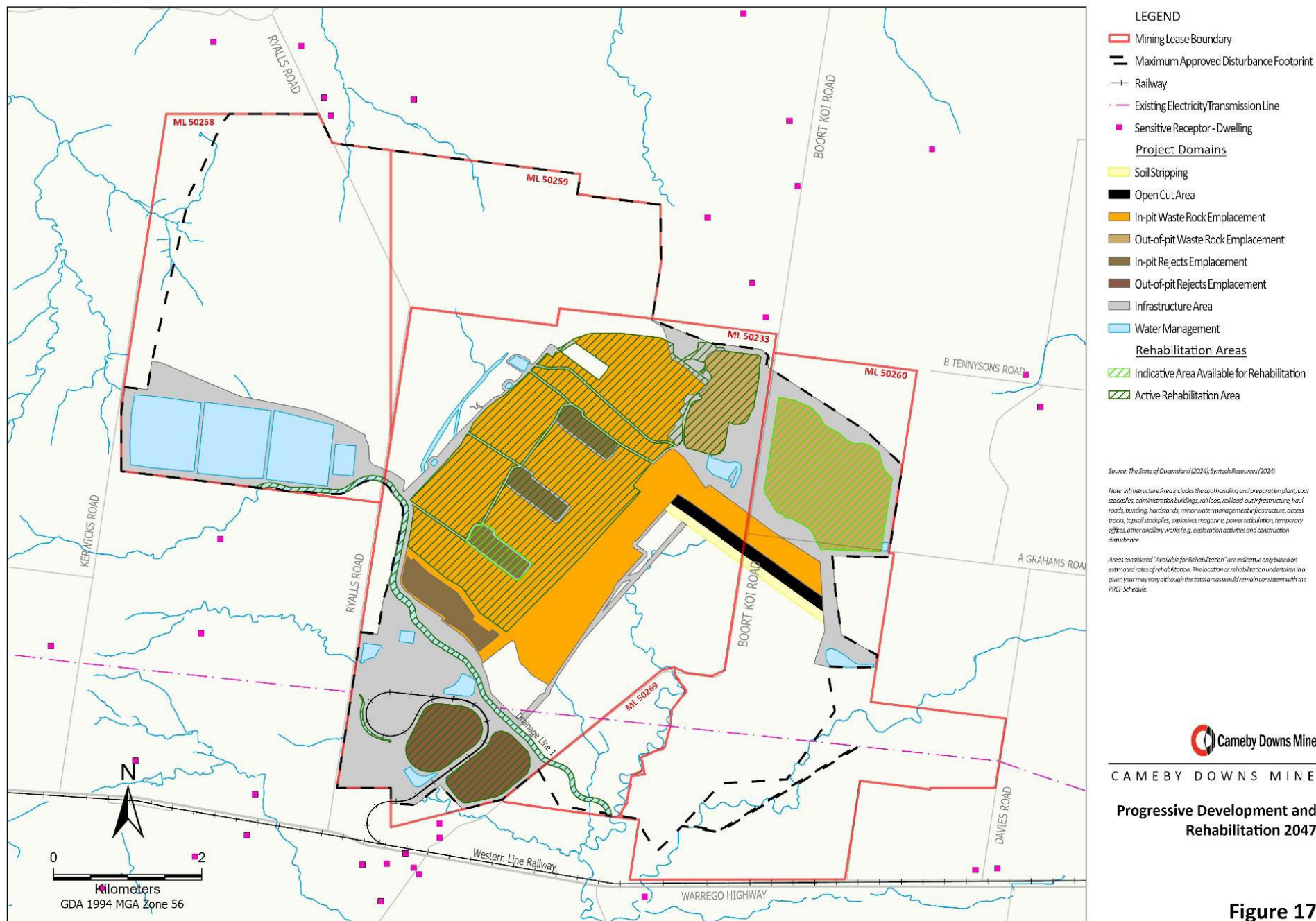


Figure 17

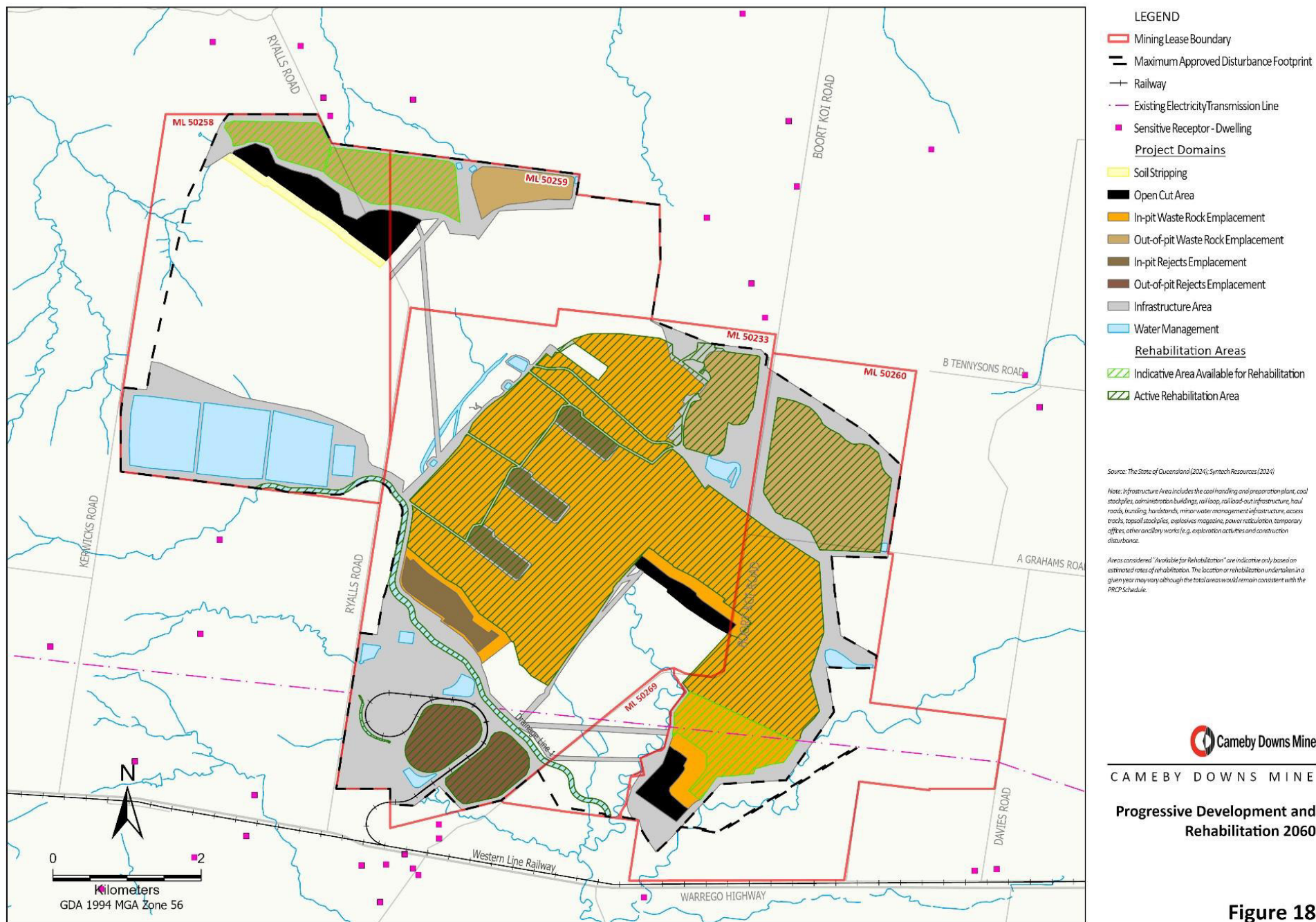


Figure 18

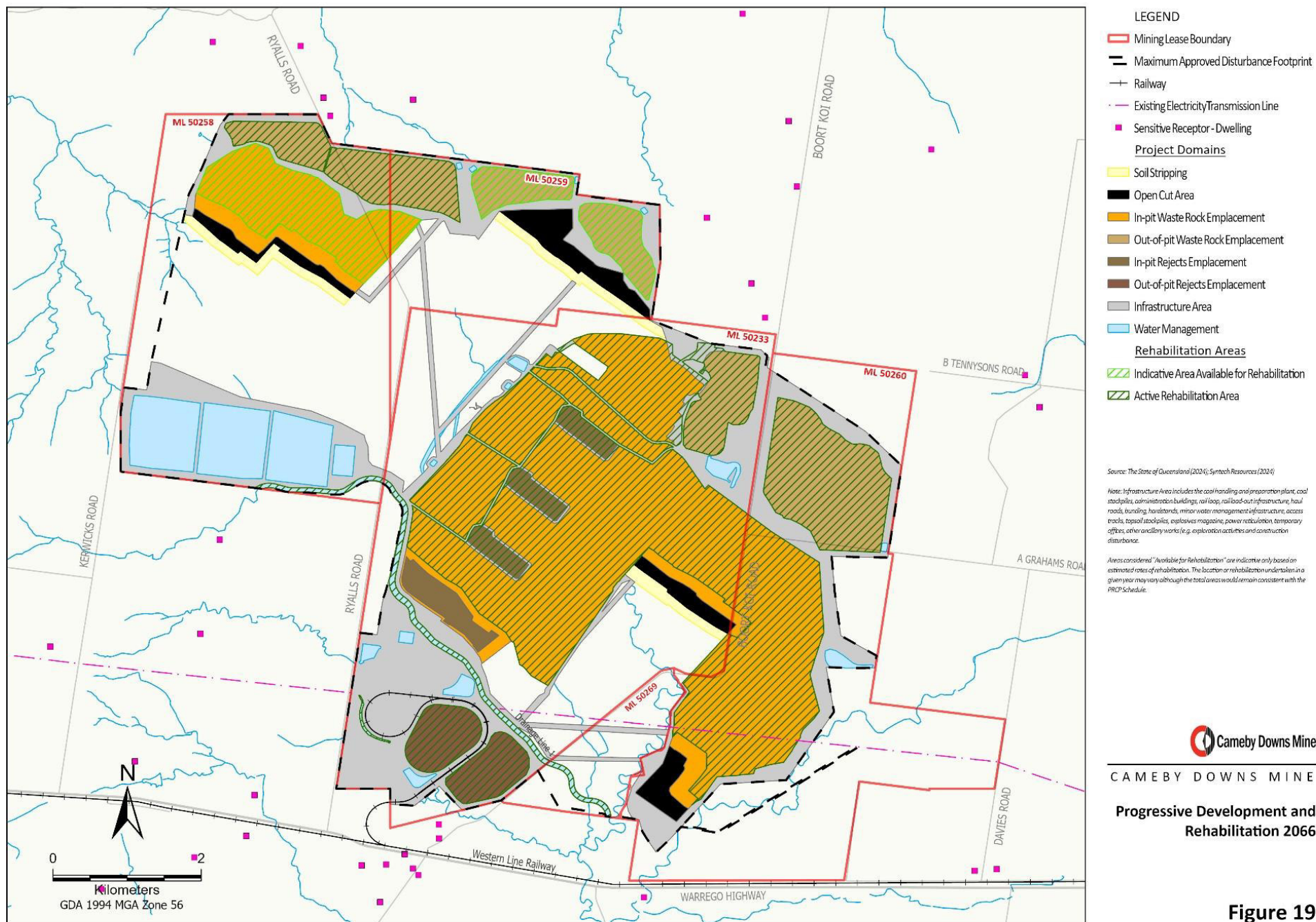


Figure 19

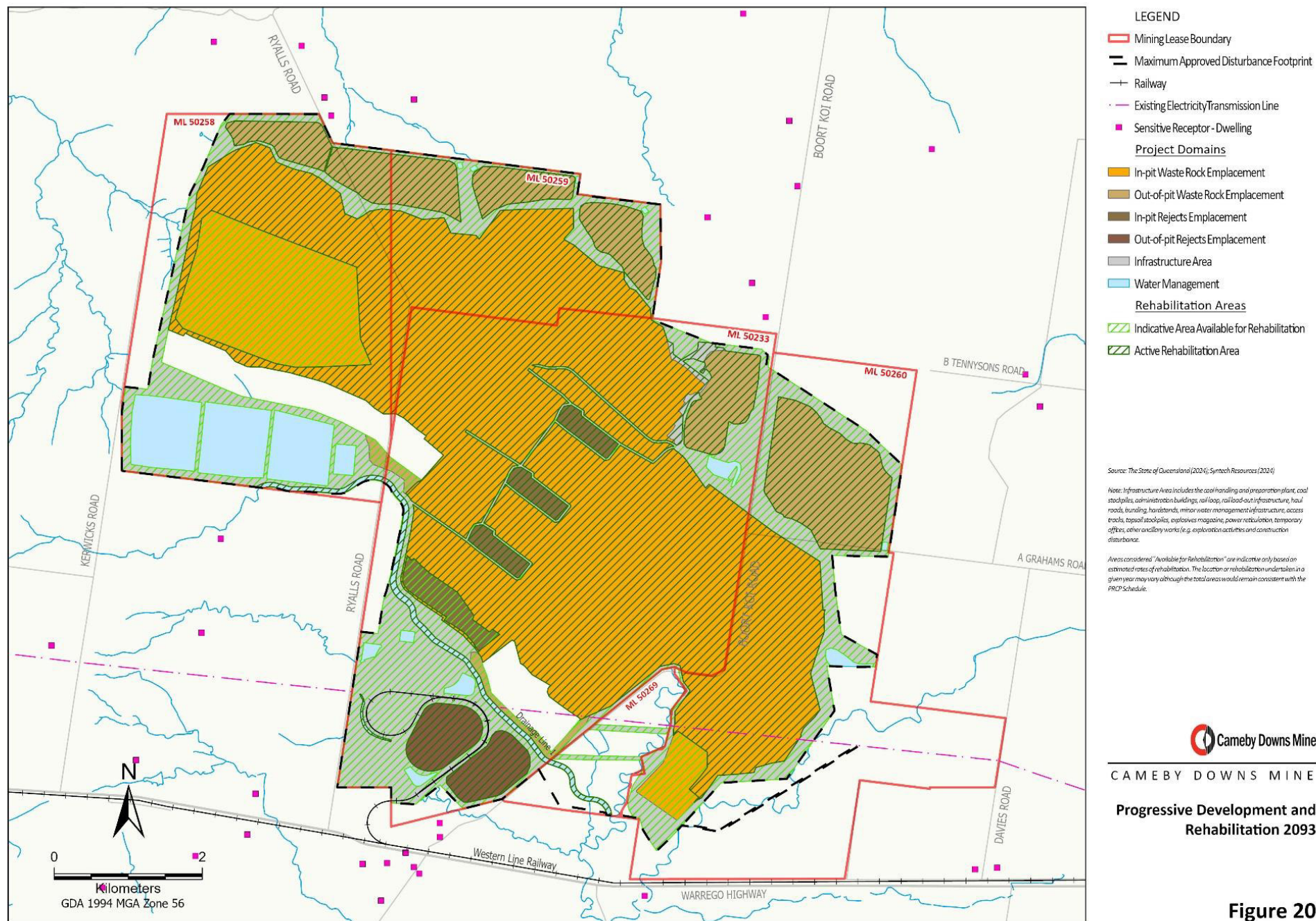
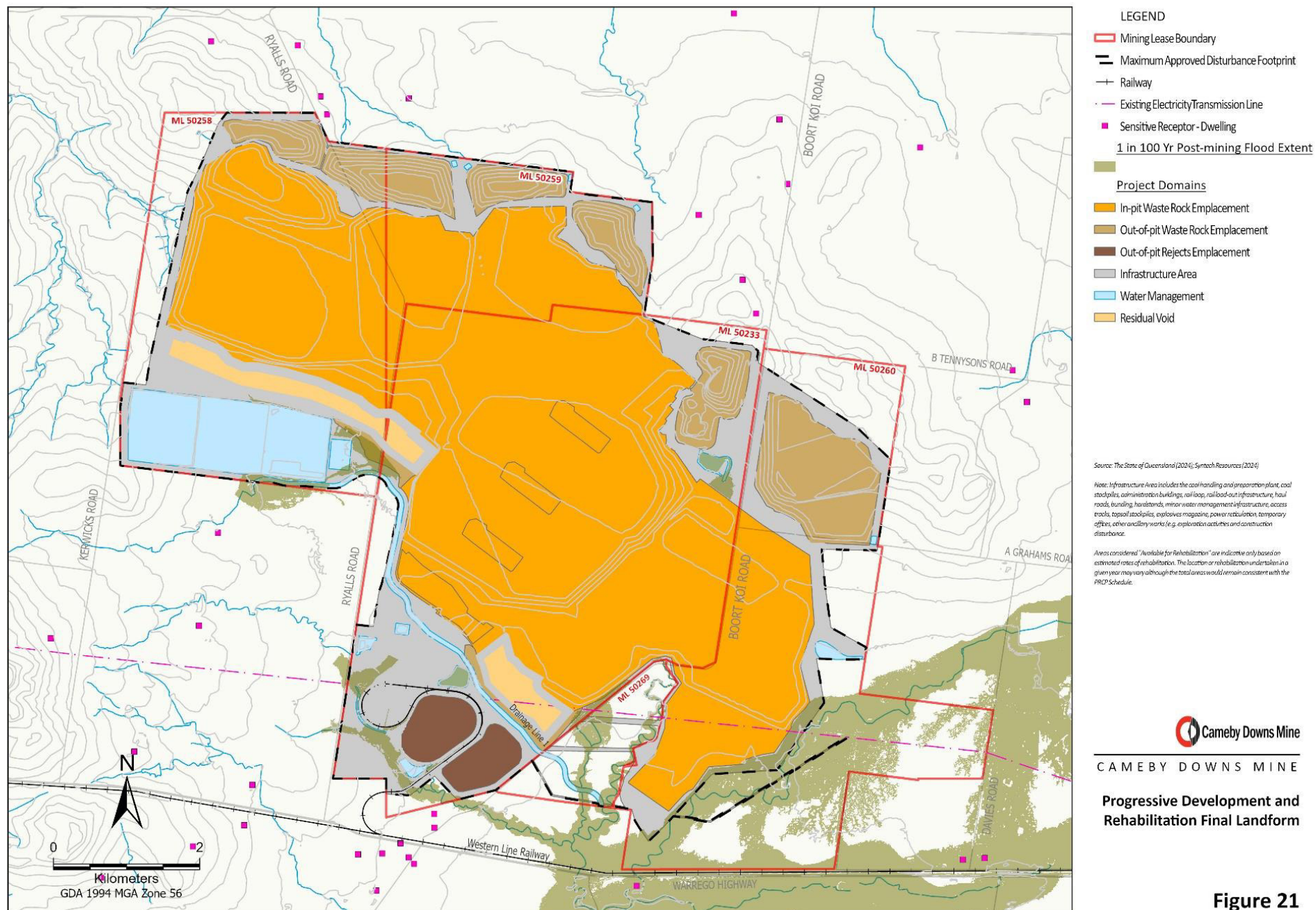
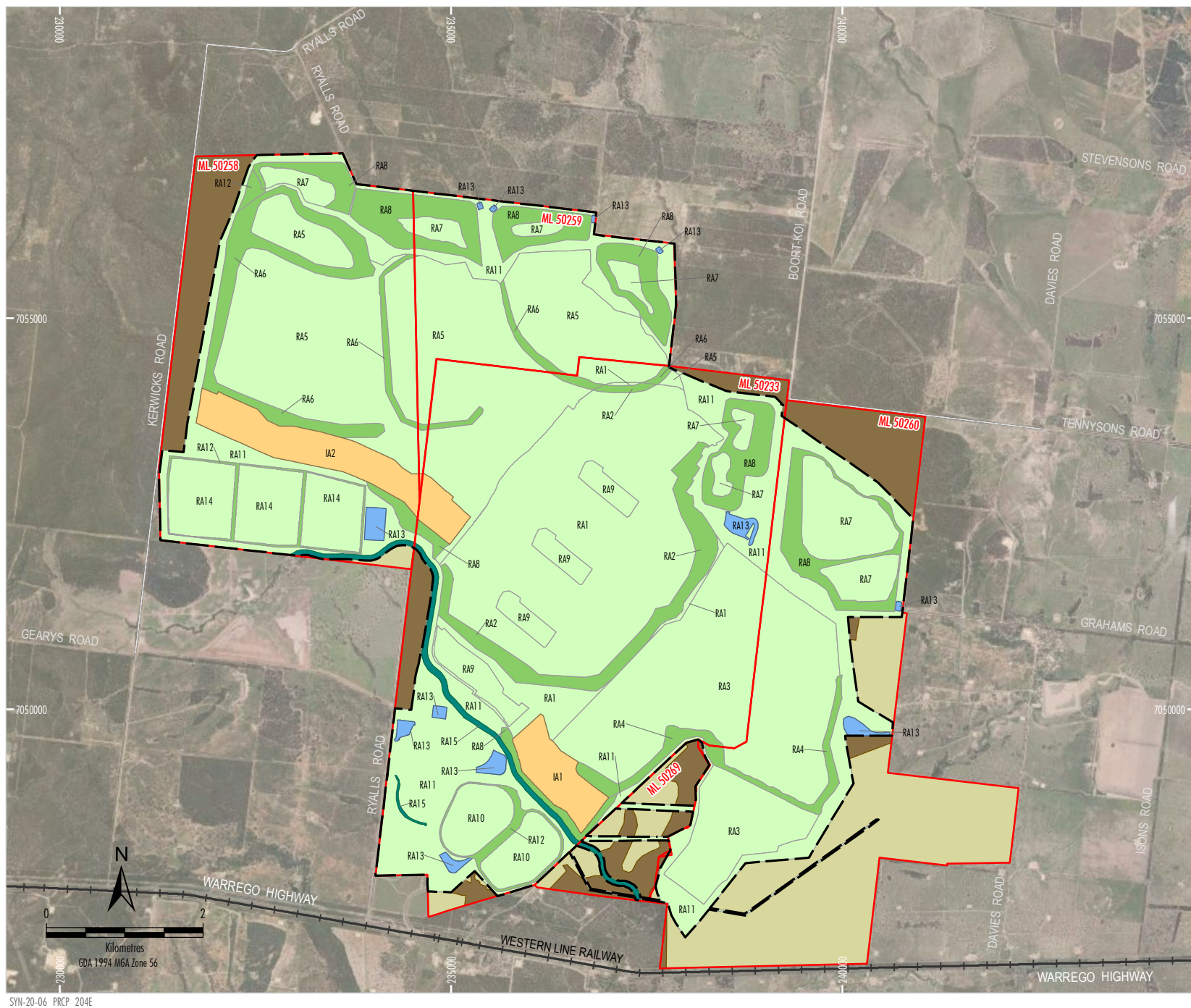


Figure 20



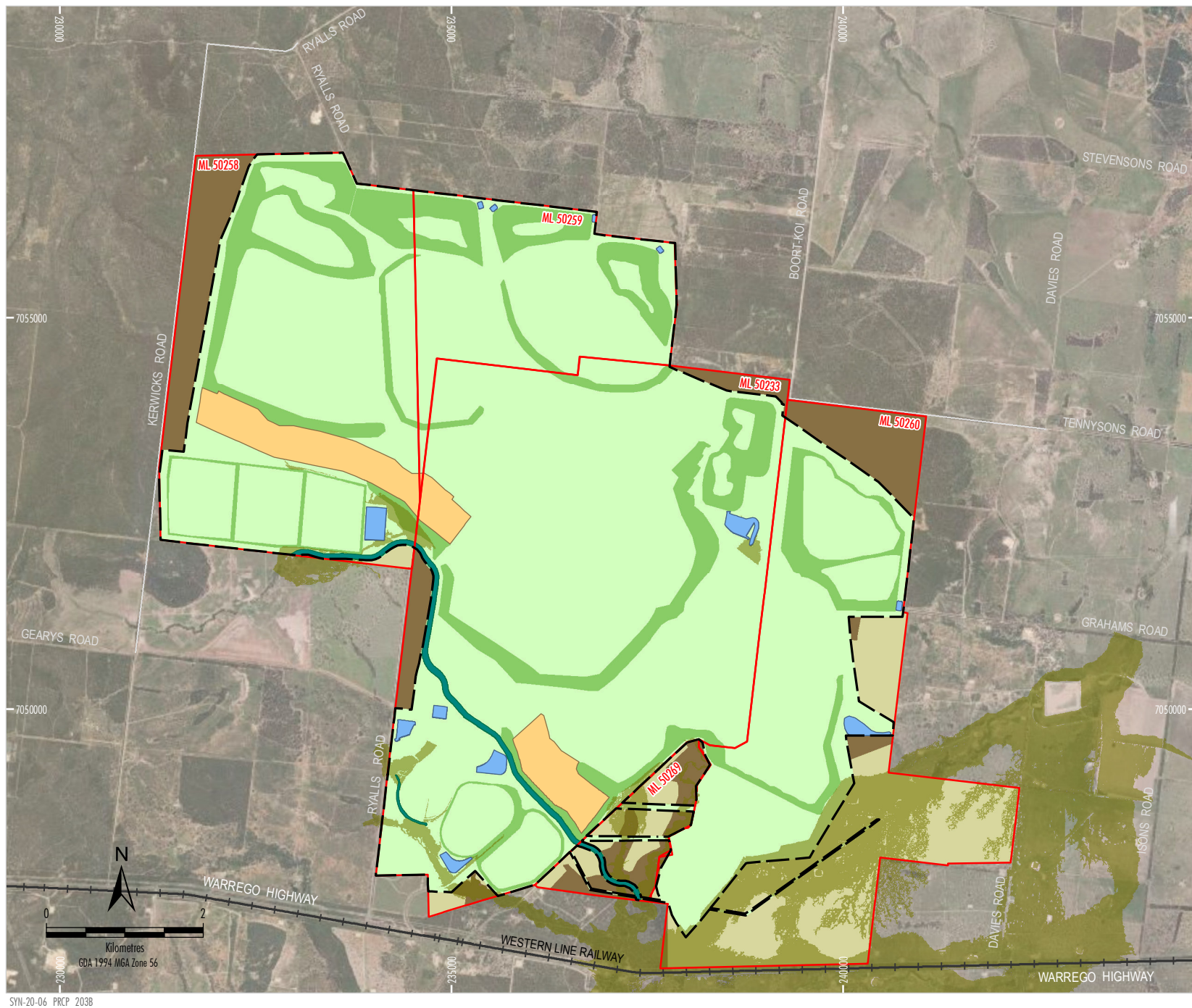


- LEGEND**
- Mining Lease Boundary
 - Maximum Approved Disturbance Footprint
 - Post-mining Land Use Areas ***
 - Grazing
 - Grazing with Native Vegetation
 - Grazing with Riparian Suited Native Vegetation
 - Grazing (Retained Water Management Infrastructure)
 - Existing Native Ecosystem
 - Existing Grazing Pasture
 - Non-use Management Areas
 - Residual Void

Source: The State of Queensland (2022); Syntech Resources (2021)
 Orthophoto: 2016; Esri, DigitalGlobe (2017)

 **Cameby Downs Mine**
C A M E B Y D O W N S M I N E
 Rehabilitation Areas and
 Improvement Areas

Figure 22



- LEGEND**
- Mining Lease Boundary
 - Maximum Approved Disturbance Footprint
 - 1 in 100 Year Post-mining Flood Extent Mapping
 - Post-mining Land Use Areas *
 - Grazing
 - Grazing with Native Vegetation
 - Grazing with Riparian Suited Native Vegetation
 - Grazing (Retained Water Management Infrastructure)
 - Existing Native Ecosystem
 - Existing Grazing Pasture
 - Non-use Management Areas
 - Residual Void

Source: The State of Queensland (2022); Syntech Resources (2021)
 Orthophoto: 2016; Esri, DigitalGlobe (2017)

 **Cameby Downs Mine**
C A M E B Y D O W N S M I N E
Approved Post-mining Land Uses
and Non-use Management Areas

Figure 23

3.1.4 Rehabilitation/Improvement Planning

Consistent with EA EPML00900113, the approved PMLU at the CDM is light intensity grazing, with areas of native vegetation and two final residual voids approved as NUMAs (Figure 23). Rehabilitation of disturbed areas at the CDM is completed in accordance with Conditions G1 to G25 of EA EPML00900113.

Condition G4 of EA EPML00900113 (reproduced below) provides the overall rehabilitation objective for the CDM:

Land disturbed by the authorised mining activities must be rehabilitated to a safe and stable non-polluting landform, with a self-sustaining vegetation cover in accordance with:

- a) *Attachment 6: Rehabilitation Requirements;*
- b) *Table G1: Approved Residual Void Design;*
- c) *Attachment 7: Approved Final Residual Voids Design; and*
- d) *The rehabilitation management plan required by condition G7.*

Further detail on the approved PMLU and NUMAs for the CDM is provided in Sections 3.3 and 3.4.

Mine planning is a structured process that takes into account a range of key variables that may influence a potential mining operation and its viability. Aspects considered in the mine planning process include safety, resource recovery, geotechnical constraints, management of potential environmental impacts (e.g. noise, air quality, water and coal rejects), community issues, risks to the operation, mining methods and rates, equipment requirements, infrastructure capacity, development timeframes and economics (i.e. capital and operating costs).

To facilitate progressive rehabilitation at the CDM, the mine planning process has aimed to maximise progressive rehabilitation by scheduling the commencement and completion of rehabilitation as soon as practicable after land becomes available. The CDM progresses steadily in one direction with a single pit active at a given time, allowing rehabilitation activities to follow behind the advancing open cut. The progressive development of the CDM is evident on Figures 10 to 21.

3.1.4.1 Relevant Activities

For the purposes of this PRC Plan, Syntech has defined Rehabilitation Areas and Improvement Areas as outlined on Figure 22. These areas have been based on the progressive development and rehabilitation plans provided in Figures 10 to 20 and the approved final landform in Figure 21. These progressive plans are consistent with the approved outcomes from the EVA (Syntech, 2018).

Table 10 provides details of the relevant activities (i.e. predicted duration, size/extent and ability to progressively rehabilitate during the activity) that will be undertaken at each of the Rehabilitation Areas and Improvement Areas, throughout the life of the CDM.

Table 10
Relevant Mining Activities

Area	Relevant Activity	Size (ha)	Date of Activity Commencement	Date of Activity Completion	Able to Progressively Rehabilitate?
Rehabilitation Areas					
RA1	Pit 1, In-pit Emplacement Area	839.98	Already Commenced	2108	Yes
RA2	Pit 1, In-pit Emplacement Area	122.82	Already Commenced	2123	Yes
RA3	Pit 2, In-pit Emplacement Area	806.63	2048	2113	Yes
RA4	Pit 2, In-pit Emplacement Area	61.45	2054	2123	Yes
RA5	Pit 3, In-pit Emplacement Area	1179.92	2066	2118	Yes
RA6	Pit 3, In-pit Emplacement Area	170.66	2066	2128	Yes
RA7	Out-of-pit Waste Rock Emplacement Areas	245.09	2022	2086	Yes
RA8	Out-of-pit Waste Rock Emplacement Areas	383.20	2022	2128	Yes
RA9	Pit 1, In-pit Rejects Emplacement Area	110.51	2039	2118	Yes
RA10	Out-of-pit Rejects Emplacement Areas	122.80	2032	2066	Yes
RA11	Infrastructure Areas	944.92	Already Commenced	2128	Yes
RA12	Infrastructure Areas	51.18	2093	2128	Yes
RA13	Water Management Infrastructure	47.64	2093	2103	Yes
RA14	Water Management Infrastructure	226.00	2093	2123	Yes
RA15	Water Diversions	48.37	Already Commenced	2053	Yes
Improvement Areas					
IA1	Central (Pit 1 and Pit 2) Final Void	74.47	2042	2098	No
IA2	Western (Pit 3) Final Void	164.40	2083	2093	No

3.1.4.2 Rehabilitation Undertaken to Date

Under section 126C(1)(j) of the EP Act, transitional PRC plans must also include the following details about any existing rehabilitation already completed at the time of submission of the proposed PRC plan:

- a description of the rehabilitation works previously carried out;
- when the rehabilitation works commenced and were completed; and
- whether the rehabilitation has been applied for or approved as progressively certified under the EP Act.

Existing rehabilitation at the CDM has been progressively undertaken. Rehabilitation works have commenced on approximately 165 ha at the CDM (Figure 10, Table 11). All rehabilitation is subject to ongoing monitoring and maintenance activities.

Table 11
Progressive Rehabilitation Undertaken to Date

Area	PMLU	Size of Area (ha)	Rehabilitation Milestone	Progression of Rehabilitation Undertaken to Date (ha) ¹
RA1	Grazing	839.98	RM1	129.9
			RM4	129.9
			RM5	-
			RM6	-
			RM8	-
			RM9	-
RA2	Grazing with Native Vegetation	122.82	RM1	19.08
			RM4	19.08
			RM5	-
			RM7	-
			RM8	-
			RM10	-
RA11	Grazing	944.92	RM1	14.56
			RM2	14.56
			RM4	-
			RM5	-
			RM6	-
			RM8	-
			RM9	-
RA14	Grazing with Riparian Suited Native Vegetation	48.37	RM1	2.08
			RM4	-
			RM5	-
			RM7	-
			RM8	-
			RM10	-

¹ Rehabilitation only reported once all milestone criteria for a given rehabilitation milestone are completed.

The PRCP Schedule (Attachment 2) includes the status of the rehabilitation activities undertaken so far. Work undertaken to date is generally limited to the completion of activities associated with RM1, RM2 and RM4 which primarily relate to decommissioning, remediation of contaminated land and landform development and reshaping/re-profiling. Activities associated with other rehabilitation milestones (e.g. RM5 and RM6) have also commenced over a large area at the CDM, however they have not yet progressed to a point where these milestones are considered to be completed. Rehabilitation activities undertaken prior to the preparation of the PRC Plan and PRCP Schedule were completed in accordance with the methodologies outlined in the Rehabilitation Operational Management Plan (Syntech, 2020), which is the approved land outcome document (and has been superseded by this PRC Plan).

Future rehabilitation activities will continue to progress through the remaining rehabilitation milestones relevant to each area (e.g. RM3 and RM5 to RM11). Syntech has not yet applied for, or received, progressive certification from DES for any of the rehabilitation completed to date.

3.2 COMMUNITY CONSULTATION

3.2.1 Community Consultation Register

During preparation of the EVA, consultation was conducted with the neighbouring landholders, local community, Aboriginal stakeholders, key State and Commonwealth government agencies, WDRC, QGC (Shell Australia) and relevant infrastructure owners.

Consultation has also been undertaken with the relevant groups during the preparation of the PRC Plan and PRCP Schedule.

A summary of the consultation undertaken to date (where relevant) is provided below. Details of any issues raised during consultation and how the issues were considered during the preparation of the PRC Plan and PRCP Schedule are provided in Table 12.

3.2.1.1 Local Community

Community Reference Group

A Community Reference Group (CRG) was established in 2010 comprising representatives from the Chinchilla and Miles communities, neighbouring landholders, WDRC and Syntech. The CRG provides a mechanism for ongoing communication between Syntech and the local community.

Syntech provided an initial overview of the CDM Continued Operations Project at the CRG meeting in December 2016. Details presented included information regarding the existing CDM operations, an overview of the Continued Operations Project and a summary of the environmental assessments and stakeholder consultation being undertaken.

Further updates on the CDM Continued Operations Project were provided to the CRG in June 2017, November 2017 and September 2018.

Syntech also met with the CRG in February 2020 and November 2020 where updates on the CDM rehabilitation, methodology and final land uses were provided. No issues or comments in relation to rehabilitation were raised by the CRG during these meetings.

During the preparation of the PRC Plan and PRCP Schedule, Syntech met with the CRG on 4 February 2021 to provide an overview of the PRC Plan and PRCP Schedule process and a summary of key elements including overall timing, final land use, NUMAs and the additional assessments being undertaken.

Adjacent/Underlying Landholders

For the CDM Continued Operations Project, Syntech distributed consultation letters to neighbouring landholders located in the CDM area and immediate surrounds in December 2016. The consultation letter provided information regarding the existing CDM operations, an overview of the proposed Continued Operations Project and a summary of the environmental assessments being undertaken to support an amendment application under the EP Act for the Continued Operations Project. Briefing newsletters were also distributed to neighbouring (and other local) landholders in June 2017 and September 2018.

Syntech also consulted with neighbouring and other local landholders as part of a bore census (to inform the Groundwater Assessment) undertaken in October 2017.

Regular consultation has been undertaken with the neighbouring landholders regarding mitigation of potential impacts through a negotiated agreement or property acquisition.

Table 12
Community Consultation Register

Stakeholder	Key Objectives and Information to be Provided	Consultation Activities and Engagement Method	Consultation Date	Issues Raised	How Issues Have Been Considered	Outcomes, Decisions and/or Commitments
Government Agencies						
Department of Environment and Science (DES)	Summary of key elements including overall timing, community consultation plan, final land use, NUMAs and assessments being undertaken. Key objectives for meeting are to confirm: - the approved final voids are pre-approved NUMAs; - no public notification is required; - the proposed PRC Plan scope (based on findings from gap analysis); - confirm staging (e.g. annual and five yearly landforms) and agree on approach to maximise operational flexibility without having to amend PRC Plan and PRCP Schedule; and - the proposed community consultation plan.	Pre-lodgement Meeting	24 Nov 2020	DES provided in-principle agreement that the final voids were pre-approved NUMAs. DES indicated that the final void design and the rehabilitation requirements outlined in the EA would need to be adopted consistently in the PRC Plan and PRCP Schedule if public notification is to be avoided. DES confirmed that the 'no final voids in floodplains' requirement would not apply to the CDM as the locations of the final voids are shown in the EA (i.e. pre-approved). DES confirmed that no public notification would be required if the final voids are pre-approved NUMAs and the final void design and rehabilitation requirements in EA Attachment 6 can be adopted consistently in the PRC Plan and PRCP Schedule. DES supported the proposed consultation program and recommended that consultation should emphasise that the PRC Plan and PRCP Schedule process is just the transfer of the approved project described in the EVA into a new format (i.e. no need to justify proposed rehabilitation outcomes again).	Syntech considered the feedback provided by DES and has used this feedback to develop the PRC Plan and PRCP Schedule, consistent with previous commitments in EA EPML00900113 and the EVA.	The final void design and rehabilitation requirements have been adopted consistent with EA EPML00900113 and the EVA. Consultation with other parties has emphasised that this PRC Plan and PRCP Schedule process is the transfer of the approved project as described in the EVA into a new format (i.e. there is no need to justify proposed rehabilitation outcomes as long as they are consistent with the EVA and EA EPML00900113).
	Correspondence with DES to clarify key issues identified and proposed approach for management of identified issues.	Email	4 Dec 2020	No issues raised.	-	-
	Draft PRCP Schedule provided to DES for review and feedback.	Email	31 March 2021	DES provided high-level advice on the content and presentation of the draft PRCP Schedule.	Syntech has considered the comments received from DES in the latest iteration of the PRC Plan and PRCP Schedule.	Updates to the content of the PRC Plan and PRCP Schedule were made as a result of the issues raised by DES.
	Draft PRC Plan and PRCP Schedule provided to DES for review and feedback.	Email	6 May 2021	DES provided high-level advice on the content and presentation of the draft PRC Plan and PRCP Schedule.	Syntech has considered the comments received from DES in the latest iteration of the PRC Plan and PRCP Schedule.	Updates to the content of the PRC Plan and PRCP Schedule were made as a result of the issues raised by DES.
	Final PRC Plan and PRCP Schedule formally lodged to DES for assessment.	Email	25 June 2021	DES provided an Information Request on 10 August 2021.	Syntech has considered the comments received from DES in the latest iteration of the PRC Plan and PRCP Schedule.	Updates to the content of the PRC Plan and PRCP Schedule were made as a result of the issues raised by DES.
Department of Resources (DoR)	Overview of PRC Plan and PRCP Schedule process and summary of key elements including overall timing, PMLU, NUMAs and assessments being undertaken.	Email/Letter	Q1 2021	No issues raised to date.	-	-

Table 12 (Continued)
Community Consultation Register

Stakeholder	Key Objectives and Information to be Provided	Consultation Activities and Engagement Method	Consultation Date	Issues Raised	How Issues Have Been Considered	Outcomes, Decisions and/or Commitments
Local Government						
WDRC	Overview of PRC Plan and PRCP Schedule process and summary of key elements including overall timing, PMLU, NUMAs and assessments being undertaken.	Meeting	8 March 2021	Query 1 – queried whether the final landform would consist of just grazing or would there be trees as well?	Described the combination of grazing and native vegetation by using the map on slide 9. The darker green proposed to be vegetation on the slopes and grazing on the flatter areas	-
				Query 2 – Queries the proportion of annual disturbance versus annual rehabilitation?	Explained that recently (over the past few years) the progress of the rehabilitation has been approximately matching the area of disturbance. Also explained that one of the purposes of the PRC Plan and PRCP Schedule is so mining companies ensured rehabilitation was planned and undertaken progressively to minimise the risk of rehabilitation not being completed.	-
				Query 3 – What is the expectation for level of grazing?	Explained that the final land use was light intensity grazing. Grazing trials are expected to be conducted to determine that the landform is stable and self-sustaining.	-
Surrounding Landholders						
Affected (Underlying and Adjoining) Landholders	Overview of PRC Plan and PRCP Schedule process and summary of key elements including overall timing, PMLU, NUMAs and assessments being undertaken.	Email/Letter	Q1 2021	No issues raised to date.	-	-
Local Community Groups						
Community Reference Group	Update on CDM rehabilitation, methodology and final land use.	Meeting	20 February 2020	No issues raised during meeting.	-	-
	Update on CDM rehabilitation, methodology and final land use.	Meeting	27 November 2020	No issues raised during meeting.	-	-
	Overview of PRC Plan and PRCP Schedule process and summary of key elements including overall timing, PMLU, NUMAs and assessments being undertaken.	Meeting	4 February 2021	Query 1 – Queried why the final voids (NUMA's) wouldn't be rehabilitated/backfilled.	Explanation on the mining process, including backfilling of mining voids progressively and explained that final voids occur due to lack of material in the final mining strip to backfill it. Also explained that the current EA has conditions regarding final void slope angles and safety requirements (e.g. bunding, geotechnical investigations).	-
				Query 2 – Regarding final land use of low intensity grazing queried if any areas would be native vegetation.	Explained that certain areas such as the flat areas of the in-pit waste rock emplacements would be most suitable for light intensity grazing and the sloped areas of the waste rock emplacements would be more suitable for native vegetation. Used the map on slide 9 of the presentation as an example of where the native vegetation land use may be. Also briefly discussed the Revegetation Plan and how that would describe the revegetation plan for the site.	-
				Query 3 – Asked about the timing of the diversion drain of DL1.	Discussed the location of the proposed drain using the map on slide 9 to show the proposed location. Discussed the timing for the drain within the next 3-5 years.	-

Table 12 (Continued)
Community Consultation Register

Stakeholder	Key Objectives and Information to be Provided	Consultation Activities and Engagement Method	Consultation Date	Issues Raised	How Issues Have Been Considered	Outcomes, Decisions and/or Commitments
Local Community Groups (Continued)						
Local Community and Groups	Overview of PRC Plan and PRCP Schedule process and summary of key elements including overall timing, PMLU, NUMAs and assessments being undertaken.	Letter/Website	Q1 2021	No issues raised to date.	-	-
Other Community Members	Place the community newsletter on the CDM website.	Website	Q1 2021	No issues raised to date.	-	-
Traditional Owners						
Aboriginal Community	Overview of PRC Plan and PRCP Schedule process and summary of key elements including overall timing, PMLU, NUMAs and assessments being undertaken.	Website	Q1 2021	No issues raised to date.	-	-
Native Title Claimants (Iman People #4 (QC2017/008))	Overview of PRC Plan and PRCP Schedule process and summary of key elements including overall timing, PMLU, NUMAs and assessments being undertaken.	Email/Letter	Q1 2021	No issues raised to date.	-	-

During the preparation of the PRC Plan and PRCP Schedule, Syntech distributed a briefing to neighbouring (and other local) landholders (Section 3.1.2.11) in April 2021, to provide an overview of the PRC Plan and PRCP Schedule process and a summary of key elements including overall timing, PMLU, NUMAs and the additional assessments being undertaken. No responses to the briefing newsletter have been received to date.

Other Local Community Members

A dedicated CDM community information line (1300 770 150) has been established for community members (including neighbouring landholders) to contact Syntech with any questions they may have, and relevant information has been, or will be, made publicly available on the CDM website.

3.2.1.2 Aboriginal Community

Cultural Heritage Management Plans (CHMPs) have been formed with the Barunggam Endorsed Parties and the Western Wakka Wakka Aboriginal Parties. The CHMPs apply to the full extent of the ML areas and clearly define management measures to avoid or minimise harm to Aboriginal cultural heritage.

Syntech provided an overview of the Continued Operations Project to the Western Wakka Wakka Aboriginal Parties and Barunggam Endorsed Parties in August 2017 and November 2017, respectively.

In April 2021, during the preparation of the PRC Plan and PRCP Schedule, Syntech distributed a briefing to the Western Wakka Wakka Aboriginal Parties and Barunggam Endorsed Parties, to provide an overview of the PRC Plan and PRCP Schedule process and a summary of key elements including overall timing, PMLU, NUMAs and the additional assessments being undertaken. No responses to the letter have been received to date.

3.2.1.3 Queensland State Government Agencies

Syntech consults with relevant Queensland State Government agencies on a regular basis in relation to the current operations at the CDM.

Consultation with Queensland State Government agencies regarding the PRC Plan and PRCP Schedule is ongoing. Consultation initiatives to date are discussed below.

Department of Environment and Science

Syntech consulted with DES throughout the preparation of the Continued Operations Project. An overview of the Continued Operations Project and the proposed approval process were discussed.

The DES conducted a site visit in November 2016. The site visit included an inspection of the existing operations and an update briefing on the Continued Operations Project. The scope of environmental assessments and the rehabilitation strategy were discussed.

An EA amendment application for the Continued Operations Project was lodged with DES on 21 November 2016. An Assessment Level Decision was subsequently issued on 30 November 2016 that the proposed amendment is a Major EA Amendment application. DES issued an Information Request on 12 January 2017 to request additional information from Syntech to enable the DES to make a decision on the application.

Syntech presented an update to the DES in May 2017. The status of the environmental assessments was discussed during the meeting.

Syntech provided a detailed summary of the environmental assessment outcomes to DES in November 2017. DES subsequently provided feedback on the environmental assessment outcomes in January 2018. The feedback focused on the water resource assessments and the rehabilitation strategy.

A follow-up meeting was held with DES in May 2018 to provide an overview of how Syntech had considered their feedback. This meeting was followed by a DES site visit to the CDM.

In November 2020, Syntech organised a meeting with DES to discuss the preparation of the PRC Plan and PRCP Schedule. Syntech provided a summary of the key elements including the overall timing, community consultation plan, PMLU, NUMAs and assessments being undertaken. The key objectives for the meeting were related to the final voids, public notification process (if required), PRC Plan and PRCP Schedule scope and the proposed community consultation plan. A follow up email was sent to DES on 4 December 2020. Feedback from DES was used to inform the preparation of the PRC Plan and PRCP Schedule.

In March 2021, Syntech provided a preliminary draft of the PRCP Schedule to DES for their review. High-level advice with regards to the draft PRCP Schedule was received from DES on 14 April 2021, and has been considered in this PRC Plan and the associated PRCP Schedule. Subsequently, a complete draft of the PRC Plan and PRCP Schedule was provided to DES on 6 May 2021. DES provided additional pre-lodgement advice to assist in finalising the PRC Plan and PRCP Schedule application. This advice has been considered and incorporated into this iteration of the PRC Plan and PRCP Schedule.

On 25 June 2021, Syntech formally lodged the PRC Plan and PRCP Schedule to DES. DES provided a detailed Information Request on 10 August 2021. The matters raised and information requested were considered and incorporated into a revised version of the PRC Plan and PRCP Schedule submitted in February 2022.

In March 2022, DES provided comments on the PRC Plan and PRCP Schedule submitted in February 2022. The DES comments have been considered and incorporated into this version of the PRC Plan and PRCP Schedule.

Department of Resources

Syntech provided a briefing on the Continued Operations Project to the DNRME (now Department of Resources [DoR]) in August 2016. An overview of the Continued Operations Project and the status of MLs 50258, 50259, 50260 and 50269 were discussed.

A pre-lodgement meeting was held with the DNRME in September 2018 to discuss the public notification of the EVA and MLs 50258, 50259, 50260 and 50269.

In April 2021, Syntech provided the DoR with a briefing letter on the PRC Plan and PRCP Schedule process and a summary of the key elements including overall timing, PMLU, NUMAs and the additional assessments being undertaken. No response to the briefing letter has been received to date.

3.2.1.4 Western Downs Regional Council

Syntech consults with the WDRC on a regular basis in relation to the current operations at the CDM (including representation as part of the CRG – Section 3.2.1.1). A briefing on the Continued Operations Project was provided to the WDRC Mayor and Deputy Mayor (Planning and Environment Councillor) in August 2016.

Key issues discussed during the August 2016 meeting included: the proposed approval process; environmental assessments; maximum employee numbers and accommodation requirements; proposed road closures; site rehabilitation and final land uses, and community consultation. Syntech has continued to provide regular updates on the Continued Operations Project to the WDRC.

In March 2021, Syntech organised a meeting with WDRC to provide an overview of the PRC Plan and PRCP Schedule process and a summary of key elements including overall timing, PMLU, NUMAs and the additional assessments being undertaken. No issues were raised during this consultation.

3.2.2 Community Consultation Plan

Future consultation to be undertaken with regards to the PRC Plan and PRCP Schedule is outlined in Table 13.

Table 13
Community Consultation Plan

Stakeholder	Key Objectives of Engagement	Proposed Engagement Method and Activities	Engagement Indicative Timing	Information to be Provided	Mechanism for Feedback Incorporation
Government Agencies					
DES	To provide updates on rehabilitation progress.	Meetings or Email Rehabilitation Report Milestone Monitoring	Annually	Status of rehabilitation.	PRCP Amendments.
DoR	To outline the status of MLs once rehabilitation is complete.	Email/Letter Report	Post-mining	Status of ML relinquishment.	Post-surrender Management Report.
Local Government					
WDRC	- To provide updates on rehabilitation progress. - To ensure any desired changes to post-mining land uses are considered.	Meetings or Email	Annually	Status of rehabilitation.	PRCP Amendments.
Surrounding Landholders					
Affected (Underlying and Adjoining) Landholders	- To provide updates on rehabilitation progress. - To discuss retaining infrastructure or water storages/management areas.	Email/Letter	As required	Status of rehabilitation.	PRCP Amendments.
Local Community Groups					
Community Reference Group	To provide updates on rehabilitation progress.	Meetings or Email	Annually	Status of rehabilitation.	PRCP Amendments.
Local Community and Groups	To provide updates on rehabilitation progress.	Website	Annually	Status of rehabilitation.	PRCP Amendments.
Other Community Members	To provide updates on rehabilitation progress.	Website	Annually	Status of rehabilitation.	PRCP Amendments.
Traditional Owners					
Aboriginal Community	To provide updates on rehabilitation progress.	Website	Annually	Status of rehabilitation.	PRCP Amendments.

3.3 POST-MINING LAND USE

The relevant land outcome documents for the CDM are EA EPML00900113 and the Rehabilitation Operational Management Plan (Syntech, 2020). The PMLU (light intensity grazing, with areas of native vegetation) is described in the land outcome documents (Figure 23). Consistent with the process outlined in the PRCP Guideline, Syntech has transitioned the approved PMLU for the CDM into the PRC Plan and PRCP Schedule and is not required to complete the information requirements under section 126C(1)(j) of the EP Act.

Native vegetation has been incorporated into the PMLU to provide wildlife corridors, shelter belts for stock (from sun and wind) and visual enhancement (Syntech, 2018). There have been no changes to the PMLU compared to the approved PMLU in EA EPML00900113 and the Rehabilitation Operational Management Plan (Syntech, 2020).

Light intensity grazing was originally selected as the PMLU for the CDM as it is located within a rural area that is predominantly used for low intensity cattle grazing on unimproved pasture. No horticulture or cropping occurs on the CDM site. The PMLU of grazing will be supported by retained water management structures which will provide access to water for livestock (Figure 22). Any unnecessary water management structures would be decommissioned.

Notwithstanding the above, the legislative requirements under section 126C(1)(d) of the EP Act still apply to the CDM. In accordance with section 126C(1)(d) of the EP Act, the rehabilitation planning part of the PRC plan must state the extent to which each PMLU for land identified in the PRCP Schedule is consistent with:

- a) the outcome of consultation with the community in developing the plan, and
- b) any strategies or plans for the land of a local government, the State or the Commonwealth.

This is addressed in the sub-sections below.

3.3.1 Community Consultation

As described in Section 3.2.1, during preparation of the EVA, consultation was conducted with the neighbouring landholders, the local community, Aboriginal stakeholders, key State and Commonwealth government agencies, WDRC, QGC (Shell Australia) and relevant infrastructure owners.

Consultation has also been undertaken with the relevant groups during the preparation of this PRC Plan and PRCP Schedule, and their feedback has been addressed or incorporated into the PRC Plan and PRCP Schedule.

The approved PMLU of light intensity grazing is considered to be consistent with the outcomes of the community consultation undertaken to date as:

- The queries raised by the CRG have been addressed and no further queries or issues have been forthcoming.
- No queries or issues with the PMLU have been raised by adjacent landholders or other members of the local community.

3.3.2 Relevant Legislation, Plans and Strategies

3.3.2.1 Local Government

The *Western Downs 2050 Community Plan* (WDRC, 2011) (the Community Plan) provides a long-term vision and strategic direction to enable the Western Downs community to guide its future in the midst of anticipated growth and changes. It is the over-arching strategic document for the region and informs all other WDRC planning documents, operations and budgeting. In short, it sets out what is important to the Western Downs community.

The Community Plan is intended to facilitate strategic and planned development of the region and form the basis for more detailed strategic and operational plans. It will guide future plans at both the regional and local scale. The Community Plan will better inform the infrastructure requirements for both the current and future communities of the region. The Community Plan will provide the strategic direction needed to ensure that the Western Downs region grows in a sustainable way that meets the community's expectations.

The approved PMLU of light intensity grazing, with areas of native vegetation, is in keeping with the vision outcomes in the Community Plan as:

- The region's natural environment and native species habitats will be recognised, maintained and enhanced, and the extent of weeds and pests impacting on the region will be minimised.
- The rehabilitated landform will be consistent with the region's physical attractions (e.g. agricultural land and dramatic landscape features, including wide open spaces).
- The return to grazing will support the region's long-standing role as a vital food bowl, and will protect land used for rural production and other non-urban values from further fragmentation and excessive urban encroachment.

3.3.2.2 State and Commonwealth Governments

The State and Commonwealth legislation considered during the preparation of the EVA (Syntech, 2018) includes:

- *Mineral Resources Act 1989.*
- *EP Act 1994.*
- *EPBC Act 1999.*
- *Environmental Offsets Act 2014.*
- *Nature Conservation Act 1992.*
- *Regional Planning Interests Act 2014.*
- *Planning Act 2016.*
- *Water Act 2000.*
- *Water Resource (Condamine and Balonne) Plan 2004.*
- *Native Title Act 1993.*
- *Aboriginal Cultural Heritage Act 2003.*
- *Land Act 1994.*
- *Electricity Act 1994.*
- *Local Government Act 2009.*

- *Sustainable Planning Act 2009 Murilla (Miles) Shire Planning Scheme.*
- *Chinchilla Shire Planning Scheme.*
- *Building Act 1975.*
- *Building Regulation 2006.*
- *Building Code of Australia 2008.*

The approved PMLU is not considered to be inconsistent with any of the legislation identified above.

3.4 NON-USE MANAGEMENT AREAS

The relevant land outcome documents for the CDM are EA EPML00900113 and the Rehabilitation Operational Management Plan (Syntech, 2020). The two final voids are described in the land outcome documents and have been transitioned into this PRC Plan and PRCP Schedule (Figures 21 and 23).

Consistent with the process outlined in the PRCP Guideline, Syntech is not required to comply with the requirements under section 126C(1)(g) or (h), or section 126D(2) or (3) of the EP Act and is not required to complete the information requirements under section 126C(1)(j) of the EP Act for the approved NUMAs.

There have been no changes to the final voids compared to the approved layout in EA EPML00900113 and the Rehabilitation Operational Management Plan (Syntech, 2020).

The final voids must be consistent with the description in EA EPML00900113, and in particular, *Table G1: Approved Final Residual Voids Design* and *Attachment 7: Approved Final Residual Voids Design*.

Table G1 – Approved Final Residual Voids Design

Void ID	High Wall Slope (deg)	High Wall Incompetent Rock Slope (deg)	Low Wall Slope (deg)	Low Wall Incompetent Slope (deg)	Void Maximum Depth (m)	Void Maximum Length (m)	Void Maximum Area (ha)	Volume (Mm³)
<i>Central Final Void (Pit 1)</i>	45	45	37	37	70	1,460	75	28
<i>Western Final Void (Pit 3)</i>	45	45	37	37	87	3,770	165	86

Mm³ = million cubic metres.

Deg = Degrees.

Notwithstanding the above, the legislative requirements under section 126C(1)(d) of the EP Act still apply. In accordance with section 126C(1)(d) of the EP Act, the rehabilitation planning part of the PRC Plan must state the extent to which each NUMA identified in the PRCP Schedule is consistent with:

- the outcome of consultation with the community in developing the plan, and
- any strategies or plans for the land of a local government, the State or the Commonwealth.

This is addressed in the sub-sections below.

3.4.1 Community Consultation

As described in Section 3.2.1, during preparation of the EVA, consultation was conducted with the neighbouring landholders, the local community, Aboriginal stakeholders, key State and Commonwealth government agencies, WDRC, QGC (Shell Australia) and relevant infrastructure owners.

Consultation has also been undertaken with the relevant groups during the preparation of this PRC Plan and PRCP Schedule, and their feedback has been addressed or incorporated into the latest versions.

The approved NUMAs (i.e. the final voids) are considered to be consistent with the outcomes of the community consultation undertaken to date as:

- The queries raised by the CRG have been addressed and no further queries or issues have been forthcoming.
- No queries or issues with the NUMA have been raised by adjacent landholders or other members of the local community.

3.4.2 Relevant Legislation, Plans and Strategies

3.4.2.1 Local Government

The approved NUMAs will be managed in such a way as to minimise any impacts on the vision outcomes in the Community Plan, in particular:

- The region's natural environment and native species habitats will be recognised, maintained and enhanced, and the extent of weeds and pests impacting on the region will be minimised.
- The rehabilitated landform will be consistent with the region's physical attractions (e.g. agricultural land and dramatic landscape features, including wide open spaces).
- The size of the NUMAs has been minimised to maximise the amount of rehabilitated grazing areas that will support the region's long-standing role as a vital food bowl, and will protect land used for rural production and other non-urban values from further fragmentation and excessive urban encroachment.

3.4.2.2 State and Commonwealth Governments

The State and Commonwealth legislation that were considered during the preparation of the EVA (Syntech, 2018) are listed in Section 3.3.2.2.

The approved NUMAs are not considered to be inconsistent with any of the legislation identified above. It is noted that the NUMAs (i.e. the two final voids) will not be located within the floodplain.

3.5 REHABILITATION AND MANAGEMENT METHODOLOGY

In accordance with section 126C(1)(e) and (i), this section:

- States, for each proposed PMLU for land, the proposed methods or techniques for rehabilitating the land to a stable condition in a way that supports the rehabilitation milestones under the proposed PRCP Schedule.
- States, for each proposed NUMA, the proposed methodology for achieving best practice management of the area to support the management milestones under the proposed PRCP Schedule for the area.

3.5.1 Rehabilitation and Management Milestones

Syntech has developed a comprehensive suite of milestones for the rehabilitation areas and improvement areas for the CDM. Tables 14 and 15 list these milestones and how they relate to the proposed revegetation scenarios for the CDM. Table 16 provides a summary of the rehabilitation requirements provided in Attachment 6 of EA EPML00900113 and how they have been transitioned into this PRC Plan and the associated PRCP Schedule.

The sections below provide further detail on how Syntech will manage the rehabilitation activities to achieve the rehabilitation milestones. The management measures for the rehabilitation areas and improvement areas have been developed in consideration of guidelines and relevant information currently available, including the:

- PRCP Guideline.
- DES (2014) *Guideline: Rehabilitation requirements for mining resource activities* (Historical).
- Australian Government (2016a) *Leading Practice Sustainable Development Program for the Mining Industry – Mine Rehabilitation*.
- Australian Government (2016b) *Leading Practice Sustainable Development Program for the Mining Industry – Mine Closure*.

The rehabilitation area and improvement area management measures are considered by Syntech to be consistent with “best practice” measures available as at the time of preparing this PRC Plan and PRCP Schedule. If further information becomes available or these guidelines are revised, the PRC Plan and PRCP Schedule would be reviewed and the proposed management measures updated as required to maintain “best practice” status.

In addition to the information presented in the EVA for the Continued Operations Project, Syntech also commissioned suitably qualified specialists to develop and refine a Revegetation Plan (AusEcology, 2021; Appendix K) and to review and evaluate potential risks related to rehabilitation (Risk Mentor Pty Ltd [Risk Mentor], 2021; Appendix L). The Revegetation Plan (AusEcology, 2021) and PRCP Risk Assessment (Risk Mentor, 2021) informed the rehabilitation management, maintenance and monitoring methodologies outlined in this PRC Plan and are discussed further throughout Sections 3.5 and 3.6.

The timeframes proposed in this PRC Plan and PRCP Schedule (Table 14) have been developed in consideration of the risks that were attributed to each of the rehabilitation milestones (discussed further in Section 3.6).

Table 14
Rehabilitation Milestones and Criteria for Rehabilitation Areas

Milestone Reference	Rehabilitation Milestone	Revegetation Scenario	Milestone Criteria	Approximate Timeframe
RM1	Infrastructure Decommissioning and Removal	1, 2 & 3	a) All services disconnected and decommissioned. b) Contaminated water (e.g. affected by hydrocarbons, brine, metals, etc.) is treated to ensure consistency with upstream water quality characteristics, or removed off site. c) All wastes removed from site and lawfully disposed. d) All infrastructure and water storages demolished and removed, unless agreed in writing by landholders and relevant agencies. e) All roads and access tracks removed and ripped to reduce compaction, unless agreed in writing by landholders and relevant agencies.	3 months
RM2	Remediation of Contaminated Land	1, 2 & 3	a) Detailed site investigation report, as required under the <i>Environmental Protection Act 1994</i>, completed. b) Contaminated materials (e.g. PCBs, Dioxins, Mercury, hydrocarbon contaminated soils) removed and appropriately disposed or remediated. c) Validation testing confirms that contaminated soils have been removed or remediated. d) A site suitability statement confirms the uses or activities for which the land is suitable, align to the approved PMLUs for the site.	3 months

Table 14 (Continued)
Rehabilitation Milestones and Criteria for Rehabilitation Areas

Milestone Reference	Rehabilitation Milestone	Revegetation Scenario	Milestone Criteria	Approximate Timeframe
RM3	Installation of Cover System/Capping	1	a) Engineering and design plans to ensure that oxygen diffusion is adequately reduced to minimise the risk of sulfide oxidation and acid generation finalised. b) In-pit rejects emplacements are located hydraulically upgradient of the Central Void (Pit 1). c) In-pit coal rejects emplacements have settled before commencing installation of the cover system. d) In-pit coal rejects emplacements located a minimum of 10 m below the final landform surface elevation and encapsulated. e) The in-pit rejects emplacement in the Central Pit (Pit 1) does not exceed Relative Level (RL) 301mAHD. The remaining void is infilled with waste rock material to a final RL not exceeding 330 mAHD. f) Additional materials (capillary breaks, geofabric, etc.) installed as per the engineering design plan. g) Out-of-pit coal rejects emplacements covered with a 0.5 m layer of competent material followed by a 0.5 m layer of compacted non-sodic clay. h) Engineering report on completed cover finalised, certifying that the capping system has been built/installed as per engineering design plan.	5 years
RM4	Landform Development and Reshaping/ Re-profiling	1, 2 & 3	a) All major earthworks completed. b) Stable landform and angle achieved (up to 10%, or up to 33% where rock mulch or other stabilisation controls are used). c) Out of pit coal rejects emplacement slopes no greater than 10%, or up to 33% where rock mulch or other stabilisation controls are used.	6 months

Table 14 (Continued)
Rehabilitation Milestones and Criteria for Rehabilitation Areas

Milestone Reference	Rehabilitation Milestone	Revegetation Scenario	Milestone Criteria	Approximate Timeframe
RM4 (continued)	Landform Development and Reshaping/ Re-profiling	1, 2 & 3	d) Dirty water dams slopes no greater than 10%. e) Final elevation of out of pit waste rock emplacements are not higher than 45 m above the natural ground level. f) Landform recontoured to be sympathetic to the adjacent landforms. g) The toe of the out-of-pit waste rock emplacements adjacent to Drainage Line 1 has been treated with an erosion resistant material to maintain its stability in the event of 1,000-year ARI and PMF floodwater interaction. h) Contour or graded drains installed as per construction design. i) Drainage Line 1 diversion designed and assessed using the most relevant ACARP stream diversion criteria, current at the time the design and assessment are carried out. j) Final voids certified as geotechnically stable with a factor of safety of at least 1.2.	6 months
RM5	Surface Preparation	1, 2 & 3	a) Waste rock material ripped to a minimum of 300 mm depth. b) Topsoil placed to a minimum thickness of 100 mm. c) Topsoil amelioration and fertilisation process completed using gypsum, chemical fertiliser and/or compost as required to reach target Total N: 1,500 milligrams per kilogram (mg/kg), and Total P: 200 mg/kg. d) Till to 100 mm depth to mix and incorporate soil ameliorants (but not deep enough to bring waste rock material to the surface). e) An assessment of soil health and suitability has been completed and confirms soil is suitable for target vegetation establishment.	3 months

Table 14 (Continued)
Rehabilitation Milestones and Criteria for Rehabilitation Areas

Milestone Reference	Rehabilitation Milestone	Revegetation Scenario	Milestone Criteria	Approximate Timeframe
RM6	Revegetation (grazing)	1	a) Topsoil ripped no more than three months later than placement. b) Till along the contour with a tyned implement with tyne spacing no greater than 0.5 m. c) Direct seeding of cover crop and pasture species completed (rates as specified in Table 3-6 of Revegetation Plan version 2, dated 23/06/2021). d) Selection of pasture grass species are consistent with designated vegetation reference sites³ and include a combination of pasture species detailed in 'Table 20 Revegetation Species' in the PRC Planning Part, version 4 (April 2022).	12 months
RM7	Revegetation (grazing with native vegetation)	2 & 3	a) Topsoil ripped no more than three months later than placement. b) Till along the contour with a tyned implement with tyne spacing no greater than 0.5 m. c) Direct seeding of cover crop and pasture species completed (rates as specified in Table 3-6 of Revegetation Plan version 2, dated 23/06/2021). d) Planted tree species are consistent with the relevant vegetation reference site, and include a combination of tree species from the following: <i>Acacia shirleyi</i>, <i>Acacia leiocalyx</i>, <i>Allocasuarina luehmannii</i>, <i>Casuarina cunninghamiana</i>, <i>Callitris glaucophylla</i>, <i>Eucalyptus crebra</i>, <i>Eucalyptus populnea</i>, <i>Eucalyptus fibrosa</i> subsp. <i>nubila</i>, and <i>Eucalyptus tereticornis</i>. e) Direct seeding, hiko or native tubestock planting completed (rates as specified in Table 3-6 of the Revegetation Plan version 2, dated 23/06/2021). f) Survivorship of hiko or native tubestock greater than or equal to 70%, 12 months after planting.	12 months

³ Any 'reference site' referred to within this schedule must meet the requirements of a 'stable condition' as defined under the *Environmental Protection Act 1994*, and must also be achieving a sustainable land use relevant to the criteria it is being applied against.

Table 14 (Continued)
Rehabilitation Milestones and Criteria for Rehabilitation Areas

Milestone Reference	Rehabilitation Milestone	Revegetation Scenario	Milestone Criteria	Approximate Timeframe
RM8	Surface Conditions	1, 2 & 3	a) No evidence of slumping and erosion maintenance requirements are comparable to designated vegetation reference sites. b) Salinity levels of less than 0.6 deci-siemens per metre (dS/m) in soil root zone or less than 110% of designated vegetation reference sites. c) Cation exchange capacity levels are greater than 8 to 10 in soil root zone or greater than 90% of designated vegetation reference sites. d) Hydraulic and geomorphic characteristics of Drainage Line 1 diversion reviewed and confirmed that it is trending towards the hydraulic and geomorphic characteristics of the existing Drainage Line 1 channel.	5 years
RM9	Achievement of PMLU to Stable Condition (grazing)	1	Safe: a) Certification that slopes are safe, and predicted to remain safe. b) Certification that the relevant cover thickness has been obtained. c) A Bushfire Management Plan developed in accordance with relevant Queensland Fire and Emergency Services is in place. Stable: d) Active erosion (t/ha/year), is less than 110% of the levels present in designated vegetation reference sites. e) No evidence of severe⁴ erosion. f) Erosion maintenance requirements are comparable to designated vegetation reference sites. g) Pest species abundance comparable to designated vegetation reference sites.	5 years

⁴ Severe erosion has any of the following characteristics: Loss of surface horizons, root exposure, etc. (sheet erosion); >30 rills/100m² and/or any >0.3m deep (rill / gully erosion); presence of tunnel erosion; or evidence of mass soil movement.

Table 14 (Continued)
Rehabilitation Milestones and Criteria for Rehabilitation Areas

Milestone Reference	Rehabilitation Milestone	Revegetation Scenario	Milestone Criteria	Approximate Timeframe
RM9 (continued)	Achievement of PMLU to Stable Condition (grazing)	1	h) Weed diversity and density less than 110% of baseline survey results and abundance comparable to designated vegetation reference sites. i) Persistent groundcover greater than or equal to 70%. Self-sustaining land use: j) Meets land suitability class 4⁵ (for beef cattle grazing) with less than 5% being of land suitability class 5. k) Stocking rates in rehabilitated pasture areas are comparable to designated vegetation reference sites. l) Pasture grass species are comparable in cover and composition to designated vegetation reference sites, with a species mix including pasture species detailed in 'Table 20 Revegetation Species' in the PRC Planning Part, version 4 (April 2022). m) Pasture grass species show evidence of seed set, germination and emergence. Non-polluting: n) Receiving water quality monitoring results are comparable with upstream values. o) Groundwater quality monitoring results comply with Table E10: Groundwater Reference Bore Contaminant Triggers in EA EPML00900113.	5 years

⁵ Land suitability class should be measured at a landscape / paddock scale. It's recognised that the wider rehabilitated landform may contain small areas that are class 5.

Table 14 (Continued)
Rehabilitation Milestones and Criteria for Rehabilitation Areas

Milestone Reference	Rehabilitation Milestone	Revegetation Scenario	Milestone Criteria	Approximate Timeframe
RM10	Achievement of PMLU to Stable Condition (grazing with native vegetation)	2 & 3	Safe: a) Certification that slopes are safe, and predicted to remain safe. b) Certification that the relevant specified cover thickness has been obtained. c) A Bushfire Management Plan developed in accordance with relevant Queensland Fire and Emergency Services is in place. Stable: d) Active erosion (t/ha/year), is less than 110% of the levels present in designated vegetation reference sites. e) Erosion maintenance requirements are comparable to designated vegetation reference sites. f) Pest species abundance comparable to designated vegetation reference sites. g) Weed diversity and density less than 110% of baseline survey results and abundance comparable to designated vegetation reference sites. h) Persistent groundcover greater than or equal to 70% i) Hydraulic and geomorphic characteristics of Drainage Line 1 diversion reviewed and confirmed similar to the hydraulic and geomorphic characteristics of the existing Drainage Line 1 channel. Self-sustaining land use: j) Meets land suitability class 4⁶ (for beef cattle grazing) with less than 10% being of land suitability class 5. k) Stocking rates in rehabilitated pasture areas are comparable to designated vegetation reference sites.	Up to 20 years

⁶ Land suitability class should be measured at a landscape / paddock scale. It's recognised that the wider rehabilitated landform may contain small areas that are class 5.

Table 14 (Continued)
Rehabilitation Milestones and Criteria for Rehabilitation Areas

Milestone Reference	Rehabilitation Milestone	Revegetation Scenario	Milestone Criteria	Approximate Timeframe
RM10 (continued)	Achievement of PMLU to Stable Condition (grazing with native vegetation)	2 & 3	l) Pasture grass species are comparable in cover and composition to designated vegetation reference sites, with a species mix including pasture species detailed in 'Table 20 Revegetation Species' in the PRC Planning Part, version 4 (April 2022). m) Pasture grass species show evidence of seed set, germination and emergence. n) Litter density comparable to vegetation designated vegetation reference sites. o) Tree and shrub species are comparable in composition to designated vegetation reference sites, and include a combination of tree species from the following: <i>Acacia shirleyi</i>, <i>Acacia leiocalyx</i>, <i>Allocasuarina luehmannii</i>, <i>Casuarina cunninghamiana</i>, <i>Callitris glaucophylla</i>, <i>Eucalyptus crebra</i>, <i>Eucalyptus populnea</i>, <i>Eucalyptus fibrosa subsp. nubila</i>, and <i>Eucalyptus tereticornis</i>. p) Tree and shrub species show evidence of flowering, viable seed setting, germination and emergence. Non-polluting: q) Receiving water quality monitoring results are comparable with upstream values. r) Groundwater quality monitoring results comply with Table E10: Groundwater Reference Bore Contaminant Triggers in EA EPML00900113.	Up to 20 years
RM11	Retained Water Structures	1, 2 & 3	a) Water quality within the retained water structures is comparable with upstream values. b) Certification of structural integrity.	2 years

Table 15
Management Milestones and Criteria for Improvement Areas

Milestone Reference	Management Milestone	Milestone Criteria	Approximate Timeframe
MM1	High- and Low Wall Treatment	a) Highwall slope is no greater than 45 degrees (°) (100%). b) Low wall slope is no greater than 37° (75.4%). c) Highwalls certified as geotechnically stable. d) Certification that the final void is safe. e) Waste rock emplacements provide flood immunity for the final voids, up to the PMF. f) Central Final Void (Pit 1) has: i. maximum depth of 70 m; ii. maximum length of 1,460 m; iii. maximum area of 75 ha; and iv. maximum volume of 28 Mm³ g) Western Final Void (Pit 3) has: i. maximum depth of 87 m; ii. maximum length of 3,770 m; iii. maximum area of 165 ha; and iv. maximum volume of 86 Mm³.	2 years
MM2	Surface Conditions	a) Bund wall installed with a minimum height of 2 m, with a minimum base of 4 m, and located at least 10 m beyond area potentially affected by instability of the pit edge. b) Appropriate signage placed to clearly identify and convey the purpose (e.g. EP Act 1994 Non-Use Management Area No Entry).	12 months

Table 15 (Continued)
Management Milestones and Criteria for Improvement Areas

Milestone Reference	Management Milestone	Milestone Criteria	Approximate Timeframe
MM3	Achievement of Sufficient Improvement	Safe: a) Bund wall present. b) Appropriate signage in place. Stable: c) Highwalls certified as geotechnically stable. Non-polluting: d) Groundwater quality monitoring results comply with Table E10: Groundwater Reference Bore Contaminant Triggers in EA EPML00900113. e) Final void acts as a long-term groundwater sink.	2 years

Table 16
Transitioning of Completion Criteria

Completion Criteria from EA EPML00900113 Attachment 6	Relevant/Equivalent Transitioned Rehabilitation/Management Milestones
Safety assessment conducted with 0 (zero) significant difference as defined in AS/NZS ISO 13000 Risk Management.	• RM9/10: Certification that slopes are safe, and predicted to remain safe. • MM1: Certification that the final void is safe.
Geotechnical investigations demonstrating that the final void walls are stable.	• RM4: Final voids certified as geotechnically stable with a factor of safety of at least 1.2. h) MM1/3: Highwalls certified as geotechnically stable. i) MM1: Certification that the final void is safe.
Hydrocarbon, heavy metal or other contamination levels are acceptable to the administering authority.	• RM1: Contaminated water (e.g. affected by hydrocarbons, brine, metals, etc.) is treated to ensure consistency with upstream water quality characteristics, or removed off site. • RM2: Contaminated materials (PCBs, Dioxins, Mercury, hydrocarbon contaminated soils) removed and appropriately disposed or remediated. • RM2: Validation testing confirms that contaminated soils have been removed/remediated. • RM2: A site suitability statement confirms the uses or activities for which the land is suitable, align to the approved PMLUs for the site.
Receiving water and water bodies water quality compliant with EA EPML00900113.	• RM9/10: Receiving water quality monitoring results are comparable with upstream values.
Groundwater quality compliant with EA EPML00900113.	• RM9/10, MM3: Groundwater quality monitoring results comply with Table E10: Groundwater Reference Bore Contaminant Triggers in EA EPML00900113.
Limited active erosion, similar to the levels present in reference sites. No maintenance required to cease active erosion.	• RM8: No evidence of slumping and erosion maintenance requirements are comparable to designated vegetation reference sites. • RM9/10: Active erosion (t/ha/year) is less than 110% of the levels present in designated vegetation reference sites. • RM9: No evidence of severe erosion. • RM9/10: Erosion maintenance requirements are comparable to designated vegetation reference sites.
≥70% established and persistent groundcover at land suitably classes 3 to 4, and at least 50% at land suitably class 5.	• RM9/10: Persistent groundcover greater than or equal to 70%. • RM9: Meets land suitability class 4⁷ (for beef cattle grazing) with less than 5% being of land suitability class 5. l) RM10: Meets land suitability class 4⁸ (for beef cattle grazing) with less than 10% being of land suitability class 5.
Evidence of generational succession of trees and shrubs is apparent in rehabilitation areas.	m) RM10: Tree and shrub species are comparable in composition to designated vegetation reference sites, and include a combination of tree species from the following: <i>Acacia shirleyi</i>, <i>Acacia leiocalyx</i>, <i>Allocasuarina luehmannii</i>, <i>Casuarina cunninghamiana</i>, <i>Callitris glaucophylla</i>, <i>Eucalyptus crebra</i>, <i>Eucalyptus populnea</i>, <i>Eucalyptus fibrosa subsp. nubila</i>, and <i>Eucalyptus tereticornis</i>.

⁷ Land suitability class should be measured at a landscape / paddock scale. It's recognised that the wider rehabilitated landform may contain small areas that are class 5.

⁸ Land suitability class should be measured at a landscape / paddock scale. It's recognised that the wider rehabilitated landform may contain small areas that are class 5.

Table 16 (Continued)
Transitioning of Completion Criteria

Completion Criteria from EA EPML00900113 Attachment 6	Relevant/Equivalent Transitioned Rehabilitation/Management Milestones
Species in rehabilitated areas show evidence of flowering, viable seed setting, germination and emergence.	• RM9/10: Pasture grass species show evidence of seed set, germination and emergence. • RM10: Tree and shrub species show evidence of flowering, viable seed setting, germination and emergence.
Evidence of weed management being successful by weed diversity and density being less than 110% baseline survey results and abundance being comparable to vegetation reference sites.	• RM9/10: Weed diversity and density less than 110% of baseline survey results and abundance comparable to designated vegetation reference sites.
Pest species do not occur in substantial numbers or visibly affect the development of native plant species.	• RM9/10: Pest species abundance comparable to designated vegetation reference sites.
Stocking rates in rehabilitated pasture areas are comparable to designated reference sites.	• RM9/10: Stocking rates in rehabilitated pasture areas are comparable to designated vegetation reference sites.
Vegetation consistent with pasture grass species suitable for grazing and native vegetation comparable to designated reference sites.	• RM6: Selection of pasture grass species are consistent with designated vegetation reference sites⁹ and include a combination of pasture species detailed in 'Table 20 Revegetation Species' in the PRC Planning Part, version 4 (April 2022). • RM9/10: Pasture grass species are comparable in cover and composition to designated vegetation reference sites, with a species mix including pasture species detailed in 'Table 20 Revegetation Species' in the PRC Planning Part, version 4 (April 2022).
Litter density comparable to vegetation sites.	• RM10: Litter density comparable to designated vegetation reference sites.
Salinity levels of less than 0.6 dS/m in soil root zone or less than 110% of comparable natural reference sites.	• RM8: Salinity levels of less than 0.6 dS/m in soil root zone or less than 110% of designated vegetation reference sites.
Cation exchange capacity levels are greater than 8 to 10 in soil root zone or less than 110% of comparable natural reference sites.	• RM8: Cation exchange capacity levels are greater than 8 to 10 in soil root zone or greater than 90% of designated vegetation reference sites.
Access is prohibited to final voids by bund wall with a minimum height of 2 m, a minimum base width of 4 m and be located at least 10 m beyond the area potentially affected by any instability of the pit edge or a fence.	• MM2: Bund wall installed with minimum height of 2 m, with a minimise base of 4 m, and located at least 10 m beyond area of potentially affected by instability of the pit edge.
Final void walls drain internally to the final void.	• MM3: Final void acts as a long-term groundwater sink.

⁹ Any 'reference site' referred to within this schedule must meet the requirements of a 'stable condition' as defined under the *Environmental Protection Act 1994*, and must also be achieving a sustainable land use relevant to the criteria it is being applied against.

Table 16 (Continued)
Transitioning of Completion Criteria

Completion Criteria from EA EPML00900113 Attachment 6	Relevant/Equivalent Transitioned Rehabilitation/Management Milestones
Landform recontoured to be sympathetic to the adjacent landforms.	• RM4: Landform recontoured to be sympathetic to the adjacent landforms.
Out-of-pit waste rock emplacements – approximately 1V:10H or up to 1V:3.5H where rock mulch or other stabilisation controls are used.	• RM4: Stable landform and angle achieved (up to 10%, or up to 33% where rock mulch or other stabilisation controls are used).
Other slopes – less than 1V:10H.	• RM4: Out-of-pit coal rejects emplacement slopes no greater than 10%, or up to 33% where rock mulch or other stabilisation controls are used. • RM4: Dirty water dams slopes no greater than 10%.
Site added to the Environmental Management Register if required.	• RM2: A site suitability statement confirms the uses or activities for which the land is suitable, align to the approved PMLUs for the site.
Limited erosion (presence of sheets, rills and gullies) similar to vegetation reference sites, for a period of five years post-mining.	• RM9/10: Active erosion (t/ha/year), is less than 110% of the levels present in designated vegetation reference sites.
Erosion maintenance requirements are comparable to designated reference sites, for a period of at least five years post-mining.	• RM8: No evidence of slumping and erosion maintenance requirements are comparable to designated vegetation reference sites. • RM9/10: Erosion maintenance requirements are comparable to designated vegetation reference sites.

3.5.2 Rehabilitation Area Commencement Dates

Syntech is committed to commencing rehabilitation in each of the Rehabilitation Areas progressively, as land becomes available. An overview of the anticipated commencement dates, and justification of these dates, is provided in Table 17. Rehabilitation areas are shown on Figure 22.

3.5.3 General Rehabilitation Practices

The following sub-sections outline the information that is necessary to underpin the development of the rehabilitation and management methodologies for the existing CDM.

3.5.3.1 Hydrogeology

Groundwater Occurrence

As described in Section 3.1.2.3, the stratigraphic units occurring within the CDM area and immediate surrounds, from youngest to oldest, including corresponding hydrogeological systems, are (Figure 3):

- Quaternary / Tertiary (unconsolidated alluvial sediments) – ephemeral groundwater where present.
- Late Jurassic (Springbok Sandstone [i.e. lowermost unit of the Kumbarilla Beds]) – unsaturated in the CDM area.
- Middle Jurassic (Walloon Coal Measures) – confined aquifer associated with coal seams between overburden/interburden aquitards.
- Early/Middle Jurassic (Hutton Sandstone and Precipice Sandstone) – confined aquifers at depth.

The main productive aquifers present include the Precipice Sandstone, Hutton Sandstone, and Springbok Sandstone. Regionally, these aquifers are used extensively for stock and domestic and stock intensive water supply due to being laterally continuous, permeable, and containing significant storage (OGIA, 2016). However, in some areas, their hydraulic properties may be closer to the character of aquitards than aquifers (OGIA, 2016). The permeable units are separated by thick sequences of low permeability aquitards, confining the aquifers. Within the Project area, the main aquitards are the Evergreen Formation, the lower sequence of the Walloon Coal Measures, and the overburden separating the Springbok Sandstone and the coal seams of the Walloon Coal Measures.

Groundwater Recharge and Discharge Locations

Groundwater recharge to the Walloon Coal Measures is very low due to the relatively low annual rainfall and high evaporation rates, and the low permeability of overlying strata (Appendix C). Recharge occurs via direct rainfall where the unit outcrops and via seepage from overlying strata, and is assessed to be low (0.0 mm/year to 0.2 mm/year) as reported in the OGIA 2012 UWIR report (GHD, 2012). Plate 2 displays the conceptual groundwater model schematic for the CDM.

Airlift data from drilling in the area indicates the groundwater yields are between 0.6 litres per second (L/s) and 2.4 L/s, with a median yield of 1.2 L/s.

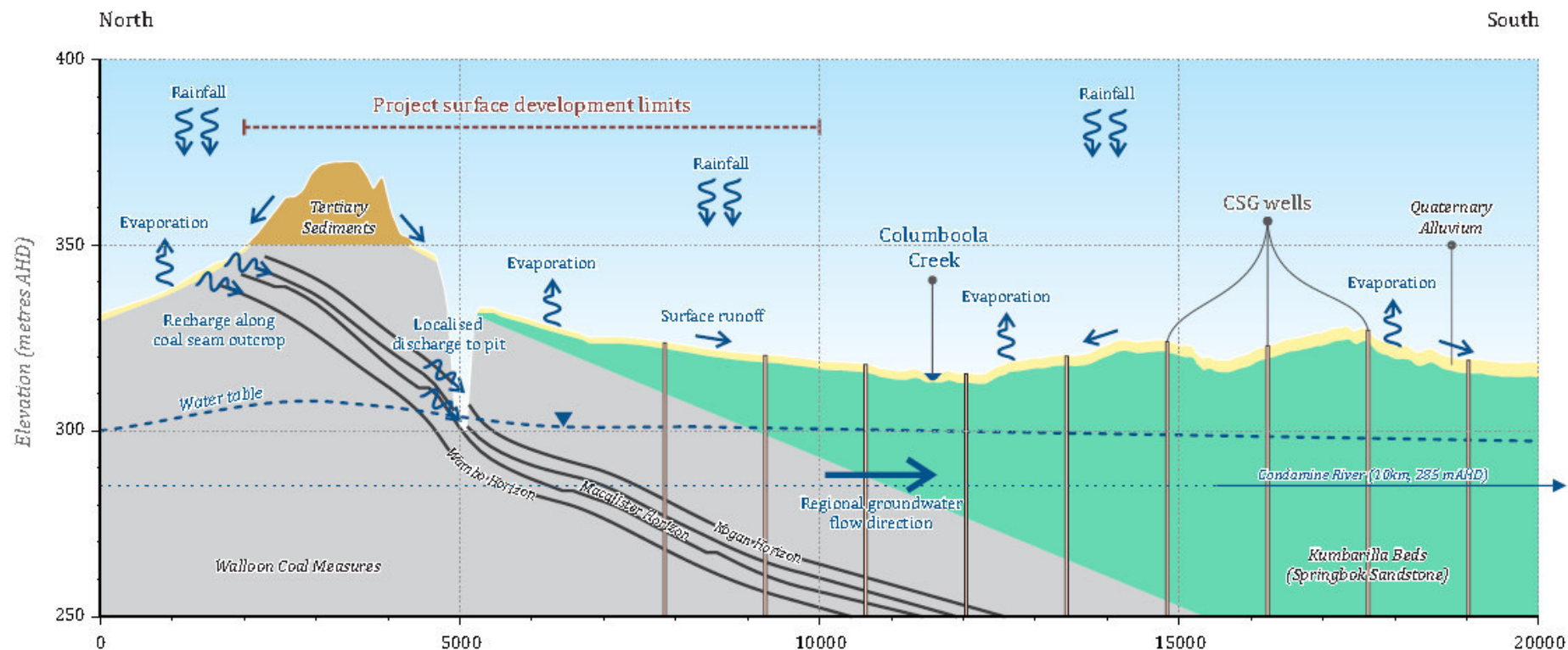
Recharge to the Great Artesian Basin (GAB) occurs via direct infiltration from rainfall along the outcrops and via seepage from streams or overlying strata. Groundwater in the GAB generally flows towards the south, southwest, and west at velocities of one to five millimetres per year (OGIA, 2016). Discharge occurs via springs, rivers, vertical leakage, subsurface flow into adjoining areas, and groundwater extraction across the basin.

Table 17
Rehabilitation Area Commencement Dates and Justification

Rehabilitation Area	Relevant Activities	PMLU	Rehabilitation Commencement Date	Estimated Completion Date	Justification of Commencement Date
RA1	Pit 1, In-pit emplacement area	Grazing	Already commenced	2108	Initial rehabilitation activities have already commenced in Pit 1. As development of Pit 1 progresses, additional areas (including RA2) will become available for rehabilitation.
RA2		Grazing with Native Vegetation	Already commenced	2123	
RA3	Pit 2, In-pit emplacement area	Grazing	2048	2113	Disturbance in Pit 2 is anticipated to commence in approximately 2046, with development of the secondary boxcut. Once the boxcut is completed, rehabilitation can be progressed.
RA4		Grazing with Native Vegetation	2054	2123	This rehabilitation area will become available as the active mining face progresses through Pit 2.
RA5	Pit 3, In-pit emplacement area	Grazing	2066	2118	Disturbance in Pit 3 is anticipated to commence in approximately 2066, with development of the secondary boxcut. Once the boxcut is completed, rehabilitation can be progressed.
RA6		Grazing with Native Vegetation	2066	2128	
RA7	Out-of-pit waste rock emplacement areas	Grazing	2022	2086	Out-of-pit waste rock emplacement areas will become available progressively over the life of the mine. The out-of-pit waste rock emplacement areas will be active during the excavation of the boxcut for each pit and two additional out-of-pit emplacement areas will be utilised at the end of mining.
RA8		Grazing with Native Vegetation	2022	2128	
RA9	Pit 1, In-pit rejects emplacement areas	Grazing	2039	2118	In-pit rejects emplacement areas will be constructed and operated throughout the life of the mine. Rehabilitation activities will be undertaken progressively as operations in these areas are completed.
RA10	Out-of-pit rejects emplacement areas	Grazing	2032	2066	The out-of-pit rejects emplacement areas are intended to be used while the in-pit rejects emplacement areas are developed. Once the in-pit rejects emplacement areas have been developed, rehabilitation of the out-of-pit rejects emplacement areas can be progressed.

Table 17 (Continued)
Rehabilitation Area Commencement Dates and Justification

Rehabilitation Area	Relevant Activities	PMLU	Rehabilitation Commencement Date	Estimated Completion Date	Justification of Commencement Date
RA11	Infrastructure areas	Grazing	Already commenced	2128	Infrastructure areas are typically anticipated to be required for the life of the mine. Some small areas of infrastructure adjacent to Pit 1 have already had rehabilitation commenced.
RA12		Grazing with Native Vegetation	2093	2128	
RA13	Water management infrastructure	Grazing (Retained Water Management Infrastructure)	2093	2103	Water management infrastructure will be required for the life of mining. As mining nears completion, Syntech will engage in further consultation with relevant stakeholders (e.g. landholders and DES) to confirm whether water management infrastructure is to be retained or should be rehabilitated. Due to the size of the large water management dams located to the south of Pit 3, these dams are unlikely to be necessary to support the overall grazing PMLU and are therefore proposed to be rehabilitated to grazing pasture.
RA14		Grazing	2093	2123	
RA15	Water diversions	Grazing with Riparian Suited Native Vegetation	Already commenced	2053	A small diversion around the rail loop has already been constructed and rehabilitation commenced. Construction of the diversion for Drainage Line 1 is scheduled to commence in 2022, with completion scheduled for 2023. Rehabilitation will be progressed subsequently.



Source: Figure 7.1 of AGE (2018).

Plate 2 – Conceptual Groundwater Model Schematic

The CDM is partially located in the mapped extent of the GAB groundwater recharge area of the Kumbarilla Beds. This unit outcrops in the north-western part of the CDM and subcrops below the Quaternary sediments. The Springbok Sandstone is generally unsaturated and does not form a significant aquifer in the vicinity of the CDM. The Hutton Sandstone is more than 500 mbGL in the vicinity of the CDM and is separated from the target coal seams by a thick sequence of sandstone, siltstone, mudstone, and coal.

Groundwater Quality

Groundwater quality is described in Section 3.1.2.5.

Current and Potential Future Groundwater Uses

The bore census conducted in 2017 (refer Section 3.1.2.5) identified there is no significant use of groundwater by landholders surrounding the CDM with the nearest water supply bore located approximately 6.5 km south of the ML boundary.

Other users in the area surrounding the CDM include CSG operations and other mining operations.

Given the availability and quality of groundwater in the area, it is expected that future groundwater uses would remain the same.

Groundwater Flow Direction and Potentiometric Profile

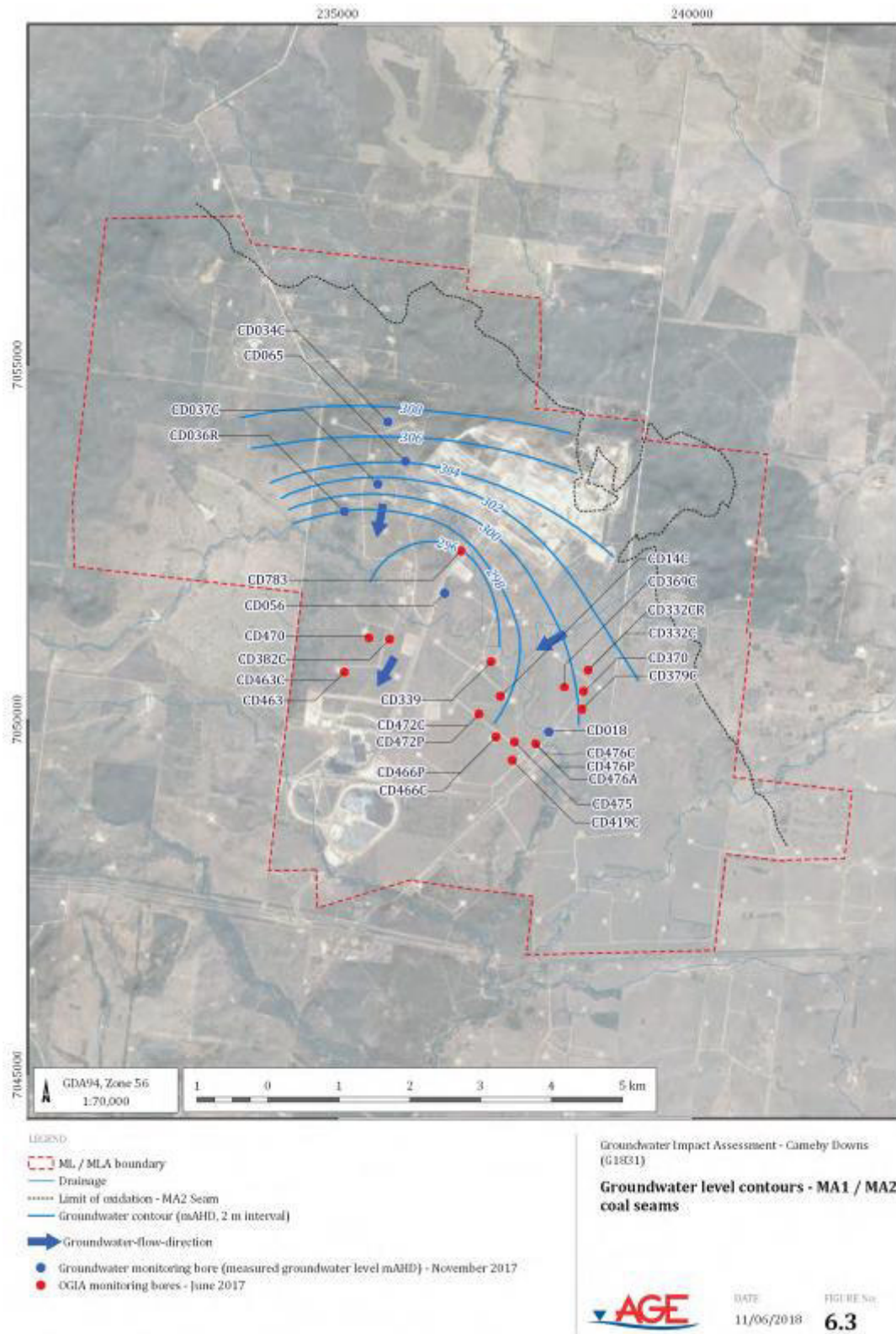
Plate 3 presents the potentiometric surface for the MA1 / MA2 coal seams. The regional groundwater flow direction in the coal seams is from north to south-southwest. The removal of associated water during CSG extraction is expected to have impacted the groundwater level and flow direction in the Walloon Coal Measures.

Groundwater flow in the vicinity of the CDM is towards the southwest, which is down dip within the Walloon Coal Measures and most likely a function of CSG extraction.

The main water bearing units of the Walloon Coal Measures are the coal seams which comprise approximately 10% of the total thickness of the unit (OGIA, 2016). Hydraulic conductivity within the Walloon Coal Measures is generally associated with secondary porosity through fractures, and cleats within the coal seams.

AGE (2006) completed in-situ permeability tests on six monitoring bores at the CDM. The median hydraulic conductivity for the MA1 / MA2 coal seams is 0.16 m/day which is representative of shallow coal seams in the region. The coal seams will have a higher hydraulic conductivity compared to the interburden due to flow via fracturing and cleats within the coal. The hydraulic conductivity data observed at the CDM is comparable to that published by OGIA (2016).

Hydraulic testing at other mines in the area indicate the hydraulic conductivity of the interburden is approximately 0.009 m/day, several orders of magnitude lower compared to the coal seams (AGE, 2013).



Source: Figure 6.3 of AGE (2018).

Plate 3 – Groundwater Level Contours

Groundwater Modelling

As described in Section 3.1.2, a comprehensive Groundwater Assessment (Appendix C) was completed for the Continued Operations Project EVA (Syntech, 2018). As part of this Groundwater Assessment, a 3D numerical groundwater flow model was developed for the Project based on historic models developed for the approved operations at the Cameby Downs Mine. The peer review of the Groundwater Assessment (Dundon Consulting Pty Limited, 2018) concluded the model had an appropriate level of complexity, was generally in accordance with the Australian Groundwater Modelling Guidelines (Barnett et al., 2012) and the groundwater impact assessment was 'fit-for-purpose'.

It is noted that there have been no significant changes to the approved operation since the Groundwater Assessment (Appendix C) was prepared for the Continued Operations Project.

In relation to contaminant transport and potential changes to groundwater levels from dewatering or waste storage, the key conclusions from the Groundwater Assessment (Appendix C), were:

- The depressurised zone in the Walloon Coal Measures is predicted to extend up to approximately 5 km towards the south-west of the CDM.
- Cumulative impacts in the region extend across much of the model domain, and are solely due to impacts from CSG development, which partially overlaps with the CDM. Logically, the drawdown that is attributable to the CDM is adjacent to the open cut pits, with the influence reducing with distance. As such, the groundwater modelling indicates the CDM will only add a small to moderate 'water take' that is predicted to be comparatively low compared to the already approved impacts from CSG operations.
- The groundwater modelling predicts the final pit voids would act as long-term groundwater sinks post-mining, with pit void water levels expected to recover to a quasi-equilibrium level that is between approximately 20 m to 25 m below the pre-mining groundwater levels.
- Evaporation from the void lake surfaces will maintain a water level below the surrounding aquifer water levels, forming a groundwater sink in the local environment. Evaporation from the lake surfaces will also slowly concentrate salts in the pit lake over time. The increasing salinity will not pose a risk to other aquifers and surface water features as the final void will remain a permanent sink.
- Although the majority of overburden would be non-acid forming material, some carbonaceous units in the overburden may have a capacity to generate acid. Overburden will continue to be placed within the open cut pits and progressively rehabilitated during mining. Groundwater will be drawn in from the surrounding geological units (and backfilled mine areas) towards the voids.
- Coal rejects will be managed to control formation and release of acid drainage. Additionally, it is anticipated that placement of coarse reject and tailings materials hydraulically up-gradient of the final void will result in any seepage from the emplaced rejects reporting to the final voids. As the final voids are predicted to become sinks, any resultant seepage from the emplaced rejects will be captured and contained within the final voids.
- The tailings within the Central Pit (Pit 1) void will reach a RL of approximately 301 m. The void will then be infilled and rehabilitated to a final surface level of approximately 330 mAHD. As the tailings level of 301 mAHD is less than the pre-mining groundwater level of 305 mAHD, any infiltration of water that comes into contact with the buried rejects is expected to remain within the void and is not expected to impact on the groundwater quality of the regional groundwater system.
- There is limited potential for groundwater contamination to occur as a result of hydrocarbon and chemical contamination.

Based on the above, contaminant transport modelling is not considered necessary as the potential for significant groundwater contamination is low.

3.5.3.2 Flooding

WRM (Appendix B) completed hydrologic and hydraulic modelling of local catchments to:

- assess the existing and proposed flood behaviour at the Cameby Downs Mine and surrounds at the completion of the Project;
- assist in the development of conceptual designs for clean water drains and drainage features diversions; and
- assess the conceptual design of flood protection measures for the open cut pits and mine infrastructure, including final landforms.

The XP-RAFTS runoff-routing model was used to estimate design flood discharges for the drainage features across the CDM and surrounds. A two-dimensional hydraulic model (TUFLOW) was also used to investigate the flood behaviour for the mine stages as follows:

- Existing Conditions (Stage 0);
- Year 29 (Stage 1);
- Year 48 (Stage 2);
- Year 75 (Stage 3); and
- End of Mine.

A range of average recurrence interval (ARI) flood events were modelled including:

- 2-year ARI – to assess the behaviour of the proposed diversion of Drainage Line 1;
- 50-year ARI – to assess the behaviour of the proposed diversion of Drainage Line 1;
- 100-year ARI – to assess the mine infrastructure flood immunity and potential flood impacts of the Project; and
- 1,000-year ARI – to assess the open cut pit flood immunity.

A PMF event was also modelled to assess the final void flood immunity at the end of mine.

The flood modelling results indicate that with the proposed flood management measures (i.e. operational flood levees and drainage line diversion), the open cut pits, and the mine infrastructure area would be protected and would not be inundated for all mine stages for the 100-year ARI and 1,000-year ARI flood events, respectively.

Other key conclusions made from the results of the flood modelling on nearby infrastructure (i.e. Warrego Highway and Western Railway) are as follows:

- comparisons with the existing condition modelling show there would be no impact to the flood immunity at the drainage features crossings of the Warrego Highway and Western Railway;
- the Western Railway will continue to have a 100-year ARI flood immunity at both Drainage Line 1 and Drainage Line 3 crossings;
- flood velocities for the 100-year ARI event along the Western Railway embankment are generally less than 1 m/s outside of drainage feature crossings (i.e. no impact); and
- the peak 100-year ARI flood velocities are generally similar along Drainage Line 1 and Drainage Line 3 (i.e. negligible change).

Based on the final landform designs, with the operational flood levees removed, the flood modelling demonstrates that the two final voids are beyond the predicted 1,000-year ARI flood and PMF event extents for the local drainages (Appendix B).

For comparison purposes, the remaining two final voids are also located beyond the Queensland Floodplain Assessment Overlay extents (Appendix B).

The toe of the out-of-pit waste rock emplacements adjacent Drainage Line 1 would be treated with an erosion resistant material to maintain its stability in the event of 1,000-year ARI and PMF floodwater interaction.

Based on the above, the final landform design has a low flood risk profile.

3.5.3.3 Soil and Capping Material Assessment

Quantity of Available Resources

LRS Environmental (Appendix G) has completed a preliminary material inventory to determine the quantity of topsoil available for rehabilitation at the CDM. The results of these calculations are summarised in Table 18 and indicate that there would be sufficient topsoil available on-site to meet the requirements of the rehabilitation concepts.

Table 18
Estimated Soil Resources Available and Required

Soil Type	Stripping Depth (mm)	Volume Available (m ³)	Volume Required (m ³)
Soil Stockpiled as at May 2018	-	549,500	-
Binkey and Braemar Soil Units	200	8,713,820	8,500,000
Tara Soil Unit	400	2,015,280	1,800,000

Source: Appendix G.

Other materials required for rehabilitation (e.g. competent rock) are also available on-site.

Ameliorants and Fertilisers

Prior to commencement of topsoiling works, adequate sampling is to be undertaken to ensure the soil pH is within the specified range. Dependent upon soil results, additional nutrients may need to be added to the fertilising process.

Existing data indicates that available topsoil materials are suitable for use in rehabilitation, but are deficient in key plant nutrients. If nutrient deficiencies are not corrected, the rehabilitation would – over the long term – be constrained to a very low level of plant growth and productivity, and to greatly increased erosion risk.

For rehabilitation works to achieve a high level of surface cover, and for that cover to be sustainable, the topsoil needs to be amended to:

- alleviate sodicity;
- increase total nutrient contents;
- establish an organic pool of nutrients; and
- improve soil structure.

In terms of nutrient shortfalls in the topsoil, target levels (concentrations) for the topsoil for N and P (the elements of greatest concern and likely cost) are:

- Total N: 1,500 mg/kg.
- Total P: 200 mg/kg.

Based on average Total N and Total P in the topsoils of 913 mg/kg and 71 mg/kg respectively, increases of 600 mg/kg in Total N and 130 mg/kg in Total P in the 0-100 mm layer would be required to bring soil levels to the boundary between "low" and "medium" as specified in Bruce and Rayment (1982). It is not possible to achieve these increases using a single application of soluble fertilisers without significant impacts on plant growth. Therefore, nitrogen and phosphorus additions will be achieved through a staged fertiliser application program and/or with a combination of soluble fertilisers and manure applications (e.g. piggery or feedlot compost).

There are a range of other advantages from the compost addition, including addition of trace elements, increased soil organic carbon, improved soil structure, and more sustainable soil fertility.

Surface Preparation Process

Rehabilitation will be undertaken progressively as the CDM expands. The sequence of works is generally:

1. Rip waste rock material to a minimum of 300 mm using grader tyres or equivalent.
2. Spread topsoil to a minimum depth of 100 mm (based on topsoil availability).
3. Spread gypsum, chemical fertiliser, and compost (as required).
4. Use a two-way disc plough, or similar, to till to 100 mm depth to mix and incorporate soil ameliorants (but not deep enough to bring waste rock material to the surface).
5. Apply seed and till on the contour with a tyned implement with tyne spacing no greater than 0.5 m.

Prior to commencement of topsoiling works, adequate sampling will be undertaken to check the soil pH is within the specified range. Dependent upon soil results, additional nutrients (e.g. chemical fertiliser or compost) may need to be added to the fertilising process.

Topsoiling shall occur immediately after re-contouring to enable sufficient bonding between the topsoil and waste rock emplacements and no more than three months prior to ripping/seeding. This optimises plant growth before organic matter and nutrients in the topsoil begins to decay. The topsoil will be re-spread to a minimum thickness of 100 mm (based on topsoil availability), with emplacement area top and batters to be contour ripped to approximately 0.5 m spacing.

General Soil Management Measures

Specific measures that would be implemented to manage soil resources include:

- Areas of disturbance would be stripped progressively, as required, to reduce potential erosion and sediment generation, and to minimise the extent of topsoil stockpiles and the period of soil storage.
- Areas of disturbance to be stripped would be clearly defined so the dozer operator clearly understands the boundaries of the area to be stripped.
- During the topsoil stripping:
 - visual inspections would be conducted to confirm that appropriate soil stripping depth is being recovered; and
 - small areas (e.g. 1 m by 1 m) would be left unstripped at approximate 100 m intervals to allow to confirm stripping depth, record soil profile observations and collect soil sample for analysis.
- Topsoil would be placed directly on completed sections of the final landform or placed in topsoil stockpiles.
- The perimeter of topsoil stockpiles would be marked and appropriately signed.
- The topsoil stockpile locations and volume would be surveyed for inclusion in the topsoil inventory.

Any long-term soil stockpiles would be managed to maintain long-term soil viability through the implementation of the following management practices as listed below:

- Topsoil stockpiles would be retained at a maximum height of 3 m and would not be double stacked to avoid compaction and damage to the topsoil.
- Topsoil stockpiles would be constructed to minimise erosion (e.g. roughened surface maintained), encourage drainage, and promote revegetation.
- Wherever practicable, soil stockpiles would not be trafficked, deep ripped or removed in wet conditions to avoid breakdown in soil structure.
- All topsoil stockpiles would be protected with a non-persistent cover crop to reduce erosion potential as soon as practicable after completion of stockpiling.
- Soil stockpiles would be located in positions to avoid surface water flows. Silt stop fencing would be placed immediately down-slope of stockpiles until stable vegetation cover is established.
- An inventory of soil resources (available and stripped) would be maintained and regularly reconciled with rehabilitation requirements.

3.5.3.4 Waste Characterisation

Detailed geochemical investigations (including static and kinetic net acid generation [NAG] testing) have been undertaken on drill-hole interval samples representing the different material types and lithologies present at the CDM in 2007, 2010 and 2012. Additional to these investigations, a number of deposited and discharge tailings samples, collected from 2019 and 2020, have been assessed for their geochemical characteristics (including static and kinetic NAG testing). These assessments have been undertaken to determine the salinity, sodicity, acid forming characteristics, and metal enrichment and solubility risks associated with the different mining waste materials, including the overburden and interburden waste rock, coarse rejects and tailings at the CDM.

These are summarised below and further detail on the waste characterisation undertaken to date for the CDM is provided in Appendix J.

Syntech will continue to test and characterise waste samples from the CDM.

Overburden and Interburden Characterisation

The geochemical characteristics of the overburden and interburden waste rock have been assessed according to the following lithological groupings (GEM, 2021):

- general sedimentary rocks (including the sandstone, siltstone, and claystone);
- carbonaceous material and mudstone; and
- alluvials and soils (including clays, sands, laterites and soils).

These test results indicate that (GEM, 2021):

- The overburden and interburden are typically expected to have low salinity and sodicity, although some of these materials are expected to have moderate to high salinity and/or moderate to high sodicity.
- The general sedimentary rocks, including the sandstone, siltstone and claystone, and the alluvials and soils, including the clays, sands, laterites and soils, are typically expected to be non-acid forming (NAF) and the majority of these materials are expected to be relatively barren in terms of acid generation and neutralisation.
- A proportion of the carbonaceous materials and mudstone is expected to be potentially acid forming (PAF) due to an increase in the reactive sulfide content. However, any PAF materials are expected to have a low capacity to generate acid (PAF-LC) with an expected acid generation capacity of less than or equal to 5 kg H₂SO₄/t.
- The overburden and interburden is expected to be slightly enriched with arsenic and significantly enriched with selenium, and due to this, relatively high concentrations of dissolved selenium can be expected to flush from the waste rock when it is initially exposed to atmospheric weathering processes.

The overburden and interburden excavated as waste rock, is either dozer pushed into the in-pit waste rock emplacements or loaded into trucks for hauling to dedicated out-of-pit waste rock emplacements. The weathered material is typically removed without blasting, but the more competent material requires drilling and blasting (GEM, 2021).

GEM (Appendix J) provided the following recommendations for management of the overburden and interburden waste rock:

- The bulk of the overburden and interburden, comprising all of the materials apart from the carbonaceous materials and mudstone, does not require selective handling for placement within the in-pit waste rock emplacements. However, due to the risk of acid generation within the carbonaceous material and mudstone, this material will be treated as the coarse reject material and encapsulated within the waste rock emplacements in order to isolate it from atmospheric oxidation.
- It is expected that blending of any minor amount of PAF or PAF-LC material that may occur within the general sedimentary overburden and interburden (i.e. sandstone, siltstone, claystone) during active disposal will produce an overall NAF material and therefore the waste rock will not require any specific handling during excavation and disposal.
- Due to the risk that some of the waste rock may be saline or sodic, this material will be assessed for its salinity and sodicity prior to being used for any on-site earthworks or construction, or prior to undertaking rehabilitation to ensure appropriate ameliorants are applied.

Syntech will implement these recommended measures at the CDM.

Coarse Rejects Characterisation

Coarse reject materials are expected to be moderately saline and to contain PAF materials. Similar to the waste rock material, the coarse rejects are expected to contain enriched arsenic and selenium and of these, selenium is likely to be readily flushed from this material if it is left exposed to surface processes (GEM, 2021).

The coarse rejects were initially co-disposed with the tailings in the out-of-pit coal rejects emplacement known as Tailings Storage Facility 1 (TSF1) (Figure 2). However, this ceased early in 2017, when in-pit disposal of the coarse rejects commenced, encapsulating the dry rejects within the waste rock (GEM, 2021).

The disposal of the coarse rejects is conducted as outlined in the Rejects Management Concept Study (Engeny, 2018) (Appendix I). Progressive rehabilitation, surface drainage and mining methods are used to minimise exposure of the coarse rejects to atmospheric oxygen in order to reduce the risk of developing acid conditions. As the in-pit waste rock emplacement progresses, the benches are graded such that any surface water overflow is directed toward the pit until either rehabilitation has been progressed or the reject material has been over-dumped with waste rock (Appendix I).

GEM (Appendix J) provided the following additional recommendation for management of the coarse rejects:

- For optimum geochemical security the coarse rejects will be encapsulated within in-pit emplacement areas, as soon as practical, in order to reduce the exposure to atmospheric oxidation, with a minimum of 5 m of NAF waste rock. If an insufficient quantity of NAF capping material or space (height) is available for a minimum 5 m cap, compaction of the capping material may be required to ensure that oxygen diffusion is adequately reduced to minimise the risk of sulfide oxidation and acid generation.
- NAF waste rock or other identified capping materials (e.g. clay) will be compacted with suitable oxygen diffusion control properties in order to reduce the minimum encapsulation thickness required.

These recommendations will be implemented by Syntech for the CDM.

Tailings Characterisation

The tailings are likely to be moderately to highly saline and either NAF or PAF-LC. The PAF-LC tailings are expected to have a geochemical lag period exceeding six months of exposure prior to developing acid conditions. The tailings are also expected to be enriched with arsenic and selenium and the selenium is expected to be readily flushed from the deposited tailing under the quasi-neutral pH conditions. A number of environmentally significant metals are likely to become soluble if low or acidic pH values are allowed to develop in the deposited tailings (GEM, 2021).

As the tailings have been identified as having a risk of being PAF, they have been managed to minimise their exposure to atmospheric oxidation during active disposal and post-closure, as documented in the Rejects Management Concept Study (Engeny, 2018).

Tailings storage facility design and management are described further in Section 3.5.4.

3.5.3.5 Landform Design

As described in Section 3.1.3, the final landform at the CDM is already approved. Key features of the approved CDM final landform include:

- eight out-of-pit waste rock emplacements;
- in-pit waste rock emplacements (backfilled voids) including in-pit disposal of coal rejects;
- two out-of-pit coal rejects emplacement;
- two final voids; and
- rehabilitated infrastructure areas (including water management areas, unless retained).

The final landform (including surface elevation contours [i.e. three dimensional designs]) is presented on Figure 21.

Syntech engaged Landloch Pty Ltd (Landloch) to assess the designs for out-of-pit landforms at the CDM, including modelling of the landforms for runoff erosion stability.

In considering landform design, Landloch (2016; Appendix M) applied the following strategy:

- Use the Water Erosion Prediction Program (WEPP) (Flanagan and Livingston, 1995) model to consider runoff and erosion from a range of landform and rehabilitation options.
- Generate time series data from WEPP to then derive parameters for the SIBERIA landform evolution model.
- Run SIBERIA for 3-dimensional landforms to consider impacts of potential flow concentrations and of changes in landform profile through time.

A 100-year climate file for the Miles area was prepared, and WEPP was used to assess runoff and erosion from landform batter profiles with varying levels of surface vegetative cover.

Landloch (Appendix M) concluded that, based on the data obtained and the results of the erosion simulations, the current landforms can be expected to deliver suitable rehabilitation outcomes. The runoff/erosion simulations showed that establishment of a sufficient and sustainable vegetation cover is critical for landform stability.

Further detail on each of the key features of the approved CDM final landform is provided below.

Out-of-pit Waste Rock Emplacements

During the excavation of the boxcuts, waste rock is loaded into haul trucks for hauling to out-of-pit waste rock emplacements. Once sufficient space is available behind the active face, waste rock material is placed in-pit behind the active workings to minimise surface disturbance associated with the out-of-pit waste rock emplacements. When the out-of-pit waste rock emplacements are no longer required (i.e. once in-pit emplacement resumes), progressive rehabilitation will be commenced to minimise the amount of time there is active disturbance associated with the out-of-pit waste rock emplacements.

Waste rock will also be placed in out-of-pit waste rock emplacements in selected areas around the final voids so that the rehabilitated final landform provides flood immunity for the final voids up to the PMF. The final landform design is shown on Figure 21.

The final elevations of the out-of-pit waste rock emplacements are not higher than 45 m above natural ground level. The out-of-pit waste rock emplacements will be contoured to form an extension of the in-pit waste rock emplacements and be free-draining away from the backfilled open cut, where practicable.

The outer slope of the out-of-pit waste rock emplacement will be re-contoured to a slope of up to 10%, or up to 33% where rock mulch or other stabilisation controls are used. The toe of the out-of-pit waste rock emplacements adjacent Drainage Line 1 will be treated with an erosion resistant material to maintain its stability in the event of 1,000-year ARI and PMF floodwater interaction (Figure 21).

The landform will then be topsoiled and seeded with grass and shrub species. Revegetation management is discussed further in Section 3.5.3.8.

In-pit Waste Rock Emplacements (Backfilled Voids)

Once sufficient space is available behind the active face, waste rock material is placed in-pit behind the active workings to minimise surface disturbance associated with out-of-pit waste rock emplacements and to also minimise the size of the final voids. Rehabilitation of the in-pit waste rock emplacements will progressively follow the active mining face, thereby minimising the area of active disturbance at any given time.

Coal rejects will also be disposed of in the in-pit waste rock emplacements (i.e. the Integrated Waste Landform [IWL]). The in-pit coal rejects emplacements will be located a minimum of 10 m below the final landform surface elevation to allow for sufficient depth for capping and rehabilitation, however may be located at deeper elevations within the overburden material (Appendix I). Once the in-pit coal rejects emplacements have reached capacity, they will be allowed to settle and will then be rehabilitated once stable.

In addition, the Central Void (once available) will contain the majority of the tailings produced. The tailings within the void will reach approximately 301 mAHD. The void will then be infilled and rehabilitated to a final surface level of approximately 330 mAHD. Rehabilitation of the surface will then be undertaken consistent with other in-pit waste rock emplacements.

Additional detail on the design, operation and rehabilitation of the IWL cells is provided in the Reject Management Concept Study (Appendix I).

The final elevations of the in-pit emplacements will range from approximately 320 mAHD in the south-east to approximately 365 mAHD in the north-west.

The approach to rehabilitation described above minimises the active disturbance associated with in-pit waste rock emplacements across the site. Once capped, the landform will then be topsoiled and seeded with grass and shrub species. Revegetation management is discussed further in Section 3.5.3.8.

Out-of-pit Coal Rejects Emplacements

Tailings are either pumped to out-of-pit coal rejects emplacements (TSF 1 and 2) or placed in the in-pit coal rejects emplacements (including the Central Void, once available). Rehabilitation of the out-of-pit coal rejects emplacements will commence when the IWL cells in the pit are available for use and the rejects material has settled.

The rehabilitated outer slope of the out-of-pit coal rejects emplacements will have a slope of approximately 1V:10H. Once ready for rehabilitation, the out-of-pit coal rejects emplacements will be covered with a 0.5 m layer of competent material followed by a 0.5 m layer of compacted non-sodic clay creating a stable landform ready for final profiling, topsoiling (0.1 to 0.2 m layer) and revegetation (seeded with grass and shrub species). Revegetation management is discussed further in Section 3.5.3.8.

Additional detail on the design and rehabilitation of the out-of-pit coal reject emplacements is provided in the Rejects Management Concept Study (Appendix I).

Final Voids

The approved CDM final landform includes two final voids (Figure 21). Further detail on the final voids is provided in Section 3.5.5.

The approved final landform design plans and sections for the two final voids post-mining which provide flood immunity for the post-mining final voids are shown on Figure 21.

The conceptual designs for the approved final landforms (including erosion protection) are shown on Figure 21.

The flood modelling demonstrates that the final voids are beyond the predicted 1,000-year ARI flood and PMF event extents for the local drainages (Appendix B).

Infrastructure

This domain is dominated by the infrastructure associated with the existing mine infrastructure area. The infrastructure domain includes, but is not limited to:

- CHPP;
- ROM coal and product stockpiles;
- train loadout and rail loop;
- workshops, stores, administration buildings, toilet complexes, vehicle wash bays, control room and coal testing laboratory, diesel fuel storage area;
- access roads and haul roads;
- electrical supply infrastructure; and
- water management features including water storages, sediment control structures, diversions and operational flood levees.

Due to the nature of the infrastructure, rehabilitation of significant areas is unlikely to be able to be undertaken progressively as the majority of the disturbance associated with this domain will be required for the life of the Project. Notwithstanding, disturbance associated with infrastructure is minimised and will be progressively rehabilitated where possible.

Water Management Features

Water storages and sediment control structures will either be retained as water sources for future land uses or decommissioned and rehabilitated. As with the infrastructure areas, water management features are required for the life of the Project and rehabilitation of significant areas is unlikely to be able to be undertaken progressively due to ongoing need. Notwithstanding, where water storages and sediment control structures are no longer required (for mining or future land uses) they will be decommissioned and rehabilitated at the earliest opportunity.

Temporary and permanent up-catchment diversion structures will be constructed over the life of the CDM to divert runoff from undisturbed areas around the open cut pits and waste rock emplacements.

The proposed drainage feature diversion for Drainage Line 1 has been designed and assessed using the ACARP stream diversion design criteria (*Project C8030 – Maintenance of Geomorphic Processes in Bowen Basin River Diversions*).

An objective of the proposed diversion of Drainage Line 1 is to provide a self-sustaining landform at the end of the mine life so that the diversion channel functions like a natural drainage similar to the hydraulic and geomorphic characteristics of the existing Drainage Line 1 channel.

Additional details on the conceptual design of the Drainage Line 1 diversion are provided in Appendix A.

At the completion of mining, the operational flood levees in the south and south-east will be removed or integrated with the approved final landforms where required to provide flood immunity up to the PMF.

Quality Assurance/Quality Control Requirements

Quality assurance measures and Environmental Quality Inspection Forms (EQIF) are used to ensure that works are completed to the specifications identified in this plan. At all stages of the rehabilitation program, EQIFs need to be completed and signed off by the relevant personnel prior to commencing the next stage of works.

Included in the EQIF process are 'Hold Points'. Hold points represent key steps in the rehabilitation process where signoff must be obtained from the nominated entities; this may include the Contractor Representative, CDM Project Managers, Environment Team and Field Supervisors. The EQIF documentation detailing the required hold points is attached for reference in the appendices at the back of this document.

EQIF hold points requiring sign-off are:

- Landform design approval.
- Landform and drainage construction approval.
- Seed selection.
- Ripping, seeding, and fertilising.

Methodology to Verify the Success of the Final Landform Design

Successful rehabilitation of the final landform will be assessed through the completion criteria and monitored following the program outlined in Section 3.7.

The certification process undertaken by DES will verify that the rehabilitation and final landform are successful prior to surrender of the EA.

Limitations and Assumptions of the Landform Design

The final landform design has the following limitations and assumptions:

- Simulations of landform evolution considered surfaces that were either bare, or had 50% or 70% vegetation cover.
- Simulations were run for a 200-year period.
- Simulations were developed using a 100-year climate sequence.
- Soil availability and quality are based on soil test sites located at an appropriate density.
- Waste characterisation is based on appropriately selected representative samples.
- Climate change projections (CSIRO, 2015) for the central slopes were adopted.

3.5.3.6 Cover Design

As described in Section 3.5.3.4, the waste characterisation test results indicate that appropriate cover design for each of the waste outputs is as follows (Appendix J):

- Overburden and interburden:
 - The bulk of the overburden and interburden, comprising all of the materials apart from the carbonaceous materials and mudstone, does not require selective handling for placement within the in-pit waste rock emplacements. However, due to the risk of acid generation within the carbonaceous material and mudstone, this material will be treated as the coarse reject material and encapsulated within the waste rock emplacements in order to isolate it from atmospheric oxidation.
 - It is expected that blending of any minor amount of PAF or PAF-LC material that may occur within the general sedimentary overburden and interburden (i.e. sandstone, siltstone, claystone) during active disposal will produce an overall NAF material and therefore the waste rock will not require any specific handling during excavation and disposal.
- Coarse rejects:
 - For optimum geochemical security the coarse rejects will be encapsulated within in-pit emplacement areas, as soon as practical, in order to reduce the exposure to atmospheric oxidation, with a minimum of 5 m of NAF waste rock. If an insufficient quantity of NAF capping material or space (height) is available for a minimum 5 m cap, compaction of the capping material may be required to ensure that oxygen diffusion is adequately reduced to minimise the risk of sulfide oxidation and acid generation.
 - NAF waste rock or other identified capping materials (e.g. clay) will be compacted with suitable oxygen diffusion control properties in order to reduce the minimum encapsulation thickness required.
- Tailings (out-of-pit):
 - The out-of-pit coal rejects emplacements will be covered with a 0.5 m layer of competent material followed by a 0.5 m layer of compacted non-sodic clay.

- Tailings (in-pit IWL):
 - Prior to tailings disposal within the Central (Pit) Void, the tailings will be disposed within the IWL. The IWL will involve the construction of centrally located deposition cells within the Central Pit waste rock emplacement to hold the tailings. A minimum 100 m buffer will be maintained between each cell as the in-pit waste rock emplacement and the cells progress. Sub-aerial tailings deposition in thin layers incorporating secondary flocculation will be used to promote segregation, desiccation, drying and consolidation of the tailings, and the final surface of the filled cells below the final landform surface to allow a sufficient depth for capping and rehabilitation.
 - The IWL cells will include an engineered compacted surface which will consist of clay and geosynthetic liner, and as such there is minimal potential for seepage from cells. Sufficient freeboard will be provided to minimise the risk of uncontrolled discharge during high rainfall events, and diversion bunds constructed around the perimeter of the cells to prevent runoff from entering the cells during deposition.
- Tailings (in-pit Central Void):
 - At completion, the tailings within the Central (Pit) Void are expected to have a RL of 301 mAHD. The remaining void will then be infilled with waste rock material and rehabilitated to a final RL of approximately 330 mAHD in line with the post-mining land use rehabilitation objectives (Syntech, 2020).
 - Due to the expected salinity and occurrence of PAF material, the tailings in the Central Void will need to be covered with non-saline and NAF material as soon as practical once tailings deposition ceases within each cell in order to reduce the risk of developing saline and/or acid conditions, leading to potential saline and/or acid and metalliferous drainage.

3.5.3.7 Water Management

Site Water Management System

Site water management at the CDM is conducted in accordance with the CDM Water Management Plan (WMP) and EA EPML00900113. Water management at the CDM is based on the containment and re-use of water as well as the control of sediment that may be potentially carried with runoff from disturbed areas (e.g. runoff from waste rock emplacements and cleared areas). Runoff from undisturbed areas is separated from disturbed areas by up-catchment diversions and channels.

The objectives of the CDM water management system specifically seek to:

- protect the integrity of local and regional water sources;
- maintain separation between runoff from areas undisturbed by mining and water generated within active mining areas;
- design and manage the system to operate reliably throughout the life of the CDM in all seasonal conditions, including both extended wet and dry weather periods;
- provide sufficient storage capacity to store, treat and discharge runoff as required, including in extended wet weather periods;
- operate in accordance with EA EPML00900113; and
- provide a reliable source of water to meet the CDM requirements (e.g. dust suppression).

To meet these objectives, the site water management system will continue to be progressively developed over the life of the CDM. The existing/approved CDM water management system includes:

- water storages;
- in-pit water storage;
- out-of-pit rejects emplacement;
- site surface water drains and sediment dams;
- erosion and sediment control structures;
- five discharge points (EA EPML00900113) including automated upstream and downstream monitoring sites;
- up-catchment diversions and channels;
- seven operational flood levees;
- diversion of Drainage Line 1;
- supply of external water from CSG operators; and
- operation of a sewage treatment plant and associated irrigation system.

WRM (2018a) concluded that the CDM surface water management system was robust and had adequate storage capacity to manage surface water runoff contained on-site for a wide range of possible climatic conditions, including extended wet and dry periods. WRM (2018a) also concluded that the potential for an uncontrolled release to receiving waters from the sites water management system was very low (i.e. <1% annual exceedance probability).

Water Demand and Supply

The CDM sources water subject to the following priority order:

- water supplied from pit dewatering (including any groundwater inflows);
- recycled process water recovered from the CHPP and reject streams;
- surface water runoff captured from disturbed areas and stored within the water management system; and
- external water supplied from CSG operators or other licensed external sources.

Syntech currently holds a specific Beneficial Use Approval (BUA) (under the *Waste Reduction and Recycling Act, 2011*) to source water from CSG operators to the CDM for use in the CHPP or for dust suppression. In November 2016, the BUA framework was replaced by an End of Waste (EOW) framework under the *Waste Reduction and Recycling Act, 2011*.

It is anticipated that this water supply will remain available to the CDM while CSG operations are conducted in the area (subject to obtaining a new EOW approval). If the supply becomes unavailable during the life of the CDM, an alternative external water supply from other CSG operations in the region, or potentially from licensed groundwater extraction, would be secured to provide a reliable make-up water source, where required.

WRM (2018a) concluded that the site is predicted to be a net consumer of water during the initial years and, over the long-term, a net producer of water. All water demands for the CDM will be met through a combination of on-site water sources, water recycled and re-used from the rejects dams and in-pit disposal areas, and water imported from the QGC Glen Eden Pond.

Contaminants That Pose a Risk to Environmental Values

The following potential contaminants have been identified as posing a potential risk to environmental values of the receiving environment:

- sediments;
- selenium and arsenic;
- total dissolved solids; and
- hydrocarbons.

Source, Pathway and Fate of Contaminants

Key potential sources of contaminants (post-rehabilitation) are:

- in-pit waste rock emplacements (including IWL cells and Central Void);
- out-of-pit rejects emplacements; and
- final voids.

Pathways for the potential contaminants to reach the receiving environment (e.g. watercourses or the groundwater table) include overland flow (e.g. overtopping of the final voids) or infiltration/seepage (e.g. from out-of-pit rejects emplacements).

With regards to overland flow, once rehabilitation is completed, all runoff will be clean water as it will be from rehabilitated surfaces. Runoff within the final void catchments will be directed into the final voids by the safety bund, and will not flow to the receiving environment.

Infiltration and Seepage Intervention and Collection Controls

With regards to infiltration/seepage (Appendix I):

- The IWLs will be clay lined and as such there is minimal potential for seepage from each cell. Despite this, any potential seepage from the IWL cells would remain within the water management system as the IWL cells are located hydraulically up-gradient of the Central Void. Long term water balance modelling also concluded that the equilibrium volumes for the south-eastern final void will remain well below (by at least 20 m) the pre-mining groundwater level and therefore the void will remain a localised sink and not impact on the groundwater quality of the regional groundwater system.
- As the tailings level of 301 mAHD (in the Central Void) is less than the pre-mining groundwater level of 305 mAHD, any infiltration of water that comes into contact with the buried rejects is expected to remain within the void and is not expected to impact on the groundwater quality of the regional groundwater system.
- RD1 and RD2 (if constructed) are classified as regulated structures and, as such, are required to be designed, constructed and operated in accordance with the CDM Environmental Authority. Regulated structures are inspected annually by a suitably qualified and experienced person at which time the condition, operation and water quality (including pH) of the structure is reviewed.

- Groundwater modelling predicts the final pit voids would act as long-term groundwater sinks post-mining, with pit void water levels expected to recover to a quasi-equilibrium level that is between approximately 20 m to 25 m below the pre-mining groundwater levels.
- Evaporation from the void lake surfaces will maintain a water level below the surrounding aquifer water levels, forming a groundwater sink in the local environment. Evaporation from the lake surfaces will also slowly concentrate salts in the pit lake over time. The increasing salinity will not pose a risk to other aquifers and surface water features as the final void will remain a permanent sink.

As described above, the final landform has been designed to minimise contamination potential as the storages have been designed to prevent seepage. Notwithstanding, if seepage were to occur, it would be drawn to the final voids which act as groundwater sinks for the area, thereby preventing any potential exposure to the receiving environment.

Surface Water Diversions

Temporary and permanent up-catchment diversion structures would be constructed over the life of the CDM to divert runoff from undisturbed areas around the open cut pits and waste rock emplacements.

The diversion for Drainage Line 1 has been designed and assessed using the ACARP stream diversion design criteria (Project C8030 – Maintenance of Geomorphic Processes in Bowen Basin River Diversions). An objective of the diversion of Drainage Line 1 is to provide a self-sustaining landform at the end of the mine life so that the diversion channel functions like a natural drainage similar to the hydraulic and geomorphic characteristics of the existing Drainage Line 1 channel.

At the completion of mining the operational flood levees in the south and south-east would be removed or be integrated with the final landforms where required to provide flood immunity up to the PMF.

Ongoing Water Management and Reduction Requirements

As mining approaches completion, Syntech will consult with landholders and/or relevant agencies regarding the potential for retaining water management structures. As grazing is the approved PMLU, it is assumed that most water management structures would be retained post-mining (i.e. due to their direct benefit to the PMLU). Currently, it is considered that due to the size of the large water management dams located to the south of Pit 3, these dams are unlikely to be necessary to support the overall grazing PMLU and are therefore proposed to be rehabilitated to grazing pasture.

If specific water structures are not suitable to be retained, they would be decommissioned or remediated in consultation with relevant stakeholders and with the approval of DES. Relevant remediation measures would be determined on a case-by-case basis.

Once remediation is completed, no ongoing water management would be required for the site.

3.5.3.8 Revegetation

AusEcology (2021; Appendix K) has reviewed the existing rehabilitation management methodologies on site and have prepared a detailed Revegetation Plan with three revegetation scenarios consistent with the PMLU of light-intensity grazing, with areas of native vegetation:

- Scenario 1 – Pasture on flat / slightly sloping land.
- Scenario 2 – Pasture with native vegetation on slopes.
- Scenario 3 – Pasture with native vegetation along riparian corridors.

The revegetation strategy for CDM is based on the re-construction approach to ecological restoration. This approach is most suitable for disturbed areas or construction areas that show modified or disturbed soils, depleted or absent soil seed bank and high potential for domination by weed species that prevent natural regeneration and succession of the pre-disturbance ecological community. This approach is employed when removal of ongoing threatening processes alone is insufficient to allow natural establishment of ecological processes and communities (Appendix K).

The revegetation strategy does not aim to recreate the conditions of the target regional ecosystems in their remnant or undisturbed state. Rather, the strategy is aimed at establishing a safe, stable and non-polluting landform, with a self-sustaining vegetation cover consistent with the proposed PMLU of light intensity grazing and specific vegetation scenario (Appendix K).

Initial revegetation activities will focus on the establishment of ground layer vegetation to facilitate stability and topsoil retention. The establishment of ground cover using a fast-germinating cover crop will be critical to the attainment of site stability in the short term. An additional mixture of pasture and native grasses and legumes will be introduced at the same time by direct seeding to establish a self-sustaining vegetation cover suitable for scenario 1 areas and native trees and shrubs will be introduced by planting to establish a self-sustaining vegetation cover suitable for scenario 2 and 3 areas (Appendix K).

Cover crop species selection will be based on time of year and may vary depending on the topsoil spreading program. Cover crops suitable for use in revegetation scenario 1, 2 & 3 are specified based on seasonality in Table 19. Most cover crop species are typically sown at depths of 1 - 4 centimetres (cm) below the soil surface for optimum germination and growth.

Table 19
Seasonal Preferences and Application Rates for Cover Crops

Cover Crop	Optimal Sowing Time	Application Rate (kg/ha)
Quick Oats	March – July	25 – 80
Barley	May – August	25 – 50
Annual Ryegrass	April – September	15
Japanese Millet	October – March	6 – 10

For revegetation scenarios 2 and 3, tree plantings will be incorporated to provide wildlife corridors, shelter belts for stock (from sun and wind) and visual enhancement to the site. Species recommended for the revegetation project are presented in Table 20. Not all species listed in Table 20 (especially grasses and forbs) are required to be used in the revegetation program. Rather, a combination of species will be chosen from the list based on the availability of seed and tubestock prior to revegetation works. However, native groundcover species will be preferentially sourced for vegetation scenario 2 and 3. In addition, if live topsoiling is used, there will likely be natural recruitment of groundcover species.

Seed Procurement and Collection

Non-native pasture and legume species are readily commercially available and, where required, will generally be purchased up to six months in advance in quantities sufficient to undertake direct seeding operations. Where native seed is preferred, where possible it will be collected from populations of identified species within the CDM site (or within close proximity) or from within the same rainfall isohyet at a minimum, with preference given to seed collected as close as possible to the CDM.

Table 20
Revegetation Species

Scientific Name	Common Name	Form	Revegetation Methodology	Scenario 1	Scenario 2	Scenario 3
* <i>Cenchrus ciliaris</i>	Buffel grass	Grass	Direct seed	✓	✓	✓
* <i>Bothriochloa pertusa</i>	Indian bluegrass	Grass	Direct seed	✓	✓	✓
* <i>Digitaria milaniana</i> cv. <i>Strickland</i>	Strickland digitaria	Grass	Direct seed	✓	✓	✓
* <i>Digitaria eriantha</i> ssp. <i>eriantha</i> cv. <i>Premier</i>	premier digitaria	Grass	Direct seed	✓	✓	✓
* <i>Bothriochloa bladhii</i> ssp. <i>glabra</i> cv <i>Swan</i>	forest bluegrass	Grass	Direct seed	✓	✓	✓
* <i>Urochloa mosambicensis</i> cv. <i>Saraji</i>	sabi grass	Grass	Direct seed	✓	✓	✓
* <i>Chloris gayana</i> cv. <i>Reclaimer</i>	reclaimer rhodes grass	Grass	Direct seed	✓	✓	✓
<i>Eragrostis brownii</i>	Brown's lovegrass	Grass	Direct seed	✓	✓	✓
<i>Cymbopogon refractus</i>	barbed-wire grass	Grass	Direct seed	✓	✓	✓
<i>Enteropogon ramosus</i>	windmill grass	Grass	Direct seed	✓	✓	✓
<i>Paspalidium caespitosum</i>	Brigalow grass	Grass	Direct seed	✓	✓	✓
<i>Dichanthium sericeum</i>	Queensland bluegrass	Grass	Direct seed	✓	✓	✓
<i>Bothriochloa decipiens</i>	Pitted bluegrass	Grass	Direct seed	✓	✓	✓
<i>Chloris divaricata</i>	-	Grass	Direct seed	✓	✓	✓
<i>Panicum coloratum</i>	Gatton panic	Grass	Direct seed	✓	✓	✓
<i>Bothriochloa insculpta</i>	creeping bluegrass	Grass	Direct seed	✓	✓	✓
* <i>Medicago truncatula</i>	barrel medic (varieties Parabinga, Caliph)	Forb	Direct seed	✓	✓	✓
* <i>Medicago polymorpha</i>	spineless burr medic (varieties Cavalier or Scimitar)	Forb	Direct seed	✓	✓	✓
* <i>Medicago</i> spp.	other medics (variety Toreador)	Forb	Direct seed	✓	✓	✓
<i>Geijera parviflora</i>	wilga	Shrub	Plant	X	✓	✓
<i>Dodonaea biloba</i>	-	Shrub	Plant	X	✓	X
<i>Dodonaea viscosa</i>	sticky hopbush	Shrub	Plant	X	✓	X
<i>Dodonaea peduncularis</i>	hop bush	Shrub	Plant	X	✓	X
<i>Acacia shirleyi</i>	lancewood	Tree	Plant	X	✓	X

Table 20 (Continued)
Revegetation Species

Scientific Name	Common Name	Form	Revegetation Methodology	Scenario 1	Scenario 2	Scenario 3
<i>Acacia leiocalyx</i>	black wattle	Tree	Plant	X	✓	X
<i>Allocasuarina luehmannii</i>	bulloak	Tree	Plant	X	✓	X
<i>Casuarina cunninghamiana</i>	river sheoak	Tree	Plant	X	X	✓
<i>Callitris glaucophylla</i>	white cypress pine	Tree	Plant	X	✓	X
<i>Eucalyptus crebra</i>	narrow-leaved ironbark	Tree	Plant	X	✓	X
<i>Eucalyptus populnea</i>	poplar box	Tree	Plant	X	X	✓
<i>Eucalyptus fibrosa</i> subsp. <i>nubila</i>	blue-leaved ironbark	Tree	Plant	X	✓	X
<i>Eucalyptus tereticornis</i>	forest red gum	Tree	Plant	X	X	✓

* Exotic species.

Generally, seed collection will be programmed at least 18 months prior to the proposed propagation commencement date, and preferably earlier in order to maximise opportunities to collect as many of the target species as possible in the quantities required. Seed collection will be undertaken in accordance with the Florabank guidelines and the *Model Code of Practice for community-based collectors and suppliers of native plant seed* (Florabank, 1998). Permissions to collect seed from private and public land will be obtained prior to collection, as appropriate.

All seed will be bagged and labelled with genus and species, collection location (coordinates), collection date and collector identification and stored under appropriate environmental conditions in order to prevent degradation and infection with mould, fungus or other pathogens. Maintenance of temperatures less than 15 degrees and low moisture levels in collection bags are considered critical to maintaining viability of collected seed.

Collected seed will be processed as soon as possible after collection. Processing may involve drying, cooling, threshing or spreading seed-containing plant parts on drop sheets to allow seed to drop over time. Processed seed will be bagged and labelled with all required information and stored in a seed fridge until required for propagation.

Planting Stock

Propagation of planting stock from seed will be commissioned at least six months ahead of planting date to allow sufficient time to produce plants that are sturdy and well-established at time of planting.

Propagated stock will preferably be delivered in 40-cell “hiko” trays or 20-cell native tubestock trays. Hiko planting stock has a well-established history of planting success in the commercial forestry industry and has the advantages of being cheaper to produce, more efficient to transport and quicker to plant. Success rates for hiko plant stock are also on par with larger native tubestock pots.

Throughout the term of the propagation phase, the nursery will be requested to provide regular updates and plant propagation reports in order for planting operations to proceed as planned. Plants will only be accepted where adherence to the following quality characteristics is achieved:

- healthy and displaying signs of active growth;
- healthy foliage and stem growth, characteristic of the species and the growth stage;
- sturdy stems and being free-standing;
- fresh actively growing roots;
- well-developed fine root system that is coherent when removed from pot, but is not tightly pot bound;
- no signs of nutritional deficiencies; and
- sun hardened.

All plants will need to be saturated prior to dispatch from the nursery.

An appropriate temporary field storage facility (field nursery) will be set up in advance of receiving the plants on site. This will typically consist of plastic sheeting or some other barrier layer set out in an open and level area, where plants can be placed without risk of them growing roots into the ground. Watering will be undertaken for the duration of time the plants are held in the temporary field storage facility to preserve the viability of the plant stock.

Establishment Methods

Direct seeding will be preferred to achieve a dense or continuous cover of green cover crops and grass species. Seeding may be undertaken using conventional broadacre seeding equipment (e.g. combine seeder, spreader with harrows or spinner).

Grass seed rates for pasture establishment typically range from 1 kilogram per hectare (kg/ha) for uncoated (bare) seed to 3 kg/ha for coated seed. However, application rates of 5 kg/ha for uncoated seed and 10 kg/ha of coated seed will be used where practicable for exposed topsoil areas to maximise germination success rate and coverage.

Timing of seeding can be important for successful revegetation. Where practicable, seed will be sown immediately before the expected onset of reliable rains or after the break of the season.

Hiko or native tubestock will be planted to establish canopy and shrub species with relatively low densities or clumped distributions compared to the more continuous cover required for revegetation of the ground layer (predominantly grasses).

General planting specifications include:

- plants will be spade planted;
- plant growth media will be saturated with water and diluted Seasol (or similar product) as per manufacturer's specifications immediately prior to dispatch from the plant nursery;
- plants will be placed in a vertical hole that is deeper than its root ball;
- depending on growth form of tubestock, planted to a depth so that the top of the plug is between 2 cm and 10 cm below the soil surface (no visible potting media at soil surface);
- plants will be planted with a slow-release fertiliser and a soil conditioner with use of water crystals (such as Terracottem), where practicable;
- firmed so that plant may not be pulled out of ground by pulling top leaves; and
- not damaged during planting.

Timing of planting will typically be targeted for late summer or early autumn when soil moisture is high and temperatures are becoming milder (March-May). The combination of decreasing daytime temperatures and intermittent showers when the soil moisture profile is good will minimise evaporative losses and maximise plant available soil moisture during the three-month establishment period.

Planting will generally be carried out once all cover crop and grass species have germinated and established. Pre-plant spot spraying will be carried out (1 m diameter sprayed spots) to minimise grass competition within the immediate vicinity of the planted tree, as required.

Table 21 sets out the anticipated stock densities and estimated quantities for plant stock per ha for vegetation scenario 2 and 3. Table 22 sets out the anticipated seed quantities for grasses and legumes per hectare across vegetation scenario 1, 2 and 3.

Seed quantity includes cover crop species, although it should be noted that cover crops will be chosen in consideration of season of application. Note that not all species listed in Tables 21 and 22 will be used in the revegetation. Rather, a combination of species will be chosen from the list based on the availability of seed and tubestock prior to revegetation works. A contingency amount of 20% will typically be utilised to account for mortality.

Table 21
Planting Densities and Quantities for Shrub and Tree Species

Scientific Name	Common Name	Form	Density Required	Average Coverage per individual plant at 10 years (m ²)	Approximate quantity required per ha
<i>Geijera parviflora</i>	wilga	Shrub	10%	5.0	200
<i>Dodonaea biloba</i>	-	Shrub			
<i>Dodonaea viscosa</i>	sticky hopbush	Shrub			
<i>Dodonaea peduncularis</i>	hop bush	Shrub			
<i>Acacia shirleyi</i>	lancewood	Tree	20%	10.0	200
<i>Acacia leiocalyx</i>	black wattle	Tree			
<i>Allocasuarina luehmannii</i>	bulloak	Tree			
<i>Callitris glaucophylla</i>	white cypress pine	Tree			
<i>Eucalyptus crebra</i>	narrow-leaved ironbark	Tree			
+ <i>Eucalyptus populnea</i>	poplar box	Tree			
<i>Eucalyptus fibrosa</i> ssp. <i>nubila</i>	blue-leaved ironbark	Tree			
<i>Casuarina cunninghamii</i>	river sheoak	Tree			
<i>Eucalyptus tereticornis</i>	forest red gum	Tree			

+ *Eucalyptus populnea* to be planted predominantly on flats, as the species may not be as successful when planted on slopes.

Table 22
Seed Quantities Required for Grasses and Cover Crops

Scientific Name	Common Name	Form	Suitability	Rate (kg/ha) ¹
* <i>Avena spp.</i>	Quick oats	Cover crop	Autumn-Winter	25 - 80
* <i>Hordeum vulgare</i>	Barley		Winter-Spring	25 - 50
* <i>Lolium rigidum</i>	Annual ryegrass		Autumn	15
* <i>Echinochloa esculenta</i>	Japanese millet		Spring-Summer	6 - 10
* <i>Cenchrus ciliaris</i>	Buffel grass	Grass		0.5 - 2
* <i>Bothriochloa pertusa</i>	Indian bluegrass			3
* <i>Digitaria milaniana cv. Strickland</i>	Strickland digitaria			1 - 2
* <i>Digitaria eriantha ssp. eriantha cv. Premier</i>	premier digitaria			3
* <i>Bothriochloa bladhii ssp. glabra cv Swan</i>	forest bluegrass			1 - 2
* <i>Urochloa mosambicensis cv. Saraji</i>	sabi grass			1 - 2
* <i>Chloris guyana cv. Reclaimer</i>	reclaimer rhodes grass			13
<i>Eragrostis brownii</i>	Brown's lovegrass			4 (combined)
<i>Cymbopogon refractus</i>	barbed-wire grass			
<i>Enteropogon ramosus</i>	windmill grass			
<i>Paspalidium caespitosum</i>	Brigalow grass			
<i>Dichanthium sericeum</i>	Queensland bluegrass			
<i>Bothriochloa decipiens</i>	Pitted bluegrass			
<i>Chloris divaricata</i>	-			
* <i>Panicum coloratum</i>	Gatton panic			3
* <i>Bothriochloa insculpta</i>	creeping bluegrass			3
* <i>Medicago truncatula</i>	barrel medic (varieties Parabinga, Caliph)	Forb	-	2 - 3
* <i>Medicago polymorpha</i>	spineless burr medic (varieties Cavalier or Scimitar)			2 - 3
* <i>Medicago spp.</i>	other medics (variety Toreador)			2 - 3

¹ Assumes coated seed, halve rate for bare seed.

* Denotes exotic species.

Planted stock will be watered in where soil moisture is less than optimal at time of planting. Pre-saturation of plant stock prior to planting is critical to early-stage survival. Where practicable, hydrated water crystals (Terracottem, Terraform or similar) will be incorporated into planting holes at time of planting to maximise water retention in the plant root zone.

The brigalow woodland snail, grey snake and short-beaked echidna require on ground timber cover, rocks, leaf litter and debris. Where practicable, a selection of trees and coarse woody debris will be retained (i.e. not mulched) stockpiled for later reinstatement in revegetation scenario 2 & 3 areas where trees are being planted. Where available, large hollow logs will be strategically placed in the native vegetation rehabilitated landform and smaller logs will be placed in piles to provide habitat for the abovementioned fauna species.

Further detail on the revegetation strategy is provided in the Revegetation Plan (Appendix K).

3.5.4 Tailings Storage Facilities

The tailings are currently pumped as a slurry into the out-of-pit coal rejects emplacements, known as Reject Dams, and in the future will be pumped to engineered in-pit emplacements, including the integrated waste landform (IWL) and Central (Pit) Void, shown in Figure 20. Due to the increased geochemical security provided by below ground disposal (i.e. limited oxygen diffusion), tailings will be preferentially disposed below final surface level (i.e. in-pit IWL and Central Void) (GEM, 2021).

The detailed design of the coal rejects emplacements has been undertaken in accordance with *Structures which are dams or levees constructed as part of environmentally relevant activities* (DES, 2019) based on the Consequence Category assessed under the *Manual for assessing consequence categories and hydraulic performance of structures* (DEHP, 2016). The detailed design processes for the out-of-pit coal reject emplacements and IWL will be conducted consistent with the design principles outlined in Engeny (2018). The detailed design process for all of these structures will consider the geotechnical characteristics of the tailings (including, but not limited to, particle size distribution, specific gravity, Atterberg limits, moisture content and dry density profiles, settling, shear strength, soil water characterisation, self-weight consolidation and desiccation).

The out-of-pit Reject Dams include RD1, comprising three deposition cells, and RD2, comprising two deposition cells, of which Cell 1 (southern cell) was commissioned in 2019. The tailings are slurry pumped into the tailings cell from spigots located around the perimeter of the cell embankments in such a manner that a tailings beach profile is created that slopes away from the perimeter embankments to ultimately form a decant pond to the designed water recovery point. Sub-aerial deposition in thin layers, incorporating secondary flocculation, is used to promote desiccation, drying and consolidation of the tailings and to improve water recovery. Active dewatering of the decant pond is returned to the site water management system for re-use. Once sufficiently consolidated, the tailings will be capped with a layer of competent rock, followed by a layer of compacted non-sodic clay, top soiled and rehabilitated according to the rehabilitation objectives.

Prior to tailings disposal within the Central (Pit) Void, the tailings will be disposed within the IWL. The IWL will involve the construction of centrally located deposition cells within the Central Pit waste rock emplacement to hold the tailings. A minimum 100 m buffer will be maintained between each cell as the in-pit waste rock emplacement and the cells progress. Sub-aerial tailings deposition in thin layers incorporating secondary flocculation will be used to promote segregation, desiccation, drying and consolidation of the tailings, and the final surface of the filled cells below the final landform surface to allow a sufficient depth for capping and rehabilitation (Engeny, 2018).

The IWL cells will include an engineered compacted surface which will consist of clay and geosynthetic liner, and as such there is minimal potential for seepage from cells. Sufficient freeboard will be provided to minimise the risk of uncontrolled discharge during high rainfall events, and diversion bunds constructed around the perimeter of the cells to prevent runoff from entering the cells during deposition (Engeny, 2018).

Once the Central (Pit) Void is available for tailings disposal, it will become the primary tailings receptacle for the mine. The north-western section of the Central Void will be utilised for tailings disposal and the south-eastern section, separated by a land-bridge, will remain a void. The Central Void will be dewatered prior to tailings deposition in order to maximise consolidation of the solids, and the size of the decant pond during disposal will be minimised to increase consolidation and beaching (Engeny, 2018).

At completion, the tailings within the Central (Pit) Void are expected to have a RL of 301 mAHD. The remaining void will then be infilled with waste material and rehabilitated to a final RL of approximately 330 mAHD in line with the post-mining land use rehabilitation objectives (Syntech, 2020). Because the final tailings surface is expected to be below the pre-mining groundwater level of 305 mAHD, any infiltration of water that comes into contact with the tailings is expected to remain within the void and is not expected to impact on the groundwater quality of the regional groundwater system (Engeny, 2018).

GEM (Appendix J) recommended that, due to the expected salinity and occurrence of PAF material, the tailings be covered with non-saline and NAF material as soon as practical once tailings deposition ceases within each cell in order to reduce the risk of developing saline and/or acid conditions, leading to potential saline and/or acid and metalliferous drainage.

Further detail on the tailings design is available in Appendix I.

3.5.5 Voids

3.5.5.1 Minimisation of Final Voids

The approved CDM final landform includes two final voids (Figure 21).

The size of the final voids will be minimised by disposing waste rock and coal rejects in-pit. In addition, waste rock removed during the mining of the western side of the Eastern Pit (Pit 2) will be used to backfill the void on the eastern side of the Eastern Pit (Pit 2) reducing the number of final voids required for the CDM (Figure 21).

3.5.5.2 Final Void Dimensions and Slope Angles

As described in Section 3.4, the final voids must be consistent with the description in EA EPML00900113, and in particular, *Table G1: Approved Final Residual Voids Design* and *Attachment 7: Approved Final Residual Voids Design*.

Table G1 – Approved Final Residual Voids Design

Void ID	High Wall Slope (deg)	High Wall Incompetent Rock Slope (deg)	Low Wall Slope (deg)	Low Wall Incompetent Slope (deg)	Void Maximum Depth (m)	Void Maximum Length (m)	Void Maximum Area (ha)	Volume (Mm³)
Central Final Void (Pit 1)	45	45	37	37	70	1,460	75	28
Western Final Void (Pit 3)	45	45	37	37	87	3,770	165	86

Mm³ = million cubic metres.

Deg = Degrees.

The final void designs are shown on Figures 24 and 25.

3.5.5.3 Final Void Stability

Final void walls will be treated (e.g. benched or blasted) so that they are geotechnically stable to an appropriate factor of safety. Once completed, a safety assessment and geotechnical investigation will be undertaken to confirm the safety and stability of the wall for the long term. An as-built design report will be completed to confirm that the final voids are consistent with the requirements of EA EPML00900113.

In addition, a trial of plant species suitability for the final void walls will be undertaken to maximise the potential for the revegetation to improve the stability of the final void walls (Section 3.6.3).

A safety bund wall consisting of competent material and/or fencing would be constructed to limit human and livestock/animal access. The bund wall will have a minimum height of 2 m, with a minimum base width of 4 m and be located at least 10 m beyond the area potentially affected by any instability of the open cut pit edge.

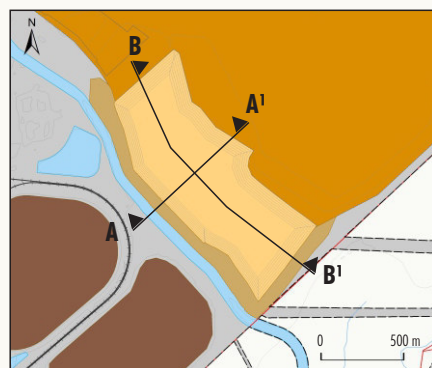
Appropriate signage alerting people to the presence of the voids will be placed around the bund.

3.5.5.4 Final Void Hydrology

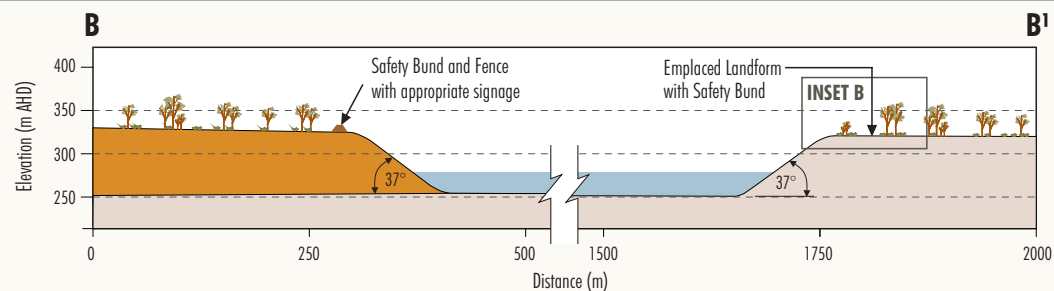
Inflows

Once mining operations cease, groundwater inflows to the final voids will no longer be collected and pumped out, and as a result, the final voids will gradually begin to fill with water. Water in other on-site operational storages may also be transferred to the final voids to facilitate decommissioning and rehabilitation.

Inflows into the final voids will comprise incident rainfall, runoff within the final void catchment area and groundwater. The catchment area of the final voids is defined by the surrounding landform including safety bunds.

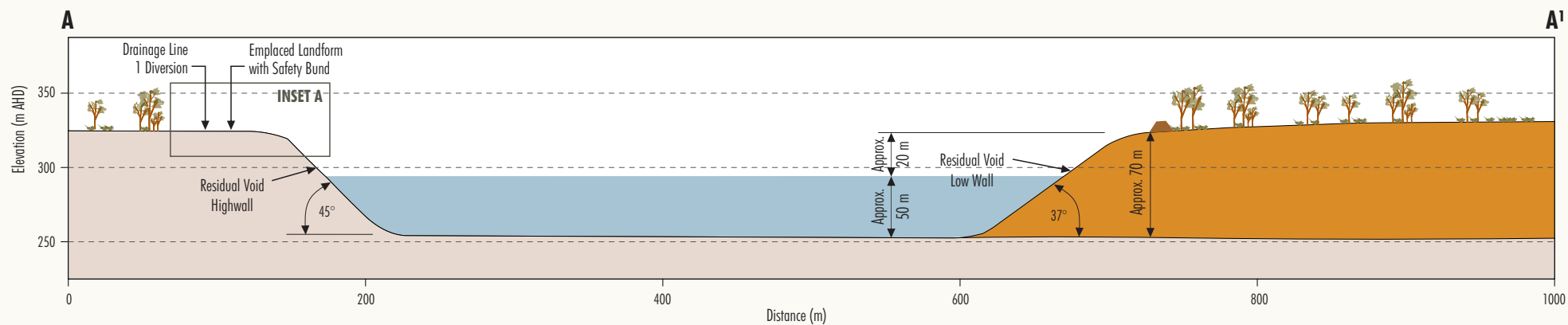
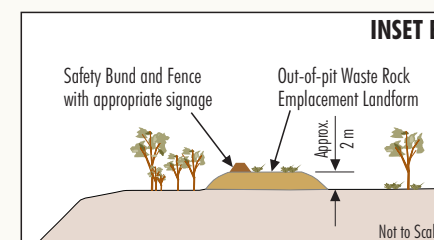
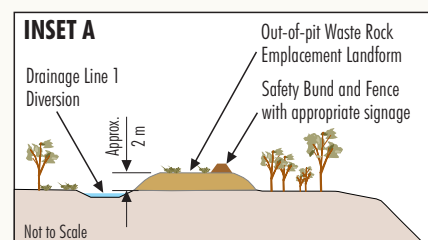


PLAN



CROSS SECTION B - B'

Scale: Vertical 1 : Horizontal 1



CROSS SECTION A - A'

Scale: Vertical 1 : Horizontal 1

INDICATIVE ONLY. SUBJECT TO DETAILED DESIGN.

LEGEND

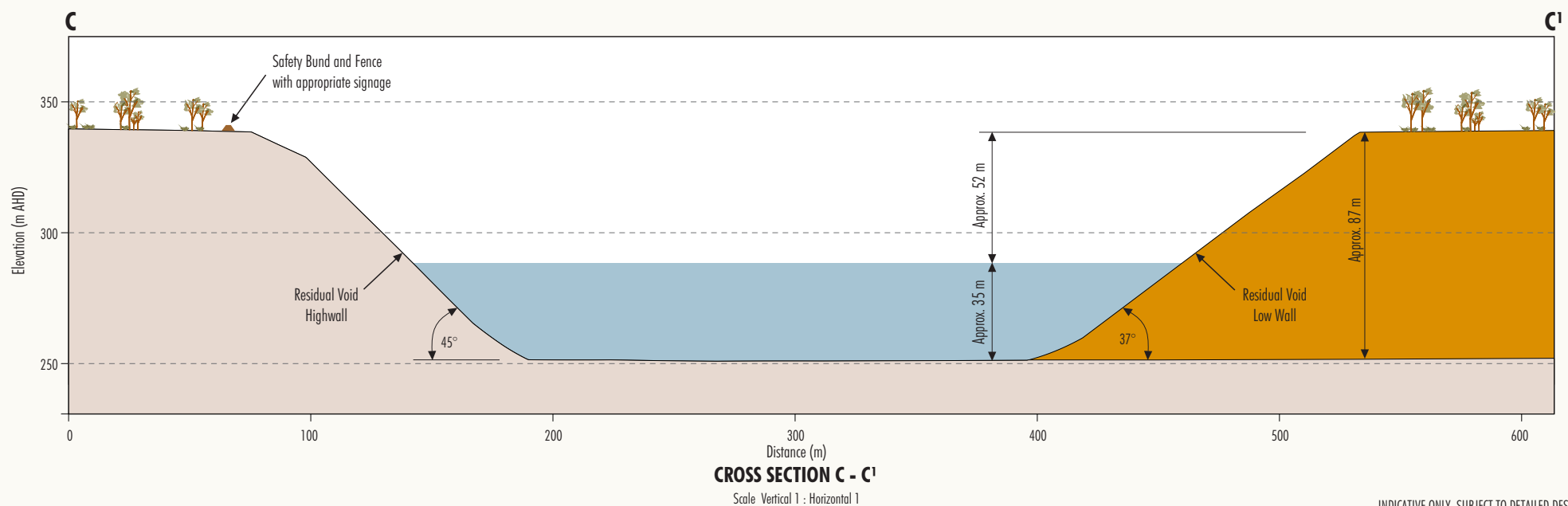
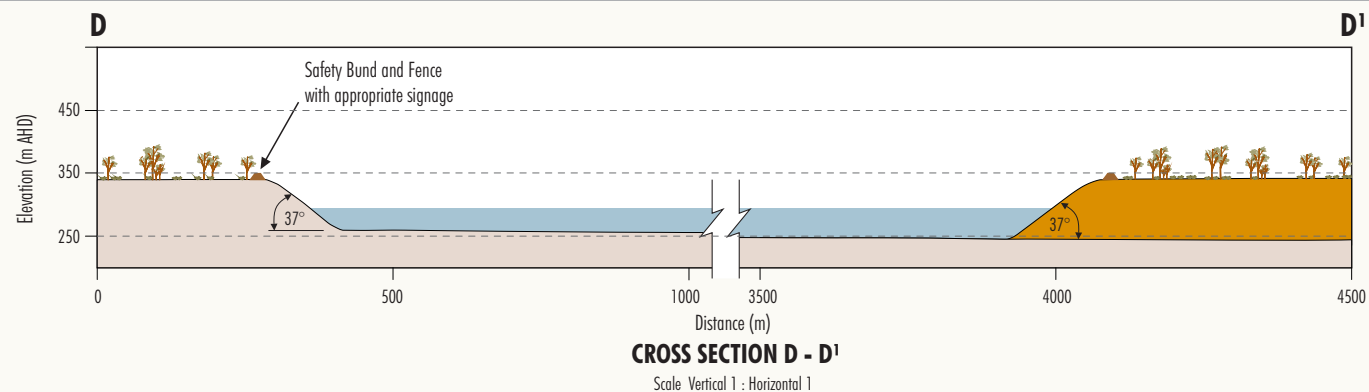
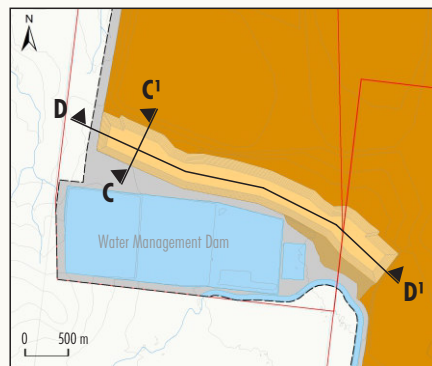
- Unmined Material
- Rehabilitated Waste Rock Emplacement
- Out-of-pit Waste Rock Emplacement
- Residual Void
- Residual Void Lake
- Tailings Storage Facility
- Water Management

Source: Syntech (2021)

 **Cameby Downs Mine**
C A M E B Y D O W N S M I N E
 Indicative Residual Void Cross-section
 - Central Void

Figure 24

SYW-20-06_PRRP_002C_XS.dwg



INDICATIVE ONLY. SUBJECT TO DETAILED DESIGN.

LEGEND

- Unmined Material
- Rehabilitated Waste Rock Emplacement
- Residual Void
- Residual Void Lake



CAMEBY DOWNS MINE

Indicative Residual Void Cross-section
- Western Void

Source: Syntech (2021)

Figure 25

Water Level Recovery Analysis

Final void water recovery analyses have been conducted as part of the Surface Water Assessment (Appendix A). The assessment is based on predicted groundwater inflows developed as part of the Groundwater Assessment (Appendix C).

The OPSIM model was run for a 500-year period from the end of mine to assess the long-term storage inventory and TDS concentrations in the final voids during post closure. The 128 years of SILO Data Drill rainfall and evaporation data was cycled four times to generate the 500-year climate sequence. Variable groundwater inflow and outflow rates were provided by AGE (2018). Several iterations of the OPSIM model were run to converge with the stage groundwater inflow curve.

Final voids and open pits are assumed to have reduced evaporation due to the shading from the walls. Two scenarios were modelled to assess the sensitivity of water inventory and TDS concentrations due to evaporation. The base case used an evaporation factor of 0.7 applied to the lake evaporation rate, which is the same factor used for open pits during operations. The alternate case reduced the evaporation factor to a conservative value of 0.5.

The stored volumes in the final voids will increase until a balance is established between rainfall/groundwater inflows and evaporation outflows. The model results show that the final void water inventory in both pits is predicted to stabilise below half of the final void FSL volume within the first 200 to 300 years after mine closure for both the base case and the alternate case.

With respect to the predicted results, the following is of note:

- Final Void (Pit 3) [West] stabilises around 15% of its storage capacity in the base case which is the lowest inventory (as a percentage) of the final voids;
- The final void storage inventories follow a similar pattern albeit with different amplitudes. The amplitudes in final void behaviour are different because:
 - they have different stage-surface area-storage curves. Final Void (Pit 1) [Centre] is significantly smaller in surface area compared with Final Void (Pit 3) [West];
 - the final voids have different catchment areas; and
 - the final voids stage-groundwater inflow relationship curves vary significantly for each void. For example, at 275 mAHD Final Void (Pit 1) [Centre] groundwater inflow is 105 cubic metres per day (m³/d) and the equivalent Final Void groundwater inflow is 113.5 m³/d.

There is very little recovery in Final Void (Pit 1) [Centre] and Final Void (Pit 3) [West] because the evaporation loss rates and rainfall runoff rates are significantly greater than the groundwater inflow rates. Therefore, the behaviour of these voids is dominated by surface hydrology rather than groundwater inflows and will continue to operate as groundwater sinks.

The alternate case increased the total storage inventory of both final voids. However, the storage inventory of the final voids is not predicted to exceed 50% of capacity over a 500-year period. Changing the evaporation factor had the following impacts on inventory:

- Final Void (Pit 1) [Centre] maximum storage inventory increased from approximately 7,370 megalitres (ML) to 11,340 ML; and
- Final Void (Pit 3) [West] maximum storage inventory increased from approximately 11,660 ML to 30,670 ML.

As outlined above, the modelling predicts that evaporation from the void lake surfaces will maintain a water level below the surrounding aquifer water levels, forming a groundwater sink in the local environment, with pit void water levels expected to recover to a quasi-equilibrium level that is between approximately 20 m to 25 m below the pre-mining groundwater levels (Appendix A).

The final void waterbodies are not predicted to spill under any of the simulated climatic sequences (Appendix A).

Based on the *Climate Change Projections for the central slopes* (CSIRO, 2015) the following changes are predicted at the CDCOP from 2090 onwards based on the RCP8.5 results:

- 80% of climate change models predicted that annual rainfall would change by between -23% (reduce by 145 mm) and 18% (increase by 113 mm); and
- 80% of climate change models predicted that annual evapotranspiration would change by between 9.8% (increase by 185 mm) and 18.1% (increase by 341 mm).

Based on the above CSIRO (2015) predictions, annual evaporation losses from the mine pit lake and its catchment will continue to be significantly higher than annual rainfall and groundwater inputs. Therefore, the potential effects of climate change on the behaviour of the final void lake are unlikely to be significant and the mine pit lakes are not expected to fill based on the CSIRO (2015) climate change predictions.

3.5.5.5 Final Void Water Quality

The final void water recovery analyses include simulations of the long-term salinity of the final void waterbodies. Evaporation from the lake surfaces will also slowly concentrate salts in the pit lake over time. The increasing salinity will not pose a risk to other aquifers and surface water features as the final void will remain a permanent sink (Appendix A).

TDS concentrations are predicted to increase past the end of the 500-year assessment period. Comparison of the maximum predicted TDS concentrations at the end of the simulation period between the base case and the alternate case show:

- Final Void (Pit 1) [Centre] maximum TDS decreased from approximately 23,000 mg/L (base case) to 6,700 mg/L.
- Final Void (Pit 3) [West] maximum TDS decreased from approximately 21,000 mg/L (base case) to 5,500 mg/L.

The results indicate that a lower evaporation rate in the alternate case has a significant impact on the concentration of salts in the final voids (Appendix A).

3.5.6 Underground Mining

This section of the PRCP Guideline is not relevant to the CDM as it is an open cut mining operation.

3.5.7 Built Infrastructure

3.5.7.1 Infrastructure Decommissioning and Removal

The majority of the infrastructure domain will be rehabilitated at the end of the CDM life as the infrastructure areas are required to support mining operations. Syntech will disconnect, decommission and remove all infrastructure from the site unless otherwise agreed with post-mining landholder(s) and DES.

Hydrocarbons (petrol, diesel, oils, greases, degreasers and kerosene), explosives, chemicals and liquid and non-liquid wastes unused at the completion of mining will be returned to the supplier in accordance with relevant safety and handling procedures.

Sites will be added to the Environmental Management Register (EMR) if required. The EMR is a public register which contains information about contaminated land in Queensland. The EMR also contains information of land which is, or could potentially be, contaminated because it is being used for an activity which may cause contamination.

3.5.7.2 Remediation of Contaminated Land

The CDM involves several Notifiable Activities and will potentially disturb areas where evidence of contamination or historical contaminating activities has occurred. Management of contaminated land during the operation of the CDM is described in Section 3.1.2.6.

Investigations will be undertaken at mine closure and prior to rehabilitation to identify and remediate any contaminated soil materials that may exist in accordance with the requirements under Part 8 of Chapter 7 of the EP Act or equivalent statutory provision in force at the time.

Where areas of potential land contamination are identified during rehabilitation activities, the CDM will undertake:

- Detailed site investigation report, as required under the *Environmental Protection Act 1996*.
- Removal or onsite-treatment of contaminated water (e.g. affected by hydrocarbons, brine, metals, etc.) to ensure consistency with upstream water quality characteristics.
- Removal and appropriate disposal/remediation of contaminated materials (PCBs, Dioxins, Mercury, hydrocarbon contaminated soils).
- All wastes removed from site and lawfully disposed.
- Validation testing to confirm that contaminated soils have been removed/remediated.

3.5.7.3 Environmental Management Register

When land is listed on the EMR for a notifiable activity, it is an indication that the land is likely to be contaminated but it does not mean it needs to be cleaned up or is not suitable for its current land use. This will depend on the nature, extent and risks of any contamination on the land, which can be determined by engaging a suitably qualified person to carry out a site investigation.

Where land is listed on the EMR because it is contaminated, details about the hazardous contaminant affecting the land will be included on the EMR as well as information about what land uses the land is suitable for. Where there is a site management plan in place to manage the contamination so it is suitable for a particular land use, the plan will also be attached to the EMR.

Once the site management plan has been successfully executed and the contamination has been resolved, Syntech will apply for the land to be removed from the EMR.

3.6 RISK ASSESSMENT

3.6.1 Risk Identification

Syntech has undertaken a risk assessment (Risk Mentor, 2021; Appendix L) to identify the risks of a stable condition for land described as a post-mining land use not being achieved, and how the risks will be managed or minimised. Syntech has identified the sources of risk, areas of impacts, events and their causes and potential consequences (Table 23).

The risks identified by the assessment team generally fell into the following categories:

- Market or other conditions leading to a move to care and maintenance or premature closure of the operation, which could compromise the ability to rehabilitate the CDM in line with community expectations.
- Problems with achieving a stable final landform arising from poor physical performance of rehabilitated waste rock emplacements, dams, or slopes.
- Impacts on the receiving environment (water) due to excursions of contaminated or sediment laden water flows.
- Decommissioning challenges leaving either contaminated or dangerous materials on the site after the conclusion of rehabilitation works.
- Impacts on ecology (flora or fauna) arising from failing to achieve the target landform and species mix on the site.
- Rehabilitation management issues related to insufficient resourcing or inadequate experience/execution of rehabilitation works.

Risks that were considered to be a result of controls failing could not be ranked (on the basis that a failed control has an indeterminant outcome) and are recorded in Appendix L.

3.6.2 Risk Evaluation and Treatment

The identified risks were ranked (considering the effect of the applied controls) using the Yancoal Risk Assessment and Control Criteria (Table 24). The risks identified were considered to be able to be effectively controlled through the implementation of the controls, management and mitigation measures as outlined in Tables 23 and 25.

Further consideration of interactions between rehabilitation milestones and the identified risks is provided in Table 26. The timeframes proposed in this PRC Plan and PRCP Schedule have been developed in consideration of the risks that were attributed to each of the rehabilitation milestones.

A detailed breakdown of all risks identified, the residual risk rankings and their associated controls is provided in Appendix L.

Table 23
Identified Rehabilitation Risks

PRCP ID	Mine Closure / Rehabilitation Aspect	Risk Source	Potential Events / Consequences	Ranking Comments	Loss Type	Existing / Proposed Risk Treatment / Control	Ranking with Controls		
PRCP-01	General	Insufficient resourcing (including skills and experience of rehabilitation personnel; funding for, or prioritisation of, rehabilitation activities; ongoing maintenance of rehabilitation requirements).	Rehabilitation inadequate, requiring further works.	As for PRCP-05.	(E) Environmental Impact	01DV.07 - Progressive rehabilitation resulting in reduced area for final rehabilitation. 02PV.04 - Rehabilitation protocols. 02PV.07 - Timing for access to rehabilitated areas. 03SV.04 - PRCP Amendment process. 04TV.03 - Government rehabilitation financial security in place.	2	C	8(M)
PRCP-02	General	Insufficient resourcing (including skills and experience of rehabilitation personnel; funding for, or prioritisation of, rehabilitation activities; ongoing maintenance of rehabilitation requirements).	Rehabilitation inadequate, requiring further works.	As for PRCP-05.	(R) Impact on Reputation	01DV.07 - Progressive rehabilitation resulting in reduced area for final rehabilitation. 02PV.04 - Rehabilitation protocols. 02PV.07 - Timing for access to rehabilitated areas. 03SV.04 - PRCP Amendment process. 04TV.03 - Government rehabilitation financial security in place.	2	C	8(M)
PRCP-03	General	Lack of clearly defined responsibilities.	Rehabilitation inadequate, requiring further works.	As for PRCP-05.	(O) Asset Damage and Other	01DV.07 - Progressive rehabilitation resulting in reduced area for final rehabilitation. 02PV.04 - Rehabilitation protocols. 02PV.07 - Timing for access to rehabilitated areas. 03SV.04 - PRCP Amendment process. 04TV.03 - Government rehabilitation financial security in place.	2	C	8(M)
PRCP-04	General	Lack of clearly defined responsibilities.	Rehabilitation inadequate, requiring further works.	As for PRCP-05.	(R) Impact on Reputation	01DV.07 - Progressive rehabilitation resulting in reduced area for final rehabilitation. 02PV.04 - Rehabilitation protocols. 02PV.07 - Timing for access to rehabilitated areas. 03SV.04 - PRCP Amendment process. 04TV.03 - Government rehabilitation financial security in place.	2	C	8(M)
PRCP-05	General	Care and maintenance/premature closure.	Delayed rehabilitation.	Non-compliance with the process of rehabilitation, leaving an unwanted site condition for subsequent land-holders and not being able to relinquish mining leases. This could possibly occur if there is a global failure of coal mining companies or a drop in demand for the product.	(E) Environmental Impact	01DV.07 - Progressive rehabilitation resulting in reduced area for final rehabilitation. 02PV.04 - Rehabilitation protocols. 02PV.07 - Timing for access to rehabilitated areas. 03SV.04 - PRCP Amendment process. 04TV.03 - Government rehabilitation financial security in place.	2	C	8(M)
PRCP-06	General	Poor records management, unable to demonstrate compliance with completion criteria.	Rehabilitation inadequate, requiring further works.	As for PRCP-05.	(E) Environmental Impact	01DV.07 - Progressive rehabilitation resulting in reduced area for final rehabilitation. 02PV.04 - Rehabilitation protocols. 02PV.07 - Timing for access to rehabilitated areas. 03SV.04 - PRCP Amendment process. 04TV.03 - Government rehabilitation financial security in place.	2	C	8(M)
PRCP-07	General	Inadequate consultation with key stakeholders.	Rehabilitation inadequate, requiring further works.	As for PRCP-05.	(E) Environmental Impact	01DV.07 - Progressive rehabilitation resulting in reduced area for final rehabilitation. 02PV.04 - Rehabilitation protocols. 02PV.07 - Timing for access to rehabilitated areas. 03SV.04 - PRCP Amendment process. 04TV.03 - Government rehabilitation financial security in place.	2	C	8(M)

Table 23 (Continued)
Identified Rehabilitation Risks

PRCP ID	Mine Closure / Rehabilitation Aspect	Risk Source	Potential Events / Consequences	Ranking Comments	Loss Type	Existing / Proposed Risk Treatment / Control	Ranking with Controls		
PRCP-08	General	Change in WDRC Planning Scheme.	Final land use no longer aligns with local planning scheme.	As for PRCP-05.	(E) Environmental Impact	01DV.07 - Progressive rehabilitation resulting in reduced area for final rehabilitation. 02PV.04 - Rehabilitation protocols. 02PV.07 - Timing for access to rehabilitated areas. 03SV.04 - PRCP Amendment process. 04TV.03 - Government rehabilitation financial security in place.	2	C	8(M)
PRCP-09	Decommissioning	Generation of waste products from demolition process (e.g., conveyors, electrical substations, compressors, services [pipes/cables], stores, laydown areas, etc.).	Inappropriate disposal of waste products (e.g., at licensed disposal facility).	Residual sources of ongoing contamination remain - addressed by rigorous identification of all areas to decommission and subsequent planning, execution, and quality/performance monitoring.	(E) Environmental Impact	01DV.01 - Surveyed plans of all mine features. 01DY.01 - Planning for decommissioning works. 02PY.01 - Works conducted by suitably qualified and experienced contractors. 03SY.05 - Contractor management and protocols.	2	D	5(L)
PRCP-10	Decommissioning	Failure to remove all infrastructure that is not to be retained post-closure (e.g., services, infrastructure, roads, carparks, hardstand areas, concrete footings).	Rehabilitation inadequate, requiring further works.	As for PRCP-09.	(E) Environmental Impact	01DV.01 - Surveyed plans of all mine features. 01DY.01 - Planning for decommissioning works. 02PY.01 - Works conducted by suitably qualified and experienced contractors. 03SY.05 - Contractor management and protocols.	2	D	5(L)
PRCP-11	Decommissioning	Failure to remove all hazardous materials (e.g., carbonaceous material on the surface, hazardous wastes, other wastes).	Rehabilitation inadequate, requiring further works.	As for PRCP-09.	(E) Environmental Impact	01DY.01 - Planning for decommissioning works. 01DV.01 - Surveyed plans of all mine features. 02PY.01 - Works conducted by suitably qualified and experienced contractors. 02PY.02 - Specific guidelines for hazardous chemicals. 03SY.05 - Contractor management and protocols.	2	D	5(L)
PRCP-12	Decommissioning	Land contamination sites not successfully identified or remediated resulting in impacts to the environment.	Rehabilitation inadequate, requiring further works.	As for PRCP-09.	(E) Environmental Impact	01DV.01 - Surveyed plans of all mine features. 01DY.01 - Planning for decommissioning works. 02PY.01 - Works conducted by suitably qualified and experienced contractors. 03SY.05 - Contractor management and protocols.	2	D	5(L)
PRCP-13	Decommissioning	Failure of borehole or gas well seals.	Resealing of boreholes or gas wells required.	As for PRCP-09.	(E) Environmental Impact	01DV.01 - Surveyed plans of all mine features. 01DY.01 - Planning for decommissioning works. 02PY.01 - Works conducted by suitably qualified and experienced contractors. 03SY.05 - Contractor management and protocols. 04TV.01 - Guidance on gas borehole decommissioning.	2	D	5(L)
PRCP-14	Decommissioning	Lack of structural integrity of buildings and infrastructure to be retained in final land use.	Collapse/failure of infrastructure to be retained (e.g., dams).	As for PRCP-09.	(E) Environmental Impact	01DV.01 - Surveyed plans of all mine features. 01DY.01 - Planning for decommissioning works. 02PY.01 - Works conducted by suitably qualified and experienced contractors. 03SY.05 - Contractor management and protocols.	2	D	5(L)
PRCP-15	Decommissioning	Impacts on European/historic heritage items.	Damage to heritage items. Prosecution.	No heritage items of significance identified.	(E) Environmental Impact	01DV.01 - Surveyed plans of all mine features. 01DY.01 - Planning for decommissioning works. 02PV.01 - Planning process to identify all heritage items. 02PV.02 - Site land disturbance permits. 02PV.03 - Utilising already disturbed footprints. 02PY.01 - Works conducted by suitably qualified and experienced contractors. 03SV.01 - Database which tracks all known heritage items. 03SY.05 - Contractor management and protocols.	1	E	1(L)

Table 23 (Continued)
Identified Rehabilitation Risks

PRCP ID	Mine Closure / Rehabilitation Aspect	Risk Source	Potential Events / Consequences	Ranking Comments	Loss Type	Existing / Proposed Risk Treatment / Control	Ranking with Controls		
PRCP-16	Decommissioning	Impacts on Aboriginal heritage items.	Damage to heritage items. Prosecution.	As for PRCP-15.	(E) Environmental Impact	01DV.01 - Surveyed plans of all mine features. 01DY.01 - Planning for decommissioning works. 02PY.01 - Works conducted by suitably qualified and experienced contractors. 02PV.01 - Planning process to identify all heritage items. 02PV.02 - Site land disturbance permits. 02PV.03 - Utilising already disturbed footprints. 03SV.01 - Database which tracks all known heritage items. 03SY.05 - Contractor management and protocols.	1	E	1(L)
PRCP-17	Ecology - flora and fauna	Landform aspect not suitable for intended target plant species - not meeting required habitats for woodland fauna.	Inability to meet post-mining land use criteria.	Appropriate species are being identified that consider habitat requirements of local fauna and the works will be subject to a monitoring process to confirm success. Reference sites are used to confirm the success/failure of the process.	(E) Environmental Impact	01DY.02 - Target revegetation species identified. 01DV.10 - Selection of appropriate analogue and reference sites. 02PV.04 - Rehabilitation protocols. 02PV.05 - Long mine life (~75 years). 03SY.01 - Monitoring and adaptive management programs. 03SY.02 - Regular review of milestones and completion criteria. 03SY.03 - Annual reporting of rehabilitation progress. 03SV.02 - Two yearly internal independent environmental audits. 04TV.02 - Internal reporting of any non-compliances.	1	C	4(L)
PRCP-18	Ecology - flora and fauna	Tree species established along diversion are not suited to riparian environment.	Rehabilitation inadequate, requiring further works.	As for PRCP-17.	(E) Environmental Impact	01DY.02 - Target revegetation species identified. 01DV.10 - Selection of appropriate analogue and reference sites. 02PV.04 - Rehabilitation protocols. 02PV.05 - Long mine life (~75 years). 03SY.01 - Monitoring and adaptive management programs. 03SY.02 - Regular review of milestones and completion criteria. 03SY.03 - Annual reporting of rehabilitation progress. 03SV.02 - Two yearly internal independent environmental audits. 04TV.02 - Internal reporting of any non-compliances.	1	C	4(L)
PRCP-19	Ecology - flora and fauna	Inappropriate revegetation species mix for targeted final land use.	Rehabilitation inadequate, requiring further works.	As for PRCP-17.	(E) Environmental Impact	01DY.02 - Target revegetation species identified. 01DV.10 - Selection of appropriate analogue and reference sites. 02PV.04 - Rehabilitation protocols. 02PV.05 - Long mine life (~75 years). 03SY.01 - Monitoring and adaptive management programs. 03SY.02 - Regular review of milestones and completion criteria. 03SY.03 - Annual reporting of rehabilitation progress. 03SV.02 - Two yearly internal independent environmental audits. 04TV.02 - Internal reporting of any non-compliances.	1	C	4(L)
PRCP-20	Final Landform	Final landform instability (e.g. in and out of pit waste rock emplacements, steep slopes, erosion, highwalls, low walls etc.) affecting post-mining land use.	Landform failure (public safety risk).	Stability of the landform leading to not meeting rehabilitation criteria, release of sediments, potential for public to encounter an unstable landform. Mitigated by rehabilitation, monitoring, relinquishment requirements and ability to remediate any identified areas of instability.	(P) Harm to People (E) Environmental Impact	01DV.02 - Geotechnical analysis and design. 01DV.03 - Geomorphic design protocols. 01DV.04 - Factor of safety applied to designs. 01DV.05 - Prior studies of erosion performance. 02PV.06 - Erosion and sediment control.	2	D	5(L)

Table 23 (Continued)
Identified Rehabilitation Risks

PRCP ID	Mine Closure / Rehabilitation Aspect	Risk Source	Potential Events / Consequences	Ranking Comments	Loss Type	Existing / Proposed Risk Treatment / Control	Ranking with Controls		
PRCP-21	Final Landform	Final landform instability (e.g. NUMAs, final voids, etc.) affecting post-mining land use.	Landform failure (public safety risk) and NUMAs causing environmental harm.	Slumping of material into the void - with potential to impact safety barriers - and subsequently causing harm to any persons, stock or fauna present. This is mitigated by geotechnical designs, monitoring and meeting relinquishment requirements. Considered to be slightly more significant than a failure of other landforms - but less likely to occur.	(P) Harm to People (E) Environmental Impact	01DV.02 - Geotechnical analysis and design. 01DV.03 - Geomorphic design protocols. 01DV.04 - Factor of safety applied to designs. 01DV.05 - Prior studies of erosion performance. 02PV.06 - Erosion and sediment control.	2	D	5(L)
PRCP-22	Final Landform	Final landform instability (e.g. steep slopes, erosion, highwalls, low walls etc.) affecting post-mining land use.	Rehabilitation inadequate, requiring further works.	As for PRCP-21.	(E) Environmental Impact	01DV.02 - Geotechnical analysis and design. 01DV.03 - Geomorphic design protocols. 01DV.04 - Factor of safety applied to designs. 01DV.05 - Prior studies of erosion performance. 02PV.06 - Erosion and sediment control.	2	D	5(L)
PRCP-23	Final Landform	Final landform unsuitable for final land use (e.g. large rocks present affecting cultivation, settlement and surface subsidence leading to extended ponding etc.).	Rehabilitation inadequate, requiring further works.	As for PRCP-21.	(E) Environmental Impact	01DV.02 - Geotechnical analysis and design. 01DV.03 - Geomorphic design protocols. 01DV.04 - Factor of safety applied to designs. 01DV.05 - Prior studies of erosion performance. 02PV.06 - Erosion and sediment control.	2	D	5(L)
PRCP-24	Final Landform	Final landforms are not consistent with and do not complement the topography of the surrounding region.	Rehabilitation inadequate, requiring further works.	As for PRCP-21.	(E) Environmental Impact	01DV.02 - Geotechnical analysis and design. 01DV.03 - Geomorphic design protocols. 01DV.04 - Factor of safety applied to designs. 01DV.05 - Prior studies of erosion performance. 02PV.06 - Erosion and sediment control.	2	D	5(L)
PRCP-25	Final Landform	Erosion and failure of drainage and water management/storage structures.	Impacts on water quality and potential discharge.	Drainage line 1 is the most significant. As for PRCP-21.	(E) Environmental Impact	01DV.02 - Geotechnical analysis and design. 01DV.03 - Geomorphic design protocols. 01DV.04 - Factor of safety applied to designs. 01DV.05 - Prior studies of erosion performance. 02PV.05 - Long mine life (~75 years). 02PV.06 - Erosion and sediment control. 03SV.08 - Water quality monitoring.	2	D	5(L)
PRCP-26	Final Landform	Failure of the tailings storage facility over time.	Impact on surrounding landform and movement of tailings off site.	Similar to PRCP-21. Dams have been assessed as a low risk. Environmentally is minor to moderate consequence - but expected to be a rare/unlikely likelihood.	(E) Environmental Impact	01DE.01 - Tailings and dam designs and management systems. 01DV.02 - Geotechnical analysis and design. 01DV.03 - Geomorphic design protocols. 01DV.04 - Factor of safety applied to designs. 01DV.09 - Mine planning includes allowance for rehabilitation of the TSF. 02PE.01 - Flocculant use achieving a stiff tailings deposition. 02PE.06 - Capping of TSF. 03SV.03 - RPQ involvement in TSF design.	3	D	9(M)

Table 23 (Continued)
Identified Rehabilitation Risks

PRCP ID	Mine Closure / Rehabilitation Aspect	Risk Source	Potential Events / Consequences	Ranking Comments	Loss Type	Existing / Proposed Risk Treatment / Control	Ranking with Controls		
PRCP-27	Final Landform	Lack of infrastructure to support intended final land use (e.g. dams, fences, watering facilities, etc.). Note: Intended final land use is light intensity grazing with native vegetation, minimal infrastructure required.	Farm dams retained insufficient to support grazing and additional dams required.	As for PRCP-21.	(E) Environmental Impact	01DV.02 - Geotechnical analysis and design. 01DV.03 - Geomorphic design protocols. 01DV.04 - Factor of safety applied to designs. 01DV.05 - Prior studies of erosion performance. 02PV.06 - Erosion and sediment control.	2	D	5(L)
PRCP-28	Final Landform	Landform (excluding final void domains) not free draining.	Rehabilitation inadequate, requiring further works.	As for PRCP-21.	(E) Environmental Impact	01DV.02 - Geotechnical analysis and design. 01DV.03 - Geomorphic design protocols. 01DV.04 - Factor of safety applied to designs. 01DV.05 - Prior studies of erosion performance. 02PV.06 - Erosion and sediment control.	2	D	5(L)
PRCP-56	Final Landform	Gazetted roads (Boort-Koi and Ryalls) if re-established would allow access to potentially hazardous locations in the rehabilitation area and final landform.	Risk to public safety.	As for PRCP-21.	(P) Harm to People	01DV.06 - Road closures. 02PE.03 - Site security, fencing, etc. 02PV.07 - Timing for access to rehabilitated areas. 03SY.04 - Third party grazing agreements.	2	D	5(L)
PRCP-50	Water	Contamination resulting from associated activities (e.g. storage and use of hydrocarbons/chemicals, drilling fluids, spillage of dirty or produced saline water, brine, sewage, tailings emplacement etc.).	Contamination of waterways or land resulting in infringement notice.	As for PRCP-52.	(E) Environmental Impact	02PE.08 - Design minimises water reporting to voids. 02PE.09 - Over-topping buffer in site voids. 03SY.06 - Water management plan. 03SV.08 - Water quality monitoring. 03SV.09 - Mine voids are groundwater sinks.	2	D	5(L)
PRCP-51	Water	Diversion of surface water runoff away from catchment areas.	Loss of water flow downstream due to capture of water in voids.	As for PRCP-52.	(E) Environmental Impact	02PE.08 - Design minimises water reporting to voids. 03SY.06 - Water management plan.	2	D	5(L)
PRCP-52	Water	Water accumulation in voids.	Overtopping/ discharge to receiving environment.	Release to the environment could lead to a minor level of harm and unlikely to occur.	(E) Environmental Impact	02PE.08 - Design minimises water reporting to voids. 02PE.09 - Over-topping buffer in site voids. 03SV.08 - Water quality monitoring. 03SV.09 - Mine voids are groundwater sinks.	2	D	5(L)
PRCP-53	Water	Groundwater seepage from voids.	Impact to receiving environment.	As for PRCP-52.	(E) Environmental Impact	02PE.08 - Design minimises water reporting to voids. 03SV.08 - Water quality monitoring. 03SV.09 - Mine voids are groundwater sinks.	2	D	5(L)
PRCP-54	Water	Poor water quality/excessive discharges (e.g. acid-drainage, high salinity, etc.).	Impact to receiving environment.	As for PRCP-52.	(E) Environmental Impact	02PE.04 - Gypsum remediation to improve run-off. 02PE.09 - Over-topping buffer in site voids. 02PV.09 - Waste rock handling procedures. 03SY.06 - Water management plan. 03SV.08 - Water quality monitoring. 03SV.09 - Mine voids are groundwater sinks.	2	D	5(L)

Table 24
Yancoal Risk and Control Assessment Criteria

Loss Type		Consequence				
		1 Insignificant	2 Minor	3 Moderate	4 Major	5 Catastrophic
(P) Harm to People		Slight injury or health effects – report only (RO) or first aid injury (FAI)	Minor injury or health effects – medical treatment injury (MTI) or restricted work injury (RWI)	Serious bodily injury or health effects –lost time injury (LTI)	Single fatality	Multiple fatalities
(E) Environmental Impact		Environmental nuisance – trivial or negligible, short term impact to area of low significance, minimal or no physical remediation required No regulation. Cost < \$1K	Minor environmental harm – short term impact to area of limited local significance, limited physical remediation Reportable Breach /Minor Non Compliance, potential warning notice, other notices (infringement / prosecution) unlikely. Costs \$1k - \$10k	Serious environmental harm – impact to Environment, physical remediation, potential or actual community health impacts or pollution or contamination. Infringement Notice but Prosecution unlikely. Costs \$10K - \$100K	Major environmental harm – long term reversible impact, health statistics in community may alter as a result of this incident or pollution or contamination Prosecution Costs \$100K – \$1M	Extreme environmental harm – irreversible impacts on environmental values of extreme & widespread areas, or those of national conservation significance, community fatalities or pollution or contamination Prosecution, License revoked Costs > \$1M
(O) Asset Damage and Other Consequential Losses		Slight damage < \$1M or < 1 day disruption to operation	Minor damage \$1M - \$5M or < 1 week disruption to operation	Local damage \$5M - \$20M or < 1 month disruption to operation	Major damage \$20M - \$100M or < 6 months partial loss of operation	Extreme damage > \$100M or 6 months Substantial or total loss of operation
(R) Impact on Reputation		Slight impact – Public awareness may exist but no public concern Isolated compliance failure – no brand damage	Limited impact – Some local public concern Intervention of regulating authority – minimal brand damage	Considerable impact - Regional public concern Major compliance failure involving fines – medium brand damage	National impact – National public concern Temporary withdrawal of license to operate – significant brand damage	International impact - International public attention Loss of shareholder confidence – irreparable brand damage
Likelihood		Level of Risk				
Likelihood Guide						
A (Almost Certain)	Likely that the unwanted event could occur several times per year at this location	11 (M)	16 (H)	20 (H)	23 (E)	25 (E)
B (Likely)	Likely that the unwanted event could occur several times per year in the Australian mining industry; or could happen annually	7 (M)	12 (M)	17 (H)	21 (E)	24 (E)
C (Possible)	The unwanted event could well have occurred in the Australian mining industry at some time in the past 10 years	4 (L)	8 (M)	13 (H)	18 (H)	22 (E)
D (Unlikely)	The unwanted event has happened in the Australian mining industry at some time; or could happen in 50 years	2 (L)	5 (L)	9 (M)	14 (H)	19 (H)
E (Rare)	The unwanted event has never been known to occur in the Australian mining industry; or is highly unlikely that it could ever occur	1 (L)	3 (L)	6 (M)	10 (M)	15 (H)

Table 25
Controls, Management and Mitigation Measures

Control Name	Expectation	Selection Reason	Responsible
01DE.01 - Tailings and dam designs and management systems	Tailings and other dams appropriately designed to contain material and any affected water.	Addressing potential for collapse or uncontrolled release of site fluids.	CDM Operations Manager
01DV.01 - Surveyed plans of all mine features	Surveyed plans to confirm that all locations, structures and features of substance are identified.	Preventing key items or built features not being addressed during rehabilitation as their physical locations are known and mapped.	CDM Mine Planning Superintendent
01DV.02 - Geotechnical analysis and design	Geotechnical analyses and implementation of designs to achieve long term stable landforms. As new materials are identified this leads to review and updating (as required) of designs.	Protection against changes in geotechnical conditions leading to final landform instability.	CDM Mine Planning Superintendent
01DV.03 - Geomorphic design protocols	Current designs are aligned with relevant QLD design principles. Planned to implement geomorphic design principles being applied to the design of the final landform.	Protection against longer term instability of the final landform.	CDM Operations Manager
01DV.04 - Factor of safety applied to designs	Factor of safety applied to the void design to address the weathering expected.	Protection against longer term instability of the final landform.	CDM Operations Manager
01DV.05 - Prior studies of erosion performance	Prior studies of erosion potential of waste rock emplacements have been considered when the rehabilitation methodology has been developed.	Addressing potential for using incorrect inputs in final landform designs.	CDM Environment and Community Superintendent
01DV.06 - Road closures	Intention is to keep the roads closed, with relocated roads providing access for private landholders.	Addresses potential for unwanted post mining access to steep slopes or water bodies.	CDM Operations Manager
01DV.07 - Progressive rehabilitation resulting in reduced area for final rehabilitation	Progressive rehabilitation (in conformance with the PRC Plan and PRCP Schedule) minimising the amount of land to rehabilitate at closure.	Addressing potential for extensive works being required at the end of mine life.	CDM Environment and Community Superintendent
01DV.08 - Mine design considers carbonaceous material in waste rock emplacements	Mine design/mine planning identifies carbonaceous material and manages this appropriately.	Addressing potential for spontaneous combustion in waste rock emplacements or stockpiles.	CDM Mine Planning Superintendent
01DV.09 - Mine planning includes allowance for rehabilitation of the TSF	Mine plan has significant time-frame for rehabilitating TSF whilst ongoing mining of the pit is occurring.	Addressing potential for incomplete capping of the tailings storage facility.	CDM Operations Manager
01DV.10 - Selection of appropriate analogue and reference sites	Selection of appropriate analogue and reference sites. AusEcology have reviewed the reference sites to confirm suitability and present a monitoring strategy.	Addresses potential to not achieve desired rehabilitation performance due to a lack of understanding of species mix and micro-climate impacts	CDM Environment and Community Superintendent
01DY.01 - Planning for decommissioning works	Appropriate planning for decommissioning works.	Specifically identifies waste products to allow for their safe disposal on or off site.	CDM Environment and Community Superintendent
01DY.02 - Target revegetation species identified	Revegetation plan to identify appropriate species for purchase and outline process to meet requirements.	Achieve a species mix which will allow the completion criteria to be met.	CDM Environment and Community Superintendent
02PE.01 - Flocculant use achieving a stiff tailings deposition	Operational strategy is the use of flocculant, leading to a very stiff material which would constrain any release.	Addresses long term escape of stored tailings.	CDM Operations Manager
02PE.02 - External supplier of seeds	External supplier of seeds to address quality and availability of appropriate seed mix.	Addresses potential for poor germination rates and inappropriate seed mix.	CDM Environment and Community Superintendent
02PE.03 - Site security, fencing, etc.	Prevention of unwanted access through site security, including fencing of lease, demarcation and signage, and exclusion of stock.	Addressing potential for overgrazing, access by unwanted third parties or feral animal access to the site.	CDM Operations Manager
02PE.04 - Gypsum remediation to improve run-off	Gypsum remediation assists in improving run-off quality.	Addressing poor quality run-off from the site.	CDM Environment and Community Superintendent
02PE.05 - Stockpiling rock for hydraulic breaks	Rock material for hydraulic breaks over tailings is stockpiled in sufficient amounts.	Addressing hydraulic erosion of the TSF dam wall (and other dam walls, drains, etc.).	CDM Operations Manager
02PE.06 - Capping of TSF	PRC Plan includes procedures for, and description of, capping requirements for the TSF.	Addressing potential for incomplete capping of the tailings storage facility.	CDM Mine Planning Superintendent
02PE.07 - Bunding and barricading of voids and steep slopes	Construct a safety bund wall of suitable material and/or fencing to limit human and livestock/animal access.	Addressing potential for injury to members of the public or livestock at the site.	CDM Mine Planning Superintendent
02PE.08 - Design minimises water reporting to voids	Executed designs minimise the catchment reporting to the void.	Addressing the unwanted build-up of water in site voids.	CDM Operations Manager
02PE.09 - Over-topping buffer in site voids	Significant buffer before over-topping and final void water balance indicates a very low risk of spill (<1% annual exceedance probability).	Addressing potential for over-topping of site voids post-mining.	CDM Environment and Community Superintendent
02PV.01 - Planning process to identify all heritage items	Planning and survey process to identify all heritage items so that they can be avoided.	Addressing potential to damage a heritage site, thereby degrading environmental values in an area.	CDM Environment and Community Superintendent
02PV.02 - Site land disturbance permits	Site land disturbance permits will be completed to manage localised disturbance and prevent impacts to specific features.	Preventing damage to heritage sites, natural features or other sensitive locations.	CDM Environment and Community Superintendent
02PV.03 - Utilising already disturbed footprints	Where possible, work will occur within already disturbed footprints to prevent excess disturbance.	Preventing disturbance to less affected items of environmental value.	CDM Operations Manager
02PV.04 - Rehabilitation protocols	Rehabilitation protocols in place to regulate planting, monitoring and selecting appropriate species of vegetation.	Minimise the potential that planted species will not lead to meeting required environmental values at closure.	CDM Environment and Community Superintendent
02PV.05 - Long mine life (~75 years)	The long mine life (~75 years) means there is sufficient time to adjust the vegetation strategy based on results.	Having a long mine life addresses the potential for seasonal variations to misrepresent the effectiveness of rehabilitation efforts.	CDM Operations Manager

Table 25 (Continued)
Controls, Management and Mitigation Measures

Control Name	Expectation	Selection Reason	Responsible
02PV.06 - Erosion and sediment control	Existing erosion and sediment control methodologies are informed by geochemical assessments and site operating knowledge.	Protecting against releases to the wider environment during construction and for the longer-term landform.	CDM Environment and Community Superintendent
02PV.07 - Timing for access to rehabilitated areas	Subsequent land holders could not access the land until the mining leases are relinquished and CDM sells the land to a subsequent party.	Prevents damage to the rehabilitated areas by third parties.	CDM Operations Manager
02PV.08 - Cleared vegetation is mulched or burnt unless retained	Vegetation is mulched or burnt unless retained for rehabilitation.	Addresses potential for unwanted species in the rehabilitated areas.	CDM Operations Manager
02PV.09 – Waste rock handling procedures	Waste rock handling procedures lead to adequate capping (to prevent any spontaneous combustion threats).	Addressing potential for spontaneous combustion in waste rock emplacements or stockpiles.	CDM Mine Planning Superintendent
02PY.01 - Works conducted by suitably qualified and experienced contractors	Works conducted by suitably qualified contractors including permits for disposing of any contaminated materials, to ensure professional outcomes.	This business input/control is intended to minimise the potential for poor execution of required works. It is supported by appropriate supervision, inspection and test plans, and formal contractual arrangements to optimise the outcomes from any works.	CDM Operations Manager
02PY.02 - Specific guidelines for hazardous chemicals	Specific guidelines in place that address any hazardous materials on site.	To minimise the outcome from any hazardous materials brought to, used or created by the operating site.	CDM Health Safety and Training Superintendent
03SV.01 - Database which tracks all known heritage items	Database which tracks all known heritage items is maintained.	To identify, geo-locate and characterise all items within proximity of the site and workings.	CDM Environment and Community Superintendent
03SV.02 - Two yearly internal independent environmental audits	Two yearly internal (to the company) independent (to the site) environmental audits undertaken and any recommendations are reviewed and actions tracked.	Challenge any slippage of standards and identify emerging conditions that may require additional resources to be allocated.	CDM Operations Manager
03SV.03 - RPQ involvement in TSF design	RPQ involvement with the TSF design as a regulated structure and subject to annual inspections.	Addressing potential instability in the TSF.	CDM Operations Manager
03SV.04 – PRCP amendment process	Processes available for amending the PRC Plan and PRCP Schedule in the event of a requirement to close the mine early (meeting requirements of a stable landform).	Reducing the potential for delivered rehabilitation not meeting community expectations.	CDM Operations Manager
03SV.05 - Topsoil management	Topsoil management described in PRC Plan (includes identifying the resource, addressing/treating any sodic soils, stockpiling to preserve soil quality, site wide topsoil study, monitoring of topsoil pre-rehab to confirm nutrient and soil chemistry levels/requirements and topsoil balance reporting).	Addressing potential for topsoil to not meet rehabilitation growing requirements.	CDM Operations Manager
03SV.06 - Rehabilitation design, monitoring and maintenance	Quantity of required species and monitoring of germination rates is defined in the PRC Plan. The plan also covers monitoring of general rehabilitation performance and required maintenance works.	Addressing failure to execute rehabilitation works in line with PRC Plan and PRCP Schedule requirements.	CDM Operations Manager
03SV.07 - Weed and pest control management	Weed and pest control management described in the PRC Plan and PRCP Schedule.	Addressing potential for rehabilitation failure due to weeds or invasive pests.	CDM Operations Manager
03SV.08 - Water quality monitoring	Water quality monitoring is undertaken for site dams and the receiving environment.	Addressing potential for cumulative impacts from poor quality water presence or release.	CDM Environment and Community Superintendent
03SV.09 – Mine voids are groundwater sinks	Groundwater modelling of long-term performance indicates that voids will continue to act as ground water sinks.	Addressing unintended releases to, or draw from, groundwater/aquifers.	CDM Environment and Community Superintendent
03SY.01 - Monitoring and adaptive management programs	Monitoring and adaptive management programs which determine relevant conditions and provide modification (within design parameters) of activities to achieve design goals.	To prevent changes in performance from becoming more significant by reducing the impact of an emerging condition/threat.	CDM Environment and Community Superintendent
03SY.02 – Regular review of milestones and completion criteria	Milestone and completion criteria to confirm outcomes are being achieved.	Prevent any long-term slippage of progressive rehabilitation.	CDM Environment and Community Superintendent
03SY.03 - Annual reporting of rehabilitation progress	Annual reporting of PRC Plan and PRCP Schedule progress to the relevant regulators.	Minimise the potential for executed rehabilitation drifting from the PRCP Schedule.	CDM Operations Manager
03SY.04 - Third party grazing agreements	Any third party grazing would be in accordance with appropriate license terms (Rural licence agreements).	Addressing unmanaged access to rehabilitated areas by third parties conducting rural businesses.	CDM Operations Manager
03SY.05 - Contractor management and protocols	Contractor management to confirm site requirements/expectations are met.	Addressing poorly executed works being performed by contractors.	CDM Operations Manager
03SY.06 - Water management plan	Water management plan with clean and dirty water diversions around the pit.	Addressing potential for unwanted collection, storage or release of waters on the site during operations and post closure.	CDM Environment and Community Superintendent
04TV.01 - Guidance on gas borehole decommissioning	Gas borehole guidance on decommissioning - that leads to a removal of any threats.	To minimise potential for unexpected legacy drill holes and associated features.	CDM Operations Manager
04TV.02 - Internal reporting of any non-compliances	Internal reporting of any non-compliances in order to alert management to any emerging threats and required allocation of resources.	Minimise the extent to which rehabilitation works fail to meet requirements of the PRC Plan and PRCP Schedule.	CDM Environment and Community Superintendent
04TV.03 - Government rehabilitation bonds in place	Government holds financial security which are sufficient to return the site to a stable, suitable landform in the event of the company failing.	Addresses failure of the company.	CDM Operations Manager

Table 26
Interactions between Rehabilitation Milestones and Identified Rehabilitation Risks

Rehabilitation Milestone	Risk Source	Associated Potential Events/Consequences	Relevant Controls
General	- PRCP-01/2: Insufficient resourcing (including skills and experience of rehabilitation personnel; funding for, or prioritisation of, rehabilitation activities; ongoing maintenance of rehabilitation requirements). - PRCP-03/4: Lack of clearly defined responsibilities. - PRCP-06: Poor records management, unable to demonstrate compliance with completion criteria. - PRCP-07: Inadequate consultation with key stakeholders.	Rehabilitation inadequate, requiring further works.	01DV.07: Progressive rehabilitation resulting in reduced area for final rehabilitation. 02PV.04: Rehabilitation protocols. 02PV.07: Timing for access to rehabilitated areas. 03SV.04: PRCP Amendment process. 04TV.03: Government rehabilitation financial security in place.
	PRCP-05: Care and maintenance/premature closure.	Delayed rehabilitation.	01DV.07: Progressive rehabilitation resulting in reduced area for final rehabilitation. 02PV.04: Rehabilitation protocols. 02PV.07: Timing for access to rehabilitated areas. 03SV.04: PRCP Amendment process. 04TV.03: Government rehabilitation financial security in place.
	PRCP-56: Gazetted roads (Boort-Koi and Ryalls) if re-established would allow access to potentially hazardous locations in the rehabilitation area and final landform.	Risk to public safety.	01DV.06: Road closures. 02PE.03: Site security, fencing, etc. 02PV.07: Timing for access to rehabilitated areas. 03SY.04: Third party grazing agreements.
	- PRCP-35: Vandalism to revegetation areas. - PRCP-36: Inadvertent or unauthorised access by mining equipment and vehicles.	Rehabilitation inadequate, requiring further works.	02PV.02: Site land disturbance permits. 03SV.05: Topsoil management. 02PE.03: Site security, fencing, etc.
	PRCP-44: Adoption of inappropriate or inadequate rehabilitation techniques, including equipment fleet.	Rehabilitation inadequate, requiring further works.	02PY.01: Works conducted by suitably qualified and experienced contractors. 03SY.05: Contractor management and protocols.

Table 26 (Continued)
Interactions between Rehabilitation Milestones and Identified Rehabilitation Risks

Rehabilitation Milestone	Risk Source	Associated Potential Events/Consequences	Relevant Controls
General (continued)	- PRCP-45: Adoption of inappropriate or inadequate rehabilitation monitoring to inform maintenance program. - PRCP-46: Adoption of inappropriate or inadequate rehabilitation monitoring to demonstrate compliance with success criteria.	Rehabilitation inadequate, requiring further works.	02PV.04: Rehabilitation protocols. 03SV.05: Topsoil management. 03SV.06: Rehabilitation design, monitoring and maintenance. 03SY.01: Monitoring and adaptive management programs. 03SY.02: Regular review of milestones and completion criteria. 03SY.03: Annual reporting of rehabilitation progress. 04TV.02: Internal reporting of any non-compliances.
	PRCP-47: Rehabilitation doesn't align with analogue/reference site, unable to demonstrate compliance with completion criteria.	Rehabilitation inadequate, requiring further works.	01DV.10: Selection of appropriate analogue and reference sites. 02PV.04: Rehabilitation protocols. 03SY.01: Monitoring and adaptive management programs. 03SY.02: Regular review of milestones and completion criteria. 03SY.03: Annual reporting of rehabilitation progress. 03SV.06: Rehabilitation design, monitoring and maintenance. 04TV.02: Internal reporting of any non-compliances.

Table 26 (Continued)
Interactions between Rehabilitation Milestones and Identified Rehabilitation Risks

Rehabilitation Milestone	Risk Source	Associated Potential Events/Consequences	Relevant Controls
RM1 Infrastructure Decommissioning and Removal	PRCP-09: Generation of waste products from demolition process (e.g., conveyors, electrical substations, compressors, services [pipes/cables], stores, laydown areas, etc.).	Inappropriate disposal of waste products (e.g., at licensed disposal facility).	01DV.01: Surveyed plans of all mine features. 01DY.01: Planning for decommissioning works. 02PY.01: Works conducted by suitably qualified and experienced contractors. 03SY.05: Contractor management and protocols.
	PRCP-10: Failure to remove all infrastructure that is not to be retained post-closure (e.g., services, infrastructure, roads, carparks, hardstand areas, concrete footings).	Rehabilitation inadequate, requiring further works.	01DV.01: Surveyed plans of all mine features. 01DY.01: Planning for decommissioning works. 02PY.01: Works conducted by suitably qualified and experienced contractors. 03SY.05: Contractor management and protocols.
	PRCP-11: Failure to remove all hazardous materials (e.g. carbonaceous material on the surface, hazardous wastes, other wastes).	Rehabilitation inadequate, requiring further works.	01DY.01: Planning for decommissioning works. 01DV.01: Surveyed plans of all mine features. 02PY.01: Works conducted by suitably qualified and experienced contractors. 02PY.02: Specific guidelines for hazardous chemicals. 03SY.05: Contractor management and protocols.
	PRCP-13: Failure of borehole or gas well seals.	Resealing of boreholes or gas wells required.	01DV.01: Surveyed plans of all mine features. 01DY.01: Planning for decommissioning works. 02PY.01: Works conducted by suitably qualified and experienced contractors. 03SY.05: Contractor management and protocols. 04TV.01: Guidance on gas borehole decommissioning.
	PRCP-14: Lack of structural integrity of buildings and infrastructure to be retained in final land use.	Collapse/failure of infrastructure to be retained (e.g. dams).	01DV.01: Surveyed plans of all mine features. 01DY.01: Planning for decommissioning works. 02PY.01: Works conducted by suitably qualified and experienced contractors. 03SY.05: Contractor management and protocols.

Table 26 (Continued)
Interactions between Rehabilitation Milestones and Identified Rehabilitation Risks

Rehabilitation Milestone	Risk Source	Associated Potential Events/Consequences	Relevant Controls
RM1 Infrastructure Decommissioning and Removal (continued)	- PRCP-15: Impacts on European/ historic heritage items. - PRCP-16: Impacts on Aboriginal heritage items.	Damage to heritage items.	01DV.01: Surveyed plans of all mine features. 01DY.01: Planning for decommissioning works. 02PV.01: Planning process to identify all heritage items. 02PV.02: Site land disturbance permits. 02PV.03: Utilising already disturbed footprints. 02PY.01: Works conducted by suitably qualified and experienced contractors. 03SV.01: Database which tracks all known heritage items. 03SY.05: Contractor management and protocols.
RM2 Remediation of Contaminated Land	- PRCP-11: Failure to remove all hazardous materials (e.g., carbonaceous material on the surface, hazardous wastes, other wastes). - PRCP-12: Land contamination sites not successfully identified or remediated resulting in impacts to the environment.	Rehabilitation inadequate, requiring further works.	01DY.01: Planning for decommissioning works. 01DV.01: Surveyed plans of all mine features. 02PY.01: Works conducted by suitably qualified and experienced contractors. 02PY.02: Specific guidelines for hazardous chemicals. 03SY.05: Contractor management and protocols.
	PRCP-50: Contamination resulting from associated activities (e.g. storage and use of hydrocarbons/chemicals, drilling fluids, spillage of dirty or produced saline water, brine, sewage, tailings emplacement etc.).	Contamination of waterways or land resulting in infringement notice.	02PE.08: Design minimises water reporting to voids. 02PE.09: Over-topping buffer in site voids. 03SY.06: Water management plan. 03SV.08: Water quality monitoring. 03SV.09: Mine voids are groundwater sinks.

Table 26 (Continued)
Interactions between Rehabilitation Milestones and Identified Rehabilitation Risks

Rehabilitation Milestone	Risk Source	Associated Potential Events/Consequences	Relevant Controls
RM2 Remediation of Contaminated Land (continued)	PRCP-37: Adverse geotechnical/geochemical issues associated with process waste storage facilities (e.g. tailings, reject emplacements, presence of sodic sub-soils) overburden and waste rock emplacements, etc.	Poor quality runoff from rehabilitated surfaces effecting water quality.	01DE.01: Tailings and dam designs and management systems. 02PE.04: Gypsum remediation to improve run-off. 03SV.05: Topsoil management. 03SV.08: Water quality monitoring.
	PRCP-55: Legacy exploration bore holes not rehabilitated at end of mine life.	Rehabilitation inadequate, requiring further works.	03SV.02: Two yearly environmental independent audits. 04TV.01: Guidance on gas borehole decommissioning.
RM3 Installation of Cover System/Capping	PRCP-26: Failure of the tailings storage facility over time.	Impact on surrounding landform and movement of tailings off site.	01DE.01: Tailings and dam designs and management systems. 01DV.02: Geotechnical analysis and design. 01DV.03: Geomorphic design protocols. 01DV.04: Factor of safety applied to designs. 01DV.09: Mine planning includes allowance for rehabilitation of the TSF. 02PE.01: Flocculant use achieving a stiff tailings deposition. 02PE.06: Capping of TSF. 03SV.03: RPQ involvement in TSF design.
	PRCP-50: Contamination resulting from associated activities (e.g. storage and use of hydrocarbons/chemicals, drilling fluids, spillage of dirty or produced saline water, brine, sewage, tailings emplacement etc.).	Contamination of waterways or land resulting in infringement notice.	02PE.08: Design minimises water reporting to voids. 02PE.09: Over-topping buffer in site voids. 03SY.06: Water management plan. 03SV.08: Water quality monitoring. 03SV.09: Mine voids are groundwater sinks.

Table 26 (Continued)
Interactions between Rehabilitation Milestones and Identified Rehabilitation Risks

Rehabilitation Milestone	Risk Source	Associated Potential Events/Consequences	Relevant Controls
RM3 Installation of Cover System/Capping (continued)	PRCP-37: Adverse geotechnical/geochemical issues associated with process waste storage facilities (e.g. tailings, reject emplacements, presence of sodic sub-soils) overburden and waste rock emplacements, etc.	Poor quality runoff from rehabilitated surfaces effecting water quality.	01DE.01: Tailings and dam designs and management systems. 02PE.04: Gypsum remediation to improve run-off. 03SV.05: Topsoil management. 03SV.08: Water quality monitoring.
	PRCP-38: Inadequate capping or removal of carbonaceous material.	Spontaneous combustion event.	01DV.08: Mine design considers carbonaceous material in waste rock emplacements. 02PV.09: Waste rock handling procedures.
	PRCP-39: Availability of suitable materials for capping of hazardous materials and tailings.	Unable to cap due to lack of suitable material on site.	01DV.09: Mine planning includes allowance for rehabilitation of the TSF. 02PE.05: Stockpiling rock for hydraulic breaks. 02PE.06: Capping of TSF. 03SV.05: Topsoil management.
RM4 Landform Development and Reshaping/Re-profiling	PRCP-20: Final landform instability (e.g. in and out of pit waste rock emplacements, steep slopes, erosion, highwalls, low walls etc.) affecting post-mining land use.	Landform failure (public safety risk).	01DV.02: Geotechnical analysis and design. 01DV.03: Geomorphic design protocols. 01DV.04: Factor of safety applied to designs. 01DV.05: Prior studies of erosion performance. 02PV.06: Erosion and sediment control.
	- PRCP-22: Final landform instability (e.g. steep slopes, erosion, highwalls, low walls etc.) affecting post-mining land use. - PRCP-23: Final landform unsuitable for final land use (e.g. large rocks present affecting cultivation, settlement and surface subsidence leading to extended ponding etc.). - PRCP-24: Final landforms are not consistent with and do not complement the topography of the surrounding region. - PRCP-28: Landform (excluding final void domains) not free draining.	Rehabilitation inadequate, requiring further works.	

Table 26 (Continued)
Interactions between Rehabilitation Milestones and Identified Rehabilitation Risks

Rehabilitation Milestone	Risk Source	Associated Potential Events/Consequences	Relevant Controls
RM4 Landform Development and Reshaping/Re-profiling (continued)	PRCP-51: Diversion of surface water runoff away from catchment areas.	Loss of water flow downstream due to capture of water in voids.	02PE.08: Design minimises water reporting to voids. 03SY.06: Water management plan.
RM5 Surface Preparation	PRCP-23: Final landform unsuitable for final land use (e.g. large rocks present affecting cultivation, settlement and surface subsidence leading to extended ponding etc.).	Rehabilitation inadequate, requiring further works.	01DV.02: Geotechnical analysis and design. 01DV.03: Geomorphic design protocols. 01DV.04: Factor of safety applied to designs. 01DV.05: Prior studies of erosion performance. 02PV.06: Erosion and sediment control.
	PRCP-29: Loss of biological and habitat resources (e.g. subsoil, topsoil, vegetative material, seedbank, rocks, etc.) through clearing, salvage and handling practices.	High quality vegetation / habitat resources lost.	02PV.02: Site land disturbance permits. 02PV.08: Cleared vegetation is mulched or burnt unless retained. 03SV.05: Topsoil management.
	PRCP-40: Insufficient spreading of topsoil (not to required thickness).	Rehabilitation inadequate, requiring further works.	02PV.02: Site land disturbance permits. 03SV.05: Topsoil management.
	PRCP-41: Availability of suitable topsoil for growth medium to support revegetation.	Rehabilitation inadequate, requiring further works/importing of topsoil.	
	PRCP-42: Topsoil unsuitable as growth medium.	Rehabilitation inadequate, requiring further works such as additional treatment/amelioration.	

Table 26 (Continued)
Interactions between Rehabilitation Milestones and Identified Rehabilitation Risks

Rehabilitation Milestone	Risk Source	Associated Potential Events/Consequences	Relevant Controls
RM6 Revegetation (grazing)	PRCP-19: Inappropriate revegetation species mix for targeted final land use.	Inability to meet post-mining land use criteria.	01DY.02: Target revegetation species identified. 01DV.10: Selection of appropriate analogue and reference sites. 02PV.04: Rehabilitation protocols. 02PV.05: Long mine life (~75 years). 03SY.01: Monitoring and adaptive management programs. 03SY.02: Regular review of milestones and completion criteria. 03SY.03: Annual reporting of rehabilitation progress. 03SV.02: Two yearly internal independent environmental audits. 04TV.02: Internal reporting of any non-compliances.
	PRCP-27: Lack of infrastructure to support intended final land use (e.g. dams, fences, watering facilities, etc.). Note: Intended final land use is light intensity grazing with native vegetation, minimal infrastructure required.	Farm dams retained insufficient to support grazing and additional dams required.	01DV.02: Geotechnical analysis and design. 01DV.03: Geomorphic design protocols. 01DV.04: Factor of safety applied to designs. 01DV.05: Prior studies of erosion performance. 02PV.06: Erosion and sediment control.
	PRCP-29: Loss of biological and habitat resources (e.g. subsoil, topsoil, vegetative material, seedbank, rocks, etc.) through clearing, salvage and handling practices.	High quality vegetation / habitat resources lost.	02PV.02: Site land disturbance permits. 02PV.08: Cleared vegetation is mulched or burnt unless retained. 03SV.05: Topsoil management.
	PRCP-30: Lack of availability and quality of seed resources.	Rehabilitation inadequate, requiring further works.	02PE.02: External supplier of seed. 03SV.06: Rehabilitation design, monitoring and maintenance.

Table 26 (Continued)
Interactions between Rehabilitation Milestones and Identified Rehabilitation Risks

Rehabilitation Milestone	Risk Source	Associated Potential Events/Consequences	Relevant Controls
RM6 Revegetation (grazing) (continued)	PRCP-31: Weed and pest control (or lack thereof), including damage from insects, plant disease, fauna and livestock.	Rehabilitation inadequate, requiring further works.	02PV.02: Site land disturbance permits. 02PV.08: Cleared vegetation is mulched or burnt unless retained. 03SV.05: Topsoil management. 03SV.07: Weed and pest control management.
	PRCP-33: Insufficient establishment or cover of vegetation.	Rehabilitation inadequate, requiring further works.	02PV.02: Site land disturbance permits. 03SV.05: Topsoil management. 03SV.06: Rehabilitation design, monitoring and maintenance.
	PRCP-48: Vegetation not self-sustaining, unable to demonstrate compliance with completion criteria.	Rehabilitation inadequate, requiring further works.	01DV.10: Selection of appropriate analogue and reference sites. 02PV.04: Rehabilitation protocols. 03SY.01: Monitoring and adaptive management programs. 03SY.02: Regular review of milestones and completion criteria. 03SY.03: Annual reporting of rehabilitation progress. 03SV.06: Rehabilitation design, monitoring and maintenance. 04TV.02: Internal reporting of any non-compliances.

Table 26 (Continued)
Interactions between Rehabilitation Milestones and Identified Rehabilitation Risks

Rehabilitation Milestone	Risk Source	Associated Potential Events/Consequences	Relevant Controls
RM7 Revegetation (grazing with native vegetation)	PRCP-17: Landform aspect not suitable for intended target plant species - not meeting required habitats for woodland fauna.	Rehabilitation inadequate, requiring further works.	01DY.02: Target revegetation species identified. 01DV.10: Selection of appropriate analogue and reference sites.
	- PRCP-18: Tree species established along diversion are not suited to riparian environment. - PRCP-19: Inappropriate revegetation species mix for targeted final land use.	Inability to meet post-mining land use criteria.	02PV.04: Rehabilitation protocols. 02PV.05: Long mine life (~75 years). 03SY.01: Monitoring and adaptive management programs. 03SY.02: Regular review of milestones and completion criteria. 03SY.03: Annual reporting of rehabilitation progress. 03SV.02: Two yearly internal independent environmental audits. 04TV.02: Internal reporting of any non-compliances.
	PRCP-27: Lack of infrastructure to support intended final land use (e.g. dams, fences, watering facilities, etc.). Note: Intended final land use is light intensity grazing with native vegetation, minimal infrastructure required.	Farm dams retained insufficient to support grazing and additional dams required.	01DV.02: Geotechnical analysis and design. 01DV.03: Geomorphic design protocols. 01DV.04: Factor of safety applied to designs. 01DV.05: Prior studies of erosion performance. 02PV.06: Erosion and sediment control.
	PRCP-29: Loss of biological and habitat resources (e.g. subsoil, topsoil, vegetative material, seedbank, rocks, etc.) through clearing, salvage and handling practices.	High quality vegetation / habitat resources lost.	02PV.02: Site land disturbance permits. 02PV.08: Cleared vegetation is mulched or burnt unless retained. 03SV.05: Topsoil management.
	PRCP-30: Lack of availability and quality of seed resources.	Rehabilitation inadequate, requiring further works.	02PE.02: External supplier of seed. 03SV.06: Rehabilitation design, monitoring and maintenance.

Table 26 (Continued)
Interactions between Rehabilitation Milestones and Identified Rehabilitation Risks

Rehabilitation Milestone	Risk Source	Associated Potential Events/Consequences	Relevant Controls
RM7 Revegetation (grazing with native vegetation) (continued)	PRCP-31: Weed and pest control (or lack thereof), including damage from insects, plant disease, fauna and livestock.	Rehabilitation inadequate, requiring further works.	02PV.02: Site land disturbance permits. 02PV.08: Cleared vegetation is mulched or burnt unless retained. 03SV.05: Topsoil management. 03SV.07: Weed and pest control management.
	PRCP-33: Insufficient establishment or cover of vegetation.	Rehabilitation inadequate, requiring further works.	02PV.02: Site land disturbance permits. 03SV.05: Topsoil management. 03SV.06: Rehabilitation design, monitoring and maintenance.
	PRCP-48: Vegetation not self-sustaining, unable to demonstrate compliance with completion criteria.	Rehabilitation inadequate, requiring further works.	01DV.10: Selection of appropriate analogue and reference sites. 02PV.04: Rehabilitation protocols. 03SY.01: Monitoring and adaptive management programs. 03SY.02: Regular review of milestones and completion criteria. 03SY.03: Annual reporting of rehabilitation progress. 03SV.06: Rehabilitation design, monitoring and maintenance. 04TV.02: Internal reporting of any non-compliances.

Table 26 (Continued)
Interactions between Rehabilitation Milestones and Identified Rehabilitation Risks

Rehabilitation Milestone	Risk Source	Associated Potential Events/Consequences	Relevant Controls
RM8 Surface Conditions	PRCP-09: Generation of waste products from demolition process (e.g., conveyors, electrical substations, compressors, services [pipes/cables], stores, laydown areas, etc.).	Inappropriate disposal of waste products (e.g., at licensed disposal facility).	01DV.01: Surveyed plans of all mine features. 01DY.01: Planning for decommissioning works. 02PY.01: Works conducted by suitably qualified and experienced contractors. 03SY.05: Contractor management and protocols.
	PRCP-25: Erosion and failure of drainage and water management/storage structures.	Impacts on water quality and potential discharge.	01DV.02: Geotechnical analysis and design. 01DV.03: Geomorphic design protocols. 01DV.04: Factor of safety applied to designs. 01DV.05: Prior studies of erosion performance. 02PV.05: Long mine life (~75 years). 02PV.06: Erosion and sediment control. 03SV.08: Water quality monitoring.
	PRCP-28: Landform (excluding final void domains) not free draining.	Rehabilitation inadequate, requiring further works.	01DV.02: Geotechnical analysis and design. 01DV.03: Geomorphic design protocols. 01DV.04: Factor of safety applied to designs. 01DV.05: Prior studies of erosion performance. 02PV.06: Erosion and sediment control.
	PRCP-20: Final landform instability (e.g. in and out of pit waste rock emplacements, steep slopes, erosion, highwalls, low walls etc.) affecting post-mining land use.	Landform failure (public safety risk).	
	PRCP-21: Final landform instability (e.g. NUMAs, final voids, etc.) affecting post-mining land use.	Landform failure (public safety risk) and NUMAs causing environmental harm.	
	PRCP-50: Contamination resulting from associated activities (e.g. storage and use of hydrocarbons/chemicals, drilling fluids, spillage of dirty or produced saline water, brine, sewage, tailings emplacement etc.).	Contamination of waterways or land resulting in infringement notice.	02PE.08: Design minimises water reporting to voids. 02PE.09: Over-topping buffer in site voids. 03SY.06: Water management plan. 03SV.08: Water quality monitoring. 03SV.09: Mine voids are groundwater sinks.

Table 26 (Continued)
Interactions between Rehabilitation Milestones and Identified Rehabilitation Risks

Rehabilitation Milestone	Risk Source	Associated Potential Events/Consequences	Relevant Controls
RM8 Surface Conditions (continued)	PRCP-43: Substrate inadequate to support revegetation or agricultural land capability (e.g. lack of organic matter, nutrient deficiency, lack of soil biota, adverse soil chemical properties, exposed hostile geochemical materials, overly compacted, and any other factors impeding the effective rooting depth).	Soil quality insufficient to support revegetation.	02PE.04: Gypsum remediation to improve run-off. 02PV.02: Site land disturbance permits. 03SV.05: Topsoil management.
RM9 Achievement of PMLU to Stable Condition (grazing)	PRCP-08: Change in WDRC Planning Scheme.	Final land use no longer aligns with local planning scheme.	01DV.07: Progressive rehabilitation resulting in reduced area for final rehabilitation. 02PV.04: Rehabilitation protocols. 02PV.07: Timing for access to rehabilitated areas. 03SV.04: PRCP Amendment process. 04TV.03: Government rehabilitation financial security in place.
	PRCP-20: Final landform instability (e.g. in and out of pit waste rock emplacements, steep slopes, erosion, highwalls, low walls etc.) affecting post-mining land use.	Landform failure (public safety risk).	01DV.02: Geotechnical analysis and design. 01DV.03: Geomorphic design protocols. 01DV.04: Factor of safety applied to designs.
	PRCP-21: Final landform instability (e.g. NUMAs, final voids, etc.) affecting post-mining land use.	Landform failure (public safety risk) and NUMAs causing environmental harm.	01DV.05: Prior studies of erosion performance. 02PV.06: Erosion and sediment control.

Table 26 (Continued)
Interactions between Rehabilitation Milestones and Identified Rehabilitation Risks

Rehabilitation Milestone	Risk Source	Associated Potential Events/Consequences	Relevant Controls
RM9 Achievement of PMLU to Stable Condition (grazing) (continued)	PRCP-26: Failure of the tailings storage facility over time.	Impact on surrounding landform and movement of tailings off site.	01DE.01: Tailings and dam designs and management systems. 01DV.02: Geotechnical analysis and design. 01DV.03: Geomorphic design protocols. 01DV.04: Factor of safety applied to designs. 01DV.09: Mine planning includes allowance for rehabilitation of the TSF. 02PE.01: Flocculant use achieving a stiff tailings deposition. 02PE.06: Capping of TSF. 03SV.03: RPQ involvement in TSF design.
	PRCP-27: Lack of infrastructure to support intended final land use (e.g. dams, fences, watering facilities, etc.). Note: Intended final land use is light intensity grazing with native vegetation, minimal infrastructure required.	Farm dams retained insufficient to support grazing and additional dams required.	01DV.02: Geotechnical analysis and design. 01DV.03: Geomorphic design protocols. 01DV.04: Factor of safety applied to designs. 01DV.05: Prior studies of erosion performance. 02PV.06: Erosion and sediment control.
	PRCP-50: Contamination resulting from associated activities (e.g. storage and use of hydrocarbons/chemicals, drilling fluids, spillage of dirty or produced saline water, brine, sewage, tailings emplacement etc.).	Contamination of waterways or land resulting in infringement notice.	02PE.08: Design minimises water reporting to voids. 02PE.09: Over-topping buffer in site voids. 03SY.06: Water management plan. 03SV.08: Water quality monitoring. 03SV.09: Mine voids are groundwater sinks.
	PRCP-29: Loss of biological and habitat resources (e.g. subsoil, topsoil, vegetative material, seedbank, rocks, etc.) through clearing, salvage and handling practices.	High quality vegetation / habitat resources lost.	02PV.02: Site land disturbance permits. 02PV.08: Cleared vegetation is mulched or burnt unless retained. 03SV.05: Topsoil management.

Table 26 (Continued)
Interactions between Rehabilitation Milestones and Identified Rehabilitation Risks

Rehabilitation Milestone	Risk Source	Associated Potential Events/Consequences	Relevant Controls
RM9 Achievement of PMLU to Stable Condition (grazing) (continued)	PRCP-31: Weed and pest control (or lack thereof), including damage from insects, plant disease, fauna and livestock.	Rehabilitation inadequate, requiring further works.	02PV.02: Site land disturbance permits. 02PV.08: Cleared vegetation is mulched or burnt unless retained. 03SV.05: Topsoil management. 03SV.07: Weed and pest control management.
	PRCP-34: Overgrazing of pasture rehabilitation areas.	Rehabilitation inadequate, requiring further works.	02PV.02: Site land disturbance permits. 02PE.03: Site security, fencing, etc. 03SV.05: Topsoil management. 03SY.04: Third party grazing agreements.
RM10 Achievement of PMLU to Stable Condition (grazing with native vegetation)	PRCP-08: Change in WDRC Planning Scheme.	Final land use no longer aligns with local planning scheme.	01DV.07: Progressive rehabilitation resulting in reduced area for final rehabilitation. 02PV.04: Rehabilitation protocols. 02PV.07: Timing for access to rehabilitated areas. 03SV.04: PRCP Amendment process. 04TV.03: Government rehabilitation financial security in place.

Table 26 (Continued)
Interactions between Rehabilitation Milestones and Identified Rehabilitation Risks

Rehabilitation Milestone	Risk Source	Associated Potential Events/Consequences	Relevant Controls
RM10 Achievement of PMLU to Stable Condition (grazing with native vegetation) (continued)	PRCP-17: Landform aspect not suitable for intended target plant species - not meeting required habitats for woodland fauna.	Inability to meet post-mining land use criteria.	01DY.02: Target revegetation species identified. 01DV.10: Selection of appropriate analogue and reference sites.
	PRCP-18: Tree species established along diversion are not suited to riparian environment.	Rehabilitation inadequate, requiring further works.	02PV.04: Rehabilitation protocols. 02PV.05: Long mine life (~75 years). 03SY.01: Monitoring and adaptive management programs. 03SY.02: Regular review of milestones and completion criteria. 03SY.03: Annual reporting of rehabilitation progress. 03SV.02: Two yearly internal independent environmental audits. 04TV.02: Internal reporting of any non-compliances.
	PRCP-20: Final landform instability (e.g. in and out of pit waste rock emplacements, steep slopes, erosion, highwalls, low walls etc.) affecting post-mining land use.	Landform failure (public safety risk).	01DV.02: Geotechnical analysis and design. 01DV.03: Geomorphic design protocols. 01DV.04: Factor of safety applied to designs.
	PRCP-21: Final landform instability (e.g. NUMAs, final voids, etc.) affecting post-mining land use.	Landform failure (public safety risk) and NUMAs causing environmental harm.	01DV.05: Prior studies of erosion performance. 02PV.06: Erosion and sediment control.

Table 26 (Continued)
Interactions between Rehabilitation Milestones and Identified Rehabilitation Risks

Rehabilitation Milestone	Risk Source	Associated Potential Events/Consequences	Relevant Controls
RM10 Achievement of PMLU to Stable Condition (grazing with native vegetation) (continued)	PRCP-26: Failure of the tailings storage facility over time.	Impact on surrounding landform and movement of tailings off site.	01DE.01: Tailings and dam designs and management systems. 01DV.02: Geotechnical analysis and design. 01DV.03: Geomorphic design protocols. 01DV.04: Factor of safety applied to designs. 01DV.09: Mine planning includes allowance for rehabilitation of the TSF. 02PE.01: Flocculant use achieving a stiff tailings deposition. 02PE.06: Capping of TSF. 03SV.03: RPQ involvement in TSF design.
	PRCP-27: Lack of infrastructure to support intended final land use (e.g. dams, fences, watering facilities, etc.). Note: Intended final land use is light intensity grazing with native vegetation, minimal infrastructure required.	Farm dams retained insufficient to support grazing and additional dams required.	01DV.02: Geotechnical analysis and design. 01DV.03: Geomorphic design protocols. 01DV.04: Factor of safety applied to designs. 01DV.05: Prior studies of erosion performance. 02PV.06: Erosion and sediment control.
	PRCP-50: Contamination resulting from associated activities (e.g. storage and use of hydrocarbons/chemicals, drilling fluids, spillage of dirty or produced saline water, brine, sewage, tailings emplacement etc.).	Contamination of waterways or land resulting in infringement notice.	02PE.08: Design minimises water reporting to voids. 02PE.09: Over-topping buffer in site voids. 03SY.06: Water management plan. 03SV.08: Water quality monitoring. 03SV.09: Mine voids are groundwater sinks.
	PRCP-29: Loss of biological and habitat resources (e.g. subsoil, topsoil, vegetative material, seedbank, rocks, etc.) through clearing, salvage and handling practices.	High quality vegetation / habitat resources lost.	02PV.02: Site land disturbance permits. 02PV.08: Cleared vegetation is mulched or burnt unless retained. 03SV.05: Topsoil management.

Table 26 (Continued)
Interactions between Rehabilitation Milestones and Identified Rehabilitation Risks

Rehabilitation Milestone	Risk Source	Associated Potential Events/Consequences	Relevant Controls
RM10 Achievement of PMLU to Stable Condition (grazing with native vegetation) (continued)	PRCP-31: Weed and pest control (or lack thereof), including damage from insects, plant disease, fauna and livestock.	Rehabilitation inadequate, requiring further works.	02PV.02: Site land disturbance permits. 02PV.08: Cleared vegetation is mulched or burnt unless retained. 03SV.05: Topsoil management. 03SV.07: Weed and pest control management.
RM11 Retained Water Structures	PRCP-14: Lack of structural integrity of buildings and infrastructure to be retained in final land use.	Collapse/failure of infrastructure to be retained (e.g. dams).	01DV.01: Surveyed plans of all mine features. 01DY.01: Planning for decommissioning works. 02PY.01: Works conducted by suitably qualified and experienced contractors. 03SY.05: Contractor management and protocols.
	PRCP-25: Erosion and failure of drainage and water management/storage structures.	Impacts on water quality and potential discharge.	01DV.02: Geotechnical analysis and design. 01DV.03: Geomorphic design protocols. 01DV.04: Factor of safety applied to designs. 01DV.05: Prior studies of erosion performance. 02PV.05: Long mine life (~75 years). 02PV.06: Erosion and sediment control. 03SV.08: Water quality monitoring.
	PRCP-27: Lack of infrastructure to support intended final land use (e.g. dams, fences, watering facilities, etc.). Note: Intended final land use is light intensity grazing with native vegetation, minimal infrastructure required.	Farm dams retained insufficient to support grazing and additional dams required.	01DV.02: Geotechnical analysis and design. 01DV.03: Geomorphic design protocols. 01DV.04: Factor of safety applied to designs. 01DV.05: Prior studies of erosion performance. 02PV.06: Erosion and sediment control.

Table 26 (Continued)
Interactions between Rehabilitation Milestones and Identified Rehabilitation Risks

Rehabilitation Milestone	Risk Source	Associated Potential Events/Consequences	Relevant Controls
RM11 Retained Water Structures (continued)	PRCP-50: Contamination resulting from associated activities (e.g. storage and use of hydrocarbons/chemicals, drilling fluids, spillage of dirty or produced saline water, brine, sewage, tailings emplacement etc.).	Contamination of waterways or land resulting in infringement notice.	02PE.08: Design minimises water reporting to voids. 02PE.09: Over-topping buffer in site voids. 03SY.06: Water management plan. 03SV.08: Water quality monitoring. 03SV.09: Mine voids are groundwater sinks.
	PRCP-51: Diversion of surface water runoff away from catchment areas.	Loss of water flow downstream due to capture of water in voids.	02PE.08: Design minimises water reporting to voids. 03SY.06: Water management plan.
	PRCP-52: Water accumulation in voids.	Overtopping/ discharge to receiving environment.	02PE.08: Design minimises water reporting to voids. 02PE.09: Over-topping buffer in site voids. 03SV.08: Water quality monitoring. 03SV.09: Mine voids are groundwater sinks.
	PRCP-53: Groundwater seepage from voids.	Impact to receiving environment.	02PE.08: Design minimises water reporting to voids. 03SV.08: Water quality monitoring. 03SV.09: Mine voids are groundwater sinks.
MM1 High- and Low Wall Treatment	PRCP-21: Final landform instability (e.g. NUMAs, final voids, etc.) affecting post-mining land use.	Landform failure (public safety risk) and NUMAs causing environmental harm.	01DV.02: Geotechnical analysis and design. 01DV.03: Geomorphic design protocols. 01DV.04: Factor of safety applied to designs. 01DV.05: Prior studies of erosion performance. 02PV.06: Erosion and sediment control.
MM2 Surface Conditions	PRCP-56: Gazetted roads (Boort-Koi and Ryalls) if re-established would allow access to potentially hazardous locations in the rehabilitation area and final landform.	Risk to public safety.	01DV.06: Road closures. 02PE.03: Site security, fencing, etc. 02PV.07: Timing for access to rehabilitated areas. 03SY.04: Third party grazing agreements.

Table 26 (Continued)
Interactions between Rehabilitation Milestones and Identified Rehabilitation Risks

Rehabilitation Milestone	Risk Source	Associated Potential Events/Consequences	Relevant Controls
MM3 Achievement of Sufficient Improvement	PRCP-20: Final landform instability (e.g. in and out of pit waste rock emplacements, steep slopes, erosion, highwalls, low walls etc.) affecting post-mining land use.	Landform failure (public safety risk).	01DV.02: Geotechnical analysis and design. 01DV.03: Geomorphic design protocols. 01DV.04: Factor of safety applied to designs. 01DV.05: Prior studies of erosion performance. 02PV.06: Erosion and sediment control.
	PRCP-21: Final landform instability (e.g. NUMAs, final voids, etc.) affecting post-mining land use.	Landform failure (public safety risk) and NUMAs causing environmental harm.	
	PRCP-22: Final landform instability (e.g. steep slopes, erosion, highwalls, low walls etc.) affecting post-mining land use.	Rehabilitation inadequate, requiring further works.	
	PRCP-51: Diversion of surface water runoff away from catchment areas.	Loss of water flow downstream due to capture of water in voids.	02PE.08: Design minimises water reporting to voids. 03SY.06: Water management plan.
	PRCP-52: Water accumulation in voids.	Overtopping/ discharge to receiving environment.	02PE.08: Design minimises water reporting to voids. 02PE.09: Over-topping buffer in site voids. 03SV.08: Water quality monitoring. 03SV.09: Mine voids are groundwater sinks.
	PRCP-53: Groundwater seepage from voids.	Impact to receiving environment.	02PE.08: Design minimises water reporting to voids. 03SV.08: Water quality monitoring. 03SV.09: Mine voids are groundwater sinks.
	PRCP-56: Gazetted roads (Boort-Koi and Ryalls) if re-established would allow access to potentially hazardous locations in the rehabilitation area and final landform.	Risk to public safety.	01DV.06: Road closures. 02PE.03: Site security, fencing, etc. 02PV.07: Timing for access to rehabilitated areas. 03SY.04: Third party grazing agreements.

3.6.3 Rehabilitation Trials

Rehabilitation trials are undertaken at the CDM to improve the chances of achieving the nominated rehabilitation outcomes. The trials are intended to manage and minimise the risks of a stable condition not being achieved.

Table 27 provides the following details for ongoing and future rehabilitation trials planned at the CDM:

- the objective of the trial(s);
- the trial design including, but not limited to, the location, underlying land characteristics and potential issues;
- the details of how the trial(s) will be carried out;
- when the trial(s) will commence;
- the duration of the trial(s);
- how the trial(s) will be assessed for success;
- how the results of the trial(s) will be incorporated into rehabilitation strategies and the development of milestones; and
- where the trial(s) have previously been carried out by the applicant.

Rehabilitation trials have been undertaken across the entirety of the rehabilitation area progressed to date.

Table 27
Rehabilitation Trial Details

Rehabilitation Trial and Objectives	Trial Design and Details	Trial Commencement, Location and Duration	Assessment of Success	Incorporation into Rehabilitation Strategies and Milestones
Rehabilitation methodology trials to review rehabilitation management and implementation.	As the CDM is in the early stages of operation and associated progressive rehabilitation, all rehabilitation activities are currently considered to be rehabilitation trials.	Rehabilitation methodology trials commenced in 2010 in the areas available for rehabilitation. These trials will continue for the duration of the CDM.	The primary measures for success will be based on the duration it takes for each area to achieve the relevant rehabilitation milestones.	As rehabilitation progresses, Syntech will review the outcomes and adopt methodologies from the rehabilitation areas considered to be the most successful.
Grazing trial to establish appropriate stocking rates.	Trials will involve 10-20 ha “cells” set up with electric fencing and a recommended trigger level for removing stock based on cover and standing vegetation biomass (e.g. 1,000 kg/ha or 70% surface cover). Stocking rates and duration will be estimated from the standing biomass pre-grazing, and verified by estimating pasture recovery rates after grazing. Several cells will function as controls.	Trials will commence in mid- to late-2022. Grazing trials will be undertaken in areas that have successfully progressed through RM6 (Revegetation). The trial will continue until designated stocking rates are reached.	The primary measures for success will be based on maintenance of surface cover at critical levels at the end of the dry season (notionally 30 September) to reduce erosion rates to sustainable levels and an absence of rilling. The secondary measures for success will be: • maintenance of palatable, productive and perennial pasture species using the Queensland Government Stocktake method; • assessment of Land Condition using Queensland beef industry guidelines; • maintenance of soil surface fertility; and • degree of woodland thickening.	The outcomes of this trial will be used to inform appropriate stocking rates for rehabilitated areas.
Plant species trials to confirm best options for diversion areas.	Plant species trials will involve the establishment of vegetation along the Drainage Line 1 diversion and will require the monitoring and analysis of which species are most successfully establishing in this environment.	Plant species trials will commence following construction of the Drainage Line 1 diversion. The trial will continue until rehabilitation of the Drainage Line 1 diversion is completed.	The primary measures for success will be based on the survivorship and establishment rates of the species seeded.	The more successful plant species will be preferentially planted to improve rehabilitation outcomes.

**Table 27 (cont.)
Rehabilitation Trial Details**

Rehabilitation Trial and Objectives	Trial Design and Details	Trial Commencement, Location and Duration	Assessment of Success	Incorporation into Rehabilitation Strategies and Milestones
Plant species trials to confirm best options for final void walls.	Plant species trials will involve the establishment of vegetation on the final void walls and will require the monitoring and analysis of which species are most successfully establishing in this environment.	Plant species trials will commence once the central void has been established. The trial will continue until rehabilitation of the central void is completed.	The primary measures for success will be based on the survivorship and establishment rates of the species seeded.	The more successful plant species will be preferentially planted to improve rehabilitation outcomes.

3.7 MONITORING AND MAINTENANCE

3.7.1 Milestone Monitoring

Successful revegetation outcomes rely on an integrated and adaptive approach to risk identification and control. Monitoring plays an integral part within the overall management strategy, as it will enable early detection of any risks to revegetation areas as well as the effectiveness of risk management actions undertaken. Effective monitoring will enable significant processes or trends to be detected and, where required, appropriate management actions to be implemented.

Table 28 provides an overview of the monitoring and/or maintenance program for each of the rehabilitation and improvement milestones, including timing of the activities, quality assurance and/or data management procedures, as well as reporting and review procedures.

3.7.1.1 *Revegetation Monitoring*

Revegetation monitoring is split into two phases, an establishment phase and a maintenance phase (Table 29). Areas of native vegetation (i.e. Scenarios 2 and 3) have longer establishment and maintenance phases because tree and shrub species will be planted in addition to direct seeding of grasses and forbs.

Table 29
Revegetation Monitoring Phases

Phase	Definition	Anticipated Timeframe (Years)	
		Scenario 1	Scenarios 2 & 3
Establishment	The period required for revegetated areas to become self-reliant without watering in normal seasonal conditions.	2	5
Maintenance	The period of growth post-establishment until the time that the revegetated plants become dominant and self-sustaining on the site.	3-5	6-20

A summary of the proposed monitoring methods for each vegetation scenario is provided in Table 30 and discussed in further detail in the Revegetation Plan (Appendix K).

Rehabilitation monitoring sites will be established following the completion of each rehabilitation area. Monitoring at these sites will include:

- one fixed 50 m transect;
- one 50 m x 10 m plot (centred on the 50 m transect); and
- five 1 m x 1 m quadrats (at 10 m intervals along the transect, alternating sides).

Sites will be placed at random within newly established rehabilitation polygons, at a density of approximately one site per 10 ha. The data to be collected in each plot/subplot is summarised in Table 30 and discussed further below. Photographic records and GPS locations for all monitoring sites and observed issues will be kept up to date in an appropriate database. To monitor revegetation progress, the data for each vegetation scenario will be averaged across monitoring sites established in similar timeframes and compared to the corresponding reference sites.

Table 28
Monitoring and Maintenance Program

Rehabilitation Milestone	Timeframe	Milestone Criteria	Monitoring and/or Maintenance	Timing of Monitoring and/or Maintenance	Quality Assurance and/or Data Management	Reporting and Review
RM1 Infrastructure Decommissioning and Removal	3 months	a) All services disconnected and decommissioned.	Confirm all services disconnected and decommissioned.	Immediately after decommissioning and removal works are completed.	Decommissioning and removal works will be conducted and certified by suitably qualified person(s).	A report will be provided by the relevant person(s) detailing the activities completed. The Annual Return will include a summary of all decommissioning and removal works.
		b) Contaminated water (e.g. affected by hydrocarbons, brine, metals, etc.) is treated to ensure consistency with upstream water quality characteristics, or removed off site.	Confirm all contaminated water treated, transferred to final voids or removed, as necessary.			
		c) All wastes removed from site and lawfully disposed.	Confirm all waste, relevant materials, buildings and water storages demolished and removed (unless otherwise agreed with landholders and/or relevant agencies).			
		d) All infrastructure and water storages demolished and removed, unless otherwise agreed in writing by landholders and/or relevant agencies.				
		e) All roads and access tracks removed and ripped to reduce compaction, unless otherwise agreed in writing by landholders and/or relevant agencies.	Confirm all roads and access tracks have been removed and ripped (unless otherwise agreed with landholders and/or relevant agencies).			
RM2 Remediation of Contaminated Land	3 months	a) Detailed site investigation report, as required under the <i>Environmental Protection Act 1994</i> , completed.	Prepare report detailing outcomes/recommendations as a result of the site investigation.	Within two weeks of undertaking investigations.	Preliminary and intrusive contaminated land investigations will be conducted by suitably qualified person(s).	The Annual Return will include a summary of all remediation works.
		b) Contaminated materials (e.g. PCBs, Dioxins, Mercury, hydrocarbon contaminated soils) removed and appropriately disposed or remediated.	Monitor levels of hydrocarbons, heavy metals, salinity and cation exchange capacity.	Immediately following removal/remediation of contaminated materials/land.	Removal/remediation works will be conducted by suitably qualified person(s).	
		c) Validation testing confirms that contaminated soils have been removed/remediated.			Validation testing will be conducted by suitably qualified person(s).	
		d) A site suitability statement confirms the uses or activities for which the land is suitable, align to the approvals PMLUs for the site.	A site suitability statement is prepared to ensure land is suitable.	Immediately following validation testing confirms that contaminated soils have been removed/remediated.	Site suitability statement will be conducted by suitability qualified person(s).	The site suitability statement will be provided to the Environment & Community Superintendent.
RM3 Installation of Cover System/ Capping	5 years	a) Engineering and design plans to ensure that oxygen diffusion is adequately reduced to minimise the risk of sulfide oxidation and acid generation finalised.	N/A	N/A	The engineering and design plans will be completed and certified by a suitably qualified person(s).	The engineering and design plans will be provided to the Environment & Community Superintendent.
		b) In-pit rejects emplacements are located hydraulically upgradient of the Central Void (Pit 1).	Review groundwater modelling as in-pit rejects emplacements are constructed.	As required (e.g. following construction of each in-pit rejects emplacement).	Review of groundwater modelling will be conducted by a suitably qualified and experienced person(s).	Outcomes of groundwater modelling will be reported to the Environment & Community Superintendent.

Table 28 (Continued)
Monitoring and Maintenance Program

Rehabilitation Milestone	Timeframe	Milestone Criteria	Monitoring and/or Maintenance	Timing of Monitoring and/or Maintenance	Quality Assurance and/or Data Management	Reporting and Review
RM3 (continued) Installation of Cover System/ Capping	(as above)	c) In-pit coal rejects emplacements have settled before commencing installation of the cover system.	Test ongoing settlement.	Six-monthly following cessation of deposition.	Testing will be conducted by a suitably qualified and experienced person(s).	Outcomes of settlement testing will be reported to the Environment & Community Superintendent.
		d) In-pit coal rejects emplacements located a minimum of 10 m below the final landform surface elevation and encapsulated.	Monitor in-pit rejects emplacement levels.	Immediately following completion.	Engineering report will certify that the in-pit coal rejects emplacements are a minimum of 10 m below the final landform surface elevation.	The Annual Return will include a summary of the cover system/capping undertaken. The RL will be reported to the Environment & Community Superintendent.
		e) The In-pit coal rejects emplacements in the Central Pit (Pit 1) does not exceed Relative Level (RL) 301 mAHD. The remaining void is infilled with waste rock material to a final RL not exceeding 330 mAHD.	Monitor in-pit rejects emplacement levels. Cease deposition of tailings once the level reaches 301 mAHD (in the Central Pit).	Quarterly monitoring. Increase monitoring frequency as the deposition level approaches 301 mAHD.	Undertake measurements of in-pit rejects emplacements at multiple points around the perimeter and average the value.	
		f) Additional materials (capillary breaks, geofabric, etc.) installed as per engineering design plan.	Confirm materials with appropriate chemical and physical properties applied as necessary. Confirm additional materials installed as required.	Immediately following completion.	"As built" drawings of the final landform will be prepared by a suitably qualified and experienced person(s).	
		g) Out-of-pit coal rejects emplacements covered with a 0.5 m layer of competent material followed by a 0.5 m layer of compacted non-sodic clay.	Review and confirm landform is consistent with requirements.	Immediately following completion.	"As built" drawings of the final landform will be prepared by a suitably qualified and experienced person(s).	
		h) Engineering report on completed cover finalised, certifying capping system built/installed as per engineering design plan.	Compare "as built" drawings with engineering and design plans.	Immediately following completion.	Engineering report will certify the cover/capping system has been constructed and installed as per the design.	

Table 28 (Continued)
Monitoring and Maintenance Program

Rehabilitation Milestone	Timeframe	Milestone Criteria	Monitoring and/or Maintenance	Timing of Monitoring and/or Maintenance	Quality Assurance and/or Data Management	Reporting and Review
RM4 Landform Development and Reshaping/ Re-profiling	6 months	a) All major earthworks completed. b) Stable landform and angle achieved (up to 10%, or up to 33% where rock mulch or other stabilisation controls are used). c) Out-of-pit coal rejects emplacement slopes no greater than 10%, or up to 33% where rock mulch or other stabilisation controls are used. d) Dirty water dams slopes no greater than 10%. e) Final elevation of out of pit waste rock emplacements are not higher than 45 m above the natural ground level. f) Landform recontoured to be sympathetic to the adjacent landforms. g) The toe of the out-of-pit waste rock emplacements adjacent to Drainage Line 1 has been treated with an erosion resistant material to maintain its stability in the event of 1,000-year ARI and PMF floodwater interaction. h) Contour or graded drains installed as per construction design. i) Drainage Line 1 diversion designed and assessed using the most relevant ACARP stream diversion criteria, current at the time the design and assessment are carried out. j) Final voids certified as geotechnically stable with a factor of safety of at least 1.2.	Review and confirm the landform is consistent with requirements.	Immediately following completion.	"As built" drawings of the final landform will be prepared by a suitably qualified and experienced person(s).	The Annual Return will include a summary of the development and reshaping of the land.
RM5 Surface Preparation	3 months	a) Waste rock material ripped to a minimum of 300 mm depth. b) Topsoil placed to a minimum thickness of 100 mm. c) Topsoil amelioration and fertilisation process completed using gypsum, chemical fertiliser and/or compost as required to reach target Total N: 1,500 milligrams per kilogram (mg/kg), and Total P: 200 mg/kg. d) Till to 100 mm depth to mix and incorporate soil ameliorants (but not deep enough to bring waste rock material to the surface). e) An assessment of soil health and suitability has been completed and confirms soil is suitable for target vegetation establishment.	Assessment of soil health.	Immediately following completion.	Surface preparation will be conducted and certified by a suitably qualified person(s).	The Annual Return will include a summary of surface preparation activities.

Table 28 (Continued)
Monitoring and Maintenance Program

Rehabilitation Milestone	Timeframe	Milestone Criteria	Monitoring and/or Maintenance	Timing of Monitoring and/or Maintenance	Quality Assurance and/or Data Management	Reporting and Review
RM6 Revegetation (grazing)	12 months	a) Topsoil ripped no more than three months later than placement.	Confirm ripping have been undertaken as required.	Immediately following completion.	Activities to be undertaken by a suitably qualified person(s).	The Annual Return will include a summary of revegetation activities and associated monitoring data.
		b) Till along the contour with a tyned implement with tyne spacing no greater than 0.5 m.	Confirm tilling have been undertaken as required.	Immediately following completion.	Activities to be undertaken by a suitably qualified person(s).	
		c) Direct seeding of cover crop and pasture species completed (rates as specified in Table 3-6 of Revegetation Plan version 2, dated 23/06/2021).	Early survivorship assessment.	Three, six and 12 months after completion of seeding.	Suitably qualified person(s) to undertake revegetation monitoring and record progressive development allowing for tracking of trends against milestone criteria and reference sites.	
		d) Selection of pasture grass species are consistent with designated vegetation reference sites ¹⁰ and include a combination of pasture species detailed in ‘Table 20 Revegetation Species’ in the PRC Planning Part, version 4 (April 2022).				
RM7 Revegetation (grazing with native vegetation)	12 months	a) Topsoil ripped no more than three months later than placement.	Confirm ripping have been undertaken as required.	Immediately following completion.	Activities to be undertaken by a suitably qualified person(s).	The Annual Return will include a summary of revegetation activities and associated monitoring data.
		b) Till along the contour with a tyned implement with tyne spacing no greater than 0.5 m.	Confirm tilling have been undertaken as required.	Immediately following completion.	Activities to be undertaken by a suitably qualified person(s).	
		c) Direct seeding of cover crop and pasture species completed (rates as specified in Table 3-6 of Revegetation Plan version 2, dated 23/06/2021).	Early survivorship assessment.	Three, six and 12 months after completion of seeding.	Suitably qualified person(s) to undertake revegetation monitoring and record progressive development allowing for tracking of trends against milestone criteria and reference sites.	
		d) Planted tree species are consistent with the relevant vegetation reference site, and include a combination of tree species from the following: <i>Acacia shirleyi</i> , <i>Acacia leiocalyx</i> , <i>Allocasuarina luehmannii</i> , <i>Casuarina cunninghamiana</i> , <i>Callitris glaucophylla</i> , <i>Eucalyptus crebra</i> , <i>Eucalyptus populnea</i> , <i>Eucalyptus fibrosa subsp. nubila</i> , and <i>Eucalyptus tereticornis</i> .				
		e) Direct seeding, hiko or native tubestock planting completed (rates as specified in Table 3-6 of the Revegetation Plan version 2, dated 23/06/2021).				
		f) Survivorship of hiko or native tubestock greater than or equal to 70%, 12 months after planting.				

¹⁰ Any 'reference site' referred to within this schedule must meet the the requirements of a 'stable condition' as defined under the *Environmental Protection Act 1994*, and must also be achieving a sustainable land use relevant to the criteria it is being applied against.

Table 28 (Continued)
Monitoring and Maintenance Program

Rehabilitation Milestone	Timeframe	Milestone Criteria	Monitoring and/or Maintenance	Timing of Monitoring and/or Maintenance	Quality Assurance and/or Data Management	Reporting and Review
RM8 Surface Conditions	5 years	a) No evidence of slumping and erosion maintenance requirements are comparable to designated vegetation reference sites, for a period of at least five years post-mining. d) Hydraulic and geomorphic characteristics of Drainage Line 1 diversion reviewed by a suitably qualified and experienced person and confirmed that it is trending towards the hydraulic and geomorphic characteristics of the existing Drainage Line 1 channel.	Soil Monitoring Photo monitoring. Line intercept monitoring.	Annually, for a period of five years.	Suitably qualified person(s) to undertake monitoring and record progressive development allowing for tracking of trends against milestone criteria and reference sites.	The Annual Return will include a summary of surface conditions and associated monitoring data.
		b) Salinity levels of less than 0.6 deci-siemens per metre (dS/m) in soil root zone or less than 110% of designated vegetation reference sites. c) Cation exchange capacity levels are greater than 8 in 10 in root zone or greater than 90% of designated vegetation reference sites.	Soil monitoring.	Annually, for a period of five years.	Suitably qualified person(s) to undertake monitoring and record progressive development allowing for tracking of trends against milestone criteria and reference sites.	
RM9 Achievement of PMLU to Stable Condition (grazing)	5 years	a) Certification that slopes are safe, and predicted to remain safe. b) Certification that the relevant specified cover thickness has been obtained.	Final landform review.	At commencement of milestone.	Certification provided by suitably qualified and experienced person(s).	The Annual Return will include a summary of rehabilitation progress.
		c) A Bushfire Management Plan developed in accordance with relevant Queensland Fire and Emergency Services is in place.	Review bushfire risk. Implement recommendations, as necessary.	Every two years.	Bushfire risk review to be undertaken by suitably qualified person(s).	The Annual Return will include a summary of all bushfire risk related works.
		d) Active erosion (t/ha/yr), is less than 110% of the levels present in designated vegetation reference sites. e) No evidence of severe erosion. f) Erosion maintenance requirements are comparable to designated vegetation reference sites. i) Persistent groundcover greater than or equal to 70%.	Soil Monitoring Photo monitoring. Line intercept monitoring.	Annually, for a period of five years.	Suitably qualified person(s) to undertake monitoring and record progressive development allowing for tracking of trends against milestone criteria and reference sites.	The Annual Return will include a summary of surface conditions and associated monitoring data.
		g) Pest species abundance being comparable to designated vegetation reference sites. h) Weed diversity and density being less than 110% of baseline survey results and abundance being comparable to designated vegetation reference sites. j) Meets land suitability class 4 ¹¹ (for beef cattle grazing) with less than 5% being of land suitability class 5. k) Stocking rates in rehabilitated pasture areas are comparable to designated vegetation reference sites. l) Pasture grass species are comparable in cover and composition to designated vegetation reference sites, with a species mix including pasture species detailed in 'Table 20 Revegetation Species' in the PRC Planning Part, version 4 (April 2022). m) Pasture grass species show evidence of seed set, germination and emergence.	Groundcover and organic litter. Plant species list and richness. Carrying capacity. Brigalow Belt Pasture Photo Standards.	Annually, for a period of five years.	Transect data will be collected and certified by suitably qualified specialists.	The Annual Return will include evaluations of the effectiveness of achieving the PMLU.
		n) Receiving water system water quality monitoring results comply are comparable with upstream values. o) Groundwater quality monitoring results comply with EA EPML00900113, for a period of at least two years.	Water quality testing and review.	Quarterly, for two years.	Suitably qualified person(s) to undertake monitoring and record progressive development allowing for tracking of trends against milestone criteria and reference sites.	The Annual Return will include a summary of water quality monitoring data.

¹¹ Land suitability class should be measured at a landscape / paddock scale. It's recognised that the wider rehabilitated landform may contain small areas that are class 5.

Table 28 (Continued)
Monitoring and Maintenance Program

Rehabilitation Milestone	Timeframe	Milestone Criteria	Monitoring and/or Maintenance	Timing of Monitoring and/or Maintenance	Quality Assurance and/or Data Management	Reporting and Review
RM10 Achievement of PMLU to Stable Condition (grazing with native vegetation)	Up to 20 years	a) Certification that slopes are safe, and predicted to remain safe. b) Certification that the relevant specified cover thickness has been obtained.	Final landform review.	At commencement of milestone.	Certification provided by suitably qualified and experienced person(s).	The Annual Return will include a summary of rehabilitation progress.
		c) A Bushfire Management Plan developed in accordance with relevant Queensland Fire and Emergency Services is in place.	Review bushfire risk. Implement recommendations, as necessary.	Every two years.	Bushfire risk review to be undertaken by suitably qualified person(s).	The Annual Return will include a summary of all bushfire risk related works.
		d) Active erosion (t/ha/year), is less than 110% of the levels present in designated vegetation reference sites. e) Erosion maintenance requirements are comparable to designated vegetation reference sites. i) Hydraulic and geomorphic characteristics of Drainage Line 1 diversion reviewed and confirmed similar to the hydraulic and geomorphic characteristics of the existing Drainage Line 1 channel.	Photo monitoring. Line intercept monitoring.	Annually, for a period of five years.	Suitably qualified person(s) to undertake monitoring and record progressive development allowing for tracking of trends against milestone criteria and reference sites.	The Annual Return will include a summary of surface conditions and associated monitoring data.
		f) Pest species abundance comparable to designated vegetation reference sites. g) Weed diversity and density less than 110% of baseline survey results and abundance comparable to designated vegetation reference sites. h) Persistent groundcover greater than or equal to 70%. j) Meets land suitability class 4 ¹² (for beef cattle grazing) with less than 10% being of land suitability class 5. k) Stocking rates in rehabilitated pasture areas are comparable to designated vegetation reference sites. l) Pasture grass species are comparable in cover and composition to designated vegetation reference sites, with a species mix including pasture species detailed in 'Table 20 Revegetation Species' in the PRC Planning Part, version 4 (April 2022). m) Pasture grass species show evidence of seed set, germination and emergence. n) Litter density comparable to designated vegetation reference sites. o) Tree and shrub species are comparable in composition to designated vegetation reference sites, and include a combination of tree species from the following: <i>Acacia shirleyi</i> , <i>Acacia leiocalyx</i> , <i>Allocasuarina luehmannii</i> , <i>Casuarina cunninghamiana</i> , <i>Callitris glaucophylla</i> , <i>Eucalyptus crebra</i> , <i>Eucalyptus populnea</i> , <i>Eucalyptus fibrosa subsp. nubila</i> , and <i>Eucalyptus tereticornis</i> . p) Tree and shrub species show evidence of flowering, viable seed setting, germination and emergence.	Groundcover and organic litter. Plant species list and richness. Carrying capacity. Brigalow Belt Pasture Photo Standards.	Annually for five years.	Transect data will be collected and certified by suitably qualified specialists.	The Annual Return will include evaluations of the effectiveness of achieving the PMLU.
		q) Receiving water quality monitoring results are comparable with upstream values. r) Groundwater quality monitoring results comply with Table E10: Groundwater Reference Bore Contaminant Triggers in EA EPML00900113.	Water quality testing and review.	Quarterly, for two years.	Suitably qualified person(s) to undertake monitoring and record progressive development allowing for tracking of trends against milestone criteria and reference sites.	The Annual Return will include a summary of water quality monitoring data.

¹² Land suitability class should be measured at a landscape / paddock scale. It's recognised that the wider rehabilitated landform may contain small areas that are class 5.

Table 28 (Continued)
Monitoring and Maintenance Program

Rehabilitation Milestone	Timeframe	Milestone Criteria	Monitoring and/or Maintenance	Timing of Monitoring and/or Maintenance	Quality Assurance and/or Data Management	Reporting and Review
RM11 Retained Water Structures	2 years	a) Water quality within the retained water structures is comparable with upstream values.	Water quality testing and review against relevant guidelines.	Quarterly, for two years.	Testing to be undertaken by suitably qualified person(s).	The Annual Return to include a summary of water quality for any retained water structures.
		b) Certification of structural integrity.	Review structural integrity.	Within two years of milestone commencement.	Engineering report will certify structural integrity.	The Annual Return will include a description of the water storages and relevant outcomes.
MM1 High- and Low Wall Treatment	2 years	a) Highwall slope is no greater than 45 degrees (°) (100%). b) Low wall slope is no greater than 37° (75.4%). c) Highwalls certified as geotechnically stable. d) Certification that the final void is safe. e) Waste rock emplacements provide flood immunity for the final voids, up to the PMF. f) Central Final Void (Pit 1) has: I. maximum depth of 70 m; II. maximum length of 1,460 m; III. maximum area of 75 ha; and IV. maximum volume of 28 Mm ³ g) Western Final Void (Pit 3) has: I. maximum depth of 87 m; II. maximum length of 3,770 m; III. maximum area of 165 ha; and IV. maximum volume of 86 Mm ³ .	Review and confirm the final void walls are consistent with requirements.	Immediately following completion.	“As built” drawings of the final landform will be prepared by a suitably qualified and experienced person(s).	The Annual Return will include a summary of the development and reshaping of the land.
MM2 Surface Conditions	12 months	a) Bund wall installed with a minimum height of 2 m, with a minimum base of 4 m, and located at least 10m beyond area potentially affected by instability of the pit edge. b) Appropriate signage placed to clearly identify and convey the purpose (e.g. EP Act 1994 Non-Use Management Area No Entry).	Visual inspection of bund wall and signage.	Following installation.	Record of visual inspection.	Record of visual inspection to be provided to Environment and Community Superintendent.
MM3 Achievement of Sufficient Improvement	2 years	a) Bund wall present. b) Appropriate signage in place.	Visual inspection of bund wall and signage.	One and two years after commencement of milestone.	Record of visual inspection.	Record of visual inspection to be provided to the Environment & Community Superintendent.
		c) Highwalls certified as geotechnically stable.	Review and confirm the landform is consistent with requirements.	Immediately following completion.	Engineering report will certify the final voids remain stable.	The engineering report will be provided to the Environment & Community Superintendent.
		d) Groundwater quality monitoring results comply with Table E10: Groundwater Reference Bore Contaminant Triggers in EA EPML00900113.	Water quality testing and review.	Quarterly, for two years.	Suitably qualified person(s) to undertake monitoring and record progressive development allowing for tracking of trends against milestone criteria and reference sites.	The Annual Return will include a summary of water quality monitoring data.
		e) Final void acts as a long-term groundwater sink.	Review catchment boundaries and groundwater modelling.	Within one year of milestone commencement.	Suitably qualified person(s) to review catchment boundaries and groundwater modelling.	The Annual Return will include details of the catchment boundaries and groundwater modelling.

Table 30
Monitoring Methods for Rehabilitation Milestones

Performance Indicator	Completion Criteria	Monitoring Method	Monitoring Measurement/ Analysis	Scenario 1	Scenario 2	Scenario 3	Establishment	Maintenance
Landform Stability and Erosion	Site is stable when comparing photographs from successive monitoring events, for a period of five years post-mining.	Vegetation monitoring	Photo monitoring (at centre of 50 m transect)	✓	✓	✓	✓	✓
	Limited active erosion, similar to the levels present in designated vegetation reference sites. No maintenance required to cease active erosion.		Line intercept (50 m transect)	✓	✓	✓	✓	✓
	Limited erosion (presence of sheets, rills and gullies) similar to designated vegetation reference sites, for a period of five years post-mining.		Line intercept (50 m transect)	✓	✓	✓	✓	✓
	Erosion maintenance requirements are comparable to designated vegetation reference sites, for a period of at least five years post-mining.	Documentation review	N/A	✓	✓	✓	✓	✓
Topsoil Characterisation	Hydrocarbon, heavy metal or other contamination levels meet relevant criteria established in accordance with DES' <i>Queensland Auditor Handbook for Contaminated Land</i> .	Soil sampling	Heavy metals scan, Hydrocarbons	✓	✓	✓	✓	
	Salinity levels of less than 0.6 dS/m in soil root zone or less than 110% of designated vegetation reference sites.		Salinity (dS/m)	✓	✓	✓	✓	
	Cation exchange capacity levels are greater than 8 in soil root zone or greater than 70% of designated vegetation reference sites.		Cation Exchange Capacity (CEC)	✓	✓	✓	✓	

Table 30 (Continued)
Monitoring Methods for Rehabilitation Milestones

Performance Indicator	Completion Criteria	Monitoring Method	Monitoring Measurement/ Analysis	Scenario 1	Scenario 2	Scenario 3	Establishment	Maintenance
Ecosystem Functionality and Sustainability	Litter density comparable to designated vegetation reference sites.	Vegetation monitoring	Groundcover quadrats (1 m x 1 m quadrats)	✓	✓	✓		✓
	Species in rehabilitated areas show evidence of flowering, viable seed setting, germination and emergence.		Species list and recruitment (50 m x 10 m plot)	✓	✓	✓		✓
	Evidence of generational succession of trees and shrubs is apparent in rehabilitation areas.		Recruitment (50 m x 10 m plot)		✓	✓		✓
	Native vegetation comparable to designated vegetation reference sites.		Tree Height (50 m x 10 m plot)		✓	✓		✓
			Species list (50 m x 10 m plot)		✓	✓		✓
			Shrub cover using Line intercept (50 m transect)		✓	✓		✓
			Tree cover using line intercept (50 m transect)		✓	✓		✓
Light-intensity Grazing Suitability	≥70% established and persistent groundcover at land suitability classes 3 to 4, and at least 50% at land suitability class 5	Vegetation monitoring	Groundcover quadrats (1 m x 1 m quadrats)	✓	✓	✓		✓
	Vegetation consistent with pasture grass species suitable for grazing		Species list (50 m x 10 m plot)	✓	✓	✓	✓	✓
	Stocking rates in rehabilitated pasture areas are comparable to designated vegetation reference sites.		Carrying capacity (head per 100 ha)	✓	✓	✓	✓	✓

Table 30 (Continued)
Monitoring Methods for Rehabilitation Milestones

Performance Indicator	Completion Criteria	Monitoring Method	Monitoring Measurement/ Analysis	Scenario 1	Scenario 2	Scenario 3	Establishment	Maintenance
Pest Flora and Fauna	Evidence of weed management being successful by weed diversity and density being less than 110% of baseline survey results and abundance being comparable to designated vegetation reference sites.	Vegetation monitoring	Species list (50 m x 10 m plot)	✓	✓	✓	✓	✓
	Evidence of weed management being successful by weed diversity and density being less than 110% of baseline survey results and abundance being comparable to designated vegetation reference sites.		Groundcover quadrats (1 m x 1 m quadrat)	✓	✓	✓	✓	✓
	Evidence of weed management being successful by weed diversity and density being less than 110% of baseline survey results and abundance being comparable to designated vegetation reference sites.		Density (stems/ha) per species (50 m x 10 m plot)	✓	✓	✓	✓	✓
	Pest species do not occur in substantial numbers or visibly affect the development of native plant species.		Observations and analysis of vegetation monitoring (50 m x 10 m plot)	✓	✓	✓	✓	✓

Newly revegetated areas will be monitored at one and two years after seeding/planting, with early survivorship assessments also undertaken at three, six and 12 months after completion. Revegetated areas more than two years old will then be monitored at five and ten years of age. Mature revegetation areas older than ten years of age will be monitored every five years with the aim of compiling sufficient evidence of success to achieve completion criteria.

3.7.1.2 *Reference Sites*

Twelve reference sites were established at the commencement of operations in 2010 to provide a comparable benchmark for rehabilitation monitoring sites to determine rehabilitative success (Reference Sites 1 to 12). An additional reference site was subsequently established for Revegetation Scenario 3 (Reference Site 13) (Figure 26).

Table 31 lists the reference sites and links each to a certain revegetation scenario, for which it will be used to provide comparable benchmarks to determine revegetation success. All reference sites are land use suitability Class 4 (based on the beef cattle grazing land use criteria) (AARC, 2012).

3.7.1.3 *Survivorship Assessment*

Monitoring the survivorship of newly planted stock will commence immediately after planting (i.e. month zero) to obtain baseline data and then at three, six- and 12-month intervals thereafter.

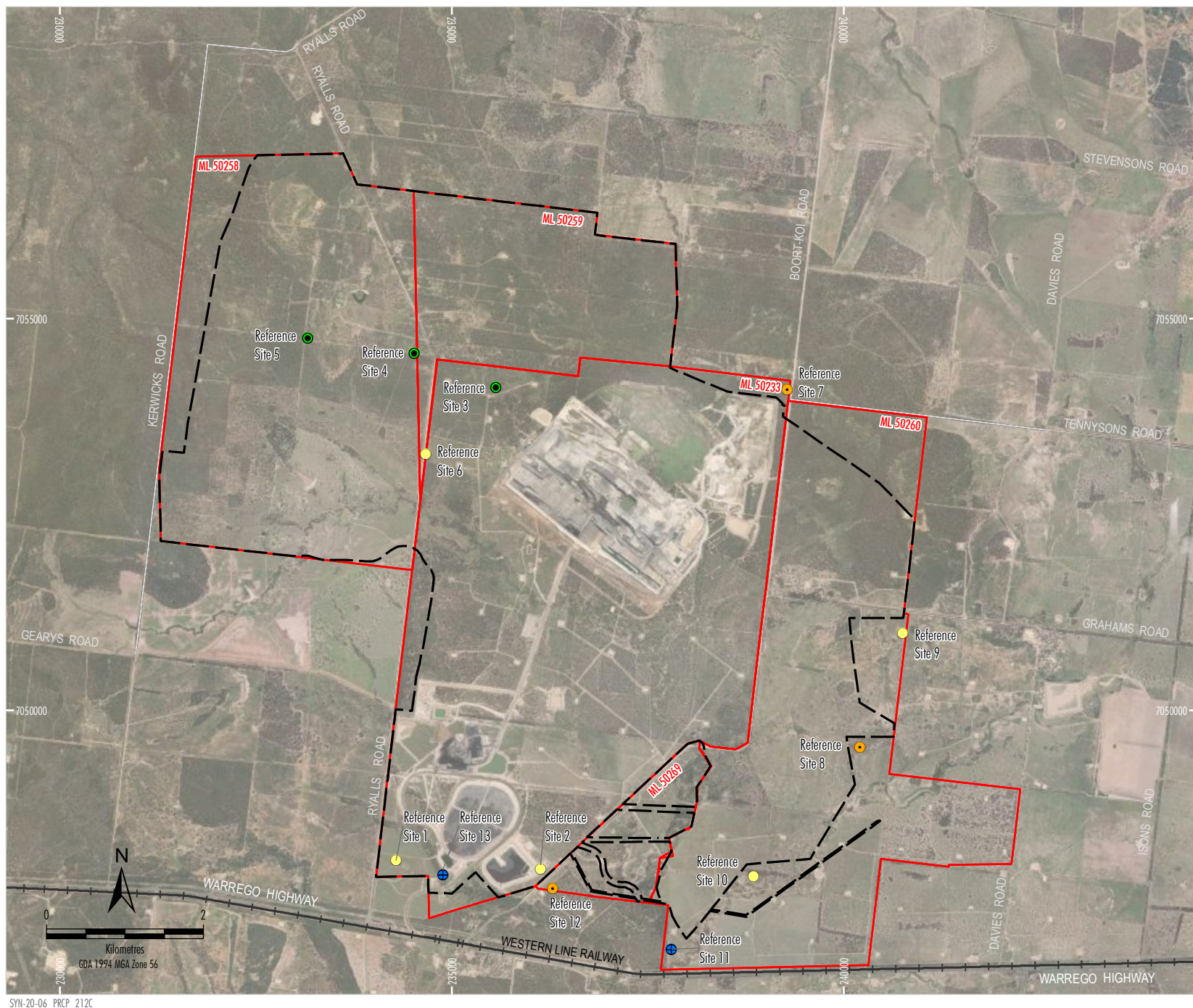
All surviving stock along the transect will be counted. If survivorship is less than 70%, supplementary planting will be undertaken.

Note that monitoring the survivorship of stock does not need to be undertaken by an Ecologist.

3.7.1.4 *Landform Stability and Erosion*

At the centre point of the transect (25 m), four (4) landscape photos (north, south, east and west) will be taken to record and assess site stability.

An estimation of the prevalence of erosion features, including sheets, rills and gullies along the 50 m transect will be made using the line intercept method. The start and end points of erosion features as they intersect the 50 m transect will be recorded, allowing total length of erosion features to be compared with reference site values.



- LEGEND**
- Mining Lease Boundary
 - Maximum Approved Disturbance Footprint
 - Rehabilitation Reference Sites**
 - Scenario 1 - Light Intensity Grazing
 - Scenario 2 - Light Intensity Grazing (with native vegetation)
 - Scenario 2 - Light Intensity Grazing (with native vegetation regrowth)
 - Scenario 3 - Light Intensity Grazing (with native vegetation along riparian corridors)

Source: The State of Queensland (2022); Syntech Resources (2021)
 Orthophoto: 2016; Esri, DigitalGlobe (2017)

 **Cameby Downs Mine**
CAMEBY DOWNS MINE
 Rehabilitation Reference Sites

Figure 26

Table 31
Rehabilitation Reference Sites

Site	Easting	Northing	Revegetation Scenario	Ecosystem Description	Factors Contributing to Baseline Condition
Reference Site 1	234290	7048088	Scenario 1	Non-remnant grassland on flat terrain	Area previously used for cattle grazing (not currently in use)
Reference Site 2	236135	7047974	Scenario 1	Non-remnant grassland on flat terrain with poplar box (<i>Eucalyptus populnea</i>)	Evidence of heavy grazing
Reference Site 3	235563	7054118	Scenario 2	Non-remnant grassland with White Cypress Pine (<i>Callitris glaucophylla</i>) on gently sloping terrain	-
Reference Site 4	234521	7054554	Scenario 2	Cleared pasture with Eucalyptus and Acacia regrowth on sloping terrain	Evidence of heavy grazing
Reference Site 5	233167	7054747	Scenario 2	Cleared pasture with Eucalyptus and Acacia regrowth on sloping terrain	Evidence of heavy grazing
Reference Site 6	234671	7053268	Scenario 1	Cleared pasture on sloping terrain	Heavy grazing and heavy disturbance
Reference Site 7	239275	7054092	Scenario 2	Native vegetation (RE 11.7.7/11.7.4/11.5.1/11.7.2)	-
Reference Site 8	240205	7049527	Scenario 2	Native vegetation (RE 11.7.5)	-
Reference Site 9	240752	7050979	Scenario 1	Non-remnant grassland on flat terrain	Area currently used for cattle grazing
Reference Site 10	238848	7047878	Scenario 1	Non-remnant grassland on flat terrain	Area currently used for cattle grazing
Reference Site 11	237805	7046951	Scenario 3	Cleared <i>Eucalyptus populnea</i> on hard setting alluvium with diverse native species	Area currently used for cattle grazing
Reference Site 12	236287	7047724	Scenario 2	Native vegetation (RE 11.5.1)	-
Reference Site 13	234886	7047897	Scenario 3	Native vegetation in the vicinity of an existing drainage line feature Tall woodland of <i>Eucalyptus tereticornis</i> with <i>E. populnea</i> and <i>Callitris columellaris</i> , Few palatable grass species, Land Class C.	Area previously used for cattle grazing (not currently in use)-

Coordinates are GDA94 MGA 55.

3.7.1.5 *Topsoil Characterisation*

Soil sampling will be undertaken at all monitoring sites during the establishment phase and subsequently if further investigation is required based on other monitoring data (e.g. persistent poor performance in relation to ground cover, erosion etc.).

Soil sampling will generally be undertaken according to the following methodology:

- At the 20 m mark and 40 m mark of each transect, a small area (25 cm by 25 cm) will be cleared of loose surface vegetation, litter and debris to avoid inclusion in the soil sample. Where grass and/or other growing vegetation is present, the vegetation will be cut off at ground level and discarded.
- A clean spade will be used to collect two 0.25 litre (L) soil samples to a depth of 10 cm below the surface of the soil.
- The two samples will be combined in a clean plastic clip seal bag (total soil sample approximately 0.5 L) and labelled with site name, monitoring point identifier, collection date and collector's name using a permanent marker.
- Labelled soil samples will be sent for analysis as soon as possible following collection.

3.7.1.6 *Ecosystem Functionality and Sustainability*

Groundcover and Organic Litter

For the 1 x 1 m quadrats, groundcover will be split into the following components: native perennial grass cover, native forb cover, pasture grass cover, non-native grass cover (that are not pasture species), non-native forb cover and leaf litter, rock and bare ground. Groundcover will be measured by a vertical projection downwards of the living and attached plant material.

Plant Species List / Richness

All pasture and native flora species within the 50 m by 10 m plot (i.e. 5 m either side of the central transect) will be recorded. The presence or absence of reproductive structures (flowers and /or fruit) per species will be noted.

Evidence of Generational Succession

The recruitment attribute assesses the presence of regeneration of the dominant tree and shrub species in the 50 m x 10 m plot. Recruitment is assessed as the proportion of dominant species present at a site that are regenerating.

Tree Canopy Height

Tree canopy height (measured to the top of the highest leaves) refers to the median canopy height in metres, estimated for the trees in the ecologically dominant layer (EDL) or canopy layer within the 50 m x 10 m plot. The median canopy height is the height that has 50% of canopy trees higher and lower than it.

Tree and Shrub Cover

An estimation of the percentage canopy cover of the living, native tree layer along the 50 m transect will be made, using the line intercept method (Greig-Smith 1964). Canopy cover equates to crown cover as defined by Walker and Hopkins (1990). The vertical projection of the tree canopy over the 50 m transect will be recorded. The total length of the projected canopy of each layer is then divided by the total length of the tape to give an estimate of percentage canopy cover on the site, which then can be compared with the reference site value.

Shrub canopy cover refers to the estimate of the percentage cover of native shrubs recorded along the 50 m transect (similar to the estimation of tree canopy cover using a vertical projection of shrub crowns downwards over the centre line transect).

3.7.1.7 Light-intensity Grazing Suitability

Groundcover and Organic Litter

For the 1 x 1 m quadrats, groundcover will be split into the following components: native perennial grass cover, native forb cover, pasture grass cover, non-native grass cover (that are not pasture species), non-native forb cover and leaf litter, rock and bare ground. Groundcover will be measured by a vertical projection downwards of the living and attached plant material.

Plant Species List / Richness

All pasture and native flora species within the 50 m by 10 m plot (i.e. 5 m either side of the central transect) will be recorded.

Carrying Capacity

Carrying capacity is measured as the number of head of cattle per 100 ha. This is calculated by dividing the dry biomass required per head of cattle by the measured mean pasture biomass (kg/ha) of each monitoring plot and converting to head per 100 ha.

To estimate pasture biomass, a 1 m height pole will be placed at the 26 m mark along the 50 m transect. A photo will then be taken at the 23 m mark facing the pole. The field of view for each photo will be aligned by tilting the camera down until the top of frame meets the horizon. The photos will then be compared to the Brigalow Belt Pasture Photo Standards to estimate biomass in tonnes per hectare (Future Beef, 2012).

3.7.1.8 Pest Flora and Fauna

Weed Density

The number of stems or estimated foliage projective cover within the 50 m x 10 m plot of each non-pasture weed species will be recorded. The data will then be extrapolated to obtain the number of stems per ha.

For the 1 x 1 m quadrats, groundcover will be split into the following components: native perennial grass cover, native forb cover, pasture grass cover, non-native grass cover (that are not pasture species), non-native forb cover and leaf litter, rock and bare ground. Groundcover will be measured by a vertical projection downwards of the living and attached plant material.

Pest Animal Browsing Damage

Pest animal browsing damage is defined as any evidence of damage to planted grasses, shrubs and trees by wallabies, hares, rabbits etc. Where possible, the number of plants damaged within the 50 x 10 m plot will be counted. A score of 0 to 3 will then be assigned to the plot, with 0 being no damage, 1 being light damage, 2 being moderate damage and 3 being severe damage.

i. Rehabilitation Maintenance/Contingency

3.7.1.9 Supplementary Planting

If the survivorship assessment identifies a success rate of less than 70%, supplementary planting will be undertaken.

Details of the supplementary planting will be determined on a case-by-case basis.

3.7.1.10 Weed Control

Weed control will be managed carefully to promote seedling growth and prevent ground cover from being reduced to a level where erosion risk is increased.

Weed control operations will typically be based on local spot spraying around native seedlings or tubestock. Broad scale herbicide application will generally be avoided due to the likelihood of damaging or killing grass cover and reducing site stability.

Three restricted species (two of which are Weeds of National Significance) are known to occur on the site. AusEcology (Appendix K) identifies these species and the best practice methods to control their spread. The frequency and intensity of control will depend on the size of infestations. Weed infestations will be recorded as part of the monitoring program and the data collected used to determine adequate control measures.

The following controls will be implemented to reduce the risks to safety and environment where appropriate:

- Herbicide applications will be primarily carried out by professional commercial operators, licenced under the *Agricultural Chemicals Distribution Control Act 1966*.
- Weed hygiene declarations for all equipment and vehicles brought onto the site will be up to date prior to arrival. An onsite inspection protocol for equipment and vehicles including personnel and contractor training will be developed and implemented.
- Work orders issued to contractors will stipulate constraints on spray operations, including weather constraints relating to wind, rainfall and temperatures.
- Work orders issued to contractors will include clear operations maps showing delineated work areas, boundaries of different treatment zones and locations of sensitive areas and weed hygiene boundaries.

3.7.1.11 Irrigation/Watering

Irrigation/watering of seedlings and plantings will be undertaken as required during the establishment phase to maintain soil moisture at field capacity and to significantly increase plant survivorship. Hand watering or spraying from a water truck will be utilised where establishment of irrigation is not feasible or practicable.

3.7.1.12 *Erosion and Sediment Control*

Erosion presents a key risk to the overall rehabilitation and revegetation outcomes. All aspects of the revegetation program will be managed with erosion risks as a key priority. Application of water to planting sites, soil disturbance around planted trees, weed control methods and general access to the planting sites are all aspects of the revegetation program that have high potential to cause erosion. Detailed instructions and appropriate supervision will be provided to personnel undertaking these activities to ensure erosion risk is managed.

For newly revegetated areas, the short-term priority will be to establish a suitable level of cover in the spring/early summer months so that there is significant erosion protection by December, which has been identified as the month of greatest erosion hazard on the site.

To reduce erosion risk, revegetation works will be scheduled to work upwards from the toe of slopes, with each windrowed line of topsoil being spread and rehabilitated progressively. Where practicable, a temporary bund will be formed at the upslope edge of the spread topsoil to divert flows originating upslope and prevent them from damaging newly revegetated areas.

3.7.1.13 *Pest Fauna and Livestock Control*

The cane toad, feral pig, feral cat, brown hare, house mouse and European fox have been recorded on the site (Ecosure, 2018b). The presence and relative abundance of these pest species will be monitored at regular intervals.

Other animals likely to be encountered that represent a risk to revegetated areas include:

- cattle and other livestock; and
- wallabies.

Regular monitoring will be undertaken to detect any pest activity that may impact the revegetation. Where damage to planted trees (e.g. by browsing from wallabies, hares, and rabbits) is observed at significant levels, guards will be installed around trees in affected areas. Some level of replanting may also be required in these areas.

Feral pig control (trapping and shooting) will be instigated where damage to planted stock is observed during monitoring.

Damage from cattle and other livestock represents a key risk to the success of revegetated areas. Newly seeded / revegetated areas will be fenced sufficiently to exclude cattle and other livestock for the duration of the revegetation establishment and maintenance phases. Light intensity grazing will only be commenced when revegetated areas are sufficiently stable with appropriate levels of ground cover.

ii. Reporting Requirements

3.7.1.14 Annual Return

In accordance with section 316J of the EP Act, Syntech's Annual Return must include an evaluation of the effectiveness of:

- the actions taken in relation to each rehabilitation milestone or management milestone under the PRCP Schedule; and
- the environmental management carried out under the PRCP Schedule.

The evaluation must state whether any rehabilitation milestones or management milestones to be completed under the PRCP Schedule during the year have been met and whether Syntech has complied with the conditions imposed on the PRCP Schedule.

3.7.1.15 Progressive Certification

Under section 318Z of the EP Act, the administering authority may certify that a particular area within a relevant tenure for a resource project has been rehabilitated under all relevant requirements of the EP Act, EA EPML00900113, a PRCP Schedule and any relevant guidelines or documents made under the EP Act.

As required by section 318ZF of the EP Act, the progressive certification report must:

- contain the following information:
 - information showing how the rehabilitation milestones and management milestones under the PRCP Schedule have been achieved; and
 - information about the extent to which the relevant conditions stated in the PRCP Schedule have been complied with;
- include:
 - a map of an appropriate scale that shows the proposed certified area; and
 - relevant information to locate the proposed certified area, including, for example, GPS information or a survey; and
- if progressive certification has previously been given for a relevant tenure for the environmental authority:
 - state when the certification was given; and
 - identify the certified area.

3.7.1.16 Surrender Application

Under section 257 of the EP Act, Syntech may apply to the administering authority to surrender the EA (EPML00900113) if, under the *Mineral Resources Act 1989*, Syntech has sought a conditional surrender for all, or part of, a relevant mining tenure.

The surrender application must be accompanied by a compliance statement for the EA, the PRCP Schedule and the conditions imposed on the PRCP Schedule. The compliance statement must state:

- the extent to which relevant activities carried out under the environmental authority have complied with the conditions of the authority;
- whether the rehabilitation milestones and management milestones under the PRCP Schedule have been met; and
- the extent to which conditions imposed on the PRCP Schedule have been complied with.

iii. Auditing

In accordance with section 285 of the EP Act, Syntech must commission an audit of the PRCP Schedule by a rehabilitation auditor for the following periods:

- the three-year period starting on the day the PRCP Schedule takes effect; and
- each three-year period starting on the day after the previous audit period ended.

Syntech must, within four months after the end of each audit period, give the administering authority the rehabilitation auditor's report and a declaration for the audit report stating that Syntech has not knowingly given false or misleading information to the rehabilitation auditor and has given all relevant information to the rehabilitation auditor.

In accordance with section 286 of the EP Act, an audit report for a PRCP Schedule must be in the approved form, and include the following:

- a statement about whether the holder has complied with the PRCP Schedule during the audit period, including:
 - details of actions Syntech has taken, or failed to take, in relation to the rehabilitation milestones and management milestones under the PRCP Schedule; and
 - whether Syntech has complied, or failed to comply, with conditions imposed on the PRCP Schedule; and
 - whether information given to the administering authority about rehabilitation carried out under the PRCP Schedule is accurate;
- an assessment of whether the PMLU for land the subject of the PRCP Schedule is likely to be achieved, having regard to the rehabilitation that has been and is to be carried out under the PRCP Schedule; and
- recommendations about actions Syntech should take to ensure rehabilitation milestones and management milestones are achieved or conditions of the PRCP Schedule are complied with.

In addition to the mandatory three-yearly audits, the administering authority has the power (under section 322 of the EP Act) to issue an audit notice, which requires the holder of a PRC Schedule to commission an audit.

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ATTACHMENT 1

ENVIRONMENTAL AUTHORITY EPML00900113

ATTACHMENT 2

PROGRESSIVE REHABILITATION AND CLOSURE PLAN SCHEDULE

Refer to separate excel spreadsheet

26 April 2025

Permit and Licence Management
Department of Environment and Science
GPO Box 2454
Brisbane Queensland 4001

To Whom It May Concern,

**RE: CAMEBY DOWNS MINE – APPLICATION FOR MINOR AMENDMENT TO PROGRESSIVE
REHABILITATION AND CLOSURE PLAN PRCP_ EPML00900113_V1**

1. INTRODUCTION

The Cameby Downs Mine (CDM) is an approved and operating open cut coal mine located approximately 360 kilometres (km) west-north-west of Brisbane, alongside the Warrego Highway approximately 16 km north-east of the township of Miles in the Western Downs Regional Council local government area (Figures 1 and 2). The CDM is owned and operated by Syntech Resources Pty Ltd (Syntech Resources) and managed by Yancoal Australia Limited (Yancoal) in accordance with Environmental Authority (EA) EPML00900113 and the Progressive Rehabilitation and Closure Plan (PRCP) Schedule PRCP_EPML00900113_V1.

Syntech Resources is proposing a minor amendment to PRCP_EPML00900113_V1 under Section 224 to 226B of the *Environmental Protection Act 1994* (EP Act) (the Amendment). The Amendment is proposed to allow for realignment of Rehabilitation Area (RA) boundaries to align with actual boundaries post completion of the rehabilitation works and amendment to PRCP Schedule PRCP_EPML00900113_V1 is required to increase the area under rehabilitation in 2025 to align with actual area under rehabilitation.

2. DESCRIPTION OF THE AMENDMENT

The Amendment application includes:

1. Realignment of RA boundaries for:
 - a. RA1 – realignment of In-pit Emplacement Area (RA1) boundary where the footprint of the Out-of-pit Waste Rock Emplacement (RA8) and subsequently the Infrastructure Area (RA11) has encroached. This realignment resulted in a 0.3ha decrease in the overall area of RA1. *(Figure 2)*
 - b. RA8 – realignment of RA8 boundary to align with the actual footprint post reshaping of the landform. This realignment of this boundary resulted in a 1.1ha increase in the overall area of RA8. *(Figure 3)*
 - c. RA11 – realignment of Infrastructure Areas (RA11) boundary due to the actual footprint of RA8 post reshaping. This resulted in a 0.7ha decrease in the overall area of RA11. *(Figure 4)*
2. Amendment of Cumulative Area Achieved in the PRCP Schedule for:
 - a. RA1 – Increase in the proposed area under rehabilitation (RM6) in 2025 to align with actual under rehabilitation in 2024. Increased from 178ha to 183ha.
 - b. RA8 - Increase in the proposed area under rehabilitation (RM7) in 2025 to align with actual under rehabilitation in 2024. Increased from 15ha to 45ha.
 - c. RA11 – Decrease in the proposed area available for rehabilitation in year 75 of 0.7ha. Due to rounding to full numbers this number remains in the schedule as 51ha.

3. Summary of changes in PRCP Schedule:

TAB	CELL REFERENCE	NOTES
Full Schedule	E5	Decreased area of Area ID 1a by 0.3ha for realignment of boundary per 1a above. Due to rounding of decimal places to full numbers this does not change the overall area for RA1, which remains at 840ha in the "Final" cell (DL13)
Full Schedule	M11	Changed from 178ha to 183ha being the actual area progressed to RM6 in 2024 as digitized using aerial photography.
Full Schedule	E89	Increased area of Area ID 8a by 1.1ha for realignment of boundary per 1b above. Resulted in a 1ha increase in the overall area for RA8, which increased from 383ha to 384ha in the "Final" cell (DL97)
Full Schedule	L89	Increased area that became available in 2024 to match actual.
Full Schedule	T89	Reduced area becoming available due to actual area rehabilitated ahead of schedule in 2024
Full Schedule	E125	Decreased area of Area ID 11a by 0.7ha for realignment of boundary per 1c above. Resulted in a 1ha decrease 945ha to 944ha for RA11 in the "Final" cell (DL133). The change in areas is not seen until 2093 as that is when the area that has been changed was to be "available" and was to be rehabilitated by 2098.
Full Schedule	CC125	Decreased area by 0.7ha per 1c above.
Rehabilitation Area Milestones	C8	Added <i>"(if planted as part of RM7 e)"</i> to RM7 f) for clarity of interpretation.





CAMEBY DOWNS MINE
Proposed Amendment - Overview Map

Figure 1: Overview of Proposed changes to Rehabilitation Areas



CAMEBY DOWNS MINE
Proposed Amendment - RA1 area to be replaced by RA8 and RA11

Figure 2: Proposed changes to RA1 Area



Legend

PRCP_Proposed RA Boundaries

PRCP_Existing RA Boundaries

Name

RA8 - Area added

RA8 - Area removed



CAMEBY DOWNS MINE
Proposed Amendment - RA8 areas

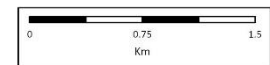


Figure 3 – Proposed changes to RA8 Area



CAMEBY DOWNS MINE
Proposed Amendment - RA11 areas

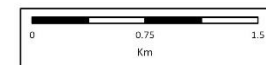


Figure 4 – Proposed changes to RA11 Area

3. COMMUNITY CONSULTATION

It is not proposed to undergo further community consultation in regards to this amendment. The decision to forego further consultation is based on the following considerations:

Prior Consultation:

Comprehensive consultation has already been conducted with a wide range of stakeholders, including neighbouring landholders, local community groups, Aboriginal stakeholders, government agencies, and relevant infrastructure owners during the development of the PRCP. This extensive engagement has ensured that all relevant parties have been informed and their concerns addressed during the initial stages of the PRCP development.

No Issues Raised:

During the consultation sessions held with the Community Reference Group (CRG) and other stakeholders, no new issues or concerns related to rehabilitation were raised. The CRG meetings, held periodically from 2016 to 2024, consistently reported no significant feedback requiring further action.

Consistency with Approved Plans:

The minor amendment aligns with the previously approved PRCP and does not introduce any new elements that would necessitate additional consultation.

Minor Nature of Amendment:

The amendment is minor and does not significantly alter the overall rehabilitation strategy or final land use outcomes. It does not impact the community or environmental outcomes previously agreed upon.

Given these points, it is reasonable to conclude that further community consultation for this minor PRCP amendment is not necessary. The existing consultation framework and ongoing communication mechanisms are sufficient to address any potential concerns and ensure transparency.

4. CONSIDERATION OF ENVIRONMENTAL PROTECTION ACT

Syntech Resources has conducted a review of the Amendment against the following relevant requirements of the EP Act:

- Section 226 of the EP Act – Requirements for amendment applications generally (Table A1 in Attachment 1).
- Section 226AA of the EP Act – Requirement for amendment application by holder of environmental authority and PRCP schedule (Table A2 in Attachment 1).
- Section 226B – Requirements for amendment applications for PRCP schedules (Table A3 in Attachment 1).
- Section 223 - Assessment of the Minor Amendment against the Minor Amendment Threshold Criteria (Table A4 in Attachment 1).

Based on this review, Syntech Resources considers that the Amendment is consistent with these relevant requirements of the EP Act.

In addition, a review of the Amendment against the minor amendment (threshold) criteria outlined in Section 223 of the EP Act has been conducted and is summarised in Table A4 in Attachment 1. Based on this review, Syntech Resources considers that the Amendment meets the minor amendment threshold criteria.

5. CONCLUSION

It is requested that the DES consider this application for a minor amendment to PRCP Schedule of PRCP_EPML00900113 under Section 224 of the EP Act.

Please contact me (07 4665 8621) should you have any questions.

Yours sincerely,

Les Merton

Environment & Community Superintendent
Cameby Downs Mine



ATTACHMENT 1

CONSIDERATION OF RELEVANT
ENVIRONMENTAL PROTECTION ACT 1994
REQUIREMENTS

Table A1: Requirements for Amendment Applications Generally

Requirements for Amendment Applications Generally ¹		Information Provided in Support of the Amendment
<i>An amendment application must –</i>		
(a)	<i>be made to the administering authority; and</i>	Compliant
(b)	<i>be in the approved form; and</i>	Compliant
(c)	<i>be accompanied by the fee prescribed by regulation; and</i>	Compliant
(d)	<i>describe the proposed amendment; and</i>	Details of the Amendment are provided in Section 2.
(e)	<i>describe the land that will be affected by the proposed amendment; and</i>	Details of the land affected by the Amendment are provided in Section 2.
(f)	<i>include any other document relating to the application prescribed by regulation.</i>	N/A

¹ In accordance with Section 226 of EP Act.

Table A2: Requirements for Amendment Applications by Holder of Environmental Authority and PRCP Schedule

Requirements for Amendment Applications by Holder of Environmental Authority and PRCP Schedule ¹		Information Provided in Support of the Amendment
1(a)	<i>This section applies if: The holder of an environmental authority and a PRCP schedule for the environmental authority (each a relevant environmental requirement) makes an amendment application; and</i>	Syntech Resources holds EA EPML00900113 and the PRCP Schedule PRCP_EPML00900113_V1 for the CDM.
1(b)	<i>The application is to amend only 1 of the relevant environmental requirements; and</i>	The Amendment is seeking to amend the PRCP Schedule of PRCP_EPML00900113_V1.
1(c)	<i>The approval of the amendment application would result in the relevant environmental requirement to which the application relates being inconsistent with the other relevant environmental requirement; and</i>	An amendment to EA EPML00900113 would not be required as a result of the Amendment.
2	<i>The holder must make an amendment application to amend both relevant environmental requirements in a way that, if the amendment application were approved, would not result in 1 of the relevant environmental requirements being inconsistent with the other relevant environmental requirement.</i>	N/A

¹ In accordance with Section 226AA of EP Act.

Table A3: Requirements for amendment applications for PRCP schedules

Requirements for amendment applications for PRCP schedules ¹		Information Provided in Support of the Amendment
	<i>An amendment application for a PRCP schedule must be accompanied by an amended rehabilitation planning part for the holder's PRC plan that complies with section 126C in relation to the proposed amendment.</i>	Current rehabilitation planning part complies with section 126C

¹ In accordance with Section 226B of EP Act.

Table A4: Assessment of the Minor Amendment against the Minor Amendment (Threshold) Criteria

Minor Amendment (Threshold) Criteria ¹		Information Provided in Support of the Amendment
(a)	<i>does not change a post-mining land use (PMLU) or non-use management area (NUMA);</i>	Compliant
(b)	<i>does not affect whether a stable condition will be achieved for land under the schedule; or</i>	Compliant
(c)	<i>does not change the way a PMLU will be achieved, or a NUMA will be managed, in a way likely to result in significantly different impacts on environmental values compared to the impacts on the values under the schedule before the change; or</i>	Compliant
(d)	<i>does not relate to a new mining tenure for the schedule; or</i>	Compliant
(e)	<i>does not change when a rehabilitation milestone or management milestone will be achieved by more than 5 years after the time stated in the schedule when it was first approved; or</i>	Compliant
(f)	<i>does not extend the day by which rehabilitation of land to a stable condition will be achieved.</i>	Compliant

¹ In accordance with Section 223 of the EP Act.

Spatial information

GIS data associated with this application is available upon request to the Department of Environment and Science.

Information on how to make a request is available at:

<https://www.qld.gov.au/environment/pollution/licences-permits/public-register>