

Landscape and Rehabilitation Management Plan

for the

Possum Brush Quarry

DA 283/97

Prepared in conjunction with:



R.W. CORKERY & CO. PTY. LIMITED

October 2023

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1.01	05/10/16	Charlie Kennett General Manager	Stacey Tyack QSE Manager	All	Plan amended to address DPE comments received 12/09/16.
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3.00	10/12/19	Charlie Kennett General Manager	Stacey Tyack QSE Manager	All Table 1 Section 4.1,4.2 Section 4.6 Section 5.1 Table 3 Section 6	Removed all or parts of Sections 1,2,3,6,7,8,12-16, to EMS (generic to all MP's). Altered order of contents. General editing. Updated internal references Added SWS to Bushfire Mgt Additional rehab strategies Updated Quarry Benches, Pit Floor and Final Void measures. Added Monitoring
3.01	04/09/20	Charlie Kennett General Manager	Stacey Tyack QSE Manager	Acronyms Table 1 Section 4.1 Section 4.2 Section 5.1 Section 5.2 Figure 54 Table 4 Table 6	Updated Updated internal references Amended weed management Amended vegetation management, added TARP's. Referenced Figure 4 Amended objectives description Updated aerial inserted Updated temporal references Link to Performance & Completion criteria added

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LIST OF ACRONYMS

AHD	Australian Height Datum
AS	Australian Standard
CCC	Community Consultation Committee
DA	Development Application
DPE	Department of Planning and Environment
Department	Department of Planning and Environment
EA	Environmental Assessment
EP&A Act	Environmental Planning and Assessment Act 1979
EPA	Environment Protection Authority
EPL	Environment Protection Licence
ERM	Environmental Resource Management Pty Ltd
GTCC	Greater Taree City Council (MidCoast Council as of 1 July 2016)
LPG	Liquid petroleum gas
MCC	MidCoast Council
OEH	Office of Environment and Heritage
PBM	Pacific Blue Metal Pty Ltd
RPM	Runge Pincock Minarco Ltd
Secretary	Secretary of the Department, or nominee

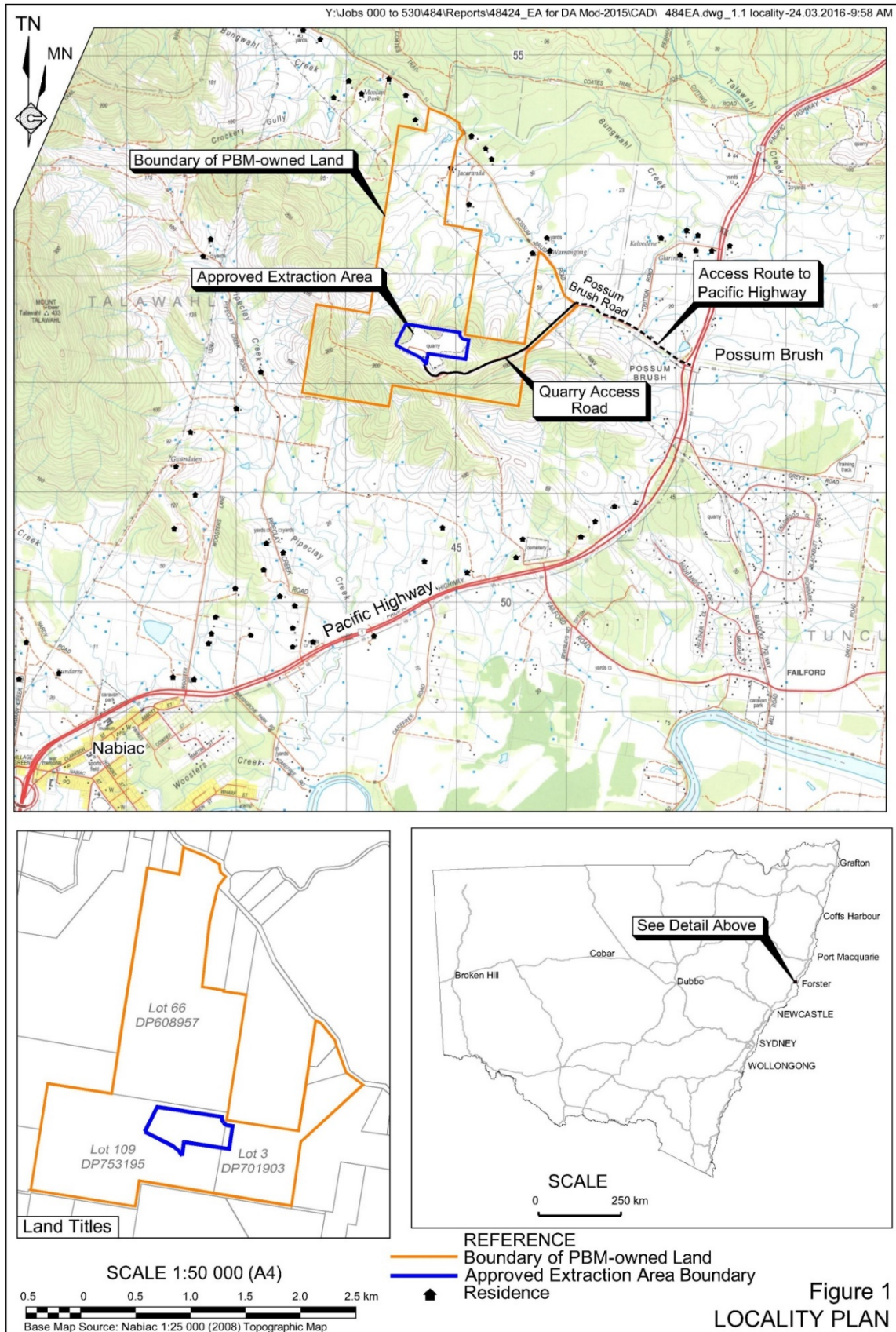
1. INTRODUCTION

This *Landscape and Rehabilitation Management Plan* (the Plan) has been prepared by Pacific Blue Metal Pty Ltd (PBM) in conjunction with R.W. Corkery & Co. Pty Limited for the Possum Brush Quarry (the Quarry). The Quarry is located approximately 2km west of the Pacific Highway at Possum Brush, 4km northwest of Failford and 5km northeast of Nabiac (**Figure 1**).

This Plan has been prepared in satisfaction of *DA Conditions 3(21) and 5(2)* of Development Consent (DA) 283/97¹. The Plan is one of six (6) supporting documents for the Environmental Management Strategy. These six (6) supporting documents being:

- Air Quality Management Strategy
- Blast Management Strategy
- Landscape and Rehabilitation Management Strategy
- Noise Management Strategy
- Transport Management Strategy
- Water Management Strategy

¹ All conditions in Development Consent DA 283/97 are referred to as *DA Condition ...*



2. LEGAL AND OTHER REQUIREMENTS

2.1 DEVELOPMENT APPROVAL

DA 283/97 was formally modified as Mod 4 by the Executive Director, Resource Assessments and Compliance as a delegate of the Minister of Planning on 1 April 2016 pursuant to Part 3A of the *Environmental Planning and Assessment Act 1979* (EP&A Act). Relevant landscape- and rehabilitation-related conditions in DA 283/97 are reproduced in **Table 1** together with a reference to the sections of the Plan where each condition is addressed.

Table 1 **Rehabilitation & Landscape -related Development Consent Requirements**

Schedule (Cond. No.)	Condition Requirement	Plan Section														
3(19)	<p>Rehabilitation Objectives</p> <p>The Applicant shall rehabilitate the site to the satisfaction of the Secretary. This rehabilitation must be in accordance with the objectives in Table 5.</p> <p><i>Table 5: Rehabilitation objectives</i></p> <table border="1"> <thead> <tr> <th>Feature</th> <th>Objective</th> </tr> </thead> <tbody> <tr> <td>Site (as a whole)</td> <td> <ul style="list-style-type: none"> • Safe, stable and non-polluting. • Final landform integrated with surrounding natural landforms as far as is reasonable and feasible, and designed to minimise the visual impacts of the development when viewed from surrounding land. • Restored with native, endemic vegetation </td> </tr> <tr> <td>Vegetated land</td> <td> <ul style="list-style-type: none"> • Conserved and enhanced with native, endemic vegetation. • Containing self-sustaining ecosystems. </td> </tr> <tr> <td>Surface Infrastructure</td> <td> <ul style="list-style-type: none"> • Decommissioned and removed, unless the Secretary agrees otherwise. </td> </tr> <tr> <td>Quarry Benches and Pit Floor</td> <td> <ul style="list-style-type: none"> • Landscaped and vegetated using native trees and understory species. </td> </tr> <tr> <td>Final Void</td> <td> <ul style="list-style-type: none"> • Minimise the height and slope of batters. • Minimise the drainage catchment. </td> </tr> <tr> <td>Community</td> <td> <ul style="list-style-type: none"> • Ensure public safety. • Minimise the adverse socio-economic effect of quarry closure. </td> </tr> </tbody> </table>	Feature	Objective	Site (as a whole)	<ul style="list-style-type: none"> • Safe, stable and non-polluting. • Final landform integrated with surrounding natural landforms as far as is reasonable and feasible, and designed to minimise the visual impacts of the development when viewed from surrounding land. • Restored with native, endemic vegetation 	Vegetated land	<ul style="list-style-type: none"> • Conserved and enhanced with native, endemic vegetation. • Containing self-sustaining ecosystems. 	Surface Infrastructure	<ul style="list-style-type: none"> • Decommissioned and removed, unless the Secretary agrees otherwise. 	Quarry Benches and Pit Floor	<ul style="list-style-type: none"> • Landscaped and vegetated using native trees and understory species. 	Final Void	<ul style="list-style-type: none"> • Minimise the height and slope of batters. • Minimise the drainage catchment. 	Community	<ul style="list-style-type: none"> • Ensure public safety. • Minimise the adverse socio-economic effect of quarry closure. 	<p>This document & Section 5.2 Table 4</p>
Feature	Objective															
Site (as a whole)	<ul style="list-style-type: none"> • Safe, stable and non-polluting. • Final landform integrated with surrounding natural landforms as far as is reasonable and feasible, and designed to minimise the visual impacts of the development when viewed from surrounding land. • Restored with native, endemic vegetation 															
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Community	<ul style="list-style-type: none"> • Ensure public safety. • Minimise the adverse socio-economic effect of quarry closure. 															
3(20)	<p>Progressive Rehabilitation</p> <p>The Applicant shall rehabilitate the site progressively, that is, as soon as reasonably practicable following disturbance. All reasonable and feasible measures must be taken to minimise the total area exposed for dust generation at any time. Interim stabilisation measures must be implemented where reasonable and feasible to control dust emissions in disturbed areas that are not active and which are not ready for final rehabilitation.</p> <p><i>Note: It is accepted that parts of the site that are progressively rehabilitated may be subject to disturbance in the future.</i></p>	<p>4.5 5.3</p>														
3(21)	<p>Landscape and Rehabilitation Management Plan</p> <p>The Applicant shall prepare a Landscape and Rehabilitation Management Plan for the development to the satisfaction of the Secretary. In addition to the standard requirements for management plans (see condition 2 of Schedule 5) this plan must:</p> <p>a) be prepared in consultation with OEH and Council;</p> <p>b) be submitted to the Secretary for approval within three months of the date of approval of Modification 4, unless otherwise agreed by the Secretary;</p>	<p>2.2</p> <p>This document</p>														

Table1 (Cont'd)
Rehabilitation and Landscape Management-related Development Consent Requirements

Schedule (Cond. No.)	Condition Requirement	Plan Section
3(21) (Cont'd)	c) provide details of the conceptual final landform and associated land uses for the site;	5.2 Figure 4
	d) describe the short, medium and long-term measures that would be implemented to ensure compliance with the rehabilitation objectives and progressive rehabilitation obligations in this consent;	5.2
	e) include a program to progressively improve the structure and floristic composition of the established wildlife corridor which includes: <ul style="list-style-type: none"> - maintaining a fence around the wildlife corridor to exclude grazing stock; - maintaining wildlife warning signs and speed limits on internal roads; and - making suitable arrangements to protect in perpetuity the wildlife corridor; and 	4.2 4.4 4.2
	f) include a program to monitor Rudder's Box within the Applicant's property;	4.3
	g) include a detailed description of the measures that would be implemented to: <ul style="list-style-type: none"> - maximise the salvage of environmental resources within the approved disturbance area for beneficial reuse; - protect vegetation and fauna habitat outside the approved extraction area; - minimise tree or native vegetation removal or destruction; - use pre-existing or local plant species for revegetation; - minimise the impacts on native fauna and flora, including Brush-tailed Phascogale and Rudder's Box; - landscape the site to minimise visual and lighting impacts; - control weeds and feral pests; - control erosion; - control access; and - bushfire management; and 	4.1 4.2 4.1 4.1 4.2 4.2 4.3 4.4 4.7 4.1 4.2 4.4 4.5 4.1 4.2 5.1 4.6
	h) include a program to monitor and report on the effectiveness of these measures, and progress against the performance and completion criteria;	6
	i) identify the potential risks to the successful rehabilitation of the site, and include a description of the contingency measures that would be implemented to mitigate these risks; and	5.4
	j) include details of who would be responsible for monitoring, reviewing, and implementing the plan. The Applicant shall implement the management plan as approved from time to time by the Secretary. <i>Note: For the purposes of this consent, suitable arrangements to protect the wildlife corridor in perpetuity may include the use of Public Positive Covenants in combination with Restrictions on Use of Land on the land title/s of the wildlife corridor. Other arrangements such as the use of Biobanking Agreements or transfer of lands to the national parks estate would also be considered for their suitability.</i>	6

Table 1 (Cont'd)
Rehabilitation and Landscape Management-related Development Consent Requirements

Schedule (Cond. No.)	Condition Requirement	Plan Section
3(22)	<p>Rehabilitation and Conservation Bond</p> <p>Within 6 months of the approval of the Landscape and Rehabilitation Management Plan, the Applicant shall lodge a Rehabilitation & Conservation Bond with the Department to ensure that the management of biodiversity and the rehabilitation of the site are implemented in accordance with the performance and completion criteria set out in the Landscape & Rehabilitation Management Plan. The sum of the bond shall be determined by:</p> <p>a) calculating the cost of rehabilitating the site taking into account the likely surface disturbance over the next 3 years of quarrying operations; and</p> <p>b) employing a suitably qualified quantity surveyor or other expert to verify the calculated costs, to the satisfaction of the Secretary.</p> <p><i>Note: If the rehabilitation of the site is completed to the satisfaction of the Secretary, then the Secretary will release the bond. If the rehabilitation of the site is not completed to the satisfaction of the Secretary, then the Secretary will call in all or part of the bond, and arrange for the completion of the relevant works.</i></p>	5.5
3(23)	<p>Within 3 months of each Independent Environmental Audit (see condition 10 of Schedule 5), the Applicant shall review, and if necessary revise, the sum of the Rehabilitation and Conservation Bond to the satisfaction of the Secretary. This review must consider the:</p> <p>a) effects of inflation;</p> <p>b) likely cost of rehabilitating the site (taking into account the likely surface disturbance over the next 3 years of the development); and</p> <p>c) performance of the implementation of the rehabilitation of the site to date.</p>	5.5
5(2)	<p>The Applicant shall ensure that the Management Plans required under this approval are prepared in accordance with any relevant guidelines, and include:</p> <p>a) detailed baseline data;</p> <p>b) a description of:</p> <ul style="list-style-type: none"> – the relevant statutory requirements (including any relevant approval, licence or lease conditions); – any relevant limits or performance measures/criteria; and – the specific performance indicators that are proposed to be used to judge the performance of, or guide the implementation of, the project or any management measures; <p>c) a description of the measures that would be implemented to comply with the relevant statutory requirements, limits, or performance measures/criteria;</p> <p>d) a program to monitor and report on the:</p> <ul style="list-style-type: none"> – impacts and environmental performance of the project; and – effectiveness of any management measures (see (c) above); <p>e) a contingency plan to manage any unpredicted impacts and their consequences;</p> <p>f) a program to investigate and implement ways to improve the environmental performance of the project over time;</p>	<p>4</p> <p>2</p> <p>2</p> <p>3</p> <p>5</p> <p>6 & 7</p> <p>8</p> <p>7</p>

Table 1 (Cont'd)
Rehabilitation and Landscape Management-related Development Consent Requirements

Schedule (Cond. No.)	Condition Requirement	Plan Section
5(2) (Cont'd)	g) a protocol for managing and reporting any: <ul style="list-style-type: none"> – incidents; – complaints; – non-compliances with statutory requirements; and – exceedances of the impact assessment criteria and/or – performance criteria; and 	8, 9, 10
	h) a protocol for periodic review of the plan. Note: The Secretary may waive some of these requirements if they are unnecessary or unwarranted for particular management plans.	12
5(7)	The Applicant shall notify, at the earliest opportunity, the Secretary and any other relevant agencies of any incident that has caused, or threatens to cause, material harm to the environment. For any other incident associated with the project, the Applicant shall notify the Secretary and any other relevant agencies as soon as practicable after the Applicant becomes aware of the incident. Within 7 days of the date of the incident, the Applicant shall provide the Secretary and any relevant agencies with a detailed report on the incident, and such further reports as may be requested.	10
5(8)	The Applicant shall provide regular reporting on the environmental performance of the project on its website, in accordance with the reporting arrangements in any plans or programs approved under the conditions of this approval	11

2.2 GOVERNMENT AGENCY CONSULTATION

The following government agency consultation was undertaken in the preparation of this Plan.

- The draft Landscape and Rehabilitation Management Plan (V0.00) was forwarded to the OEH and GTCC (now Midcoast Council MCC) for comment on 14 June 2016.
- A response was received from OEH on 27 June 2016. The OEH did not provide any comments on the Draft Landscape and Rehabilitation Management Plan.
- A response was received from GTCC (MCC) on 28 June 2016. The Draft Landscape and Rehabilitation Management Plan was amended as appropriate and a letter outlining the amendments provided to GTCC.
- Landscape and Rehabilitation Management Plan V2.01, sent to OEH and MCC for consultation 25 May 2018.
- Response received from OEH on 28 May 2018. The OEH did not provide any comments on the Landscape and Rehabilitation Management Plan V2.01.
- MCC did not respond.

Evidence of consultation is provided in Appendix A.

3. OBJECTIVES AND KEY PERFORMANCE OUTCOMES

Table 2 presents the objectives and key performance outcomes for this Plan and the Quarry.

Table 2 Objectives and Key Performance Outcomes

Objectives	Key Performance Outcomes
a) To ensure compliance with the criteria of DA 283/97, EPL 3393 and reasonable community expectations.	i) Compliance with all relevant criteria and reasonable community expectations, as determined in consultation with the relevant government agencies.
b) To implement appropriate progressive rehabilitation and landscape management and mitigation measures during all stages of the Quarry	ii) All identified rehabilitation and landscape management and mitigation measures implemented.
c) To appropriately manage site preparation works to ensure that suitable rehabilitation material remains for rehabilitation operations during all stages of the Quarry	iii) Sufficient, viable rehabilitation materials are available for rehabilitation operations during all stages of the Quarry
d) To ensure that the visual amenity of residences and public vantage points is not unacceptably impacted by Quarry-related activities.	iv) Visual amenity management measures implemented and effective in a timely manner.
e) To implement an appropriate complaints handling and response protocol	v) Complaints (if any) handled and responded to in an appropriate manner.
f) To implement appropriate corrective and preventative actions, if required.	vi) Corrective and preventative actions implemented, if required
g) To implement an appropriate incident reporting program, if required.	vii) Incidents (if any) reported in an appropriate manner.

4. LANDSCAPE MANAGEMENT

The approved extraction area is fully cleared of remnant native vegetation. As a consequence, management of vegetation in that area is not required. Minor tree clearing was undertaken to formalise the laydown area in 2022 in accordance with DA 2021/1821.

Minor quantities of soil remain to be relocated within a small area near the western boundary of Area B and within the storage laydown area. The management of the vegetation and soil in these areas is outlined in the following sub-sections. The rehabilitation planned on site during Stage 2 is discussed in Section 5.

4.1 INTERNAL VEGETATION MANAGEMENT

Installation of the laydown area began in late 2021. Only trees located within the development footprint were removed. Logs and vegetation from the removed trees were used as seed banks, habitat provision and erosion control around the subject site. All other trees adjoining the development footprint are retained and protected during construction

Historically, in the short to medium term, a six (6) monthly weed control program was undertaken within and around Areas A and B. The principal species target in these areas were blackberry and lantana, both of which were controlled through a combination of mechanical removal and herbicide application. In the long term, the success of the native vegetation establishment will determine the type and frequency of the weed control program in these areas, with targeted weed control programs designed and implementation as required

In the 2018-2019 Annual Report, our vegetation and weed management contractor, IBIS, recommended that the site be deemed as an act on inspection once every 12 months until further notice. The non-native flora seed banks on and in the soil has been sufficiently depleted and natural succession of native flora species is evident with a great population of seedlings, maturing seedlings and young healthy trees flourishing since non-native flora populations have been controlled. It is PBM's intention to follow this recommendation of our Vegetation Contractor.

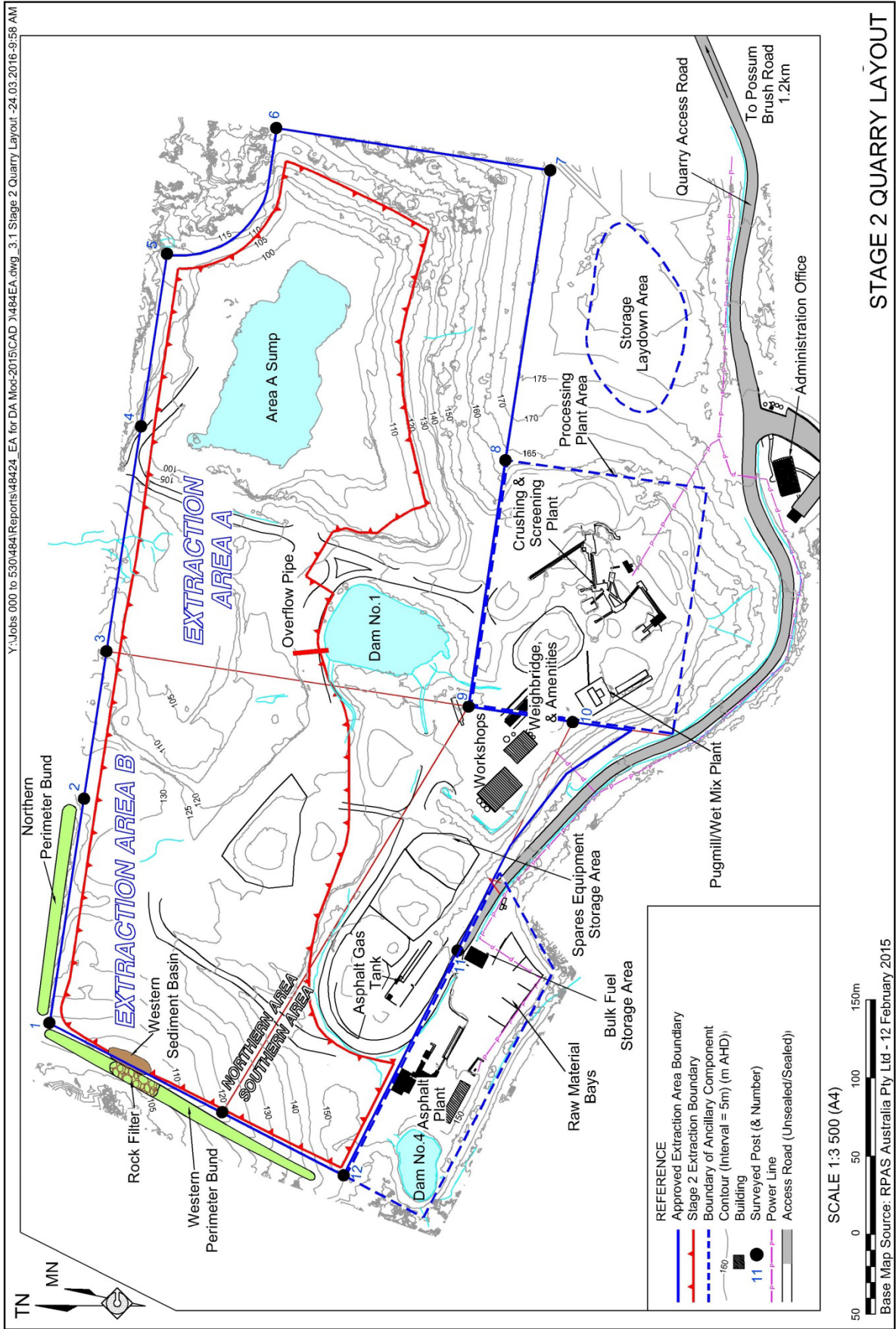


Figure 2 Stage 2 Quarry Layout

4.2 EXTERNAL VEGETATION MANAGEMENT

The native vegetation on PBM's land beyond the extraction area is actively managed to ensure it retains its health and vigour and continues to provide habitat for local fauna. High value areas have been set aside for environmental benefits, coinciding with areas of land productively used for agricultural pursuits. **Figure 4** shows the areas of interest for the protection and enhancement of local flora and fauna; these being:

- adjacent to the quarry access road,
- a 50m wide corridor adjacent to the northern boundary of the approved extraction area
- within the wildlife corridor (see **Plate 3**)

Each of these three areas are fenced to exclude stock and unauthorised personnel access. Works within the areas include at a minimum, an annual weed control program to allow for native flora to recolonise the area. The long term goal is to establish these areas with robust native vegetation, with minimal maintenance and disturbance. Progress toward this goal will be reported on in the annual review as well as undergoing independent assessment in the three (3) yearly Independent Environmental Audit.

PBM has been progressively improving the structure and floristic composition of the Wildlife Corridor since 1999. In 2019 the Wildlife Corridor had reached a mature self-sustaining stage with minimal interference required. In the 2018-2019 Annual Report, our vegetation and weed management contractor, IBIS, recommended that the site be deemed as an act on inspection once every 12 months until further notice. The non-native flora seed banks on and in the soil had been sufficiently depleted and natural succession of native flora species was evident with a great population of seedlings, maturing seedlings and young healthy trees flourishing since non-native flora populations had been controlled.

Shortly after the release of the 2018-2019 Vegetation Report, the bushfires of November 2019 burnt all vegetated areas of the quarry and surrounding land including:

- Quarry access road
- 50m buffer zone
- Final benches in Area A and Area B
- Wildlife corridor

Irreplaceable Bush Regeneration Indigenous Services (IBIS) undertook post bushfire monitoring and assessment of the Wildlife Corridor and other vegetated areas in January 2020. IBIS found that all vegetation within the Wildlife Corridor and other vegetated areas, including the planted Rudder Box trees were severely burnt. Stemming from January 2020 assessment, IBIS recommended that PBM wait for substantial rainfall to undertake further monitoring and assessment of survival, growth and loss of native vegetation and, if necessary, develop a weed control program. Whilst substantial rainfall events did occur in February and March 2020, COVID-19 restrictions placed on both IBIS and PBM restricted site visits. IBIS attended the Site in August 2020 and September 2020 to undertake the second post bushfire assessment and prepare a management plan for recovery. IBIS determined the best course of action to leave the rehabilitation areas over the summer months, to allow time for recovery and new growth, which would then be assessed again in Autumn 2021. Subsequently, the rehabilitation areas were re-assessed in May 2021. IBIS found that the natural recovery of native flora species was evident and flourishing, including Giant Stinging Tree seedlings. A stand of the *eucalyptus rudderii* was also present. IBIS undertook a three (3) month weed control program from June – August 2021.

Throughout the 2021-2022 and 2022-2023 periods IBIS continued to undertake vegetation inspections and rehabilitation activities within the wildlife corridor. The 2022-2023 IBIS vegetation report states that natural recovery of native flora species is evident and flourishing. Furthermore, the report recommends continued periodic weed control until the weed populations are controlled or full forest canopy is reinstated to ensure the existing and new pioneer native vegetation is not suppressed by non-native vegetation.

It is PBM's intention to follow the recommendation of our Vegetation Contractor.

However, should additional action be required triggered either by an inspection or natural phenomena such as bushfire, the management regime of these areas will be reassessed and additional control measures implemented. Table 3 provides a list common threats to the rehabilitated vegetation areas.

Prior to the 2019 bushfires, PBM proposed to apply for the wildlife corridor to be protected in perpetuity by entering into a Conservation Agreement or Biodiversity Stewardship Agreement with the Biodiversity Conservation Trust. Both programs aim to protect areas which contain high conservation values. The 2019 bushfire decimated the mature wildlife corridor, removing the high conservation value that had been established over the preceding 20 years. The site now needs to undergo significant rehabilitation management, which PBM is undertaking, prior to assessment for conservation value with the Biodiversity Conservation Trust.

Table 3 TARP for rehabilitated vegetation areas

Trigger	Action	Response
Weeds species impact	<ul style="list-style-type: none"> ➤ Assess extent and threat. 	<ul style="list-style-type: none"> ➤ Undertake weed control if viable with internal resources. ➤ If internal resources are not available engage Bush Rehabilitation specialist to assess and implement appropriate control measures. ➤ Monitor impact and if necessary reapply action sequence.
Pest species impact	<ul style="list-style-type: none"> ➤ Assess extent and threat. 	<ul style="list-style-type: none"> ➤ Undertake pest control if viable with internal resources. ➤ If internal resources are not available engage Bush Rehabilitation specialist to assess and implement appropriate control measures. ➤ Monitor impact and if necessary reapply action sequence.
Bushfire	<ul style="list-style-type: none"> ➤ Identify speed and direction of approach. ➤ Identify potential fuel sources 	<ul style="list-style-type: none"> ➤ Use UHF to declare emergency within the quarry ➤ Initiate Emergency response procedure (SP03) ➤ Check established fire breaks are clear to minimise impact. ➤ If fire does impact rehabilitated areas initiate the following: <ul style="list-style-type: none"> ○ Search area for injured fauna. ○ Fix any damaged fences to exclude cattle. ○ Engage Bush Rehabilitation specialist to assess impact and develop recovery management plan.
Drought	<ul style="list-style-type: none"> ➤ Identify loss of canopy and keystone species 	<ul style="list-style-type: none"> ➤ Engage Bush Rehabilitation specialist to assess impact and develop recovery management plan.

4.3 RUDDER'S BOX COMMUNITY

A program of seed collection was undertaken prior to removal of the Rudders Box trees in Area A. This seed was propagated, and once completion of primary and secondary weed control undertaken, planted in the southern section of the Wildlife Corridor in a far greater number than the number of mature and semi-mature trees removed. Subsequent monitoring of both the planted and naturally occurring Rudders Box have highlighted a robust healthy community within the PBM property (see **Plate 4**). Monitoring of the number and health of the Rudders Box community within the wildlife corridor will continue to be undertaken on an annual basis and reported in the Annual Review. Monitoring will include:

- Name of person undertaking monitoring
- Date of monitoring
- Location of trees
- Tree Identification Number
- Height of each tree
- Diameter of each tree (at 1.3m height)
- General tree health

4.4 FAUNA MANAGEMENT

PBM actively manages the identified environmental areas to enrich both the floristic characteristics and faunal habitat provisions of these areas.

The Brush-tailed Phascogale is the principal threatened fauna species, which potentially resides within the locality of the quarry. With a home range varying from 4-15ha, the Brush-tailed Phascogale may be foraging throughout the quarry and immediate environs. However, nesting will be excluded within the extraction areas as the site is already cleared. Nesting may however occur within the identified environmental areas of the property. The retention and ongoing management of these protected environmental areas is PBM's principal measure in support of the Brush-tailed Phascogale and its habitat. These measures will allow PBM to maintain Brush-tailed Phascogale habitat on the property.

Like the Brush-tailed Phascogale other native fauna may at times enter the quarry area. In order to minimise the possible negative impact of such occasions, wildlife warning signs have been installed on permanent internal roads, and speed limits have been set at between 25km/h and 40km/hr.

To date, the existence of feral pest species has not been an issue. Six (6) monthly inspections of the quarry and the larger PBM property are undertaken by internal staff and/or external Vegetation Contractors to monitor for indications of feral pest issues. If a feral pest species are detected a suitable management plan will be designed and implemented to control the feral pest species in question.

4.5 SOIL MANAGEMENT

The exposed soil near the western boundary of Area B is sufficiently stabilised by an active re-seeding program combined with natural regrowth. This regrowth will be retained until the area is finally stripped of soil. In the meantime, the western perimeter bund along the western boundary of Area B and the western sediment basin (see **Figure 2**) are able to manage sediment-laden runoff generated from this area.

The small area of topsoil and subsoil disturbed in the storage laydown area was stripped and stockpiled for use in landscaping and water diversion bunding around the storage area. If required, silt-stop fencing will be positioned downslope of the cleared area until the disturbed area is stabilised and/or covered with suitable material to create a hardstand or access road.

4.6 BUSHFIRE MANAGEMENT

All ongoing operations will occur within previously cleared land with the exception of part of the southeast corner of Area A requiring the removal of some vegetation previously planted as part of rehabilitation program and adjacent to the storage laydown area.

Firefighting equipment is provided within all the mobile equipment on site and within designated areas of the Quarry. The water cart is equipped with a fire fighting pump and hose designed to assist in the control of small fires. Water, from dams, is readily available throughout the site for use in fire fighting. Should any large bushfires arise from or encroach onto PBM land, including the wildlife corridor, the Rural Fire Service will be contacted to deal with the bushfire.

In addition, PBM will continue its periodic discussions with the local Rural Fire Service, including guidance on the need, if any, for controlled burns.

An established Asset Protection Zone (APZ) provides a buffer between the vegetation hazard and the bulk fuel storage area, which includes diesel and LPG.

During the 2019 Bushfires the Rural Fire Services (RFS) and associated emergency services used the water contained in Sump A in the Pit Floor as a vital Static Water Supply (SWS) for fire fighting operations in the area. PBM will continue to manage the water contained within the pit for use as a SWS.

4.7 VISIBILITY

Possum Brush Quarry is well located from a visibility perspective in that it is surrounded by substantial areas of remnant vegetation and numerous ridges. PBM has retained and enhanced the vegetation surrounding the extraction area to limit visual access from surrounding residences and local public roads.

The only area where visibility is possible (due to the surrounding ridges and remnant vegetation) is from the northeast. **Plate 1** displays the view from Possum Brush Road near Residence 2 (see **Figure 3**). It is noted that the only areas of the Quarry that are visible from Possum Brush Road are the extracted slopes above the asphalt plant. The white LPG tank adjacent to the asphalt plant is visible from a short section of the Pacific Highway.



Plate 1 View to the southwest towards Possum Brush Quarry from Possum Brush Road

In order to maintain the low visual impact of the Quarry components, PBM will continue to maintain the vegetation immediately surrounding the extraction area.

4.8 SURROUNDING RESIDENTS

Figure 3 displays all the residents within 2km of the Quarry.

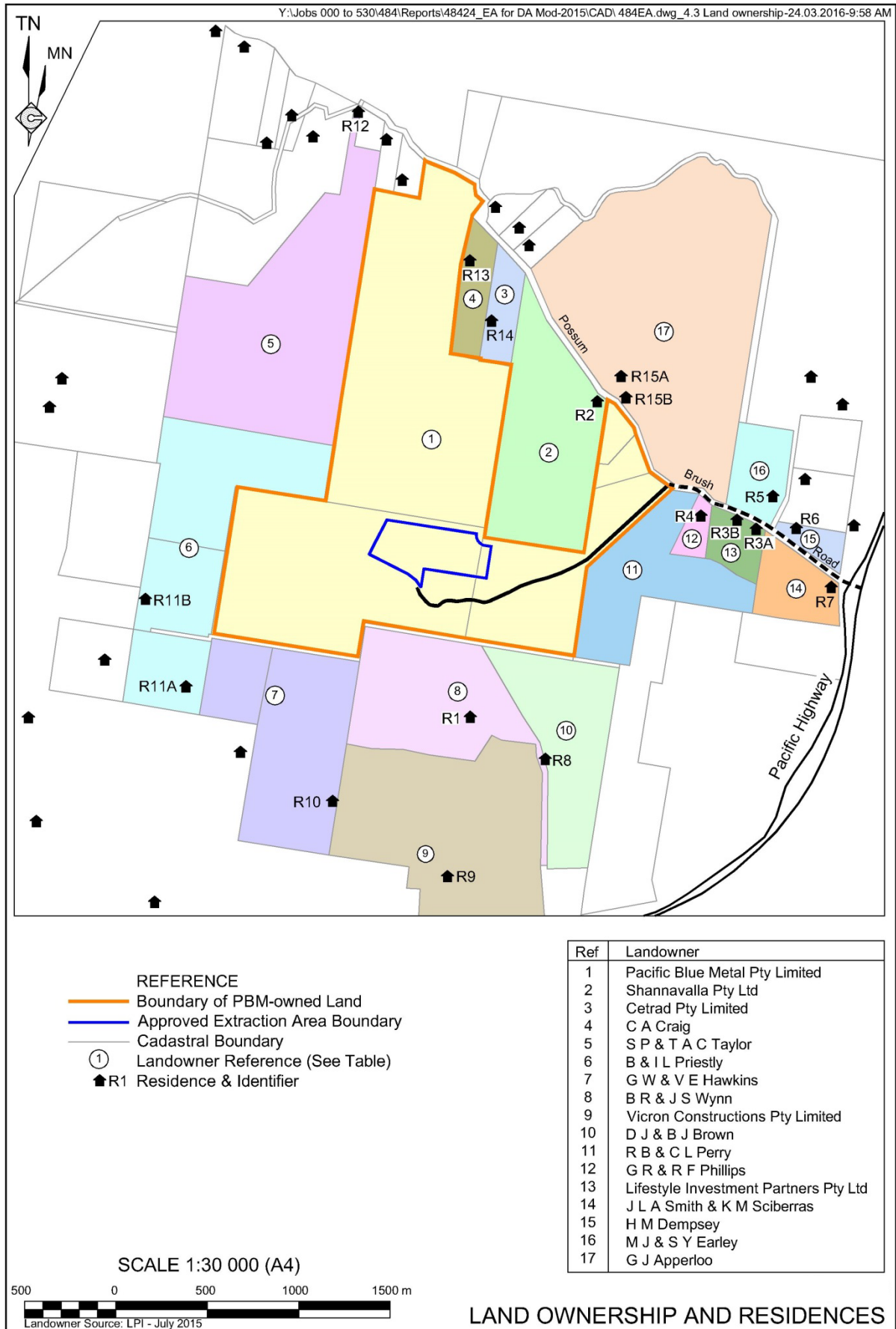


Figure 3 Land Ownership and Residences

5. REHABILITATION

5.1 REHABILITATION STRATEGY

The rehabilitated quarry will be planned to function as a sustainable ecosystem which reflects the natural ecology of the area. The aim of the rehabilitation plan is to provide a safe and stable landform that is compatible with the surrounding landscape and can allow for a range of potential future land uses. Emphasis will continue to be placed upon natural regeneration from soils retained within the Quarry Site and/or the use of endemic seed collected within PBM's property. It is envisaged that given the site's forested lands and the proximity to both private and public forests, wildlife corridors and the expansion of habitat opportunities for aquatic/wetland and terrestrial fauna species will be enhanced

PBM will maintain a progressive approach to the rehabilitation of disturbed areas within the Quarry Site to ensure the rehabilitation of the terminal benches occurs soon after those benches are created. Benches are to be rehabilitated with vegetation to a level similar to that of the surrounding vegetation to assist in visually shielding the benches and to provide habitat for the long term use of native fauna. All benches will be designed to be internally draining, capturing and retaining water for bench vegetation.

Access to the rehabilitated areas is physically restricted through the installation of soil berms and high walls. Additionally all PBM staff and contractors are made aware of the restricted access to these rehabilitation areas during their induction.

The final landform at the end of the Quarry life (**Figure 4**) displays the locations of the terminal benches. It is noted that a number of the final benches displayed in **Figure 4** would be generated beyond Stage 2, i.e. following a further modification of Development Consent DA 283/97. The benches completed during Stage 2 on the western, northern and eastern sides of the extraction area would be revegetated progressively throughout Stage 2. **Figure 5** provides a schematic of the rehabilitated final benches.

The Possum Brush Quarry is planned to continue beyond the current 30 year approval period. Following the extraction of the proposed 11.1Mt of rock as part of Stage 2, at least 8.9Mt of rock would remain within:

- the southern and south-eastern sides of Area A (in the area of the interim vegetation);
- the southern area within Area B; and
- the floor of Areas A and B.

Should PBM not be granted approval to continue quarry after 2046, the site will be decommissioned with all unnecessary surface infrastructure removed and final rehabilitation works undertaken. The site will be incorporated into the existing agricultural enterprise, with the pit floor water body being used as agricultural water source. The water body will have stable slopes, and will be accessed via the haul road, both of which will be at +45m AHD.

The pit floor water body is also an important Static Water Supply (SWS) for the Rural Fire Service (RFS), as highlighted by its use during the bushfires that swept through Possum Brush and surrounds in November and December 2019.

5.2 REHABILITATION OBJECTIVES

The measures designed to meet the rehabilitation objectives as determined by the Department in Condition 19 Schedule 3 are outlined in Table 4.

Condition 19 requires a description of the short, medium and long term measures to ensure compliance with the rehabilitation objectives of the consent. As an existing quarry, with no further lateral expansion, the active quarry area is distinctly defined and has well-established and managed rehabilitation areas in place. This includes the Wildlife Corridor, 50m buffer and the quarry access corridor. The short and medium term measures to develop and manage these rehabilitation areas have already been implemented. At this stage of the development, PBM's objective is to protect the vegetation areas which were rehabilitated under the previous consent, undertaking additional rehabilitation measures when and if necessary. Rehabilitation of Final Benches (as per Section 4.1) is ongoing and will complement the established rehabilitation areas.

Table 4 Rehabilitation Objectives and Measures

Feature	Objective	Rehabilitation Measures
Site (as a whole)	Safe, stable and non-polluting	<p>PBM's objective is to return the land to a safe, stable and non-polluting site by:</p> <ul style="list-style-type: none"> • Ensuring the final void is as small as possible and progressively reshaping disturbed areas to match the surrounding landform. • Creating habitats for native flora and fauna by rehabilitating disturbed areas with endemic vegetation species, installing nesting boxes and controlling weeds and feral pests. • Proactively managing environmental buffer zones and wildlife corridors to improve local biodiversity values and maximise connectivity.
	Final landform integrated with surrounding natural landforms as far as is reasonable and feasible, and designed to minimise the visual impacts of the development when viewed from surrounding land.	Possum Brush Quarry is well located from a visibility perspective in that it is surrounded by substantial areas of remnant vegetation and numerous ridges. PBM has retained and enhanced the vegetation surrounding the extraction area to limit visual access from surrounding residences and local public roads. Progressive rehabilitation of disturbed areas combined with the dedication and maintenance of buffer zones and wildlife corridors will continue to keep the site integrated with surrounding natural land form as well as minimise the visual impacts of the quarry.
	Restored with native, endemic vegetation.	PBM will utilise the already established wildlife corridor and other environmental areas in order to provide a seed bank of native endemic species for the ongoing rehabilitation of terminal benches and the rehabilitation of the quarry floor. Revegetation via the seed bank is achieved via natural means as well as through propagating and planting local seeds. This is supplemented with purchased native endemic tube stock from local native nurseries where necessary. These actions will continue to be undertaken throughout Stages 1-6 (Years 1-30)
Vegetated Land	Conserved and enhanced with native, endemic vegetation.	PBM has established a wildlife corridor and additional environmental protection areas in order to connect and enhance native vegetation and fauna habitat (Figure 5). These areas will continue to be actively managed, with the Wildlife Corridor scheduled to be formally preserved in perpetuity.
	Containing self-sustaining ecosystems.	To achieve this objective PBM has been and will continue to proactively rehabilitate degraded areas of the quarry (quarry benches) and maintain environmental buffers and connectivity corridors outside of the extraction area with self-sustaining vegetation cover. This measure will provide an initial establishment of native vegetation as well as a broad native seed source (and associated

		vectors) for the continued re-establishment of the site. Native fauna will readily recolonise the area once rehabilitation is established – locally migrating from the well-established habitats surrounding the quarry.
Surface Infrastructure	Decommissioned and removed, unless the Secretary agrees otherwise.	At the end of quarry life all unnecessary surface infrastructure shall be decommissioned and removed from site. The long term objective is to utilise the quarry as an integral component of the ongoing agriculture enterprise. With permission of the Secretary, this will include the retention of some surface infrastructure relative to the agricultural business (access road, workshop, power, sewer, weighbridge, administration building). The asphalt plant may remain as a separate entity under a separate consent.
Quarry Benches & Pit Floor	Landscaped and vegetated using native trees and understorey species.	PBM's objective is to immediately stabilise all earthworks, drainage lines and disturbed areas during activities associated with the ongoing operation of the quarry in order to minimise erosion and sedimentation and visibility impacts. PBM will continue to undertake scheduled weed control in newly revegetated and less rehabilitated areas and infill plantings when necessary throughout Stages 1-6 of the development (see EMS Section 2.2). In the longer term, i.e. by the end of this Stage 2 Consent, PBM's objective is to rehabilitate all terminal quarry benches with native trees and understory species. At the end of quarry life, the pit floor will act as a water source for the ongoing agricultural enterprise and as a Static Water Source for the Rural Fire Service.
Final Void	Minimise the height and slope of batters.	All batters are limited by intentional design to a maximum height of 10-15m and a maximum slope of 75-80°.
	Minimise the drainage catchment.	The drainage catchment for the quarry was designed to be as small as possible to minimise soil disturbance in the first instance, and will not extend beyond the final void and ancillary area.
Community	Ensure public safety.	The Quarry Access Road extends to the local Possum Brush Road with a lockable gate positioned approximately 50m along the Quarry Access Road. The gate is locked outside approved operational hours to ensure that members of the public cannot access the Quarry Site after hours. Signage directs all members of the public entering the site to stop at the office. Any member of the public found within the quarry without an escort or prior induction are immediately escorted back to the main office.

	<p>Minimise the adverse socio-economic effect of quarry closure.</p>	<p>As a small business the Possum Brush Quarry employs on average between 20 and 25 employees. These employees are not concentrated in one town or area, but are geographically spread throughout the region. This in itself will reduce any concentrated socio-economic impact of quarry closure. In addition quarry closure will be undertaken over a period of time, allowing slow release of staff into the local job market.</p>
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5.3 REHABILITATION ACTIVITIES

The final benches within the extraction area above 120m AHD would be progressively revegetated to minimise the visual impact of the exposed rock faces.

Figure 6 schematically displays the profile of two final benches and the placement of the weathered rock and establishment vegetation.

The key rehabilitation activities of benches will involve:

- i) the placement of sufficient (approximately 1-2m) weathered overburden, with emphasis placed in creating a roughened surface to locally contain rainfall;
- ii) subsoil and topsoil (if available) will be placed on the overburden material generally to a depth of approximately 0.1- 0.15m. Soil will be preferentially be transferred from areas stripped of topsoil, however, where necessary, soil will be transferred from stockpiles;
- iii) the reliance upon natural regeneration on the substrate on each bench, similar to that which has already occurred on some of the eastern benches (see **Plate 2**);
- iv) depending on the source of the topsoil, a weed spraying program will be undertaken if required, to ensure weed growth is controlled early; and,
- v) supplementary planting of tubestock propagated with seed collected within PBM's property and will invariably include some of the following.

- *Corymbia intermedia* Bloodwood
- *Eucalyptus microcorys* Tallowood
- *Eucalyptus acmeniodes* White Mahogany
- *Eucalyptus placita* Grey Iron Bark
- *Eucalyptus siderophloia* Northern Grey Iron Bark
- *Eucalyptus maculate* Spotted Gum
- *Allocasuarina litoralis* Black She Oak
- *Acacia fimbriata* Fringed Wattle
- *Acacia longifolia* Coast Wattle
- *Acacia floribunda* Sallee Wattle

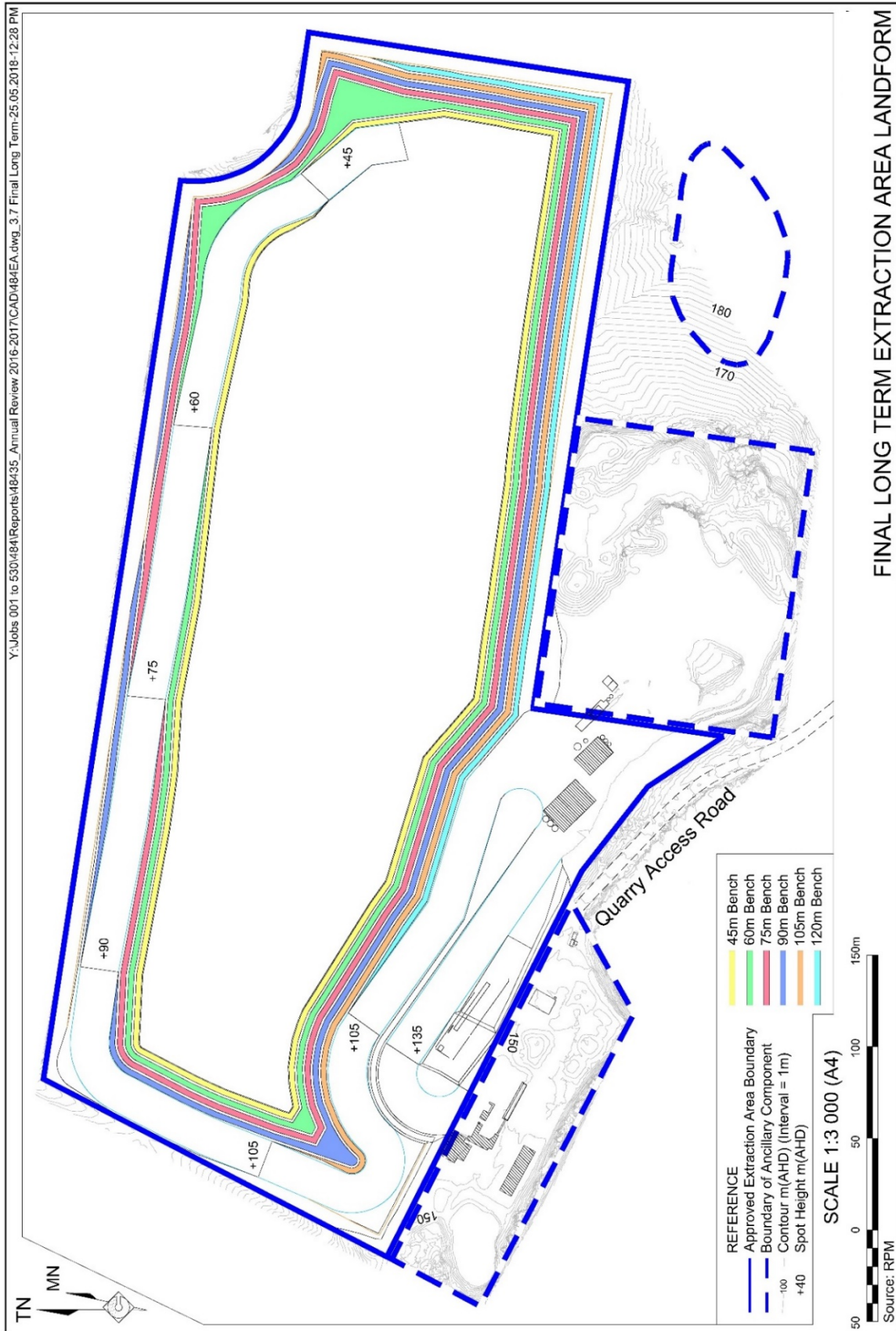


Figure 4 Final Long Term Extraction Area Landform

5.4 REHABILITATION MAINTENANCE

PBM will continue to maintain areas of rehabilitation to ensure the necessary standards are being achieved. **Table 5** below outlines the identified risks to rehabilitation and the contingency measures planned to mitigate these risks.

Table 5 Rehabilitation Risks and Contingency Measures

Potential Risk	Contingency Measure
High mortality rate of planted tubestock.	At a minimum, annual inspections of tree and shrub growth to identify mortality rates and any areas that require infill planting. The presence of significant surrounding vegetation also provides a seed bank of local plant species to help aid long term rehabilitation of local provenance stock.
Invasive weed species	Scheduled inspections will identify the presence, species and extent of weed growth when and where present in rehabilitation areas. Any identified sites will undergo additional weed control to combat the weed in question. Scheduled inspections will vary from quarterly to annual inspections dependent on the rehabilitation stage of the site, with newer and less rehabilitated sites undergoing more regular inspections.
Invasion of feral pest species	Identification of the presence and population numbers of feral pest species during scheduled inspections will identify feral pests that may threaten rehabilitation areas. Once identified a control program using Best Practice Feral Pest Species Management will be developed and implemented.
Damaged perimeter fencing	Perimeter fencing will be checked on a six (6) monthly basis to ensure grazing stock and/or unauthorised personnel do not enter rehabilitation areas. Any damage to perimeter fencing will be immediately repaired. In addition vegetation management along perimeter fencing will be undertaken to prevent damage to the fence via vegetation growth.
Soil erosion	Inspection of all rehabilitation areas after substantial rainfall events to identify any areas where remedial earthworks are required.

5.5 REHABILITATION AND CONSERVATION BOND

Within six (6) months of the approval of this Plan, PBM will lodge a Rehabilitation & Conservation Bond with DPE to ensure that the management of biodiversity and the rehabilitation of the site are implemented in accordance with the performance and completion criteria set out in this Plan. The sum of the bond shall be determined by:

- a) calculating the cost of rehabilitating the site taking into account the likely surface disturbance over the next 3 years of quarrying operations and
- b) employing a suitably qualified quantity surveyor or other expert to verify the calculated costs.

Within three (3) months of each Independent Environmental Audit, PBM will review and if necessary revise the sum of the Conservation and Rehabilitation bond in accordance with the provisions of *DA Condition 3(23)*.

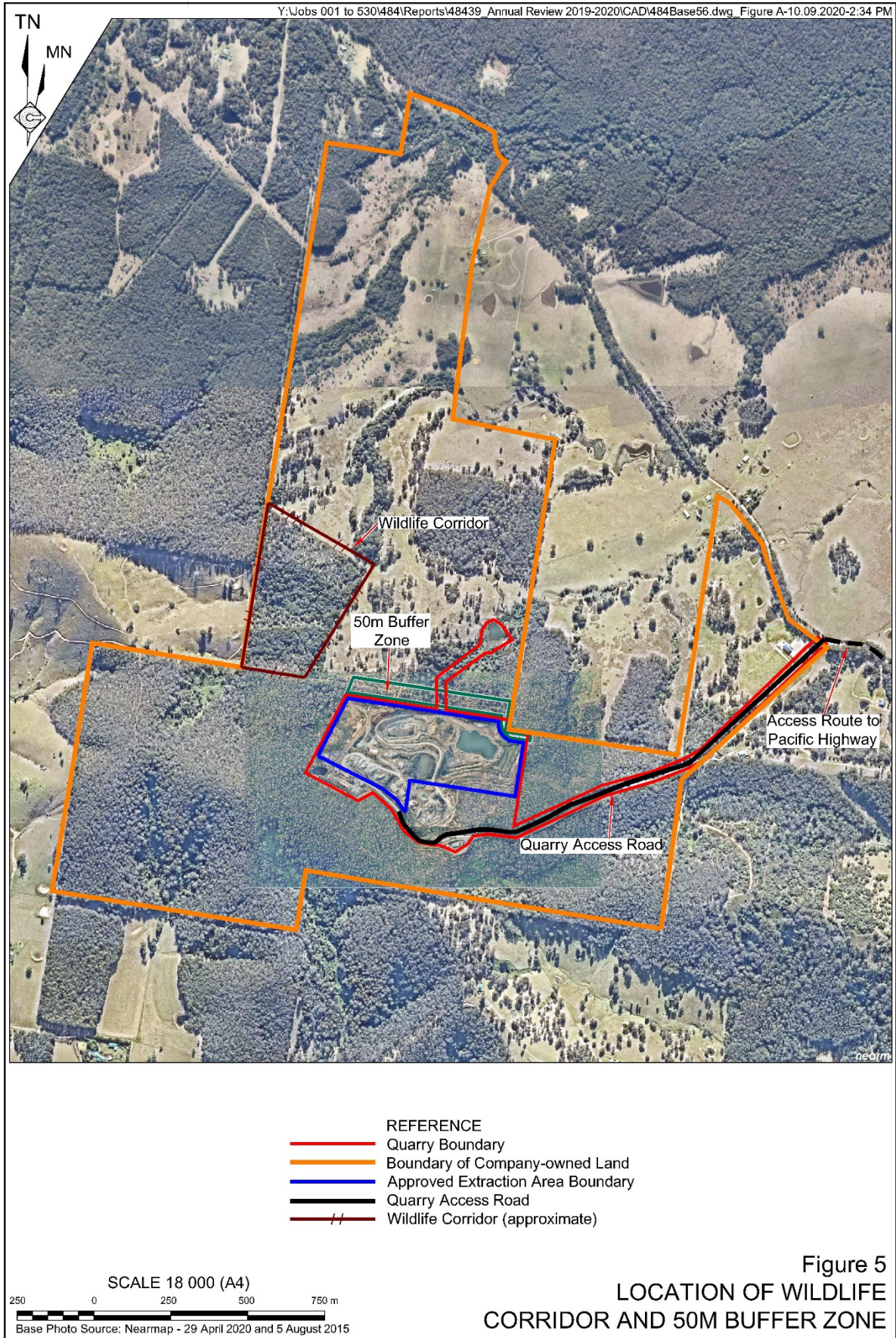


Figure 5 Location of Wildlife Corridor & 50m Buffer Zone



Plate 2 Natural revegetation on the eastern faces of Area A (Photo Ref. E484I_030)

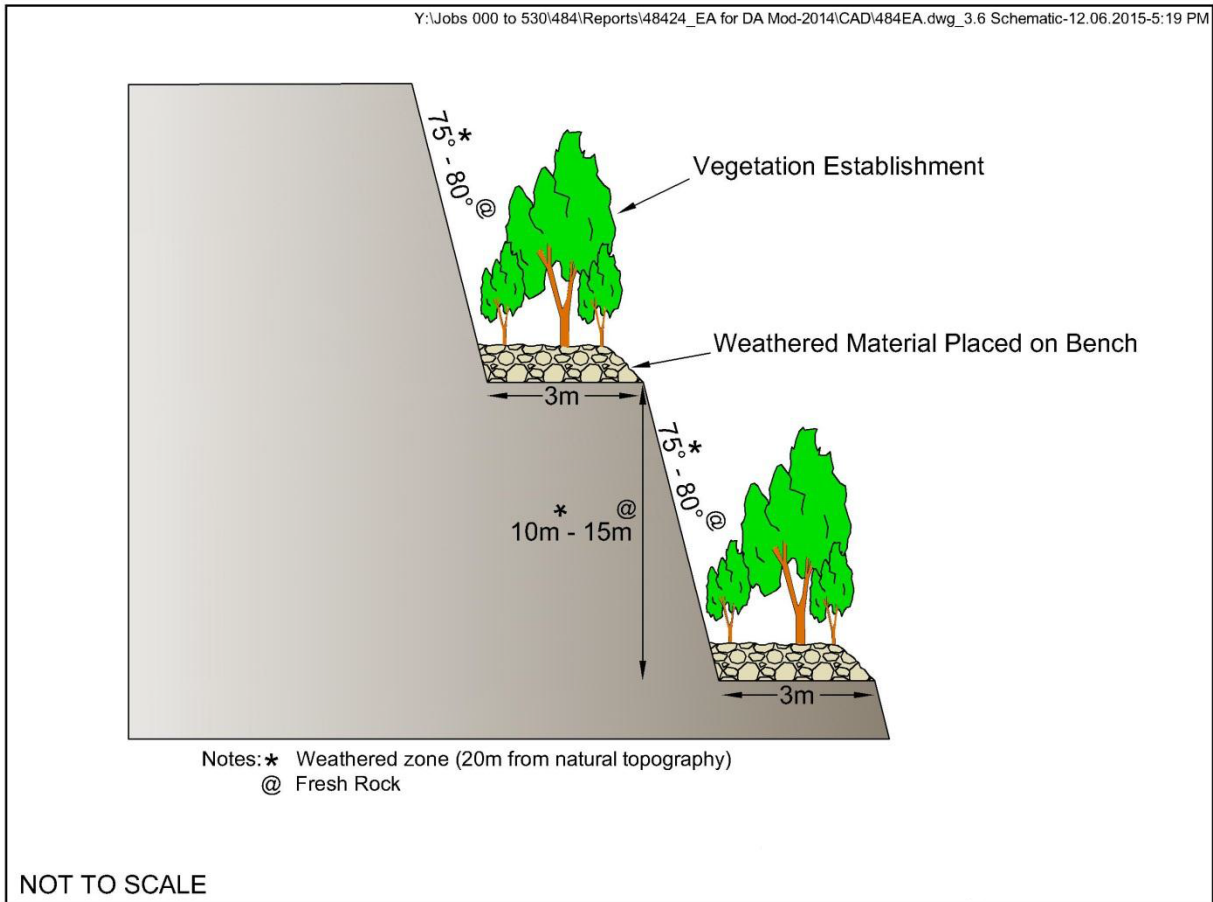


Figure 6 Schematic Rehabilitated Final Quarry Bench



Plate 3 **Creek in Wildlife Corridor after weed control and rain event**



Plate 4 **Planted Rudders Box in Wildlife Corridor**

6. MONITORING

Section 4 Landscape Management, outlines the measures PBM has established to meet the landscape management requirements of *DA Condition 3(21)(g)*. *DA Condition 3(21)(h)* requires a program to monitor and report on the effectiveness of these measures) and progress against the Performance Criteria (as outlined in Table 2) and Completion Criteria (as outlined in Table 4). Table 6 presents a summary of the requirements of *DA Condition 3(21)(g)*, the monitoring undertaken and the performance and completion criteria to which they contribute.

PBM's commitment to effective rehabilitation will involve annual monitoring throughout the life of the Quarry. Rehabilitated areas will be inspected and assessed by PBM's Compliance Manager (or delegate) on an annual basis to ensure a satisfactory level of rehabilitation is being achieved on the benches and in the identified environmental areas.

A summary of monitoring carried out during the reporting period, including identification of monitoring trends over the life of the development will be provided in the Annual Review and independently assessed by the three (3) yearly Independent Environmental Audit.

Table 6 Monitoring of Condition 3 (21)(g)

Condition requirement	Monitoring	Performance criteria	Completion criteria
Maximise the salvage of environmental resources within the approved disturbance area for beneficial reuse	Plan to maximise salvageable timbers, seeds and soils prior to disturbance. Record type of beneficial reuse undertaken.	To appropriately manage site preparation works to ensure that suitable rehabilitation material remains for rehabilitation operations during all stages of the Quarry.	<ul style="list-style-type: none"> • Site as a whole restored with native, endemic vegetation • Quarry Benches and Pit Floor landscaped and vegetated using native trees and understorey species.
Protect vegetation and fauna habitat outside approved extraction area	List protection measures undertaken in environmental protection areas, including weed control, feral animal control and rehabilitation.	<ul style="list-style-type: none"> • To implement appropriate progressive rehabilitation and landscape management and mitigation measures during all stages of the Quarry. 	<ul style="list-style-type: none"> • Vegetated land conserved and enhanced with native, endemic vegetation. • Vegetated land containing self-sustaining ecosystems
Minimise tree or native vegetation removal or destruction	Record native tree numbers or area of vegetation removed and retained (if applicable).	<ul style="list-style-type: none"> • To implement appropriate progressive rehabilitation and landscape management and mitigation measures during all stages of the Quarry. 	<ul style="list-style-type: none"> • Vegetated land conserved and enhanced with native, endemism vegetation.
Use pre-existing or local plant species for revegetation	Tally & type of plant species planted.	<ul style="list-style-type: none"> • To implement appropriate progressive rehabilitation and landscape management and mitigation measures during all stages of the Quarry. 	<ul style="list-style-type: none"> • Site as a whole restored with native, endemic vegetation • Vegetated land conserved and enhanced with native endemic vegetation.
Minimise the impacts on native flora and fauna, including Brush-tailed Phascagale and Rudder's Box	Record any disturbance to native flora and fauna, and measures taken to mitigate disturbance.	<ul style="list-style-type: none"> • To implement appropriate progressive rehabilitation and landscape management and mitigation measures during all stages of the Quarry. 	<ul style="list-style-type: none"> • Vegetated land conserved and enhanced with native endemic vegetation.
Landscape the site to minimise visual and lighting impacts	Already completed.	<ul style="list-style-type: none"> • To implement appropriate progressive rehabilitation and landscape 	<ul style="list-style-type: none"> • Final landform integrated with surrounding natural landforms as far

Condition requirement	Monitoring	Performance criteria	Completion criteria
		management and mitigation measures during all stages of the Quarry.	as is reasonable and feasible and designed to minimise the visual impacts of the development when viewed from surrounding land.
Control weeds and feral pests	Record any activities undertaken.	<ul style="list-style-type: none"> • To implement appropriate progressive rehabilitation and landscape management and mitigation measures during all stages of the Quarry. 	<ul style="list-style-type: none"> • Site as a whole restored with native, endemic vegetation • Vegetated land conserved and enhanced with native, endemic vegetation. • Vegetated land containing self-sustaining ecosystems
Control Erosion	Record activities including installation and maintenance of sediment and erosion control measures.	<ul style="list-style-type: none"> • To implement appropriate progressive rehabilitation and landscape management and mitigation measures during all stages of the Quarry. 	<ul style="list-style-type: none"> • Site as a whole is safe, stable and non-polluting. • Minimise the height and slope of batters. • Minimise the drainage catchment.
Control access	Record any breaches of restricted access to the site and to environmental areas.	<ul style="list-style-type: none"> • n/a 	<ul style="list-style-type: none"> • Ensure public safety
Bushfire Management	Record any actions taken to reduce risk of bushfire and post bushfire response.	<ul style="list-style-type: none"> • n/a 	<ul style="list-style-type: none"> • Vegetated land containing self-sustaining ecosystems.

7. EVALUATION OF COMPLIANCE

PBM will evaluate compliance in accordance with the procedures detailed in Section 7 of the Environmental Management Strategy.

8. CORRECTIVE AND PREVENTATIVE ACTION

Section 8 of the Environmental Management Strategy details the corrective and preventative actions to be taken in the event an exceedance of any relevant criteria or breach of condition(s) is identified.

9. COMPLAINTS HANDLING AND RESPONSE

Section 9 of the Environmental Management Strategy outlines PBM's complaints management procedure, including dispute resolution.

10. INCIDENT MANAGEMENT

As per Environmental Management Strategy Section 10.

11. PUBLICATION OF MONITORING INFORMATION

As per Environmental Management Strategy Section 11

12. PLAN REVIEW

As per Environmental Management Strategy Section 12

Appendix A Government Department Consultation

From: [Steven Cox](#)
To: [Stacey Tyack](#)
Subject: RE: PBM Updated Landscape & Rehabilitation Mgt Plan
Date: Monday, 28 May 2018 5:29:03 PM
Attachments: [image001.png](#)

Hi Stacey,

We are currently unable to provide comment on management plans and won't be providing comment on the PBM Updated Landscape and Rehabilitation Management Plan.

Please provide a copy of the plan to DPE without comment from OEH.

[REDACTED]

Regards
Steven

Steven Cox
Senior Team Leader Planning
Hunter Central Coast Branch
Regional Operations Division
Office of Environment & Heritage
Level 4/26 Honeysuckle Drive Newcastle NSW 2300
Locked Bag 1002 Dangar NSW 2309
T 02 4927 3140
M 0472 800 088

From: Stacey Tyack [mailto:qse@pacificbluemetal.com.au]
Sent: Friday, 25 May 2018 4:06 PM
To: OEH ROD Hunter Central Coast Mailbox <rog.hcc@environment.nsw.gov.au>; OLG - Mid-Coast Council <council@midcoast.nsw.gov.au>
Subject: PBM Updated Landscape & Rehabilitation Mgt Plan

Dear Sir/Madam,

In 2016 OEH and Greater Taree City Council (now Mid Coast Council (MCC)) provided comments on Pacific Blue Metals Landscape and Rehabilitation Management Plan for the Possum Brush Quarry.

Pacific Blue Metal (PBM) has recently undertaken a review of this plan and has made some amendments which are mostly administrative in nature.

However, one amendment has been the clarification of surface infrastructure to remain on site at the end of quarry life.

The nominated infrastructure will be utilised in the ongoing agricultural enterprise of the property.

DPE has directed PBM to undertake further consultation with OEH and MCC in the course of this review.

Therefore please find attached a pdf copy of the reviewed management plan. All amendments are in track changes and are easy to see.

Any comments on the reviewed plan can be forwarded to gse@pacificbluemetal.com.au

Please don't hesitate to get in contact if you have any queries. I look forward to your response.

Kind regards, Stacey

Stacey Tyack
QSE Manager

Pacific Blue Metal Pty Ltd
Great Lakes Aggregates Pty Ltd
PO Box 6
NABIAC NSW 2312

Ph: 02 6554 3206
Fax: 02 6554 3250



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Any views expressed in this email are those of the individual sender except where the sender expressly and with authority states them to be the views of the NSW Office of Environment and Heritage.

PLEASE CONSIDER THE ENVIRONMENT BEFORE PRINTING THIS EMAIL

From: [Stacey Tyack](#)
To: [Arna Fotheringham](#)
Subject: FW: MOD 4 DA 283/97 PBM
Date: Thursday, August 18, 2016 9:17:00 AM
Attachments: [image001.png](#)
[image004.png](#)
[image008.png](#)
[image009.png](#)
[image010.png](#)
[image011.png](#)
[image007.png](#)
[image012.png](#)
[image013.png](#)
[image014.png](#)

Hi Arna,

Thank you for providing comment on the Transport and Landscape & Rehabilitation Management Plans for MOD 4 DA 287/93.

For your reference I have provided a response to each of your comments below – these are highlighted in blue. If you have any questions please don't hesitate to contact me.

Kind regards,
Stacey

From: Arna Fotheringham [<mailto:Arna.Fotheringham@gtcc.nsw.gov.au>]
Sent: Tuesday, June 28, 2016 3:52 PM
To: gse@pacificbluemetal.com.au
Subject: FW: MOD 4 DA 283/97 PBM

Arna Fotheringham

Development Planner
02 6592 5247 | 0428 293 416 | arna.fotheringham@gtcc.nsw.gov.au

MidCoast Council | 2 Pulteney Street | PO Box 482 | Taree 2430
www.midcoast.nsw.gov.au

From: Arna Fotheringham
Sent: Tuesday, 28 June 2016 3:51 PM
To: 'gse@pacificbluemetal.com' <gse@pacificbluemetal.com>
Subject: MOD 4 DA 283/97 PBM

Hi Stacey

I refer to your email 15/06/2016 requesting comments in relation to the Draft Landscape and Rehabilitation Management Plan and Draft Transport Management Plan. The drafts were referred to the relevant Council Officer and I provide their comments as follows:

Draft Transport Management Plan – (Asset Planning)

The Draft Transport Management Plan is considered to be acceptable and no further changes are required.
[Acknowledged](#)

Draft Landscape and Rehabilitation Management Plan – (Environmental Services)

-

PBM Modification approval Stage 2

Council agrees with the intent of Environmental Performance Conditions outlined in Schedule 3 attached to the Notice of Modification in relation to Stage 2 of the Pacific Blue Metal Operating Plan.

Council agrees that the applicant is to:

- Meet the specific performance criteria established under this consent, and
- Implement all reasonable and feasible measures to prevent and/or minimise any material harm to the environment that may result from the construction, operation, or rehabilitation of the development.

Council has reviewed the *Landscape and Rehabilitation Management Plan* (Plan) for the Possum Brush Quarry (DA 283/97), *Draft Report No. 484/33*, prepared in conjunction with R.W. CORKERY & CO. PTY. LIMITED, dated June 2016 and requests that the data gaps listed below are addressed, and additional information is provided.

1. The “wildlife corridor” and the “50m corridor” is not referenced or shown on a figure/drawing/plan to confirm its location, and photographs have not been provided. [Figure 8: Location of Wildlife Corridor and 50m Buffer Zone has been included and appropriate references throughout document have been made to reflect addition of map. Plate 3 Wildlife Corridor has been included.](#)

The *Landscape and Rehabilitation Management Plan* (Plan) refers to the ‘50m wide corridor’ and ‘wildlife corridor’ on the following pages:

Page 12, Table 2(e) & (j) - refers to the “wildlife corridor”;

Page 16, 7. Competence Training and Awareness - refers to the “rehabilitation area and wildlife corridor”;

Page 18, 9.2 External Vegetation Management – refers to the “50m wide corridor” and the “wildlife corridor”; and

Page 21, 10.3 Rehabilitation Maintenance, Point 6 – refers to the “wildlife corridor in perpetuity”.

2. On page 18, the Rudders Box Planting area in “Area A” is referred to, but isn’t shown on a figure/drawing/plan, and no photographs have been provided.

Rudders Box seeds were [collected](#) from Area A, not planted in Area A. Exert from Management Plan states: “A program of seed collection was undertaken prior to removal of the Rudders Box trees in Area A”. Rudders Box plantings were undertaken in the Wildlife Corridor. [Plate 4 Rudders Box planted in the Wildlife Corridor has been included.](#)

3. The Plan refers to “regular” or “periodic” environmental monitoring activities but does not provide timeframes e.g. short, medium, and long-term monitoring activities, as specified in the condition 21. The requested programs and detailed descriptions have not been provided. See text in red below. Please provide a spreadsheet or list that specifies each specific performance criteria, the related environmental protection measures (i.e. programs and detailed descriptions) and the timeframe of each proposed activity. In addition, the spreadsheet or list of specific programs and detailed descriptions will be required to order meet other conditions, such as Schedule 4 Additional Procedures (Notification of Landowners and Independent Review), and Schedule 5 Environmental Management, Reporting and Auditing (Environmental Management Plan etc.).

Rehabilitation programs, performance criteria and associated monitoring timeframes are generally sufficiently described within the paragraphs of Sections 9 and 10, negating the need for an supplementary spreadsheet. However, based on your comments, additional performance criteria, monitoring and reporting procedures have been added, and references to ‘regular’ or ‘periodic’ have been replaced with quantitative values. Examples of alternations include the following:

Clause NBR	Previous wording	New wording
9.1	A regular weed control program is undertaken within and around Areas A and B. The principal species target in these areas are blackberry and lantana, both of which are controlled through a combination of mechanical removal and herbicide application. Targeted weed control for other weed species will be designed and implementation as required.	In the short to medium term, a six (6) monthly weed control program is being undertaken within and around Areas A and B. The principal species target in these areas are blackberry and lantana, both of which are controlled through a combination of mechanical removal and herbicide application. Targeted weed control for other weed species will be designed and implementation as required. In the long term, the success of the native vegetation establishment will determine the type and frequency of the weed control program in these areas.
9.2	Notwithstanding, information on status of the successful planting and protection measures of the Rudder's Box will be periodically provided.	Notwithstanding, information on status of the successful planting and protection measures of the Rudder's Box will be provided in the annual review.
9.2	Works within these areas include at a minimum, an annual weed control program to allow for native flora to recolonise the area. Six (6) monthly weed and revegetation programs are scheduled and implemented when required, for example when undertaking primary weed control programs.	Works within these areas include at a minimum, an annual weed control program to allow for native flora to recolonise the area. Six (6) monthly weed and revegetation programs are scheduled and implemented when required, for example when undertaking primary weed control programs. The long term goal is to establish these areas with robust native vegetation, with minimal maintenance and disturbance. Progress toward this goal will be reported on in the annual review as well as undergoing independent assessment in the three (3) yearly Independent Environmental Audit.
9.3	To date, the existence of feral pest species has not been an issue. Regular inspections of the quarry and the larger PBM property are undertaken by internal staff as well as external	To date, the existence of feral pest species has not been an issue. Six (6) monthly inspections of the quarry and the larger PBM property are undertaken by internal staff and/or external Revegetation Contractors to monitor for indications of feral pest issues.
10.3	Periodic inspections of tree and shrub growth to identify mortality and any areas that may require replanting.	At a minimum, annual inspections of tree and shrub growth to identify mortality and any areas that may require replanting.
	Inspections of the extent of weed grown and identification of areas where additional weed control is necessary	Scheduled inspections of the extent of weed growth and identification of areas where additional weed control is necessary. This will vary from quarterly to annual inspections

		dependent on the rehabilitation stage of the site in question.
	Perimeter fencing will be periodically checked to ensure grazing stock do not enter rehabilitation areas.	Perimeter fencing will be checked on a six (6) monthly basis to ensure grazing stock do not enter rehabilitation areas.
10.4	PBM's commitment to effective rehabilitation will involve annual monitoring throughout the life of the Quarry. Rehabilitated areas will be inspected and assessed by PBM's Compliance Manager on an annual basis to ensure a satisfactory level of revegetation	<p>PBM's commitment to effective rehabilitation will involve annual monitoring throughout the life of the Quarry. Rehabilitated areas will be inspected and assessed by PBM's Compliance Manager on an annual basis to ensure a satisfactory level of revegetation is being achieved on the benches and in the identified environmental areas.</p> <p>A summary of monitoring carried out during the reporting period, including identification of monitoring trends over the life of the development will be provided in the Annual Review and independently assessed by the three (3) yearly Independent Environmental Audit.</p>

4. On page 21 the Plan refers to: "Investigation into the use of suitable arrangements to protect the wildlife corridor in perpetuity, in particular the use of Biobanking Agreements." Specifically, how will PBM address the long term tenure of the wildlife corridor?

As required by Schedule 3 Clause 21, the Landscape and Rehabilitation Management Plan must include a program which includes making suitable arrangements to protect in perpetuity the wildlife corridor, it does not require that the manner in which we achieve this is determined by this point in time. As an important goal, the protection of the wildlife corridor in perpetuity requires substantial investigation and consideration of the options available. PBM plan to undertake this process in due course and will subsequently report on the progress of such.

**Extract: Notice of Modification, Page 12
Landscape and Rehabilitation Management Plan**

21. The Applicant shall prepare a Landscape and Rehabilitation Management Plan for the development to the satisfaction of the Secretary. In addition to the standard requirements for management plans (see condition 2 of Schedule 5) this plan must:

- (a) be prepared in consultation with OEH and Council;
- (b) be submitted to the Secretary for approval within three months of the date of approval of Modification 4, unless otherwise agreed by the Secretary;
- (c) provide details of the conceptual final landform and associated land uses for the site; **Page 22 Figure 7 only shows benching. The wildlife corridor and the other protected areas are not shown.**

See address of Point 1 above.

- (d) describe the short, medium and long-term measures that would be implemented to ensure compliance with the rehabilitation objectives and progressive rehabilitation obligations in this consent; **The short, medium and long-term measures are not specified.**

See address of Point 3 above.

- (e) include a program to progressively improve the structure and floristic composition of the established wildlife

corridor which includes:

maintaining a fence around the wildlife corridor to exclude grazing stock; **The location of the wildlife corridor is not shown. See address of Point 2 above.**

- maintaining wildlife warning signs and speed limits on internal roads; and
- making suitable arrangements to protect in perpetuity the wildlife corridor; and

(f) include a program to monitor Rudder's Box within the Applicant's property; **The location of the Rudder's Box plantings is not shown. See address of Point 2 above.**

(g) include a detailed description of the measures that would be implemented to:

- maximise the salvage of environmental resources within the approved disturbance area for beneficial reuse;
- protect vegetation and fauna habitat outside the approved extraction area; **Beyond the extraction area, is the native vegetation area already fenced? If not, when will the fencing of this area be completed?** Section 9.2 of the Landscape Management Plan states that areas beyond the extraction area for active flora and fauna management are; the wildlife corridor, the 50m buffer zone north of the approved extraction area and the area adjacent to the quarry access road. These areas are all fenced to prevent stock access.
- minimise tree or native vegetation removal or destruction;
- use pre-existing or local plant species for revegetation;
- minimise the impacts on native fauna and flora, including Brush-tailed Phascogale and Rudder's Box;
- landscape the site to minimise visual and lighting impacts;
- control weeds and feral pests; **Only 'regular' or 'periodic' is mentioned. Timeframes are not specified. See address of Point 3 above.**
- control erosion;
- control access; and
- bushfire management; and

(h) include a program to monitor and report on the effectiveness of these measures, and progress against the performance and completion criteria;

(i) identify the potential risks to the successful rehabilitation of the site, and include a description of the contingency measures that would be implemented to mitigate these risks; and

(j) include details of who would be responsible for monitoring, reviewing, and implementing the plan.

The Applicant shall implement the management plan as approved from time to time by the Secretary.

Note: For the purposes of this consent, suitable arrangements to protect the wildlife corridor in perpetuity may include the use of Public Positive Covenants in combination with Restrictions on Use of Land on the land title/s of the wildlife corridor. Other arrangements such as the use of Biobanking Agreements or transfer of lands to the national parks estate would also be considered for their suitability.

Regards

Arna Fotheringham

Development Planner
02 6592 5247 | 0428 293 416 | arna.fotheringham@gtcc.nsw.gov.au

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From: [Arna Fotheringham](mailto:Arna.Fotheringham)
To: gse@pacificbluemetal.com.au
Subject: MOD 4 283/97 PBM
Date: Wednesday, August 24, 2016 4:48:46 PM
Attachments: [image001.png](#)
[image002.png](#)
[image003.png](#)
[image004.png](#)
[image005.png](#)
[image006.png](#)
[image007.png](#)
[image008.png](#)
[image009.png](#)
[image010.png](#)

Hi Stacey

I referred your response comments in relation to the management plans to the relevant Officers who advise that the proposed amendments are considered acceptable.

Regards

Arna Fotheringham

Development Planner
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From: [Richard Bath](#)
To: [Stacey Tyack](#)
Cc: [Steve Lewer](#)
Subject: RE: PBM DRAFT Landscape & Rehabilitation Mgt Plan
Date: Monday, June 27, 2016 11:57:27 AM
Attachments: [image001.png](#)
[DOC16-290635-1_Review of Draft Landscape and Rehabilitation Management Plan Possum Brush Quarry 27062016.pdf](#)

Hi Stacey

Please find attached OEH's response to your request.

Regards

Richard Bath
Senior Team Leader Planning
Hunter Central Coast Region
Regional Operations Group
Office of Environment and Heritage
Locked Bag 1002 Dangar NSW 2309
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T: 4927 3152
M: 0408 266 986
W: www.environment.nsw.gov.au

From: Stacey Tyack [mailto:qse@pacificbluemetal.com.au]
Sent: Tuesday, 14 June 2016 4:35 PM
To: ROG Hunter Central Coast Mailbox
Subject: PBM DRAFT Landscape & Rehabilitation Mgt Plan

Dear Sir/Madam,

As per Condition 3 (21) of the newly consented MOD 4 DA 283/97, Pacific Blue Metal has prepared a Draft Landscape and Rehabilitation Management Plan for Stage 2 of the Possum Brush Quarry.

Pacific Blue Metal would like to invite OEH to comment on the Draft Landscape and Rehabilitation Management Plan, a copy of which is attached.

As the Final Landscape and Rehabilitation Management Plan needs to be lodged with DPE by 1 July 2016, it would be much appreciated if you could provide any comments by 28 June 2016. Please provide comments to qse@pacificbluemetal.com.au

If you have any questions please do not hesitate to get in contact.

Kind regards,
Stacey

Stacey Tyack
QSE Manager

Pacific Blue Metal Pty Ltd
Great Lakes Aggregates Pty Ltd
PO Box 6
NABIAC NSW 2312

Ph: 02 6554 3206
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DOC16/290635-1

Ms Stacey Tyack
QSE Manager
Pacific Blue Metal Pty Ltd / Great Lakes Aggregates Pty Ltd
PO Box 6
NABIAC NSW 2312

**RE: OEH CONSULTATION – DRAFT LANDSCAPE AND REHABILITATION MANAGEMENT PLAN
– POSSUM BRUSH QUARRY – PACIFIC BLUE METAL PTY LTD / GREAT LAKES AGGREGATES
PTY LTD**

Thank you for forwarding the Possum Brush Quarry Draft Landscape and Rehabilitation Management Plan (June 2016) for our comment.

The Office of Environment and Heritage (OEH) encourages the development of such plans to ensure that proponents have determined how they will meet their statutory obligations and designated environmental objectives. However, OEH does not approve or endorse these documents as our role is to set environmental objectives for environmental/conservation management, not to be directly involved in the development of strategies to achieve those objectives. OEH acknowledges Pacific Blue's / Great Lake Aggregate's requirement to consult with relevant government agencies and considers that you have consulted with OEH through providing this document.

If you require any further information regarding this matter please contact Steve Lewer, Regional Biodiversity Conservation Officer, on 4927 3158.

Yours sincerely

A handwritten signature in black ink, appearing to read 'R Bath'.

27 JUN 2016

RICHARD BATH
Senior Team Leader Planning, Hunter Central Coast Region
Regional Operations

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