



TOMINGLEY
GOLD OPERATIONS PTY LTD
(A wholly owned subsidiary of Alkane Resources Ltd)

Tomingley Gold Operations

Biodiversity Management Plan



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TABLE OF REVISIONS

Revision Number	Revision Date	Prepared By	Approved by	Comments
Revision 1	December 2012	Phil Cameron (OzArk)	Michael Sutherland	Submitted for Consultation
Revision 2	January 2013	Colleen Measday	Michael Sutherland	Submission for Approval following consultation
Revision 3	June 2015	Mark Williams	Sean Buxton	Review following finalisation of PVP
Revision 4	July 2016	Mark Williams	Sean Buxton	Annual Review
Revision 5	September 2016	Mark Williams	Sean Buxton	Review following MOD 3
Revision 6	January 2017	Phillip Cameron	Mark Williams	Review following MOD 3
Revision 7	November 2020	Greg Bible	David Pritchard	Review following Independent Audit
Post Approval Review Updates	June 2021	Genevieve Peel (AREA)	David Pritchard	Update following DPIE Review

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1. INTRODUCTION AND SCOPE

This Biodiversity Management Plan (BMP) has been prepared to manage the Biodiversity Offset Area and other biodiversity aspects of the Tomingley Gold Operations (TGO) mine site and has been in effect since 2013. It will continue to be used by TGO personnel as the first point of reference for biodiversity related issues and statutory commitments.

The objective of this BMP is to improve and maintain the native vegetation and fauna habitats within the Biodiversity Offset Area towards biometric benchmark condition through an adaptive program of conservation management practices and natural regeneration.

The Biodiversity Management Plan is part of the TGO Environmental Management Strategy (EMS). The Environmental Management Strategy (EMS) forms part of the Integrated Management System for the project. It describes the strategic framework for environmental management of the project and is used by Tomingley Gold Operations (TGO) personnel to ensure environmental impacts are minimised and legislative requirements are complied with during operation of the Tomingley Gold Mine.

The EMS is supported by a number of specific Environmental Management Plans, including this Biodiversity Management Plan. These plans provide detailed information on areas of environmental risk and provide a process to manage that risk within TGO.

The other Environmental Management Plans supporting the EMS include:

- Blast Management Plan;
- Noise Management Plan;
- Air Quality and Greenhouse Gas Management Plan;
- Cultural Heritage Management Plan;
- Traffic Management Plan;
- Rehabilitation Management Plan (which is incorporated into the Mining Operations Plan (MOP));
- Water Management Plan;
- Pollution Incident Response Management Plan; and
- Hazardous Materials Management Plan.

The Second Mining Operations Plan (MOP) for the Tomingley Gold Mine was prepared by R.W. Corkery & Co. Pty., in 2014 to provide detailed information on mining, processing and rehabilitation operations within ML1684. The MOP also provides information to demonstrate the environmental risks associated with the operations on ML1684 are being appropriately managed and mitigated. This document incorporates the Rehabilitation Management Plan required under Condition 3(53) of Project Approval 09_0155.

The ultimate aim of rehabilitation is to rehabilitate disturbed areas to create a final landform that maintains or improves biodiversity values of the mine site.

Rehabilitation activities proposed to be implemented during the MOP term are on a domain-by-domain basis. A domain is a land management unit within the Mine Site. Domain 9 (a part of operational domains) and Domain J (post mining land use domains) incorporate the Conservation and Biodiversity Offset Areas which are the areas identified in this Biodiversity Management Plan as the Biodiversity Offset Area.

Strategies outlined in this Biodiversity Management Plan have been employed to enhance the quality of remnant native vegetation and restore specific plant community types in designated areas of the

Biodiversity Offset Area. This will lead to enhancing the quality of fauna habitat to meet the needs of threatened fauna known to occur at the mine site.

This plan does not cover rehabilitation of the site operational areas, such as the four open cut voids, underground mine, processing plant, three waste rock emplacements, residue storage facility and associated civil infrastructure.

Baseline data used to inform this plan has been taken from an Ecological Assessment undertaken by OzArk Environmental and Heritage Management Pty Ltd for the TGO Project, a specialist study used to inform the Tomingley Gold Project Environmental Assessment prepared by R.W Corkery & Co. Pty. Limited in November 2011 <https://www.alkane.com.au/wp-content/uploads/2017/12/TGP-EnvironmentalAssessment.pdf>.

2. AVOID, MINIMISE, MITIGATE AND OFFSET

As per PA09-0155, in order to avoid, minimise, mitigate or offset impacts (in that hierarchical order) on native vegetation (including the two identified Endangered Ecological Communities (EEC's)), native fauna (including threatened species) and their habitat, the TGO Mine Site activities and infrastructure has been located so as to avoid the majority of remnant native vegetation. Disturbance of remnant native vegetation has been restricted to (approximately):

- 2.7ha (of 36.9ha) of Inland Grey Box – Poplar Box – White Cypress Pine tall woodland on red loams;
- 0.9ha (of 30.9ha) of Fuzzy Box – inland Grey Box on alluvial brown loam soils; and
- 18.8ha (of 70.3ha) of Belah / Black Oak Western Rosewood Wilga woodland.

The principles of impact avoidance, minimisation, mitigation and offset measures have been addressed through the establishment of an approved Biodiversity Offset Strategy and Biodiversity Management Plan (BMP) for the Mine in consultation with the OEH, LLS and DPIE (see following section for details of relevant consultation).

3. CONSULTATION

Consultation has been completed with relevant government departments during the original development of this document. Appendix 1 provides details of consultation previously undertaken with OEH and LLS.

Revision 7 of this management plan, dated 7 November 2020, has been reviewed by the Resource Assessments Division of Department of Planning, Industry and Environmental (DPIE, formally OEH) on 10 May 2021 and request for additional information has resulted in a revision of the document.

NSW OFFICE OF ENVIRONMENT AND HERITAGE

Revision 1 of this plan was provided to OEH on 7 January 2013. Discussions regarding details of the Property Vegetation Plan (PVP) to manage biodiversity offsets in perpetuity on an on-title agreement occurred on 17 September 2014 with Peter Christie and Sonya Ardill at the Dubbo OEH office.

LOCAL LAND SERVICES

Consultation and a site inspection were undertaken with the Local Land Services (then Catchment Management Authority) by Dr Darren Shelly and Dr Terry Mazzer and it was determined that the proposed offset area was suitable for a Conservation PVP.

4. LEGISLATIVE REQUIREMENTS

4.1 Legislative Framework and Approval

TGO was assessed under Part 3A of the Environmental Planning and Assessment Act 1979 (EP&A Act), with Project Approval (PA 09_0155) being granted by the NSW Minister for Planning and Infrastructure in 2012. Approval has been modified five times subsequently. The conditions of PA 09_0155 which are relevant to biodiversity, and where these conditions are addressed in this document are shown in Table 1 below.

As per Schedule 3, Condition 38, TGO has lodged a conservation bond with the Department to ensure that the biodiversity offset is implemented in accordance with the performance and completion criteria of the Biodiversity Management Plan. See Appendix 7 for a copy of the original Banker's Undertaking in respect of the required Biodiversity Bond for the Tomingley Gold Project.

Table 1: Project Approval (PA 09_0155) Biodiversity Conditions addressed in this document

Project Approval (PA 09_0155) Biodiversity Conditions	Relevant section of this BMP						
Biodiversity Offset Schedule 3, Condition 33 The Proponent shall implement the offset strategy outlined in Table 9, and shown in Appendix 5, to the satisfaction of the Secretary	Section 4.2						
Schedule 3, Condition 34 By 31 January 2015, the Proponent shall make suitable arrangements to provide appropriate long-term security for the Offset Area in the strategy to the satisfaction of the Secretary. Biodiversity Offsets for RSF2 Schedule 3, Condition 34A By 31 May 2023, unless otherwise agreed by the Secretary, the Proponent must retire the biodiversity credits specified in Table 9a below. The retirement of credits must be carried out in accordance with the NSW Biodiversity Offsets Scheme of the BC Act. <i>Table 9a: Ecosystem Credit Requirements</i> <table> <tr> <th>Vegetation Type</th><th>Credits Required</th></tr> <tr> <td>PCT 82 Western Grey Box - Poplar Box – White Cypress Pine tall woodland on red loams mainly of the eastern Cobar Penneplain Bioregion</td><td>103</td></tr> <tr> <td>PCT 201 Fuzzy Box Woodland on alluvial brown loam soils mainly in the NSW South Western Slopes Bioregion</td><td>49</td></tr> </table>	Vegetation Type	Credits Required	PCT 82 Western Grey Box - Poplar Box – White Cypress Pine tall woodland on red loams mainly of the eastern Cobar Penneplain Bioregion	103	PCT 201 Fuzzy Box Woodland on alluvial brown loam soils mainly in the NSW South Western Slopes Bioregion	49	Section 4.2 and Section 4.3
Vegetation Type	Credits Required						
PCT 82 Western Grey Box - Poplar Box – White Cypress Pine tall woodland on red loams mainly of the eastern Cobar Penneplain Bioregion	103						
PCT 201 Fuzzy Box Woodland on alluvial brown loam soils mainly in the NSW South Western Slopes Bioregion	49						
Pre-Clearing Surveys Schedule 3, Condition 35 Prior to and during vegetation clearing, the Proponent shall engage a suitably qualified and/or experienced ecologist to confirm the presence of nesting/roosting species in areas to be affected by clearing activities.	Section 8, Appendix 3						
Schedule 3, Condition 36 Should any Grey-crowned Babblers be identified on the site, the Proponent shall develop measures to either relocate the birds or protect them and their roosting habitat from disturbance during vegetation clearing and construction works.	Section 9.2						
Biodiversity Management Plan Schedule 3, Condition 37 The Proponent shall prepare a Biodiversity Management Plan for the project to the satisfaction of the Secretary. This plan must:							
(a) be prepared in consultation with BCS (Biodiversity, Conservation and Science Directorate within the Department), and submitted to the Secretary for approval by the end of January 2013, unless the Secretary agrees otherwise;	Section 3						
(b) describe how the implementation of the biodiversity offset strategy would be integrated with the overall rehabilitation of the site;	Section 1						
(c) describe the short, medium, and long term measures that would be implemented to: (i) manage the remnant vegetation and habitat on the site and in the offset area/s (if and when applicable); and (ii) implement the biodiversity offset strategy (if and when applicable), including detailed performance and completion criteria;	Section 7						

Project Approval (PA 09_0155) Biodiversity Conditions	Relevant section of this BMP
(d) include detailed performance and completion criteria for evaluating the performance of the biodiversity offset strategy, and triggering remedial action (if necessary);	Section 14 and 15
(e) include a detailed description of the measures that would be implemented over the next 3 years, including the procedures to be implemented for: (i) enhancing the quality of existing vegetation and fauna habitat; (ii) restoring native vegetation and fauna habitat on the biodiversity areas and rehabilitation area through focusing on assisted natural regeneration, targeted vegetation establishment and the introduction of naturally scarce fauna habitat features (where necessary); (iii) maximising the salvage of resources within the approved disturbance area - including vegetative, soil and cultural heritage resources – for beneficial reuse in the enhancement of the biodiversity areas or rehabilitation area, including maximising salvage of suitable coarse woody vegetation within the RSF 2 footprint as fauna habitat within biodiversity offset areas; (iv) collecting and propagating seed; (v) minimising the impacts on fauna on site, including pre-clearance surveys and minimising the potential exposure to tailings; (vi) controlling weeds and feral pests; (vii) controlling erosion; (viii) managing grazing and agriculture on site; (ix) controlling access; and (x) bushfire management;	Section 12 Section 12
(f) include a seasonally-based program to monitor and report on the effectiveness of these measures, and progress against the detailed performance and completion criteria;	Section 13
(g) identify the potential risks to the successful implementation of the biodiversity offset strategy, and include a description of the contingency measures that would be implemented to mitigate against these risks; and	Section 15
(h) include details of who would be responsible for monitoring, reviewing, and implementing the plan.	Section 16.1
Conservation Bond Schedule 3, Condition 38 Within three months of the approval of the Biodiversity Management Plan, the Proponent shall lodge a conservation bond with the Department to ensure that the biodiversity offset is implemented in accordance with the performance and completion criteria of the Biodiversity Management Plan. The sum of the bond shall cover the full cost of implementing the Biodiversity Offset Strategy and be verified by a suitably qualified rehabilitation specialist or quantity surveyor. If the biodiversity offset is implemented to the satisfaction of the Secretary, the Secretary will release the conservation bond. If the offset strategy is not implemented to the satisfaction of the Secretary, the Secretary will call in all or part of the conservation bond, and arrange for the satisfactory implementation of the biodiversity offset. If the offset strategy is not completed generally in accordance with the completion criteria in the Biodiversity Management Plan, the Secretary will call in all or part of the conservation bond, and arrange for the satisfactory completion of the relevant works. With the agreement of the Secretary, this bond may be combined with the rehabilitation security deposit administered by RR.	Appendix 7
Management Plan Requirements Schedule 5, Condition 3 The Proponent shall ensure that the management plans required under this approval are prepared in accordance with any relevant guidelines, and include:	
(a) detailed baseline data;	Section 5.1 and 5.2
(b) a description of: (i) the relevant statutory requirements (including any relevant approval, licence or lease conditions); (ii) any relevant limits or performance measures/criteria; (iii) 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;	Section 4.1 and Section 14

Project Approval (PA 09_0155) Biodiversity Conditions	Relevant section of this BMP
(c) a description of the measures that would be implemented to comply with the relevant statutory requirements, limits, or performance measures/criteria;	See management measures throughout, Section 14 for performance criteria
(d) a program to monitor and report on the: (i) impacts and environmental performance of the project; (ii) effectiveness of any management measures (see c above);	Section 13 and Section 14
(e) a contingency plan to manage any unpredicted impacts and their consequences and to ensure that ongoing impacts reduce to levels below relevant impact assessment criteria as quickly as possible;	Section 15
(f) a protocol for managing and reporting any: (iii) incidents; (iv) complaints; (v) non-compliances with statutory requirements; and (vi) exceedances of the impact assessment criteria and/or performance criteria; and	Section 15.4
(g) a protocol for periodic review of the plan.	Section 18
Schedule 5, Condition 5 Within three months of: (a) the submission of an annual review under condition 4 above; (b) the submission of a non-compliance or incident notification under conditions 7 below; (c) the submission of an audit under condition 8 below; or (d) any modification to the conditions of this approval (unless the conditions require otherwise), the Proponent shall review, and if necessary, revise, the strategies, plans, and programs required under this approval to the satisfaction of the Secretary. With the agreement of the Secretary, the Proponent may prepare any revised strategy, plan or program without undertaking consultation with all parties under the applicable conditions of this consent.	Section 18 Section 18
Appendix 8, Desired Outcome 7 Avoid, minimise, mitigate or offset impacts (in that hierarchical order) on native vegetation (including the two identified EECs), native fauna (including threatened species) and their habitat.	
7.1 Locate the Mine Site activities and infrastructure so as to avoid the majority of remnant native vegetation. Restrict disturbance of remnant native vegetation to (approximately): • 2.7ha (of 36.9ha) of Inland Grey Box – Poplar Box – White Cypress Pine tall woodland on red loams; • 0.9ha (of 30.9ha) of Fuzzy Box – inland Grey Box on alluvial brown loam soils; and • 18.8ha (of 70.3ha) of Belah / Black Oak Western Rosewood Wilga woodland.	Section 2
7.2 Implement the impact avoidance, minimisation, mitigation and offset measures of an approved Biodiversity Offset Strategy and Biodiversity Management Plan (BMP) for the Mine in consultation with the OEH and DPE.	Section 2
Offset residual impacts on native flora and fauna.	
7.3 Implement the Conservation Property Vegetation Plan, as agreed and signed between TGO and Local Land Services – Central West.	Section 4.2
Rehabilitate disturbed areas to create a final landform that maintains or improves biodiversity values of the Project Site.	
7.4 Complete rehabilitation in accordance with an approved Rehabilitation Management Plan (RMP) or Mining Operations Plan (MOP).	Section 1

4.2 Securing the Biodiversity Offset Area

Schedule 3, Conditions 34 of PA 09_0155 requires long-term protection to be arranged for the Biodiversity Offset Area.

A Conservation Property Vegetation Plan (PVP) has been developed in consultation with NSW Office of Environment and Heritage (OEH) (now NSW Department of Planning, Industry and Environment (DPIE)) and approved by Local Land Services (LLS) as the framework under which TGO will manage and provide long-term security for the Biodiversity Offset Area.

The PVP has been registered with NSW Land and Property Information (LPI) under the *Real Property Act 1900* in accordance with Section 31(2)(b) of the *Native Vegetation Act 2003*. Land registered under a PVP is required to comply with the following criteria:

- The unambiguous principal objective of ongoing site management is biodiversity conservation;
- Management is undertaken in accordance with a Plan of Management;
- There is reasonable likelihood that sufficient resourcing will be available to implement the Plan of Management over-time;
- The arrangements are in-perpetuity, and conservation obligations are transparently transferred and disclosed to any new owners of the land through appropriate administrative procedures; and
- There are appropriate accountability mechanisms to secure the outcomes and these mechanisms cannot be altered without alternative and comparable offsetting arrangements being put in place.

A copy of the PVP is attached as Appendix 2.

Schedule 3, Conditions 33 of PA 09_0155 presents the original offset area requirements, as shown in Table 2. Consultation with OEH and LLS resulted in modified offset area agreed for a Conservation Property Vegetation Plan (PVP), as shown in Table 3.

Table 2: Offsetting area requirements from PA 09_0155.

<i>The Proponent shall implement the offset strategy outlined in Table 8, and shown in Appendix 5, to the satisfaction of the Director-General.</i> <i>Table 8: Biodiversity Offset</i>		
Community Type	Offset Area to be Conserved (ha)	Remnant Extension (Protection and Ameliorative Planting) (ha)
Inland Grey Box – Poplar Box – White Cypress Pine tall woodland on red loams (Benson 76)	21.1	21.5
River Red Gum riverine woodland forest (Benson 78)	13.1	13.5
Fuzzy Box – Inland Grey Box on alluvial brown loam soils (Benson 201)	5.0	26.0
Poplar Box – Belah woodland on clay alluvial plains (Benson 56)	1.9	0
Belah/ Black Oak Western Rosewood, Wilga Community (Benson 57)	25.5	0
TOTAL	66.6	61.0

Table 3: Offsetting requirements as agreed for Property Vegetation Plan.

* Communities not affected under the Part 3A approvals and remain intact on site

<i>ID</i>	<i>Plant Community Type</i>	<i>Offset Area to be Conserved (ha)</i>	<i>Remnant Extension (Protection and Ameliorative Planting) (ha)</i>	<i>Total</i>
56	Poplar Box - Belah woodland on clay-loam soils on alluvial plains of north-central NSW	2.0 *	0	2.0
57	Belah/Black Oak - Western Rosewood - Wilga woodland of central NSW including the Cobar Peneplain Bioregion	27.0	0	27.0
76	Western Grey Box tall grassy woodland on alluvial loam and clay soils in the NSW South Western Slopes and Riverina Bioregions	26.6	28.8	55.4
78	River Red Gum riparian tall woodland / open forest wetland in the Nandewar Bioregion and Brigalow Belt South Bioregion	9.9 *	21.9	31.8
201	Fuzzy Box Woodland on alluvial brown loam soils mainly in the NSW South Western Slopes Bioregion	14.5	26.3	40.8
	TOTAL	80.0	77.0	157ha

4.3 Biodiversity Offsets for Residue Storage Facility 2

TGO is currently exploring options to meet the credit requirements outlined in the table below by 31 May 2023 in accordance with the NSW Biodiversity Offsets Scheme of the BC Act.

Table 9a: Ecosystem Credit Requirements

<i>Vegetation Type</i>	<i>Credits Required</i>
PCT 82 Western Grey Box - Poplar Box – White Cypress Pine tall woodland on red loams mainly of the eastern Cobar Peneplain Bioregion	103
PCT 201 Fuzzy Box Woodland on alluvial brown loam soils mainly in the NSW South Western Slopes Bioregion	49

5. BIODIVERSITY OFFSET STRATEGY

The Biodiversity Offset Strategy at TGO incorporates Biodiversity management and consists of the following two main components:

1. Management of vegetation communities within the designated Biodiversity Offset Area.
2. Ongoing management and monitoring of flora and fauna within the Mine Site.

The aim of this Biodiversity Management Plan is to enhance the quality of remnant native vegetation and restore specific plant community types in designated areas of the Biodiversity Offset Area, which will lead to enhancing the quality of fauna habitat to meet the needs of threatened fauna known to occur at the mine site.

The management and enhancement activities proposed for the designated Biodiversity Offset Area, as well as ongoing management and monitoring of flora and fauna within the Mine Site is discussed in the following sections. Existing vegetation and fauna are described below, as sourced from the Ecological Assessment undertaken by OzArk Environmental and Heritage Management Pty Ltd for the TGO Project Environmental Assessment. The purpose of the fauna and flora survey was to conduct baseline studies to determine the presence/absence of flora and fauna within the TGO Project Site based upon desktop analysis and field surveys.

5.1 Baseline Vegetation Data

The original Ecological Assessment undertaken by OzArk states that 124 species of flora were recorded during the assessment, of which 66 (53.2%) were native and 58 (46.8%) were exotic. The 2011 Environmental Assessment classified remnant vegetation proposed for clearing into Low, Moderate and Good condition (utilising the BioBanking methodology). The size and condition of cleared vegetation patches determined the offset area required for conservation and extension.

Native species generally dominated the ground cover of native woodland and forested areas (albeit very sparsely) where thickets of African box thorn are absent. Highly modified areas were characterised by higher diversity of introduced species, both intentional (agricultural and planted) and exotic weeds.

Identified weeds declared as noxious included galvanised burr (*Bassia birchii*) and African box thorn (*Lycium ferocissimum*) both Class 4 noxious weeds under the Noxious Weed Act 1993 (repealed).

No plants listed as threatened were recorded.

Approximately 82.5 percent of the Mine Site had been cleared before the mine was constructed because of European occupation, grazing and cropping. The areas of remnant native vegetation were generally associated with Crown Land paper road easements and land unsuitable for cultivation. The Biodiversity Offset Area is located within the Darling Riverine Plains Bioregion – Bogan-Macquarie subregion. The NSW South Western Slopes Bioregion – Inland Slopes subregion lies within 500 metres to the east of the Biodiversity Offset Area.

Five remnant Plant Community Types (PCT) are present in the Biodiversity Offset Area, see Table 4 and Figure 1. These are:

- PCT56– Poplar Box - Belah woodland on clay-loam soils on alluvial plains of north-central NSW;
- PCT57 – Belah/Black Oak - Western Rosewood - Wilga woodland of central NSW including the Cobar Peneplain Bioregion;
- PCT76 – Western Grey Box tall grassy woodland on alluvial loam and clay soils in the NSW South Western Slopes and Riverina Bioregions. This community is a component of the NSW Inland Grey Box Woodland Endangered Ecological Community;
- PCT78 – River Red Gum riparian tall woodland / open forest wetland in the Nandewar Bioregion and Brigalow Belt South Bioregion; and

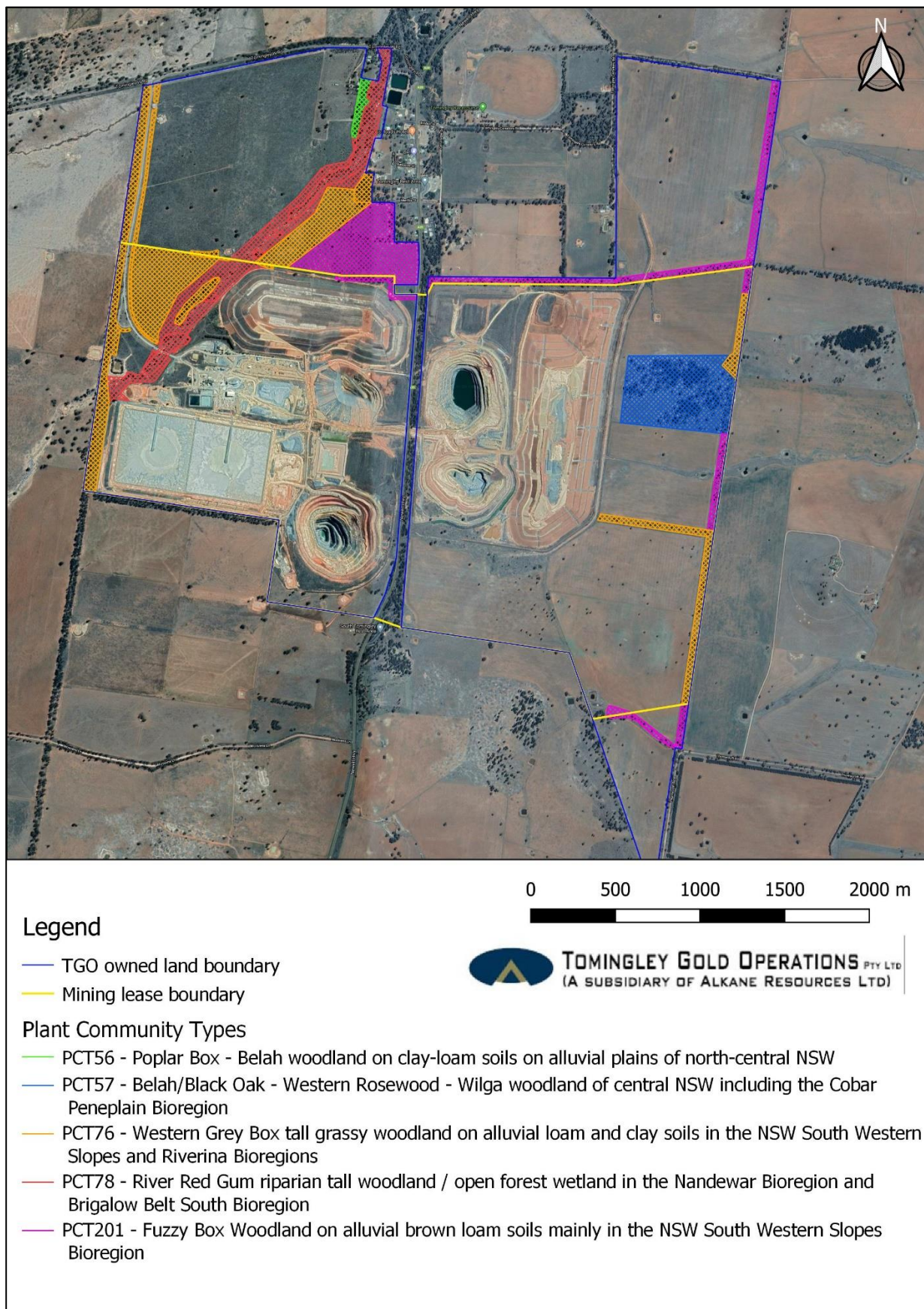
- PCT201 – Fuzzy Box Woodland on alluvial brown loam soils mainly in the NSW South Western Slopes Bioregion. This community is a component of a Fuzzy Box on alluvial soils Ecological Community.

Table 4: Plant Community Types in the Biodiversity Offset Area

<i>PCTID</i>	<i>Community Type</i>	<i>Offset Area to be Conserved (ha)</i>	<i>Remnant Extension (Protection and Ameliorative Planting) (ha)</i>	<i>Total</i>
56	Poplar Box - Belah woodland on clay-loam soils on alluvial plains of north-central NSW	2.0*	0	2.0
57	Belah/Black Oak - Western Rosewood - Wilga woodland of central NSW including the Cobar Peneplain Bioregion	27.0	0	27.0
76	Western Grey Box tall grassy woodland on alluvial loam and clay soils in the NSW South Western Slopes and Riverina Bioregions	26.6	28.8	55.4
78	River Red Gum riparian tall woodland / open forest wetland in the Nandewar Bioregion and Brigalow Belt South Bioregion	9.9*	21.9	31.8
201	Fuzzy Box Woodland on alluvial brown loam soils mainly in the NSW South Western Slopes Bioregion	14.5	26.3	40.8
	TOTAL	80.0	77.0	157 ha

Detailed vegetation baseline data for comparison is available from permanent vegetation monitoring sites and within the Ecological Assessment undertaken by OzArk
https://www.alkane.com.au/wp-content/uploads/2017/12/61606_Part-4_Ecology_Final.pdf.

Figure 1: Biodiversity Offset Area Plant Community Types



5.2 Baseline Fauna Data

The fauna survey undertaken for the 2011 Environment Assessment indicated the mine site supports a moderate diversity of native fauna.

A total of 134 vertebrate fauna species (123 native and 11 introduced) were recorded comprising:

- 17 reptile species (no threatened species, one with local conservation concern);
- Six frog species (no threatened species, two with local conservation concern);
- 86 bird species (including five listed as threatened under the NSW *Biodiversity Conservation (BC) Act 2016* (previously TSC Act 1995), one listed as a threatened and migratory species under the Commonwealth EPBC Act, and seven species of local conservation concern); and
- 25 mammal species (including three threatened and three species with local conservation concern under the NSW TSC Act).

Listed species recorded within the boundaries of the mine site plus those previously recorded and identified on BioNet and the NSW Wildlife Atlas include:

- *Pomatostomus temporalis* (eastern subspecies) - Grey-crowned Babbler listed as Vulnerable (V) under the Threatened Species Conservation Act 1995 (TSC Act);
- *Chalinobus picatus* - Little Pied Bat, (V TSC Act);
- *Polytelis swainsonii* - Superb Parrot, (V TSC Act, V Environmental Protection, Biodiversity Conservation Act 1999 (EPBC Act));
- *Climacteris picumnus* - Brown Treecreeper, (V TSC Act);
- *Merops ornatus* - Rainbow Bee-eater, (listed as a Migratory Species in the EPBC Act);
- *Hieraaetus morphnoides* - Little Eagle, (V TSC Act);
- *Circus assimilis* - Spotted Harrier, (V TSC Act);
- *Artamus leucorhynchus* - White-breasted Woodswallow, (V TSC Act) (since repealed);
- *Petroica phoenicea* - Flame Robin, (V TSC Act)
- *Phascolarctos cinereus* - Koala, (V TSC Act); and
- *Miniopterus (schreibersii) orianae oceanensis* - Eastern Bentwing Bat, (V SC Act).

Except for the Koala, Brown Tree-creeper and Flame Robin, all these listed species were recorded during the 2011 Environmental Assessment biodiversity surveys.

During subsequent assessments, the following listed microbats not previously recorded on site were identified during routine biodiversity monitoring:

- *Vespadelus troughtoni* - Eastern Cave Bat (V - BC Act); (Roosts in caves)
- *Vespadelus baverstocki* - Inland Forest Bat (V - BC Act); (Roosts in tree hollows and abandoned buildings)
- *Chalinobus dwyeri* - Large-eared Pied Bat (V - BC Act, V - EPBC Act) (Roosts in caves, old mine workings and Fairy Martin nests); and
- *Myotis macropus* – Southern Myotis (V - BC Act). (Roosts in caves, tree hollows, bridges and buildings)

Of these species or groups of species, four (Grey-crowned Babbler [eastern subspecies], microbats, frogs and Fat-tailed Dunnarts) are targeted for annual monitoring (Chapter 13) to give an indication of the quality of fauna habitat and success of biodiversity management.

6. EXPLANATION OF CHANGING VEGETATION ASSESSMENT METHODS

Since this BMP was originally created there have been changes in the Biodiversity Offset scheme and biodiversity assessment practices. This document, Review 7 of the TGO BMP introduces the Biodiversity Assessment Method which is a consistent method for the assessment of biodiversity values as well as improvements in biodiversity values from management actions undertaken at offset sites.

A future review of review of biodiversity monitoring sites and methodology (LFA versus BAM) is planned by TGO. The three vegetation assessment methods relevant to this report are described below.

Landscape Function Analysis

Landscape Function Analyses (LFA) is a methodology used to assess key indicators of ecosystem function including landscape organisation and soil surface condition as measure of how well the landscape retains and uses vital resources. It was developed by CSIRO scientists Tongway and Hindley (Tongway 1994, Tongway and Hindley 1995, 1996, 2003, 2004). The indicators used quantify the utilisation of the vital landscape resources of water, topsoil, organic matter and perennial vegetation in space and time.

Ten Landscape Function Analysis (LFA) plots have been established and continue to be monitored during annual vegetation monitoring to obtain a range of ecological data:

- Landscape organisation
- Soil surface assessment
- Soil analysis
- Monitoring structural diversity floristic and other biodiversity attributes.

Landscape Function Analysis is used to inform mine site continuous improvement in rehabilitation and revegetation practices and lease relinquishment following mine closures; and lease relinquishment following mine closures.

Biobanking

Remnant vegetation at TGO was classified in the 2012 Environmental Assessment using the BioBank Methodology. The BioBanking Scheme has been replaced by the Biodiversity Offsets Scheme (BOS) under the Biodiversity Conservation Act 2016 (BC Act) which commenced on 25 August 2017. The BOS is also a market-based scheme that operates in a similar way to BioBanking however there have been a number of changes including replacement of the BioBanking Assessment Methodology (BBAM) with the Biodiversity Assessment Methodology (BAM).

Biodiversity Assessment Method (BAM)

A field survey in accordance with the BAM using BAM vegetation plots can be used to measure vegetation composition, structure and function attributes. The BAM calculator can then be used to determine vegetation integrity scores and assess habitat suitability for threatened species.

Vegetation 'nested plots' 20 by 50 metres, can be used to indicate the quality of vegetation, and consequently the quality of habitat present in and around the site.

The 20 by 20 metre area measures biodiversity (plant composition or floral biodiversity, hence evidence to identify the plant community type [PCT] and its quality) and the 20 by 50 metre structure plot, including one-by-one metre leaf litter plots, measure the function of the same area. Function includes an assessment of size classes of trees and tree hollows, which are both indicative of the age of trees assessed, ground logs and the amount of leaf litter.

Vegetation Condition Benchmarks for plant community types (PCT's) describe the reference state to which sites are compared to score their site-scale biodiversity values or set goals for management or restoration. When scores for composition, structure and function are combined into a vegetation integrity score, they provide the rigour and transparency needed to make site-scaled comparisons of biodiversity values to inform natural resource management decision making tools.

The three primary attributes of biodiversity; composition, structure and function are described by benchmarks:

- Composition benchmarks are growth form species richness
- Structure benchmarks are growth form summed foliage cover
- Function benchmarks are number of large trees, length of logs and cover of litter

The benchmark criteria for plant communities at TGO will be applicable to the Bogan-Macquarie IBRA subregion or the Inland Slopes IBRA subregion. TGO would be guided by these benchmarks and vegetation community descriptions during the enhancement of the Biodiversity Offset Area.

The five Plant Community Types present in the Biodiversity Offset Area and their benchmarks are described in Appendix 6. Benchmarks are measured per 1000 metres squared (i.e., per 20 x 50 metre BAM plot). How these benchmarks will be incorporated into vegetation management is discussed in the following sections.

7. MANAGMENT OF THE BIODIVERSITY OFFSET AREA

This section outlines the management and enhancement activities undertaken and/or proposed for the designated Biodiversity Offset Area, as shown in Figure 1 (Section 5).

This section provides details of measures that will be implemented to manage remnant vegetation within the Biodiversity Offset Area. The Biodiversity Offset Area must be managed for biodiversity as per project approvals. Many of the short (Table 5) and medium (Table 6) term management strategies have been implemented and have been marked as complete in this document. Others are being implemented (long term Table 7).

7.1 Short-term Management Strategies

Table 5: Short term strategies

Short term goals	Completion criteria	Completion status
Mark-out, appropriately fence and sign the Biodiversity Offset Area	Fences and signs in place on fences and gates around the Biodiversity Offset Area	Complete
Establish fixed monitoring points in the form of plots, transects and photo points	Fixed monitoring points established: Landscape function Analysis Plots Photo points	Complete
Retain regrowth and remnant native vegetation	Designated remnant vegetation retained in the Biodiversity Offset Area defined by fences and signs	Complete
Removal of domestic stock except where a grazing strategy with a conservation outcome is applied in the Fuzzy Box remnant corridor north of Caloma (Map 1 - map unit 3A)	Stock removed and managed in accordance with the PVP	Complete Management ongoing
Weed control (particularly African boxthorn)	Weed control program implemented. High Treat Weed infestations reduced in area of occupancy annually.	Not yet complete / ongoing Weed populations (African Box Thorn) persist
Manage erosion	Erosion mitigation installed in Gundong Creek	Not yet complete
Removal of redundant farm infrastructure	Farm infrastructure removed except where heritage items remain in position or items are left for aesthetic reasons	Complete
Management of human activity around revegetation areas	Fences and gates maintained around the mine site and Biodiversity Offset Area	Complete Management ongoing
Enforce retention of dead timber	Dead timber left in the Biodiversity Offset Area	Management ongoing
Retain naturally occurring rock	Rocks left in the Biodiversity Offset Area	Management ongoing
Control of feral herbivores / vertebrate pest management (foxes, rabbits and cats)	Vertebrate pest management program in place	Management ongoing
Cease any use of fertilisers	Fertilisers are not used on the biodiversity offset area	Complete Management ongoing

7.2 Mid-term Management Strategies

Table 6: Mid-term strategies

Mid-term goals	Completion criteria	Completion status
Monitoring, evaluation and reporting via established monitoring strategies	Flora and fauna monitoring occurs.	Ongoing
Develop Best Management Practices for fire management with respect for vegetation types and threatened species	Fire management occurs in accordance with the PVP and under the direction of the Rural Fire Service	Not yet complete No specific fire use required.
Develop hazard reducing Best Management Practices in consultation with the NSW Rural Fires Service	Fire management occurs in accordance with the PVP and under the direction of the Rural Fire Service	Not yet complete
Management of human activity around revegetation and rehabilitation areas	Fences and signs in place to protect revegetation and rehabilitation areas.	Complete Management ongoing
Replanting or supplementary planting where natural regeneration will not be sufficient	Seeding and planting has occurred as needed to achieve a recommended 75% of PCT benchmarks (as per the BAM)	Ongoing
Retention of dead timber and naturally occurring rock	Timber and rock are not removed from the Biodiversity Offset area	Management ongoing
Erosion control as required	Erosion in Gundong Creek and elsewhere as required	Not yet complete Natural revegetation contributing to erosion control
Gundong Creek rehabilitation in the form of salvaged timber placed in the riparian vegetation corridor	Timber to be used to mitigate erosion processes	Not yet complete

7.3 Long term Management Strategies

Table 7: Long term strategies

Long term goals	Completion criteria	Completion status
Monitoring, evaluation and reporting. Landscape Function Analysis and benchmarks will be used to inform mine site continuous improvement in rehabilitation and revegetation practices and lease relinquishment following mine closures;	Landscape Function Analysis monitoring occurs Data from monitoring used to demonstrate rehabilitation/ revegetation improvement	Ongoing
Remedial planting to ensure that vegetation types meet local vegetation benchmarks;	Seeding and planting has occurred as needed to achieve a recommended 75% of PCT benchmarks (as per the BAM)	Not yet complete
Control of feral and over abundant native herbivores;	Vertebrate pest management program in place	Ongoing
Vertebrate pest management (Foxes, rabbits, hares, cats);	Vertebrate pest management program in place	Ongoing
Maintain cessation of use of fertilisers;	Fertilisers are not used on the biodiversity offset area.	Complete Management ongoing
Maintenance of natural drainage flow regimes;	Natural drainage regimes can occur except where modified in accordance with the Project Approval	Complete Management ongoing

Implement managed grazing regime as stimulated in PVP;	Grazing ceased or otherwise managed in accordance with the PVP	Complete Management ongoing
Determine if the impacts on key threatened species are consistent with predictions in the EA;	Re-survey of key threatened species occurs, and comparison is made	Not yet complete
Assess progressive changes to flora and fauna species assemblages within the Approved Project Disturbance Areas and the Biodiversity Offset Area as the Project progresses; and	Analyse monitoring data and supplement monitoring data if necessary	Not yet complete
Confirm that the ecological integrity/function of the Biodiversity Offset Area is maintained or improved as a result of ongoing management practices.	Analyse Landscape Function Analysis and consider establish monitoring using the BAM.	Not yet complete

8. VEGETATION MANAGEMENT STRATEGIES

Vegetation in the Biodiversity Offset Area is either remnant or extension (Table 8). Extension areas were cleared and used for agriculture activities prior to purchase of the land by the company and are currently being enhanced using revegetation techniques.

The following strategies have been employed to enhance the quality of remnant native vegetation and restore specific plant community types in designated areas of the Biodiversity Offset Area:

- Seed collection and subsequent propagation or planting by TGO staff or suitable contractors has been employed to assist the native vegetation within the Biodiversity Offset Area. Seeds have been sourced from within the Central West catchment but not entirely from within the TGO;
- Seed mix has been sown by hand in some areas of the Biodiversity Offset Area;
- Natural regeneration is occurring readily, and propagation and supplementary planting efforts are likely to be used for species that are not naturally regenerating or have notably reduced local populations. Since sheep were removed from the landscape natural regeneration has been highly successful and this requirement may not be required;
- Significant natural regeneration of trees, shrubs and grasses is occurring in the Gundong Creek riparian corridor (a small man-made channel) which are contributing to the reduction of erosion during rain events; and
- All clearing will be undertaken only following completion of the TGO "Clearing Permit", the template of which is attached in Appendix 3. Thus, ensuring all clearing has been planned given consideration to TGO commitments before clearing is started.

Table 8: Remnant and extension vegetation in the Biodiversity Offset Area

PCTID	Remnant	Extension
PCT56	Poplar Box – Belah woodland is located adjacent to the northern reaches of the Gundong Creek corridor.	No extension will occur for this community
PCT57	Belah/ Black Oak woodland has been conserved on the eastern edge of the property.	No extension will occur for this community
PCT76	Inland Grey-Box EEC will be conserved including corridors along the western edge of the mining lease and corridors bordering the mining lease to the east. Other patches of this vegetation can be found along the Gundong Creek corridor and adjacent to Tomingley village.	This includes two large patches. One is adjacent to the southern end of the main mine access road reaching across to join the riparian vegetation of Gundong Creek. The second is an extension of the remnant patch adjacent to the village and bordering the riparian vegetation to the mine lease boundary TGO undertook seedling planting and hand spreading of seeds in both these areas during 2013 and 2014. In addition, successful natural regeneration has occurred since the removal of stock from this land.
PCT78	Figures have varied for the total remnant area of River Red Gum community however, the area selected for conservation continues to include all the remnant vegetation, a total of 9.9 hectares according to the PVP document.	River Red Gum community has been established, enhancing the riparian corridor along the Gundong Creek. Hand seeding occurred within the riparian corridor during 2013 and substantive natural regeneration has occurred. The PVP stipulates TGO's commitment to utilise salvaged timber to enhance the habitat capacity of the riparian corridor. Vegetation stockpiles of salvaged felled vegetation have been established and will be used to meet this commitment.

PCTID	Remnant	Extension
PCT201	Fuzzy Box community has been conserved as corridors bordering the TGO owned land east of the Newell Highway. A section of this remnant corridor system will be managed slightly differently to the remainder of the remnant vegetation to maintain a low fire fuel load as stipulated in the PVP. A small patch is located west of the Newell Highway, immediately inside the northern edge of the mining lease boundary.	The most significant area of Fuzzy Box community is immediately south of Tomingley village, bordered by the mining lease, the Newell Highway, Tomingley village and a patch of Inland Grey Box community. The corridor system on the eastern side of the property has been extended to the north. Planting and seeding occurred in the main area of Fuzzy Box extension during 2013 and 2014. In addition, successful natural regeneration has occurred since the removal of stock from this land.

8.1 Revegetation Techniques

Vegetation management within the Biodiversity Offset Area, including revegetation programs, will be undertaken in accordance with the relevant commitments from the PVP, as presented in Table 9. Action will be taken to further increase plant community and habitat quality towards benchmark values where natural regeneration is not adequate.

Targeted revegetation (planting or seeding) will be required where natural revegetation, or previous seeding and planting efforts do not result in achieving the recommended 75 percent of the Plant Community Type (PCT) benchmarks. Species selection should be selected from the representative species list for each PCT (see Appendix 6).

Table 9: Vegetation management techniques within the Biodiversity Offset Area.

Supplementary planting	In perpetuity	Where remnant vegetation is present and in low condition (see Appendix A) and natural regeneration is not occurring, the landholder must undertake supplementary planting within 24 months of the commencement of this PVP. Supplementary planting must use indigenous trees, shrubs and groundcover species forming each of the following Vegetation communities: - Inland Grey Box-Poplar Box- White Cypress Pine tall woodland on red loams (Benson 76) in Map Unit 1a. - River Red gum Riverine woodland forest (Benson 78) in Map Unit 2a. - Fuzzy Box – Inland Grey Box on alluvial brown loam Soils (Benson 201) in Map Unit 3a. - Poplar Box – <u>Belah</u> Woodland on Clay (Benson 56) in Map Unit 4. - <u>Belah</u> /Black Oak Western Rosewood, Wilga Woodland (Benson 57) in Map Unit 5.
Revegetation	In perpetuity	The landholder must establish indigenous trees, shrubs and groundcover species which form the vegetation communities defined below within 24 months of the commencement of this PVP. - 28.8 Ha of Inland Grey Box-Poplar Box- White Cypress Pine tall woodland on red loams (Benson 76) in Map Unit 1b. - 9.9 Ha of River Red gum Riverine woodland forest (Benson 78) in Map Unit 2b. - 26.3 Ha Fuzzy Box – Inland Grey Box on alluvial brown loam Soils (Benson 201) in Map Unit 3b.
Retain regrowth	In perpetuity	The landholder must retain all native vegetation regrowth and/or natural regeneration of native plant species in Map Units 1a, 1b, 2a, 2b, 3a, 3b, 4 and 5. All regrowth or natural regeneration of native vegetation in Map Units 1a, 1b, 2a, 2b, 3a, 3b, 4 and 5 is classified as 'Protected Regrowth' under the Native Vegetation Act 2003. Non-native vegetation must not be planted or sown in Map Units 1a, 1b, 2a, 2b, 3a, 3b, 4 and 5 at any time.
Clearing Not permitted	In perpetuity	The clearing of native vegetation, whether remnant or regrowth, is not permitted in Map Units 1a, 1b, 2a, 2b, 3a, 3b, 4 and 5 at any time unless otherwise state in this PVP.
Exclude Fertilisers	In perpetuity	Fertilisers must not be applied within Map Units 1a, 1b, 2a, 2b, 3a, 3b, 4 and 5 at any time.

Initial Biodiversity Offset Area revegetation programs (in 2013 and 2014) utilised a range of ground preparation and planting techniques, to varying degrees of success. Lessons learnt during these early campaigns has been used to plan future vegetation enhancement activities. Natural regeneration in parts were more prolific and had higher rates of success than planted vegetation. Those techniques considered successful achieved the following aims:

- Minimise opportunity for weed establishment;
- Reduce the risk of erosion by water and wind;
- Reduce the use of herbicides;
- Maximise the opportunity for the seed or seedling to receive water;
- Maintain native ground cover; and
- Reduce competition for germinating seeds and seedlings.

The following techniques were observed to give the best plant establishment results. These should be employed where species richness or cover needs supplementing to progress towards benchmark:

- Plant species composition (seed mix or tubestock) should reflect the community structure and species composition of the targeted vegetation community.
- Pre slashing and/or weed spraying (at least four weeks before planting) to reduce competition from established grasses.
- Single deep rip lines (400mm deep) approximately 10 metres apart, without grading or other surface disturbance. As much time as possible, but at least six weeks, should be left between ripping and planting to allow the ground to re-settle.
- Holes prepared for seedlings should be pre-treated with water holding crystals to increase the water immediately available to the plant.
- Fertilisers must not be used in the Biodiversity Offset Area as per PVP conditions.
- Hand sowing of seeds in a sand extender for area coverage or planting of seedlings at 5m intervals in hiko cells using a pottiputki.
- Guarding of seedlings with coreflute protectors and single stakes.

8.2 Habitat Improvement

Habitat development activities within the Biodiversity Offset Area will be implemented as per the PVP conditions presented in Table 10. Salvaged timbers used in Map Units 1a and 2a should be done with reference to the benchmark characteristics for the relevant PCTs.

Table 10: Habitat development techniques within the Biodiversity Offset Area.

Direction	Time frame	Map Units to which the direction applies
Retain dead timber	In perpetuity	All dead timber either standing or fallen must be retained in Map Units 1a, 1b, 2a, 2b, 3a, 3b, 4 and 5 at all times
Retention of naturally occurring rocks	In perpetuity	Naturally occurring rocks must not be removed from Map Units 1a, 1b, 2a, 2b, 3a, 3b, 4 and 5 at any time
Salvaged local timbers	In perpetuity	Salvaged local timbers must be primarily installed in Map Units 1a and 2a along Gundong Creek to rehabilitate the riparian corridor to current Best Management Practices.

9. FAUNA MANAGEMENT STRATEGIES

The following strategies are employed to minimise operational impacts on fauna outside the Biodiversity Offset Area:

- Domestic stock does not have access to the Biodiversity Offset Area except where this occurs in accordance with the PVP;
- The risk of vehicle trauma is communicated to all TGO staff in the mine site induction. As is the need for vigilance and care when driving to, from and around site. The maximum site speed limit of 40km/h is strictly enforced;
- To manage risk associated with nesting Grey-crowned Babblers on site all TGO staff are made aware of the species. There are no known babbler habitat areas within the current operational mining/processing areas;
- If known habitat trees do require felling, a suitably qualified and experienced ecologist will be engaged to complete a pre-clearance survey in accordance with the template included as Appendix 4 and, where required, remove the animal(s) and/or nest/roosting habitat nests prior to clearing;
- Where required, clearing will not occur during breeding season (between July to February) to reduce risk of impact to tree dependent microbats and birds, in particular the Grey-crowned babbler;
- A Site Specific Procedure has been prepared to inform staff about the management of sick, injured or deceased wildlife and actions to take if such an animal is discovered;
- As part of the site induction, staff will be informed that strictly no one is to handle any species of bat on site. Bats have potential to carry zoonoses (a disease that animals carry which can affect humans); and
- If an unexpected threatened species is discovered during mine operations, the established procedure included as Appendix 5 will be followed.

The three primary fauna habitat management strategies are discussed in more detail below.

9.1 Fauna habitat augmentation

Fauna habitat features will be retained on site where possible such as:

- Timber recovered during planned vegetation clearing on site will continue to be stockpiled and distributed within the Gundong Creek riparian zone. Stockpiled vegetation will be isolated from access to ensure it is not moved, damaged or used for an alternate purpose;
- Habitat features such as logs and rocks have not been removed from remnant vegetation areas since TGO took ownership of the site and such features are commonly observed amongst much of this vegetation. The Biodiversity Offset area has been fenced and sign posted to reduce the risk of interference with these habitat features.

Fauna habitat features will be allowed to increase naturally within the biodiversity offset area and enhancing naturally scarce habitat features can occur where a need is identified. Habitat features identified in PCT benchmark criteria include leaf litter, large trees and coarse woody debris. Table 11 shows the benchmarks for coarse woody debris, litter cover and number of large trees for each PCT in the BOA. Only coarse woody debris is applicable for augmentation of fauna habitat. Both large trees (and the hollows they contain) and leaf litter will increase naturally as planted/seeding trees and shrubs mature.

Table 11: Plant community type benchmarks for function (fauna habitat) per 1000m²

	Coarse woody debris (m)	Litter cover (percent)	Number of large trees
PCT56	55	36	3
PCT57	45	40	5
PCT76	49	65	3
PCT78	82	51	4
PCT201	34	35	2

Scarce habitat features such as artificial tree hollows or nest boxes can also be added. Some nest boxes have been installed in the Biodiversity Offset Site in PCT57 and PCT76. Use of nest boxes/ artificial hollows should be monitored to confirm use of hollows prior to the addition of more nest boxes of the same design. Habitat augmentation should occur with specific species in mind and be designed to meet the needs of the target species.

9.2 Grey-crowned Babbler roosting habitat protection

Should any Grey-crowned Babblers be identified on the site during mine construction and operation, measures shall be developed to either relocate the birds or protect them and their roosting habitat from disturbance during vegetation clearing and construction works.

Areas of known roosting habitat will be protected by the following measures:

- erection of warning signs indicating areas of known roosting habitat,
- disturbance will be minimised where known habitat exists outside of the disturbance footprint, such as personnel staying on established tracks only,
- education of personnel by inclusion of babbler information in induction training and distribution of an information flyer,
- continued habitat improvement in remnant vegetation,
- regular monitoring to provide an indication of population health (see Section 13).

9.3 Management and Monitoring Program for Cyanide Impact on Site

Management

The TGO residue storage facility (RSF) is operated in accordance with the following measures to limit the potential for cyanide impact on fauna:

- A cyanide destruction circuit has been included in the design of the processing plant to ensure that WAD cyanide concentration reporting to the RSF is less than 30mg/L and the 90th percentile discharge limit is less than 20mg/L as per the requirements of EPL 20169;
- A fauna exclusion fence has been constructed surrounding the process water dam. The dam is the only location on site where cyanide concentrations could be injurious to fauna. The fence is constructed of 1.8m chain mesh fence (to exclude large mammals) and fine mesh skirt at the base (to exclude small mammals and reptiles);
- Aquatic vegetation is maintained around the perimeter of farm dams retained within the Biodiversity Offset Area and other non-operational TGO land to assist in preserving attractive bird habitat away from the RSF; and
- Maintaining minimal decant water on the RSF so as not to attract fauna.

Monitoring

The monitoring program assesses cyanide impact on wildlife, focusing on routine wildlife inspections and mortality observations. The program includes:

- WAD cyanide concentrations are measured at discharge into the tailings facilities daily as per the TGO Environmental Protection Licence.
- Processing personnel carry out wildlife observation surveys (see Appendix 8) twice a day at the beginning of each shift, and as soon after sunrise as possible for day shift.
- Wildlife observation information collected will provide an indication of wildlife visitations and mortality associated with RSF.
- The assessment will consider weather, number of animals present, type of species, and area of the RSF in use.
- Any incident of fauna death or injury (including bogging) associated with the RSF Impoundment is to be reported to the Environmental Department as soon as practical. As stipulated in EPL 20169 the incident is to be reported to the EPA's Pollution Line 131 555 as soon as the licensee becomes aware of the incident.
- The Production Superintendent or on call supervisor need to be informed of fauna deaths/injuries associated with the RSF Impoundment as soon as practical.

10. SITE MANAGEMENT, WEED AND PEST CONTROL

Specific site management requirements are addressed in the following sections.

10.1 Controlling Access

Public and TGO access to the Biodiversity Access Area is strictly controlled to reduce the potential for disturbance to revegetation/regeneration areas or comprise of habitat value. PVP conditions require the following access control measures as per Table 13.

Table 12: Human disturbance management requirements as per the PVP

Management of human disturbance	Term of project	- The landholder must take all reasonable measures to exclude dumping; fire wood collection; and unauthorised human activities at all times. - The landholder must install signage clearly stating the land use of offset area as biodiversity conservation at each separate offset area. - The erection of signage described in the Management Action titled "Management of human activities" under Management Action Details (b) in this Schedule must be commenced within twelve (12) months of the commencement of clearing.
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Table 14 shows the control measures used to manage human disturbance at TGO.

Table 13: Access control measures

Action	Complete
Fences and locked gates are installed around the Biodiversity Offset Area;	Complete
Signs are installed indicating the Biodiversity Offset Area gates and boundaries;	Complete
The main site access road guides traffic entering the mine site avoiding the Biodiversity Offset Area	Complete
Areas requiring operational clearing are clearly marked to prevent accidental access or disturbance of adjacent areas;	Complete
Defined tracks and access routes have been designated around the mine site;	Complete
TGO ensures staff and contractors adhere to the defined routes (through training and awareness); and	Complete
Fencing and/or signs have been installed and maintained to prevent disturbance in non-operational site areas.	Complete

10.2 Weed Management

The PVP requires ongoing weed control within the Biodiversity Offset Area in accordance with the following condition shown in Table 15.

Table 14: Weed management as per the PVP

Weed control	In perpetuity	The landholder must control non-native plant species in Map Units 1a, 1b, 2a, 2b, 3a, 3b, 4 and 5 to encourage the establishment of native groundcover species. The landholder must not use herbicides within Map Units 1a, 1b, 2a, 2b, 3a, 3b, 4 and 5 except to spot-spray non-native weed species.
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The weed control program for TGO focuses upon the removal of noxious weeds, reducing potential for further weed invasion, and preventing the transportation of weeds into previously unaffected mine site areas. TGO undertakes weed control of those species listed in Table 16 (as well as other recorded weeds) according to the TGO Site Specific Procedure for Weed Management.

Table 15: Weeds observed during Environmental Assessment

Common name of target weed	Scientific name of target weed	Description of infestation (e.g. intensity (% cover) & location within zone)
Galvanised burr	<i>Bassia birchii</i>	Sporadic weed in all areas. 0.5% covers.
African boxthorn (a Weed of National Significance and Noxious Weed)	<i>Lycium ferocissimum</i>	Predominantly under tree canopies, greatest densities along Gundong Creek. Up to 50% of cover in some areas.
Bathurst burr (a Noxious Weed)	<i>Xanthium spinosum</i>	Sporadic weed in cultivated areas.
Noogoora burr (a Noxious Weed)	<i>Xanthium pungens</i>	Sporadic, greatest densities along Gundong Creek. Up to 20% of cover in some areas.
Black Thistle	<i>Cirsium vulgare</i>	Scattered, weed in fallow

10.3 Management of Vertebrate Pests

The PVP requires vertebrate pest control to be undertaken within the Biodiversity Offset Area in accordance with the following condition. In Table 17.

Table 16: Vertebrate pest management as per the PVP

Control of feral and over abundant native herbivores	Term of project	The landholder must control all pest vertebrates such as cats, feral dogs and foxes from Map Units 1a, 1b, 2a, 2b, 3a, 3b, 4 and 5, (as outlined in the Tomingley Gold Project, Biodiversity Management Plan) at all times.
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Vertebrate pests in the mine site or other TGO owned land include foxes, rabbits, hares and feral cats. Over abundant native herbivores are limited to Eastern Grey Kangaroos, *Macropus giganteus*. Managing the population of Eastern Grey Kangaroos should be considered at such time the population is causing a risk to the Biodiversity Offset Area.

Common vertebrate pest control methods and monitoring techniques that are, or will be, used to control feral animal populations on TGO land are presented in Table 18.

Table 17: Common techniques and timing of culling and monitoring feral vertebrates.

Species	Method of culling	Optimum frequency and timing
Fox	Cage trapping. It is not considered appropriate to use 1080 near the village.	Tri-annually, on demand. Programme linked with sheep management practices.
Cat	Difficult species to control. Cage trapping late winter is effective to catch dispersing young.	Annual (late winter)
Rabbit	Ripping of burrows, gassing and use of Pindone used in combination can be effective.	Annual, on demand.
European Hare	Baiting can be effective.	Opportunistic.
Species	Method of monitoring	Optimum frequency
Fox	Spotlighting, trapping	Tri-annual
Cat	Spotlighting, trapping	Tri-annual

Rabbit	Targeted observation of species, detection of burrows, monitor burrow activity.	Tri-annual
European Hare	Targeted observation, spotlighting.	Tri-annual

10.4 Managing Grazing and Agriculture

Grazing

Grazing by domestic stock will not be allowed in the Biodiversity Offset Area until 2024 (except Map unit 3a) and then only in accordance with the PVP, SEE Table 19.

The PVP allows up to 14 days per calendar year to be undertaken to manage fuel loads as per Rural Fire Service advice where relevant within Map 1, map unit 3A of the Biodiversity Offset Area, as conditioned in the PVP.

Limited grazing will be utilised within PVP Map 1, map unit 3a to manage fuel loads in the Biodiversity Offset Area as prescribed in the conditions outlined in Table 19.

Table 18: Grazing requirements as per the PVP

Grazing exclusion	In perpetuity	The landholder is to exclude all livestock for a minimum of 10 years to prevent damage to revegetation and native vegetation regeneration. After 10 years of grazing exclusion the landholder may undertake strategic grazing in map Units 1a, 1b, 2a, 2b, 3b, 4 and 5. Grazing must allow at least six months between each grazing event and must not exceed a total of 14 days per calendar year.
Strategic grazing	In perpetuity	The landholder may undertake strategic grazing in map Unit 3a at any time for the purpose of decreasing fuel loads to reduce fire risk to the neighbouring residence. Grazing must allow at least six months between each grazing event and must not exceed a total of 14 days per calendar year.

This grazing strategy will ensure that native vegetation has an opportunity to regenerate and establish over the long-term, while Tomingley residents' concerns regarding an increased fire hazard resulting from biomass accumulation in offset areas is managed accordingly.

Agricultural Activities

TGO will adhere to the conditions within the PVP regarding the management of agricultural activities within the Biodiversity Offset Area, see Table 20.

Table 19: Permitted routine agricultural management activities as per the PVP

Permitted Routine Agricultural Management Activities (RAMA's)	In perpetuity	The Landholder must not clear native vegetation in the area identified as Map Units 1a, 1b, 2a, 2b, 3a, 3b, 4 and 5 for routine agricultural management activities, except when the landholder is clearing native vegetation for the following Routine Agricultural Management Activities: - The operation and maintenance only of permanent fences only (as permitted by s. 22 and s. 11(1)(a) Native Vegetation Act 2003 and cl 27 Native Vegetation Regulation 2013); - The removal of noxious weeds under the Noxious Weeds Act 1993 (as permitted by s. 22 and s. 11(1)(b) Native Vegetation Act 2003); - The control of pests under the Local Land Services Act 2013 (as permitted by s. 22 and s. 11(1)(c) Native Vegetation Act 2003); - The clearing of feral native plant species (as permitted by s. 22 Native Vegetation Act 2003 and cl. 37 Native Vegetation Regulation 2013); - The maintenance of public utilities (as permitted by S.22 and S.11(1)(h) Native Vegetation Act 2003 and Cl. 37 Native Vegetation Regulation 2013); - Any activity reasonably considered necessary to remove or reduce an imminent risk of serious personal injury or damage to property (as permitted by s. 22 and s. 11(1)(i) Native Vegetation Act 2003). The clearing of any vegetation in contravention of this clause is excluded from being an activity permitted to be carried out under Part 3 Division 3 s.22 of the Native Vegetation Act 2003.
Permitted Routine Agricultural Management Activities (RAMA's)	In perpetuity	

Note: The Native Vegetation Act 2003 and associated regulations have now been repealed and replaced with the Biodiversity Conservation Act 2016 and associated legislation.

10.5 Fire Management

The risk of fire within the Biodiversity Offset Area will be managed in accordance with the PVP condition in Table 21 below.

Table 20: Fire management requirements as per the PVP

Fire Management for Conservation	Term of project	-Best Management Practices for fire management for the vegetation types and threatened species present on the site within Map Units 1a, 1b, 2a, 2b, 3a, 3b, 4 and 5 must be implemented during the term of the project. -Best management practices must be determined in consultation with the NSW Rural Fire Service (as outlined in the Tomingley Gold Project, Biodiversity Management Plan). -The use of fire within Map Units 1a, 1b, 2a, 2b, 3a, 3b, 4 and 5 must be in accordance with the conditions of a Bush Fire Environmental Assessment Code approval issued by the NSW NSW Rural Fire Service.
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Fire prevention and management on, or near, the mine site is managed according to the TGO Emergency Management Plan. TGO have procedures and awareness training in place to prevent onsite ignition of bushfire. TGO Incident Response Team have limited fire-fighting capability and TGO notify local RFS brigades in the case of large offsite fires threatening the Biodiversity Offset Area.

The use of fire for biodiversity outcomes is not practical and unlikely to occur in the foreseeable future, due to the small and awkward shape of the Biodiversity Offset Area and proximity to Tomingley village, the mine site and local agricultural land. However, any use of fire on the TGO site, for any reason, will be done after consultation with the NSW Rural Fire Service.

11. RESOURCE RECOVERY AND BENEFICIAL USE

Condition 37(e)(iii) of Project Approval (PA 09_0155) requires *maximising the salvage of resources within the approved disturbance area - including vegetative, soil and cultural heritage resources – for beneficial reuse in the enhancement of the biodiversity areas or rehabilitation area;*

To date, TGO has salvaged the resources outlined in Table 22 from the approved disturbance area:

Table 21: Salvaged resources

Resource	Comment
Topsoil	Topsoil salvaged from mining pit excavation areas has been stockpiled and will be managed (stabilised and integrity monitored) until such time it is reused during site rehabilitation.
Seeds	Seed collected from trees on the mine site were used to hand seed extension areas in the Biodiversity Offset Area.
Logs including sections of hollow branches	Logs and hollow branches felled in the disturbance area were retained and stockpiled. These will be reused in the Biodiversity Offset Area and or to contribute to erosion mitigation in Gundong Creek.
Kurrajong seedlings	Approximately six Kurrajong (<i>Brachychiton populneus</i>) seedlings in the approved disturbance area were salvaged and replanted in the Biodiversity Offset Area

Resource salvage will continue to occur where there is opportunity to do so from within the approved disturbance area.

Resources salvaged from the approved disturbance area have also been used for local projects including as snag/ fish habitat in the Macquarie River and as zoo animal food.

12. MANAGEMENT MEASURES 3 YEAR SUMMARY

A summary of the management measures which will continue to be implemented over the next three years as per Condition 37(e) of Project Approval (PA 09_0155) is shown in Table 23 below.

Majority of these management measures are ongoing for the life of the project.

Risk assessment as per Section 15 undertaken following routine inspections, review of annual vegetation and/or biannual fauna monitoring and/or following modification of project approvals will identify if biodiversity performance measures indicate declining biodiversity values. Identified risks would then be managed as per the Trigger Action Response Plan (TARP).

Table 22: Three year management summary

Approval Condition	Management Measures	Relevant Section of this BMP
(i) enhancing the quality of existing vegetation and fauna habitat;	• Timber recovered during planned vegetation clearing on site will continue to be stockpiled and distributed within the Gundong Creek riparian zone. Stockpiled vegetation will be isolated from access to ensure it is not moved, damaged or used for an alternate purpose • Increase trees in areas of open grassland • Increase coarse woody debris in offset area • Increase grassy stratum and tussock grass cover by natural regeneration and/or by planting and seeding native grasses • Establishment of a shrubby understorey by natural regeneration and/or by planting and seeding shrubs • Maintain aquatic vegetation in around waterbodies except where otherwise managed as part of mine operations (sediment dams) • Maintain areas of native vegetation around waterbodies, and enhance habitat with increasing woody debris, rock and leaf litter – naturally or by adding habitat items • Prevent the chemicals or mine run off from entering waterbodies except where they are part of mine operations (dirty water drains) • Grazing management and keep domestic stock away from the water edge (or a portion of it) to protect vegetation/ habitat • Fencing and/or signs installed and maintained to prevent disturbance in non-operational site areas • Weed management • Pest management • Nest boxes installed and monitored • Overall increase in habitat size and vegetation and habitat quality in offset area	Section 9.1 and 13.2 (Habitat enhancement actions for identified species)
(ii) restoring native vegetation and fauna habitat on the biodiversity areas and rehabilitation area through focusing on assisted natural regeneration, targeted vegetation establishment and the introduction of naturally scarce fauna habitat features (where necessary);	As per Condition (i) above	Section 9.1 and 13.2 (Habitat enhancement actions for identified species)

Approval Condition	Management Measures	Relevant Section of this BMP
(iii) maximising the salvage of resources within the approved disturbance area - including vegetative, soil and cultural heritage resources – for beneficial reuse in the enhancement of the biodiversity areas or rehabilitation area;	- Topsoil salvaged from mining pit excavation areas has been stockpiled and will be managed (stabilised and integrity monitored) until such time it is reused during site rehabilitation - Seed collected from trees on the mine site are used to hand seed extension areas in the Biodiversity Offset Area - Logs and hollow branches felled in the disturbance area are reused in the Biodiversity Offset Area and/or to contribute to erosion mitigation in Gundong Creek - Resource salvage will continue to occur where there is opportunity to do so from within the approved disturbance area	Section 11
(iv) collecting and propagating seed;	- Seed mix has been sown by hand in some areas of the Biodiversity Offset Area - Declining biodiversity values (indicated by annual monitoring) will trigger more supplementary planting by collecting and propagating seed	Section 8 and 11
(v) minimising the impacts on fauna on site, including pre-clearance surveys and minimising the potential exposure to tailings;	- If known habitat trees do require felling, a suitably qualified and experienced ecologist will be engaged to complete a pre-clearance survey in accordance with the template included as Appendix 4 and, where required, remove the animal(s) and/or nest/roosting habitat nests prior to clearing - Where required, clearing will not occur during breeding season (between July to February) to reduce risk of impact to tree dependent microbats and birds, in particular the Grey-crowned babbler - Domestic stock does not have access to the Biodiversity Offset Area except where this occurs in accordance with the PVP - The risk of vehicle trauma is communicated to all TGO staff in the mine site induction. As is the need for vigilance and care when driving to, from and around site. The maximum site speed limit of 40km/h is strictly enforced - To manage risk associated with nesting Grey-crowned Babblers on site all TGO staff are made aware of the species. There are no known babbler habitat areas within the current operational mining/processing areas - A Site Specific Procedure has been prepared to inform staff about the management of sick, injured or deceased wildlife and actions to take if such an animal is discovered - If an unexpected threatened species is discovered during mine operations, the established procedure included as Appendix 5 will be followed - The TGO residue storage facility (RSF) is operated according to management measures aiming to limit the potential for cyanide impact on fauna	Section 9
(vi) controlling weeds and feral pests;	Weed management is ongoing as per the PVP	Section 10
(vii) controlling erosion;	Erosion mitigation will continue to be installed in Gundong Creek through natural regeneration and relocation of salvaged timber	Section 7 and 8

Approval Condition	Management Measures	Relevant Section of this BMP
(viii) managing grazing and agriculture on site;	- Grazing by domestic stock is not be allowed in the Biodiversity Offset Area until 2024 (except Map unit 3a) and then only in accordance with the PVP (The PVP allows up to 14 days per calendar year to be undertaken to manage fuel loads as per Rural Fire Service advice where relevant within Map 1, map unit 3A of the Biodiversity Offset Area, as conditioned in the PVP) to ensure that native vegetation has an opportunity to regenerate and establish over the long-term, while Tomingley residents' concerns regarding an increased fire hazard resulting from biomass accumulation in offset areas is managed accordingly	Section 10.4
(ix) controlling access; and	- Fences and locked gates are maintained around the Biodiversity Offset Area - Signs are maintained indicating the Biodiversity Offset Area gates and boundaries - The main site access road guides traffic entering the mine site avoiding the Biodiversity Offset Area - Areas requiring operational clearing are clearly marked to prevent accidental access or disturbance of adjacent areas - Defined tracks and access routes have been designated around the mine site - TGO ensures staff and contractors adhere to the defined routes (through training and awareness) - Fencing and/or signs are maintained to prevent disturbance in non-operational site areas.	Section 10.1
(x) bushfire management;	- Fire prevention and management on, or near, the mine site is managed according to the TGO Emergency Management Plan. TGO notify local RFS brigades (and vice versa) in the case of large offsite fires threatening the Biodiversity Offset Area - However, any use of fire on the TGO site, for any reason, will be done after consultation with the NSW Rural Fire Service	Section 10.5

13. BIODIVERSITY MONITORING PROGRAM

The aim of the Biodiversity Monitoring Program is to measure and assess the effectiveness of conservation, revegetation and rehabilitation measures implemented on site and within the TGO Biodiversity Offset Area. It also allows TGO to determine progress against the biodiversity offset management performance and completion criteria. Biodiversity monitoring can be done internally or TGO can engage external contractors to undertake the program.

Results of biodiversity monitoring needs to be submitted in report form which compares results to previous monitoring reports. In this way trends can be observed, risks identified and remedial action can be implemented. Any trends or recommendations identified during monitoring are TGO's responsibility to manage through risk identification and action of the Trigger-Action-Response-Plan (TARP), see Section 15).

The monitoring program meets the PVP condition below.

Table 23: Vegetation monitoring requirement - PVP

Monitor established vegetation points	Term of project	The monitoring of vegetation must follow the Office of Environment and Heritage publication, "Model for Practical Partnerships in Resource Condition, Monitoring Evaluation and reporting 2011", (as outlined in the Tomingley Gold Project, Biodiversity Management Plan). The evaluation and reporting from the monitoring data must lead to constant improvement of the vegetation condition.
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13.1 Vegetation

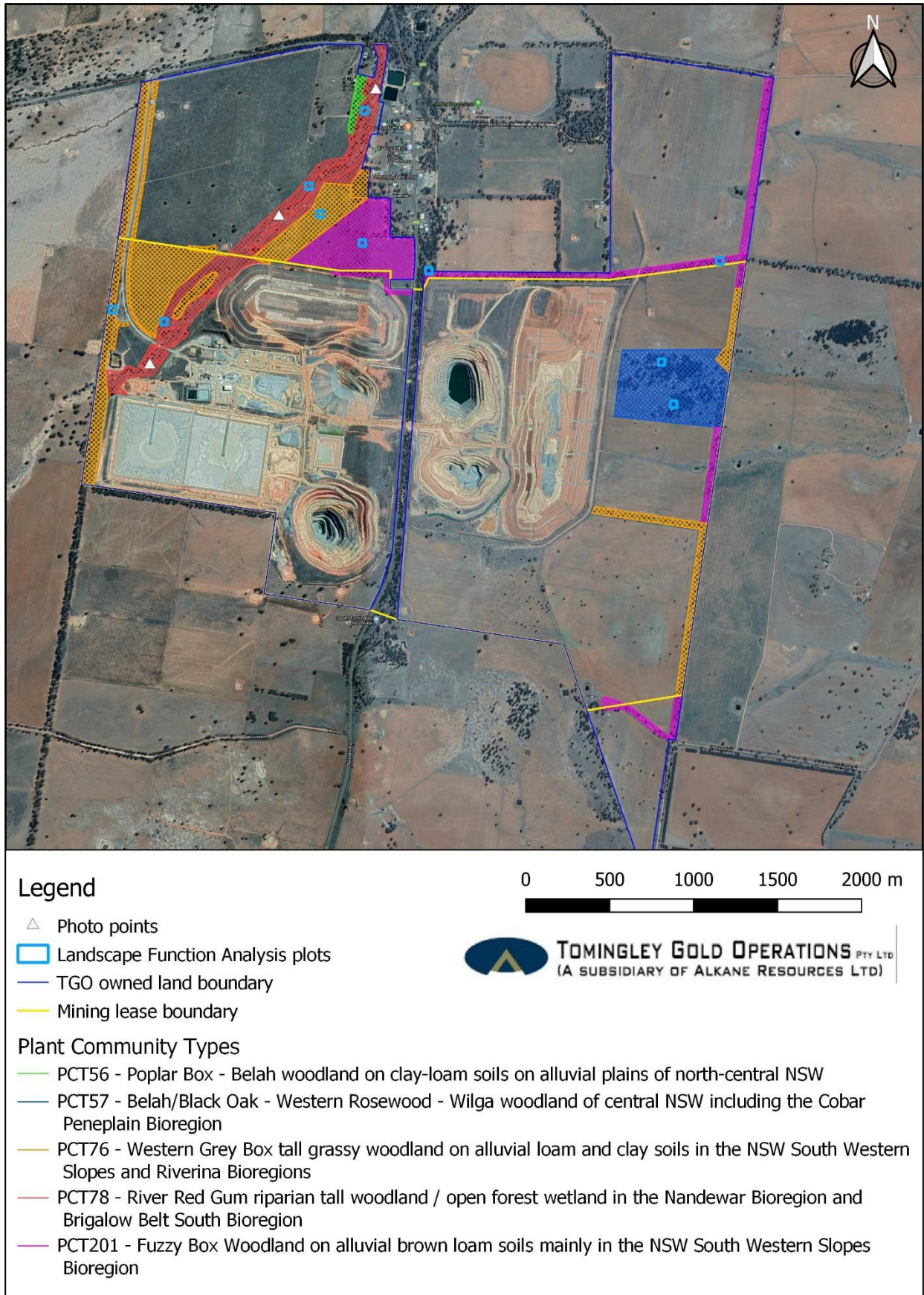
Vegetation monitoring is undertaken annually to assess the condition and improvement of revegetated areas onsite, including vegetation community extension within the Biodiversity Offset Area and mine site rehabilitation. Monitoring includes the following activities:

1. Ten Landscape Function Analysis (LFA) plots have been established for annual vegetation monitoring. The location of these plots is shown on Figure 2. Of these, eight are analogue sites that have been established within local remnant vegetation areas and two are revegetation monitoring sites within Biodiversity Offset extension areas (completed in 2014). Additional plots will be installed to monitor rehabilitation of the mine site against local criteria as appropriate through the life of mine.
Each vegetation plot consists of a 50 x 20 metre plot, transect and photo points. Data has been collected regarding species composition, age demographic, habitat complexity and opportunity, and landscape functionality.
2. Three photo points have also been established along Gundong Creek to provide a photographic record of creek and riparian corridor rehabilitation (Figure 2). These were established in January 2013.

The Biodiversity Assessment Method 2017 (BAM) is now the main tool used in NSW to measure each Plant Community Type against the benchmark criteria. The BAM was established in 2017 and is the recognised systematic vegetation assessment method. This supersedes the BioBanking Assessment Method which was used in the initial ecological assessment at this site. No BioBanking or Biodiversity Assessment Method plots have been established as part of this monitoring program at this stage.

TGO is currently considering use the Biodiversity Assessment Method (2017) to monitor progress towards benchmarks at LFA and additional sites, to be consistent with current assessment methods.

Figure 2: Vegetation monitoring plots and photo points.



13.2 Fauna

Site Specific Procedures have been developed for TGO fauna monitoring activities. Relevant ecological information captured during vegetation monitoring indicates habitat usage and potential fauna population trends. Fauna monitoring surveys occur in spring or summer every two years and include the following activities:

1. Grey-crowned Babbler monitoring as a means of population census and to identify breeding locations as a gauge breeding success.
2. Bat monitoring (over three consecutive nights per event) to establish population trends. Specialist recording equipment and expert data analysis is required to enable accurate species identification.
3. Fat-tailed Dunnart monitoring as a means of population census and to gather relevant species management information.
4. Cyanide impacts on native fauna as described in Section 8.1.

Grey-crowned Babblers



Plate 1: Grey-crowned Babbler (eastern sub species).

Species ecology

All five of the remnant vegetation communities recorded at TGO (as described in Section 2.1) are listed on the DPIE Threatened Species website (<http://www.environment.nsw.gov.au/threatenedspecies/>) as preferred vegetation types for the NSW vulnerable Grey-crowned Babbler. The DPIE website also provides the following insights into the ecology and habitat of this species:

- Inhabits open Box-Gum Woodlands on the slopes, and Box-Cypress-pine and open Box Woodlands on alluvial plains;
- Flight is laborious so birds prefer to hop to the top of a tree and glide down to the next one. Birds are generally unable to cross large open areas;
- Live in family groups that consist of a breeding pair and young from previous breeding seasons. A group may consist of up to fifteen birds. All members of the family group remain close to each other when foraging. A soft 'chuck' call is made by all birds as a way of keeping in contact with other group members;

- Feed on invertebrates, either by foraging on the trunks and branches of eucalypts and other woodland trees or on the ground, digging and probing amongst litter and tussock grasses;
- Build and maintain several conspicuous, dome-shaped stick nests about the size of a football. A nest is used as a dormitory for roosting each night. Nests are usually located in shrubs or sapling eucalypts, although they may be built in the outermost leaves of low branches of large eucalypts. Nests are maintained year-round, and old nests are often dismantled to build new ones;
- Breed between July and February. Usually, two to three eggs are laid and incubated by the female. During incubation, the adult male and several helpers in the group may feed the female as she sits on the nest. Young birds are fed by all other members of the group; and
- Territories range from one to fifty hectares (usually around ten hectares) and are defended all year. Territorial disputes with neighbouring groups are frequent and may last up to several hours, with much calling, chasing and occasional fighting.

Threats to the Grey-crowned Babbler listed by DPIE include:

- Clearing of woodland remnants;
- Heavy grazing and removal of coarse woody debris within woodland remnants;
- Nest predation by species such as ravens and butcherbirds may be an issue in some regions where populations are small and fragmented.

Monitoring

A population census of Grey-crowned Babblers is required to occur as part of the monitoring program for the Biodiversity Offset Area.

Three families have historically been known from the immediate mine site area. Census should involve:

- A stocktake of nests in the Biodiversity Offset Area – including identification of large nests, nests in use and nests in disrepair;
- A strategic search for animals by traversing all timbered areas within the Biodiversity Offset Area; and
- A strategic search for animals by listening for their calls in patches of woodland within the Biodiversity Offset Area using 15 minutes of listening time while being quiet and still.

Habitat enhancement actions

Actions which will increase the habitat for the Grey-crowned Babbler at TGO are:

- Increase trees in areas of open grassland; and
- Increase coarse woody debris

The change in grazing management at TGO, combined with fencing, feral cat management and re-vegetation (the most beneficial local outcome for a vagrant population utilising the area), is in the process of restoration and enhancement of a grassy stratum and establishment of a shrubby understorey and an increase in the existing area of preferred habitat (an effective feeding and breeding resource for local populations) for the species.

Microbats

Three of the TGO remnant vegetation communities are listed on the DPIE Threatened Species website as preferred vegetation types for the Little Pied Bat (as well as Eastern Cave Bat (BC Act), Inland Forest Bat (BC Act) and Large-eared Pied Bat (EPBC Act recorded in 2014):

- PCT82 Western Grey Box - Poplar Box - White Cypress Pine tall woodland on red loams mainly of the eastern Cobar Peneplain Bioregion;
- PCT78 River Red Gum riparian tall woodland / open forest wetland in the Nandewar Bioregion and Brigalow Belt South Bioregion; and

- PCT201 Fuzzy Box Woodland on alluvial brown loam soils mainly in the NSW South Western Slopes Bioregion.

Species ecology

Little Pied Bats and the other species recorded feed on insects, but exact diet is not known. Microbats can travel several kilometres between roosting sites and feeding sites. The main threats to listed microbats in the mine site are feral cats and modification to native vegetation, including the entire removal of vegetation (as for mining development) and livestock grazing/browsing removing the mid and lower stratum.

Monitoring

Monitoring of microbats should be conducted using remote sensing, ultrasonographic recorders. At least two recorders should be used for each assessment. Additional survey techniques may include watching for bats using areas of open water shortly after dusk.

Recorders should be:

- set up away from artificial lighting;
- amongst trees
- near waterbodies; and
- record for at least three consecutive nights.

Habitat enhancement actions

Following reduced grazing on mine land in 2010, a general recovery of the ground layer across all areas with remnant vegetation was observed subsequently significant more species of bats and the numbers of calls were recorded in 2014 (15 species confidently recorded) than in 2010 (Seven species were confidently recorded). Vegetation management according to the requirements of this BMP should see this regeneration continue, supplemented by active revegetation activities. The following management activities may also assist listed microbat species recorded on the mine site recovery:

- Control of feral cats;
- Exclusion or management of livestock grazing;
- Retaining/ revegetating foraging and roosting habitat; and
- Minimising the use of pesticides within or adjacent to areas where insectivorous bats occur.

Frogs

Species ecology

Frogs live in the most varied of our country environments, from rainforests and mountains to deserts. However, they are sensitive to change in their environment. Most common frogs live in or around fresh water. Many need water to breed, although a small puddle can be enough. Their thin, permeable skin is not waterproof, which means they can lose a lot of body moisture on warm days. For this reason, frogs are most active at night, when they will hop about in search of food or a mate. During the day, they find a hiding spot and wait until the heat and light of the sun have passed.

The thin, porous skin of frogs and tadpoles makes them sensitive creatures. Through this skin, they absorb chemicals from the air and water. For this reason, frogs are good indicators of environmental damage (taken from <https://www.environment.nsw.gov.au/topics/animals-and-plants/native-animals/native-animal-facts/frogs>).

Monitoring

Frog activity is best assessed in the early evening. Frogs can be identified by their calls or by observation. If possible, both identification techniques should be used.

Spotlights can be used to locate eye shine or allow for identification. Care should be taken not to bring the light close to the animals to avoid increasing their body temperature or drying out their skin.

If handling frogs, gloves should be worn, or hands should be clean of chemicals including sun cream and cigarette residue.

Habitat enhancement actions

Habitat enhancement actions for frog habitat are better described as habitat protection actions. These actions include:

- Maintain aquatic vegetation in around waterbodies except where otherwise managed as part of mine operations (sediment dams).
- Maintain areas of native vegetation around waterbodies, and enhance habitat with increasing woody debris, rock and leaf litter – naturally or by adding habitat items.
- Prevent the chemicals or mine run off from entering waterbodies except where they are part of mine operations (dirty water drains).
- Keep domestic stock away from the water edge (or a portion of it) to protect vegetation/ habitat.

Fat-tailed Dunnart

The Fat-tailed Dunnart is not a listed species under the BC Act or the EPBC Act.

Pedestrian surveys on the 6th of August 2009 by OzArk recorded a dead female fat-tailed dunnart within the mine site on the eastern side of the Newell highway. At the time this species was a regionally significant species (no additional legislative consequence but a species of conservation concern). It is not currently listed as a threatened species and has not been recorded in the area again. A live specimen has yet to be recorded or trapped. The related threatened BC Act species, Stripe faced Dunnart *Sminthopsis macroura* also has the potential to occur.

Species ecology

The Fat-tailed Dunnart is a native marsupial with a combined head, body and tail length of 105 millimetres to 160 millimetres and weights of 10 to 20 grams.

Fat-tailed dunnarts occupy a variety of open habitats, including open woodland, low shrublands and arid shrublands. Populations can also be found living in areas of agricultural land such as unimproved pasture, they have been found in old hay sheds, amongst rock piles and old logs (taken from https://www.swifft.net.au/cb_pages/sp_fat-tailed_dunnart.php)

Breeding occurs between July and February. Females construct nests under logs, rocks, or in deep cracks in the ground, made from dried plant material. (taken from https://www.swifft.net.au/cb_pages/sp_fat-tailed_dunnart.php).

Monitoring

Annual monitoring for Fat-tailed Dunnarts is required by this management plan.

Monitoring should consist of three consecutive nights of trapping using Ellipt Type A traps. Two sets of 25 traps should be used, with the sets used in different areas of the site. For example, a line adjacent to Gundong Creek and in the patch of PCT57 Belah/Black Oak - Western Rosewood - Wilga woodland of central NSW.

Traps should be baited with balls made from a mix of peanut butter and rolled oats, with honey and or fish sauce. Traps and baits should be checked every morning of survey and traps reset before dusk.

Care should be taken to ensure animals are not contained in the traps during extreme temperatures. Early checking of traps is the best method to avoid this however, shelter may be placed over trap to mitigate the impact of temperature extremes.

Habitat enhancement actions

Dunnarts are impacted by loss of habitat for shelter and food and competition and predation by pest animals. Actions to improve habitat for dunnarts include:

- Increase coarse woody debris – naturally or by adding logs; and
- Increase tussock grass cover – naturally or by planting and seeding native grasses.

Management of pest animals will also aid the survival of this species.

Other listed species

Other listed species are known to occur in and around the mine site. Biodiversity offset management strategies will also increase habitat values for species including Koala and Superb Parrot. Formal monitoring is not conducted for these species, however opportunistic sightings will be reported in the bi-annual Biodiversity Monitoring Reports.

Koala

A recorded 'local population' of Koala (consisting of one BioNet record at Gundong Creek near the Newell Highway and another approximately 5km south of Narromine) are considered to possibly be dispersing or transient individuals. The DPIE Threatened Species website also lists the habitat and ecology for Koala as:

- Inhabiting eucalypt woodlands and forests;
- Feeding on the foliage of more than 70 eucalypt species and 30 non-eucalypt species, but in any one area will select preferred browse species;
- Inactive for most of the day, feeding and moving mostly at night;
- Spending most of their time in trees, but will descend and traverse open ground to move between trees;
- Home range size varies with quality of habitat, ranging from less than two hectares to several hundred hectares in size;
- Generally solitary, but have complex social hierarchies based on a dominant male with a territory overlapping several females and sub-ordinate males on the periphery; and
- Females breed at two years of age and produce one young per year.

Three of the TGO remnant PCT's are listed on the DPIE Threatened Species website as preferred vegetation types for the Koala.

The TGO mine site does not have SEPP44 (NSW Koala protection policy) tree species or other feed tree species within, or adjacent to the operational areas, and no breeding or foraging habitat will be affected by the activity. The potential effect is on the development of seedlings / saplings causing a temporary reduction in available future fodder.

The river red gum community along Gundong Creek and Poplar Box community on TGO land is potential Koala habitat and the proposed TGO revegetation program (including 11ha of riparian revegetation along Gundong Creek) will result in an increase in area of potential Koala occupancy and connectivity. The current change in grazing management, combined with fencing and feral animal management, will also see an improvement to potential Koala habitat and connectivity along Gundong Creek as evidenced by substantial natural regeneration along this waterway.

Superb Parrot

The DPIE Threatened Species website lists the habitat and ecology for the Superb Parrot as:

- Inhabiting Box-Gum, Box-Cypress-pine and Boree Woodlands and River Red Gum Forest;
- In the Riverina the birds nest in the hollows of large trees (dead or alive) mainly in tall riparian River Red Gum Forest or Woodland. On the South West Slopes nest trees can be in open Box-Gum Woodland or isolated paddock trees. Species known to be used are Blakely's Red Gum, Yellow Box, Apple Box and Red Box;
- Nesting in small colonies, often with more than one nest in a single tree;
- Breeding between September and January;
- May forage up to 10 km from nesting sites, primarily in grassy box woodland;
- Feeding in trees and understorey shrubs and on the ground and their diet consists mainly of grass seeds and herbaceous plants. Also eaten are fruits, berries, nectar, buds, flowers, insects and grain.

This species does not breed north of Molong, NSW hence the only requirement affected is foraging and resting habitat. The DPIE threatened species website lists TGO remnant vegetation communities 1, 2 and 3 (as described in Section 2.1) as preferred communities for Superb Parrot.

A review of aerial photography in the wider region clearly shows that road corridors, creek lines and un-arable hill tops are the only areas where white box (*Eucalyptus albens*) (considered to be the critical key feeding resource as its winter flowering) remains. There is no white box within the TGO mine site area.

The change in grazing management combined with fencing, feral cat management and re-vegetation (the most beneficial local outcome for the population) along with restoration and enhancement of a grassy stratum (an effective feeding resource for a vagrant population), is progressing habitat enhancement for this species in accordance with the national Recovery Plan for the Superb Parrot.

14. BIODIVERSITY MANAGEMENT PERFORMANCE CRITERIA

The aim of this Biodiversity Management Plan is to enhance the quality of remnant native vegetation and restore specific plant community types in designated areas of the Biodiversity Offset Area, which will lead to enhancing the quality of fauna habitat to meet the needs of threatened fauna known to occur at the mine site.

Performance criteria allow a measurement of progress and success of management strategies. The following sections present the performance criteria which will be used to assess impacts to biodiversity within Biodiversity Offset Area. In the event risk assessment indicates declining performance of any objectives, the Trigger-Action-Response-Plan (TARP) would be implemented (See Section 15).

14.1 Vegetation enhancement completion criteria

Vegetation enhancement completion criteria for evaluating the performance of the biodiversity offset strategy are outlined in Table 25 below.

If risk assessment, as per Section 15, following routine inspections, review of annual vegetation and/or biannual fauna monitoring and/or following modification of project approvals identifies unlikely achievement of any of these performance criteria, identified risks would then be managed as per the Trigger Action Response Plan (TARP).

Vegetation enhancement completion criteria are based on progression towards benchmark for each Plant Community Type (PCT). Benchmark is considered perfect PCT condition and is not often observed in remnant vegetation. 75 percent of benchmark parameters can be considered completion for vegetation enhancement. Completion criteria in the following tables show the benchmark values, 75 percent of benchmark and a low progress measure of 25 percent and of benchmark.

Some criteria are not practical to augment such as leaf litter and number of large trees. These criteria will, however, naturally be achieved over time if the tree richness and cover are achieved.

Table 24: Vegetation management targets and completion criteria

Objective	Target	Completion Criteria
Weed populations monitored and controlled	Weed populations are successfully reduced and/or controlled	Annual monitoring indicates reduction and severity of weed populations, indicated by zero occurrence of new weeds, no increase in the area of occupancy for existing weeds and weed species comprise < 5% of species diversity and < 5% ground cover
Increase or maintain habitat value at the time of mine closure	- Habitat enhancement and extension directives stated within PVP document are achieved - Habitat values increase to 75 percent of benchmark parameters for each PCT	Vegetation monitoring indicates achievement of 75 percent of benchmark parameters for PCT's
Protect and enhance areas of Endangered Ecological Communities (EEC) and other native vegetation in line with PVP	- Increase vegetation composition, structure and function of vegetation to meet benchmark criteria for each PCT. - Remnant vegetation is successfully enhanced and/or naturally regenerated to increase quality, indicated by achievement of 75 percent of benchmark criteria for each PCT	Vegetation monitoring indicates achievement of 75 percent of benchmark parameters for PCT's

Table 26 to Table 30 show PCT benchmark criteria with 25 and 75 percent of this benchmark for each PCT in the Biodiversity Offset Area.

Table 25: PCT56 Benchmark – completion criteria

PCT56 Benchmark			
Vegetation Class		Floodplain Transition Woodlands	
IBRA		Darling Riverine Plains	
Benchmark Calculation Level		25% of benchmark value	75% of benchmark value
Tree Richness	3	0.75	2.25
Shrub Richness	6	1.5	4.5
Grass and Grass Like Richness	5	1.25	3.75
Forb Richness	7	1.75	5.25
Fern Richness	0	0	0
Other Richness	1	0.25	0.75
Tree Cover	22	5.5	16.5
Shrub Cover	5	1.25	3.75
Grass and Grass Like Cover	18	4.5	13.5
Forb Cover	5	1.25	3.75
Fern Cover	0	0	0
Other Cover	0	0	0
Total length of fallen logs	55	13.75	41.25
Litter Cover	36	9	27
Number of Large Trees	3	0.75	2.25
Large Tree Threshold Size	50		

Key to table:

Purple text = Composition score

Green text = structure score

Black text = Function score

Table 26: PCT57 Benchmark – completion criteria

PCT57 Benchmark			
Vegetation Class		Semi-arid Woodlands (Shrubby sub-formation)	
IBRA		NSW South Western Slopes	
Benchmark Calculation Level		25% of benchmark value	75% of benchmark value
Tree Richness	4	1	3
Shrub Richness	10	2.5	7.5
Grass and Grass Like Richness	5	1.25	3.75
Forb Richness	7	1.75	5.25
Fern Richness	0	0	0
Other Richness	1	0.25	0.75
Tree Cover	8	2	6
Shrub Cover	9	2.25	6.75
Grass and Grass Like Cover	6	1.5	4.5
Forb Cover	2	0.5	1.5
Fern Cover	0	0	0
Other Cover	0	0	0
Total length of fallen logs	45	11.25	33.75
Litter Cover	40	10	30
Number of Large Trees	5	1.25	3.75
Large Tree Threshold Size	30		

Key to table:

Purple text = Composition score

Green text = structure score

Black text = Function score

Table 27: PCT76 Benchmark – completion criteria

PCT76 Benchmark			
Vegetation Class		Floodplain Transition Woodlands	
IBRA		NSW South Western Slopes	
Benchmark Calculation Level		25% of benchmark value	75% of benchmark value
Tree Richness	3	0.75	2.25
Shrub Richness	5	1.25	3.75
Grass and Grass Like Richness	7	1.75	5.25
Forb Richness	11	2.75	8.25
Fern Richness	1	0.25	0.75
Other Richness	1	0.25	0.75
Tree Cover	31	7.75	23.25
Shrub Cover	2	0.5	1.5
Grass and Grass Like Cover	23	5.75	17.25
Forb Cover	5	1.25	3.75
Fern Cover	0	0	0
Other Cover	0	0	0
Total length of fallen logs	49	12.25	36.75
Litter Cover	65	16.25	48.75
Number of Large Trees	3	0.75	2.25
Large Tree Threshold Size	50		

Key to table:

Purple text = Composition score

Green text = structure score

Black text = Function score

Table 28: PCT78 Benchmark – completion criteria

PCT78 Benchmark			
Vegetation Class		Inland Riverine Forests	
IBRA		Darling Riverine Plains	
Benchmark Calculation Level		25% of benchmark value	75% of benchmark value
Tree Richness	3	0.75	2.25
Shrub Richness	3	0.75	2.25
Grass and Grass Like Richness	4	1	3
Forb Richness	9	2.25	6.75
Fern Richness	1	0.25	0.75
Other Richness	0	0	0
Tree Cover	36	9	27
Shrub Cover	0	0	0
Grass and Grass Like Cover	18	4.5	13.5
Forb Cover	4	1	3
Fern Cover	0	0	0
Other Cover	0	0	0
Total length of fallen logs	82	20.5	61.5
Litter Cover	51	12.75	38.25
Number of Large Trees	4	1	3
Large Tree Threshold Size	50		

Key to table:

Purple text = Composition score

Green text = structure score

Black text = Function score

Table 29: PCT201 Benchmark – completion criteria

PCT201 Benchmark			
Vegetation Class		Western Slopes Grassy Woodlands	
IBRA		Darling Riverine Plains	
Benchmark Calculation Level		25% of benchmark value	75% of benchmark value
Tree Richness	3	0.75	2.25
Shrub Richness	4	1	3
Grass and Grass Like Richness	7	1.75	5.25
Forb Richness	9	2.25	6.75
Fern Richness	1	0.25	0.75
Other Richness	1	0.25	0.75
Tree Cover	11	2.75	8.25
Shrub Cover	2	0.5	1.5
Grass and Grass Like Cover	20	5	15
Forb Cover	5	1.25	3.75
Fern Cover	0	0	0
Other Cover	0	0	0
Total length of fallen logs	34	8.5	25.5
Litter Cover	35	8.75	26.25
Number of Large Trees	2	0.5	1.5
Large Tree Threshold Size	50		

Key to table:

Purple text = Composition score

Green text = structure score

Black text = Function score

14.2 Fauna completion criteria

Fauna management completion criteria for evaluating the performance of the biodiversity offset strategy are outlined in Table 31 below.

If risk assessment, as per Section 15, following routine inspections, review of annual vegetation and/or biannual fauna monitoring and/or following modification of project approvals identifies unlikely achievement of any of these performance criteria, identified risks would then be managed as per the Trigger Action Response Plan (TARP).

Table 30: Fauna management targets and completion criteria

Objectives	Target	Completion criteria
Protection of Grey-crowned Babblers (eastern sub-species) and their habitat	Nesting continues successfully.	Biodiversity monitoring indicates species still breeding in their known range.
Maintain Grey-crowned Babbler population.	Resident population remains.	Biodiversity monitoring indicates species still present in their known range.
Maintain a healthy frog population.	Maintain frog populations and aquatic habitat within the Biodiversity Offset Area.	Biodiversity monitoring indicates healthy frog populations and aquatic habitat in the Biodiversity Offset Area.
Confirm or deny presence of Fat-tailed Dunnart population.	- Resident population successfully detected - If detected risks to resident population are identified and managed	Presence or absence of a resident population is confirmed.
Maintain a healthy microbat population.	Populations of microbats are not reduced.	Biodiversity monitoring indicates healthy microbat populations are still present in the Biodiversity Offset Area.

Objectives	Target	Completion criteria
Vertebrate pest populations monitored and controlled	Vertebrate pest populations are successfully reduced and/or controlled	Annual monitoring indicates reduction in extent of feral and overabundant native animals
Increase or maintain habitat value at the time of mine closure.	- Habitat enhancement and extension directives stated within PVP document are achieved - Habitat values increase towards benchmark for each PCT and meet the need of threatened fauna known to occur at the mine site.	Vegetation monitoring indicates Vegetation enhancement criteria complete (see previous section).
Minimise or prevent cyanide related fauna deaths.	Minimal fauna deaths from exposure to cyanide	If any cyanide related fauna deaths are recorded, appropriate action is taken to reduce the risk of it occurring again.

15. BIODIVERSITY RISK MANAGEMENT STRATEGY AND TRIGGER ACTION RESPONSE PLAN

The final measure of the Biodiversity Offset Area management success will be determined during post-mining lease relinquishment. Risks with potential to compromise final success will be identified well ahead of final mine closure, see below, to allow for appropriate remedial management and / recovery.

15.1 Risk Identification

The Risk Assessment Process used to identify the potential risks to the successful implementation of the biodiversity offset strategy should follow the same assessment process that is outlined in the MOP. Within the MOP, environmental risk assessment has been undertaken in accordance with AS/NZS ISO 31000:2009 Risk Management - Principles and Guidelines.

Risk Assessment should be undertaken where a risk to general conservation/land management or a decline in biodiversity values are identified following routine inspections or following review of annual vegetation and/or biannual fauna monitoring and/or following modification of project approvals, which indicate unlikely achievement of performance criteria.

Example Risk assessment is as follows:

1. Risk Identified (examples: new weed infestation identified during routine inspections of biodiversity Offset Area; Biodiversity monitoring indicates potential decline in resident Grey-crowned Babbler population)
2. Risk given a *Qualitative Consequence Rating* i.e., will the impact to environment be Negligible/Moderate/Major/Major/Severe
3. Risk is given a *Qualitative Likelihood Rating* i.e., is it almost certain/likely/possible/unlikely/rare to occur?
4. Using these measures, the Risk is given a *Qualitative Risk Rating* i.e., low/medium/ high pr very high, see Table 32 below.

Table 31: Qualitative Risk Rating

Likelihood	Consequences				
	Insignificant 1	Minor 2	Moderate 3	Major 4	Catastrophic 5
A (Almost Certain)	M	H	H	VH	VH
B (Likely)	M	M	H	H	VH
C (Possible)	L	M	H	H	H
D (Unlikely)	L	L	M	M	H
E (Rare)	L	L	M	M	H

Note: Rating modified after AS/NZS ISO31000:2009 Risk Management - Principles and Guidelines

Any risks to biodiversity with a Qualitative Risk Rating greater than 'Low' are likely to impact the achievement of completion criteria (Section 14) and will require action as per the TARP in Table 29 below.

15.2 Trigger Action Response Plan

Table 32: Biodiversity offset risk management strategy and trigger action response plan.

Risk	Trigger	Action	Response
Invasive exotic weeds increasing area of occupancy, or unresponsive to current control/ eradication measures.	New weed species identified during routine weed management of vegetation monitoring. Weed control yields no decline, or an increase, in area of occupancy of the weed in the treatment area.	Review weed control strategies and frequency. Confirm current advised control method for the species in question.	Consider updating weed management strategy Consider increasing focus on weed mapping and monitoring
Endangered Ecological Communities (EEC) and other native vegetation identified in the PVP are declining in quality	Annual vegetation monitoring indicates decline in vegetation integrity score or LFA score with no discernible natural justification – e.g. drought, storm damage, flood, fire, season.	Review data to determine the cause of the reduction in integrity score. Determine if natural variation of species is occurring Review vegetation management strategies occurring in or around that site.	Consider species regional investigation into presence/ change Consider undertaking more frequent monitoring to detect risks earlier or to determine other intricacies. Address cause/s of decline if any identified
Grey-crowned Babbler (eastern sub-species) local population impacted	Grey-crowned Babblers not recorded during routine monitoring in the Biodiversity Offset Area with no discernible natural justification – e.g. drought, storm damage, flood, fire, season.	Implement further searches for this species to confirm presence/ absence. Review fauna management strategies and local disturbances.	Reduce or remove disruptive process if possible Implement habitat augmentation to better suit this species.
Declining frog populations	Number of species recorded during routine monitoring is less than the previous monitoring.	Review species recorded each year to answer the following question: - Are any species that were present, no longer being recorded? - Are any other trends present in the number of species or number of individual recorded? Undertake water quality analysis in areas of aquatic habitat/ previous frog presence	Review fauna management strategies. - Consider more detailed frog studies - Consider factors which may be impacting the species in decline - Consider reducing or remove impacting factor/s Consider habitat augmentation
Undetected Fat-tailed Dunnart (or other dunnart species) population in the offset area	Fauna monitoring detects dunnart population	Prevent activities which may cause disturbance to the local population.	Consider management strategies to protect the population and enhance the available habitat. Consider additional work to understand the local population.
Declining microbat population	Number of species recorded during routine monitoring is less than the previous monitoring.	Review species recorded each year to answer the following question:	Review fauna management strategies. Consider more detailed bat studies

Risk	Trigger	Action	Response
		- Are any species that were present, no longer being recorded? - Are any other trends present in the number of species or number of individual recorded	- Consider factors which may be impacting the species in decline - Consider reducing or remove impacting factor/s Consider habitat augmentation
Vertebrate pest populations are increasing out of control	A greater number of feral species individuals are recorded during nocturnal surveys for two consecutive years.	Confirm the most suitable control method for the out-of-control pest species	Review vertebrate pest management strategy Undertake, or engage a suitably licensed contractor to, implement a more intensive vertebrate pest monitoring and control program
Cyanide impacting native fauna	Cyanide related fauna deaths exceed 10 annually.	Review cyanide levels at the time of deaths Review cyanide management and monitoring practices. Review wildlife control measures	Consider changing cyanide monitoring and management practices. Consider upgrading wildlife control measures

15.3 Reporting and Evaluation of Compliance

Biodiversity incidents that represent a non-compliance with Project Approval or Environmental Protection Licence conditions are reported to the NSW Environment Protection Authority, Division of Resources and Geoscience or Department of Planning, Infrastructure and Environment, as relevant. Operational interactions with wildlife or high value biodiversity areas, as well as any significant observations are included in the internal *Monthly Environmental Monitoring Report*.

Relevant biodiversity information, and compliance with regulatory requirements, is reported to relevant government authorities in the *Annual Review* and made publicly available on the TGO website.

15.4 Complaints Handling and Response

Complaints regarding the management of the Biodiversity Offset Area are managed in accordance with the TGO Complaints Management Site Specific Procedure.

A community information / complaints line is maintained by TGO with personnel available to respond 24 hours a day, seven days a week. Complainants can call the Community Information Line Number 02 6865 6116 which operates 24 hours a day, 7 days a week email tomingleygold@alkane.com.au or If you are calling for business purposes please call between 9am – 5 pm Monday to Friday on 02 6867 9780.

16. COMPETENCE TRAINING AND AWARENESS

TGO personnel shall undergo biodiversity management awareness training as part of the site induction program. The following areas will be covered in the induction:

- Protected biodiversity value areas that must not be disturbed;
- Key threatened species potentially impacted by TGO activities;
- Response when operations interact with wildlife or threatened species; and
- An explanation of the TGO Biodiversity Offset Strategy.

16.1 Roles and Responsibilities

Table 33: Biodiversity management roles and responsibilities.

Role	Responsibilities
TGO Operations Manager	Accountable for the overall environmental performance of the operations, including the outcomes of this Plan.
Environmental and Community Manager	Ensure the implementation of this Plan. Reporting of incidents and non-compliances. Ensure employees are competent through training and awareness programs.
Mobile Equipment / Fixed Plant Operators	Ensure operations are undertaken in accordance with this plan and TGO procedures. Ensure appropriate notification and response in the event of an environmental incident. Show due care not to cause environmental harm.
All Personnel	Follow direction provided by the Environmental and Community Manager. Show due care not to cause environmental harm. Notify Supervisor/Environmental and Community Manager of any environmental non-compliance.

17. REVIEW

This plan will be reviewed annually or following modification of project approvals.

As per PA09-0155, Schedule 5, Condition 5, within three months of:

- a. the submission of an annual review (as required by the Secretary)
- b. the submission of a non-compliance or incident notification under the incident reporting condition;
- c. the submission of an audit under the independent environmental audit condition;
- d. any modification to the conditions of this approval (unless the conditions require otherwise),

TGO shall review, and if necessary, revise, the strategies, plans, and programs required under this approval to the satisfaction of the Secretary. With the agreement of the Secretary, TGO may prepare any revised strategy, plan or program without undertaking consultation with all parties under the applicable conditions of this consent.

Before the next version of this BMP, the following actions are recommended to overhaul the BMP and associated monitoring practices to be more in line with current biodiversity assessment methods, vegetation, and management zone mapping protocols, and ensure goals are relevant and achievable.

1. Collect current baseline using the current Biodiversity Assessment Method including in areas where management actions occurred
2. Establish a revised set of goals, performance criteria and future management actions to achieve these goals
3. Map vegetation management zones based on management actions past and future
4. Develop a simple and targeted monitoring plan to measure the efficacy of all management actions. It is recommended this vegetation monitoring plan is implemented in accordance with the NSW Biodiversity Conservation Trusts Ecological Monitoring Module.
5. Revise the structure of the BMP to best present the updated goals.

Appendix 1: Consultation

Consultation with OEH and Local Land Services on preparation of this plan

Dear Peter,

Thank you for providing comments on the Tomingley Gold Project – Biodiversity Management Plan.

We have considered your comments and amended our plan accordingly. The changes are reflected in the table that follows.

OEH Comment	TGO Response
2.2 Fauna The Biodiversity Management Plan (BMP) states “Assessments of Significance and / or Part 7 tests were undertaken for the Grey-crowned Babbler, Little Pied Bat, Superb Parrot and Koala, which were all determined as “affected” species” The Koala is known to occur in the Tomingley Narromine Water Pipeline study area (two previous records), and has the potential to occur within the mine site. There are no management actions provided to reduce impact on Little Pied Bat, Superb Parrot or Koala. The BMP should outline the species requirements for each threatened species that will be impacted by the development, and how these requirements will be provided for across the non-impacted and/or offset areas should be detailed, particularly in areas to be revegetated. Elements to be discussed should include preferred vegetation type and structure, competition, food resources, minimum patch size, landscape connectivity and breeding, nesting and roosting requirements. Knowledge of threats to the species and how these will be managed should also be outlined.	Section 8.9.1, 8.9.2, 8.9.3 and 8.9.4 have been added to include consideration to your comments and to provide further information.
7.4.1 Short term management strategies For collection of baseline data and ongoing monitoring appropriately sized vegetation plots must be established. The following data should be collected from 20m x 20m plots: - Native plant richness and cover - Exotic cover by stratum/growth form - Litter - Bare ground - Cryptogam cover - Vascular plants (cover, abundance, growth form and sub stratum) The following data should be collected from 20m x 50m plots: - Number of trees with hollows	Section 7.4.1 has been updated to include your suggested dot points.

- Coarse woody debris (logs) - Woody regeneration - Woody stem size data - Tree health	
8.1 Clearing Management Pre-clearing surveys Project approval requirement 3(37)e(iv) has not been addressed. Pre-clearing surveys should be conducted prior to clearing of any native vegetation. Implementing staged habitat removal Prior to clearing a qualified ecologist should identify and mark any fauna habitat features to be removed. This will assist implementation of a staged habitat removal and minimize direct impacts on fauna by providing them with the opportunity to vacate hollows naturally. Relocation Site Identification of nearby habitat that would be suitable for the release of fauna that may be encountered during the pre-clearance process or habitat removal should be conducted by a qualified ecologist. Information is required on the proposed sites that fauna will be relocated to following removal from the areas to be cleared. What ability do these sites have to accommodate additional animals? Do the vegetation communities and habitat features correspond to the areas that the animals are being removed from? Will there be a limit placed on the number of animals to be relocated to each site Procedure and Response to Unexpected Threatened Species The project manager and / or environmental manager should develop a procedure and response protocol for unexpected threatened species located on the site during projects and maintenance works. An example of this procedure is provided in the RTA Biodiversity Guidelines (see link at end of this document). Pre-clearing fauna trapping To reduce the impact of the clearing activities on native fauna, an intensive trapping and relocation program should be undertaken immediately prior to the	Section 8.1 has been updated to include a reference to seed harvesting. Section 8.1 has been updated to include reference to the 3 stage Vegetation Clearing Survey (which is also attached in Appendix 3). Section 8.5 Response to the identification of an unexpected threatened species has been added and Appendix 4 now includes a flow chart for the response to discovery of an unexpected threatened species. Tomingley Gold Operations will clear native vegetation of Fauna prior to clearing operations by observing the area to be cleared

clearing event. The trapping should occur over a minimum of three nights of ideal trapping conditions. Trapping should include the use of Elliott trap sizes A and B and any other capture methods considered suitable to particular species. An adequate sample of the animals that are trapped should be fitted with radio tracking devices to record the survival rates of the animals that are relocated. Sample size will vary with the abundance of the species, with 10% of the total sample of a species up to 20 individuals per species typically providing adequate knowledge of relocation success. Details of the radio tracking undertaken should be recorded in the Tree Clearing Reports, with survival rates recorded in the Annual Environmental Monitoring Report. Monitoring and reporting of the animals fitted with these devices should occur for at least 6 months after release. Concerted efforts should be made to recover all radio-collars from animals, with concurrent checks of their body condition and reproductive status. Copies of the reports should be provided to OEH. Weed Mapping Mapping of weed locations within the area to be cleared should be conducted prior to clearing, especially any noxious or environmental weeds. Appropriate control methods should apply prior to clearing where broader distribution is likely to occur. Vegetation Clearing Requirements and Procedures Experienced ecologist and / or wildlife career should be on site during habitat removal. Inform clearing contractors of any changes to the sequence of clearing if required. Post-clearing assessment should follow with the ecologist checking for any fauna that may have been missed during both Stage 1 and Stage 2 of clearing phase. Include the following information in reports for vegetation clearing: • Habitat feature type and location.	for Fauna and relocating any fauna observed. We do not believe that trapping will be required as the clearing is done in very small areas at a time. The Vegetation Clearing Survey (Appendix 4) has been updated to include a survey for noxious weeds prior to clearing operations. Included in Vegetation Clearing Survey (Appendix 4)
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• Number of hours between first and second stage of habitat removal. • Fauna species present. • Fauna species captured. • Fauna species relocated. • Release location. • Condition/behavior of animal upon release. • Fauna injured or killed. Relocation of fauna Staged habitat removal should be implemented. The two stages of habitat removal that should be conducted are: 1. Clearing of trees lacking hollows, followed by 2. Clearing of trees with hollows Trees should be checked for the presence of animals prior to the commencement of Stage 2. OEH encourages that a hollow-bearing tree that contains any species (rather than threatened species only) be retained for a minimum of 48 hours to allow the animal to relocate prior to the next clearing phase. Other recommendations include: 1. Radio tracking an adequate sample of animals captured after the stage 2 clearing and recording and reporting the details of the animals being radio tracked. 2. Recording of the success / survival rate of animals that are reared or released by a wildlife organisation and results included in the annual report requirements. In the first instance, fauna should always be relocated to sites that have the same or better habitat resources compared to the site that is being cleared. Only where this is not possible should sites then be utilised that have fewer habitat resources.	
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Inspection of tree hollows Tree hollows should be inspected for fauna by a qualified ecologist and using a burrow-scope camera or visual observation of exiting individuals if the hollow shape obscures camera imaging. Separation of Woody Debris Woody vegetation being cleared should be separated into: Attachment 1 • Secondary re-use; and • Exotic (non-native) vegetation that requires removal and disposal if its retention is foreseen to have a negative impact on the habitat.	
8.2 Weed Management Method of control, monitoring and inspections need to include targets and measurable performance indicators to demonstrate the extent to which the weed management objectives have been achieved.	Section 8.2 has been updated to include performance targets and a comparison of weed monitoring with performance target
8.3 Fire Management for Conservation In table 10 methods for monitoring the outcomes of ecological burns include 20x20m permanent vegetation plots and rapid vegetation data collection points. There is no detail of what data will be recorded at these plots and how the data will be used.	Table 11 in section 8.3 has been updated to reflect your comments and provide further information.
8.6 Management of feral and overabundant herbivores and vertebrate pests Method of control, monitoring and inspections need to include targets and measurable performance indicators to demonstrate the extent to which the pest management objectives have been achieved. More detail is required as to how success of control programs will be measured.	Section 8.6 has been updated to include Performance Criteria and Table 15 has been updated to include a Monitoring Record and comparison against Performance Criteria
9.1.1 Management of program for cyanide impact on site More detail regarding the fencing is needed to stipulate whether the fencing to be constructed will prevent animals from climbing over the fence and burrowing under.	Section 9.1.1 has been updated to say that TGO will research industry best practice in fauna exclusion fencing and that the fence chosen should be able to prevent animals from climbing over the fence and burrowing under.

Please also find attached a copy of Revision 2 of the Biodiversity Management Plan that has been submitted to Department of Planning.

Please do not hesitate to call me if would like to discuss anything.

Best Regards

Colleen Measday
Environment Superintendent

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F: +61 2 6882 9282
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TOMINGLEY
GOLD OPERATIONS PTY LTD
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This email and its attachments are confidential to the named addressee and may contain legally privileged information. If you have received this email in error please let us know and immediately delete it from your system.

From: Michelle Crawford [mailto:Michelle.Crawford@environment.nsw.gov.au]
Sent: Tuesday, 22 January 2013 3:17 PM
To: Colleen Measday
Cc: Peter Christie
Subject: Tomingley Gold Project Biodiversity Management Plan

Hi Colleen

Please find attached OEH's comments on the Tomingley Gold Project Biodiversity Management Plan. Should you have any queries please do not hesitate to contact Peter Christie, North West Coordinator either via email or on 02 6883 8317.

Regards

Michelle Crawford
Threatened Species Officer
Regional Operations Group
Office of Environment and Heritage
NSW Department of Premier and Cabinet
48-52 Wingewarra Street (Po Box 2111) Dubbo NSW 2830
T: 02 6883 5339 F: 6884 8675
W: www.environment.nsw.gov.au

This email is intended for the addressee(s) named and may contain confidential and/or privileged information.

DEVELOPMENT OF ALTERNATE BIODIVERSITY OFFSET AREA ALLOCATION:

 Reply  Reply All  Forward



Thu 11/12/2014 3:03 PM

Tim Nalder <timothy.nalder@lls.nsw.gov.au>

Re: TGO - PVP modifications

To: Ady Watson

Cc: Mark Williams

 Follow up. Completed on Tuesday, 5 May 2015.
You replied to this message on 15/12/2014 1:32 PM.

Hi Ady,
The changes are very sensible and practical.

If it is not too much trouble it may be best to send all the areas through again (remnant and extension) to make sure what I have is correct. If they could be sent through as shapefiles using coordinate system GDA94.

This will save me a lot of time and makes sure the projection is correct as I have to go of the mapping for the hectares.

After I have mapped it and incorporated the changes into the contract I will send you another draft copy for review.

This will be in January as I only have next week and then we have a compulsory 2 week close down period. I will be back at work on the 5th of January.

Regards,
Tim

Tim Nalder, Senior Land Services Officer
Central Tablelands
Local Land Service
Orange Agricultural Institute | Forrest Rd | PO Box 1344 | Orange NSW 2800

T: 02 6363 7873 | **F:** 02 6363 7880 | **M:** 0438 224 536 |

E: timothy.nalder@lls.nsw.gov.au |

W: <http://centraltablelands.lls.nsw.gov.au> |

Appendix 2: PVP

TGO Property Vegetation Plan



Local Land
Services

Local Land Services

Conservation

PROPERTY VEGETATION PLAN

Native Vegetation Act 2003

TOMINGLEY GOLD OPERATIONS

Tomingley West Road

TOMINGLEY NSW 2869

This Property Vegetation Plan applies to the land described in Schedule 1, as shown on Map 7 in Schedule 4 of this agreement.

The Landholder is authorised to undertake the activities set out in Schedule 2 and agrees to carry out the management actions and management action details set out in Schedule 2. The Landholder agrees to comply with the requirements of Schedule 3.

Notes:

1. The Director-General of Department of Premier and Cabinet (or delegate) will notify the Registrar-General once all landholders and parties with a prescribed interest have consented to the registration of this PVP. Once notified by the Director-General, the Registrar-General is required to register this PVP. This PVP will then be binding on all current and future landholders.
2. This Plan does not exempt the landholder from any Council clearing consent requirements.
3. In order to carry out the works under this PVP, the Landholder may be required to obtain other approvals from other government agencies.

Executed by Tomingley Gold Operations Pty Ltd ACN 149 040 371 in accordance with section 127 of the *Corporations Act 2001* (Commonwealth) by:

David Ian Chalmers

Director – Tomingley Gold Operations Pty Ltd

Signature

2/03/15

Date

Karen Elizabeth Vera Brown

Company Secretary – Tomingley Gold Operations Pty Ltd

Signature

31/3/15

Date

General Manager of Central West Local Land Services

Delegate of the Minister administering the *Native Vegetation Act 2003*

Signature

16/04/2015

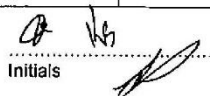
Date

LLS File Ref: CW01825

Request No: 18458

SCHEDULE ONE — DESCRIPTION OF LAND TO WHICH THIS PVP APPLIES

Lot	DP	LGA	Parish	County
104	755110	NARROMINE	GUNDONG	NARROMINE
32	755110	NARROMINE	GUNDONG	NARROMINE
36	755110	NARROMINE	GUNDONG	NARROMINE
105	755110	NARROMINE	GUNDONG	NARROMINE
112	755110	NARROMINE	GUNDONG	NARROMINE
122	755110	NARROMINE	GUNDONG	NARROMINE
1	254193	NARROMINE	GUNDONG	NARROMINE
185	43458	NARROMINE	GUNDONG	NARROMINE
73	755110	NARROMINE	GUNDONG	NARROMINE
74	755110	NARROMINE	GUNDONG	NARROMINE
81	755110	NARROMINE	GUNDONG	NARROMINE
111	755110	NARROMINE	GUNDONG	NARROMINE
30	755110	NARROMINE	GUNDONG	NARROMINE
23	755110	NARROMINE	GUNDONG	NARROMINE
24	755110	NARROMINE	GUNDONG	NARROMINE
25	755110	NARROMINE	GUNDONG	NARROMINE
26	755110	NARROMINE	GUNDONG	NARROMINE
29	755110	NARROMINE	GUNDONG	NARROMINE
31	755110	NARROMINE	GUNDONG	NARROMINE
35	755110	NARROMINE	GUNDONG	NARROMINE
93	755110	NARROMINE	GUNDONG	NARROMINE
92	755110	NARROMINE	GUNDONG	NARROMINE
90	755110	NARROMINE	GUNDONG	NARROMINE


 Initials

Lot	DP	LGA	Parish	County
37	755110	NARROMINE	GUNDONG	NARROMINE
38	755110	NARROMINE	GUNDONG	NARROMINE
39	755110	NARROMINE	GUNDONG	NARROMINE
99	755110	NARROMINE	GUNDONG	NARROMINE
2	254193	NARROMINE	GUNDONG	NARROMINE
3	1151198	NARROMINE	GUNDONG	NARROMINE
2	1151198	NARROMINE	GUNDONG	NARROMINE
101	1191228	NARROMINE	GUNDONG	NARROMINE

16 8
Initials

SCHEDULE TWO — AUTHORISED ACTIVITIES AND MANAGEMENT ACTIONS

MANAGEMENT ACTIONS FOR CONSERVATION PVPS

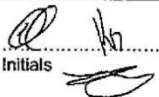
1. The management actions and management action details are to be continued for, or completed within, the duration specified in the column "Duration of Management Action".
2. The management actions and management action details set out below must be undertaken in the specified map unit as identified in Schedule 4.

Map Number (as per Schedule 4)	Map Units	Management Action	Duration of Management Action	Management Action Details
1	1a, 2a, 3a, 4, 5	Supplementary planting	In perpetuity	Where remnant vegetation is present and in low condition (see Appendix A) and natural regeneration is not occurring, the landholder must undertake supplementary planting within 24 months of the commencement of this PVP. Supplementary planting must use indigenous trees, shrubs and groundcover species forming each of the following Vegetation communities: • Inland Grey Box - Poplar Box - White Cypress Pine tall woodland on red loams (Benson 76) in Map Unit 1a. • River Red gum riverine woodland forest (Benson 78) in Map Unit 2a. • Fuzzy Box – Inland Grey Box on alluvial brown loam Soils (Benson 201) in Map Unit 3a. • Poplar Box – Belah Woodland on Clay (Benson 56) in Map Unit 4. • Belah - Black Oak - Western Rosewood - Wilga woodland (Benson 57) in Map Unit 5.
	1b, 2b, 3b	Revegetation	In perpetuity	The landholder must establish indigenous trees, shrubs and groundcover species which form the vegetation communities defined below within 24 months of the commencement of this PVP. • 28.8 ha of Inland Grey Box – Poplar Box - White Cypress Pine tall woodland on red loams (Benson 76) in Map Unit 1b. • 9.9 ha of River Red gum riverine woodland forest (Benson 78) in Map Unit 2b. • 27 ha Fuzzy Box – Inland Grey Box on alluvial brown loam Soils (Benson 201) in Map Unit 3b.
	1a, 1b, 2a, 2b, 3b, 4, 5	Grazing exclusion	In perpetuity	The landholder is to exclude all livestock for a minimum of 10 years to prevent damage to revegetation and native vegetation regeneration. After 10 years of grazing exclusion the landholder may undertake strategic grazing in map Units 1a, 1b, 2a, 2b, 3b, 4 and 5. Grazing must allow at least six months between each grazing event and must not exceed a total of 14 days per calendar year.

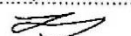
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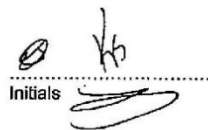
Map Number (as per Schedule 4)	Map Units	Management Action	Duration of Management Action	Management Action Details
1	3a	Strategic grazing	In perpetuity	The landholder may undertake strategic grazing in map Unit 3a at any time for the purpose of decreasing fuel loads to reduce fire risk to the neighbouring residence. Grazing must allow at least six months between each grazing event and must not exceed a total of 14 days per calendar year.
	1a, 1b, 2a, 2b, 3a, 3b, 4, 5	Retain regrowth	In perpetuity	The landholder must retain all native vegetation regrowth and/or natural regeneration of native plant species in Map Units 1a, 1b, 2a, 2b, 3a, 3b, 4 and 5. All regrowth or natural regeneration of native vegetation in Map Units 1a, 1b, 2a, 2b, 3a, 3b, 4 and 5 is classified as 'Protected Regrowth' under the <i>Native Vegetation Act 2003</i> . Non-native vegetation must not be planted or sown in Map Units 1a, 1b, 2a, 2b, 3a, 3b, 4 and 5 at any time.
	1a, 1b, 2a, 2b, 3a, 3b, 4, 5	Clearing Not permitted	In perpetuity	The clearing of native vegetation, whether remnant or regrowth, is not permitted in Map Units 1a, 1b, 2a, 2b, 3a, 3b, 4 and 5 at any time unless otherwise state in this PVP.
		Permitted Routine Agricultural Management Activities (RAMA)	In perpetuity	The Landholder must not clear native vegetation in the area identified as Map Units 1a, 1b, 2a, 2b, 3a, 3b, 4 and 5 for routine agricultural management activities, except when the landholder is clearing native vegetation for the following Routine Agricultural Management Activities: • The operation and maintenance only of permanent fences only (as permitted by s. 22 and s. 11(1)(a) <i>Native Vegetation Act 2003</i> and cl 27 <i>Native Vegetation Regulation 2013</i>); • The removal of noxious weeds under the <i>Noxious Weeds Act 1993</i> (as permitted by s. 22 and s. 11(1)(b) <i>Native Vegetation Act 2003</i>); • The control of pests under the <i>Local Land Services Act 2013</i> (as permitted by s. 22 and s. 11(1)(c) <i>Native Vegetation Act 2003</i>); • The clearing of feral native plant species (as permitted by s. 22 <i>Native Vegetation Act 2003</i> and cl. 37 <i>Native Vegetation Regulation 2013</i>); • The maintenance of public utilities (as permitted by S.22 and S.11(1)(h) <i>Native Vegetation Act 2003</i> and Cl. 37 <i>Native Vegetation Regulation 2013</i>); • Any activity reasonably considered necessary to remove or reduce an imminent risk of serious personal injury or damage to property (as permitted by s. 22 and s. 11(1)(i) <i>Native Vegetation Act 2003</i>). The clearing of any vegetation in contravention of this clause is excluded from being an activity permitted to be carried out under Part 3 Division 3 s.22 of the <i>Native Vegetation Act 2003</i> .

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Map Number (as per Schedule 4)	Map Units	Management Action	Duration of Management Action	Management Action Details
1	1a, 1b, 2a, 2b, 3a, 3b, 4, 5	Control of feral herbivores	Term of project	The landholder must control all pest vertebrates such as cats, feral dogs and foxes from Map Units 1a, 1b, 2a, 2b, 3a, 3b, 4 and 5, (as outlined in the Tomingley Gold Project, Biodiversity Management Plan) at all times.
		Salvaged local timbers	In perpetuity	Salvaged local timbers must be primarily installed in Map Units 1a and 2a along Gundong Creek to rehabilitate the riparian corridor to current Best Management Practices.
		Weed control	In perpetuity	The landholder must control non-native plant species in Map Units 1a, 1b, 2a, 2b, 3a, 3b, 4 and 5 to encourage the establishment of native groundcover species. The landholder must not use herbicides within Map Units 1a, 1b, 2a, 2b, 3a, 3b, 4 and 5 except to spot-spray non-native weed species.
		Retain dead timber	In perpetuity	All dead timber either standing or fallen must be retained in Map Units 1a, 1b, 2a, 2b, 3a, 3b, 4 and 5 in at all times.
		Retention of naturally occurring rocks	In perpetuity	Naturally occurring rocks must not be removed from Map Units 1a, 1b, 2a, 2b, 3a, 3b, 4 and 5 at any time.
		Exclude Fertilisers	In perpetuity	Fertilisers must not be applied within Map Units 1a, 1b, 2a, 2b, 3a, 3b, 4 and 5 at any time.
		Fire Management for Conservation	Term of project	Best Management Practices for fire management for the vegetation types and threatened species present on the site within Map Units 1a, 1b, 2a, 2b, 3a, 3b, 4 and 5 must be implemented during the term of the project. Best management practices must be determined in consultation with the NSW Rural Fire Service (as outlined in the Tomingley Gold Project, Biodiversity Management Plan). The use of fire within Map Units 1a, 1b, 2a, 2b, 3a, 3b, 4 and 5 must be in accordance with the conditions of a Bush Fire Environmental Assessment Code approval issued by the NSW Rural Fire Service.
		Monitor established vegetation points	Term of project	The monitoring of vegetation must follow the Office of Environment and Heritage publication, "Model for Practical Partnerships in Resource Condition, Monitoring Evaluation and reporting 2011", (as outlined in the Tomingley Gold Project, Biodiversity Management Plan). The evaluation and reporting from the monitoring data must lead to constant improvement of the vegetation condition.


 Initials 

Map Number (as per Schedule 4)	Map Units	Management Action	Duration of Management Action	Management Action Details
1	1a, 1b, 2a, 2b, 3a, 3b, 4, 5	Management of human disturbance	Term of project	The landholder must take all reasonable measures to exclude dumping; fire wood collection; and unauthorised human activities at all times. The landholder must install signage clearly stating the land use of offset area as biodiversity conservation at each separate offset area. The erection of signage described in the Management Action titled "Management of human activities" under Management Action Details (b) in this Schedule must be commenced within twelve (12) months of the commencement of clearing.


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SCHEDULE THREE - STANDARD CONDITIONS

Commencement

1. This PVP will commence from the date at which it is signed by the Minister administering the *Native Vegetation Act 2003* (or delegate).

Words and phrases used

2. In this Schedule:

"LLS" means Local Land Services constituted under section 8 of the *Local Land Services Act 2013*;

"Central West Local Land Services" means Local Land Services in the Central West region;

"Landholder" means the landholder who is a party to this PVP and once this PVP is registered all future landholders;

"the works under this PVP" means the clearing, the management actions, the mitigating actions and all other works that the Landholder is authorised or required to take under this PVP;

"the Land" means the land to which this PVP applies;

"OEH" means the Office of Environment and Heritage within the Department of Premier and Cabinet and includes its successor departments or agencies; and

"PVP" means this property vegetation plan.

Monitoring and auditing

3. The carrying out of any works under this PVP may be subject to auditing by members of staff of LLS or officers of OEH who are authorised officers under the *Native Vegetation Act 2003*, as set out in sections 34 and 35.
4. Subject to reasonable notice, the Landholder will allow authorised officers of LLS or OEH access to the Land and allow those officers to do all things reasonably necessary for the purpose of monitoring or auditing compliance with this PVP.
5. Clauses 3 and 4 do not affect the powers of authorised officers of LLS, OEH or other government agencies to carry out investigations under the *Native Vegetation Act 2003*.

Registration of PVP on Title

6. For the purpose of sections 31(1) and 31(2) of the *Native Vegetation Act 2003*, the Landholder consents to the registration of this PVP in accordance with section 31 of the *Native Vegetation Act 2003*.

Dispute resolution

7. The Landholder and Minister (or delegate) agrees to attempt to resolve any dispute in relation to this PVP by negotiation in the first instance. Such negotiation may involve agreeing on a variation to the PVP. However, this clause does not apply to a dispute relating to a possible breach of the *Native Vegetation Act 2003*.
8. Where appropriate, if negotiations are not successful, the Minister (or delegate) agrees to provide a written notice to the Landholder setting out the nature of any contravention and requesting the Landholder to take the steps specified in that notice, in the time specified in that notice, to rectify that contravention. This clause does not apply to a possible breach of the *Native Vegetation Act 2003*.
9. The Landholder agrees to comply with that notice in the time specified in the notice. Failure to comply with that notice is a breach of this plan. If the Landholder does not comply with the notice, the Minister (or delegate) may consider terminating this plan, in accordance with the procedure set out in section 30 of the *Native Vegetation Act 2003*. LLS or OEH may also take other action under that Act.
10. The landholder also agrees to provide access to the property to officers of LLS and OEH.

Note: The procedure for varying or terminating a PVP is set out in section 30 of the *Native Vegetation Act 2003* and clause 11 of the *Native Vegetation Regulation 2013*.

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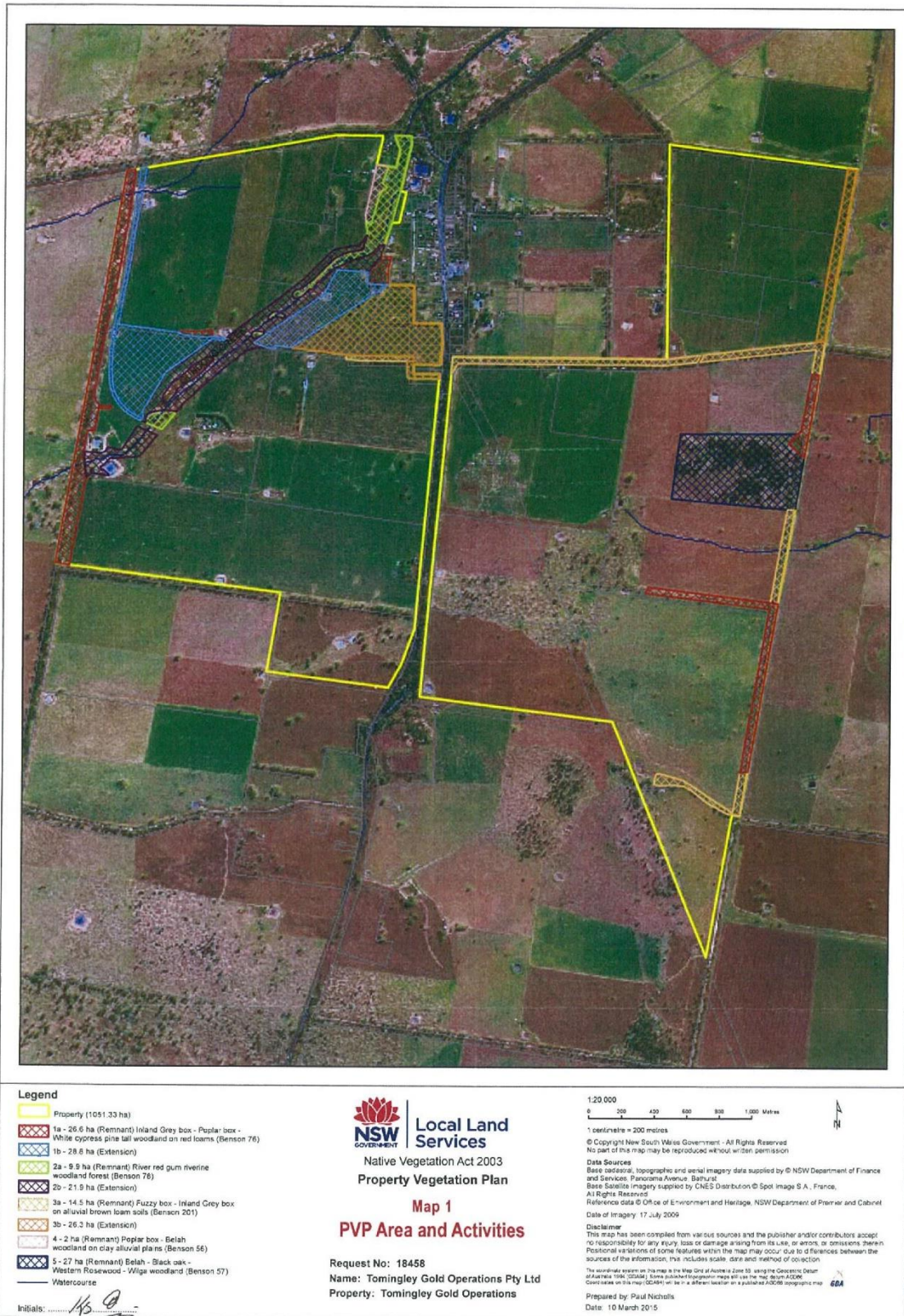


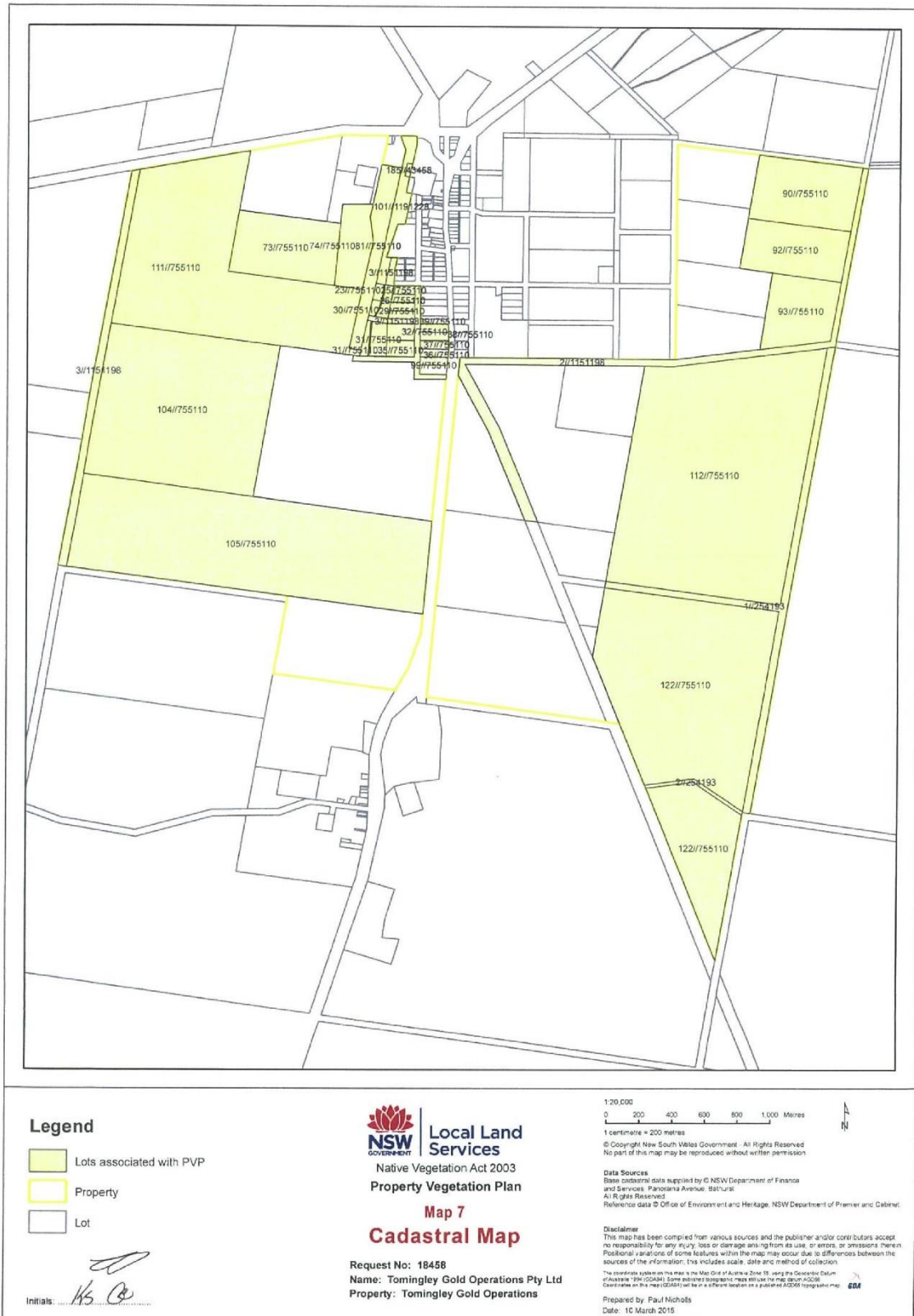


SCHEDULE FOUR — MAPS

Map 1	PVP Area and Activities authorised by this PVP.
Map 2	Not Applicable
Map 3	Not Applicable
Map 4	Not Applicable
Map 5	Not Applicable
Map 6	Not Applicable
Map 7	Cadastral Map of Lots associated with this PVP


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Initials





Appendix 3: Clearing Permit

TGO Clearing Permit Template

SITE		CLEARING PERMIT
DATE		
TIME		
		Ensure all signatures and checkboxes are completed.
1. Any person (the Applicant) intending to perform land clearing on the Tomingley Gold Operations (TGO) leases shall complete this form in accordance with the Standard Operating Procedure SOP – 03002, Vegetation Clearing. 2. The Applicant shall complete Parts 1 – 6, as well as all relevant maps. 3. Provide the original completed form to the TGO Project Manager for approval, 24 hours before works are proposed to be carried out. 4. The TGO Project Manager or TGO Operations Manager shall review and complete Part 7 of this Permit. If approved the TGO Project Manager or TGO Operations Manager shall provide a copy of the signed form to the Applicant. 5. A copy of the completed form shall be provided to the TGO Environmental Superintendent. 6. TGO Environmental Superintendent to complete Part 8. 7. Keep a copy of the completed form in the site clearing register.		
PART 1	Tenement: MLA 399	
LAND DETAILS	Area:	
	Landholder: not applicable if on ML or EL	
PART 2 PROPOSAL	Attach a map showing the extend of clearing. The extent of clearing should be shaded on the map.	
	LOCATION POINT	EASTINGS
	NORTHINGS	
	Please describe the area to be cleared or provide Eastings and Northings	
Purpose of clearing		
e.g. To establish an area for construction of 2 x 21ha cells in the TGO RSF		

	Total area of proposed clearing (hectares) and/or number of individual trees to be removed Table showing: Yy m X zz m = zz hectares total cumulative hectare disturbance to date total hectare disturbance design What type of vegetation Community? - refer to Biodiversity Management Plan total trees to be removed design			
	Proposed method of clearing and disposal of cleared vegetation Large Box trees to be stockpiled separate to smaller material e.g. Loader to be used to skim above land surface to remove only scrub and dead wood. Topsoil and subsoil not to be disturbed.			
	Period for which clearing is proposed to be undertaken (e.g. 1 June 2009 – 6 June 2009) XXXX			
PART 3 SET OUT	Has the area to be cleared been marked out on site? ☐ Yes ☐ No			
PART 4 INSTRUCTION OF STAFF	Has the machine operator been advised to stay within the areas marked out for clearing? Has this person been advised that if the tree contains a hollow they are too gradually nudge the tree, in order to allow any nesting animal time to escape prior to felling. ☐ Yes ☐ No			
PART 4 ECOLOGIST	Has an ecologist been engaged to check the area to be cleared for the presence of nesting/roosting species just prior to clearing? The ecologist will remain on site during clearing to relocate any animals that may be sighted during clearing and to check the felled vegetation post-clearing. ☐ Yes ☐ No			
PART 5 HERITAGE	Are there any artefact scatters or scarred trees in this area? Check with Cultural Heritage Management Plan ☐ Yes ☐ No			
PART 6 APPLICANT SIGNATURES	CONTRACTOR (APPLICANT)	Department	Name	Time
		Section	Signature	Date

	Mintrex Construction Supervisor	Department	Name	Time
		Section	Signature	Date
PART 7 MANAGER APPROVAL	TGO OPERATIONS/ TGO PROJECT MANAGER	Department	Name	Time
		Section	Signature	Date
PART 8 MONITORING & REVIEW	TGO ENVIRONMENTAL SUPERINTENDENT	Date of Inspection		
		Area disturbed (ha)		
		Seed Collection Potential Can any seeds be collected from Mature trees?	Expected completion date	
DISTRIBUTION	☐ CONTRACTOR ☐ TGO OPERATIONS /TGO PROJECT MANAGER ☐ ENVIRONMENTAL SUPERINTENDENT			

Appendix 4: Clearing Template

TGO Vegetation Clearing Survey Template



Vegetation Clearing Survey

STAGE 1 - PRE – CLEARING SURVEY				
Date Surveyed				
Name				
Area of Works (Inc. map)				
Process: Walk the area to be cleared and mark out and identify any potential habitat to be removed. Observe the habitat for Fauna. Identify nearby habitat that would be suitable for the release of any fauna identified or that may be encountered during the clearing works. Things to consider, will include; The ability of the area to accommodate additional animals. Do the habitat features and vegetation communities correspond to the areas the animals were removed from? Capture and relocate any Fauna where it is possible to do so. Check the vegetation to be cleared for the presence of any noxious weeds. Inform the site supervisor if any special requirements are to be made for vegetation with the presence of noxious weeds. Inform the site supervisor that the area has been checked fauna removed and clearing is ok to proceed. Inform the supervisor and machine operator of any special instructions during clearing: For example: A large log is located in the first 50m, please nudge the log and wait for any previously unseen animals to escape. Fill in the table below for work undertaken during Pre-Clearing Survey:				
Habitat Feature Identified	Fauna Species Present	Fauna Species Captured	Fauna Species Relocated	Condition and behaviour of the animal upon release



Vegetation Clearing Survey

Weed Management				
Are there any noxious weeds present in the area to be cleared?		Action to be taken with the vegetation containing noxious weeds.		



Vegetation Clearing Survey

STAGE 2 - CLEARING MONITORING			
Process: During clearing operations maintain radio contact with the operator. If an animal is sighted inform the operator to cease works and attempt to relocate the animal prior to recommencing clearing. Fill in the table below for any work undertaken during clearing operations:			
Fauna Species Captured	Fauna Species Relocated	Condition and behaviour of the animal upon release	Additional Comments
Injured or Killed Fauna In the event that an animal is injured please take them to: • Don Crosby Veterinary Surgeons, 327 Darling Street, Dubbo; Ph: (02) 68855544 • Alternatively call WIRES on 1300 094 737			
Were any animals injured			
Were there any animal deaths			



Vegetation Clearing Survey

STAGE 3 – POST CLEARING SURVEY			
Process: Following clearing operations walk over the cleared site and check for the presence on Fauna, also check in the hollows of felled trees.			
Fauna Species Captured	Fauna Species Relocated	Condition and behaviour of the animal upon release	Additional Comments

Appendix 5: Unexpected Finds

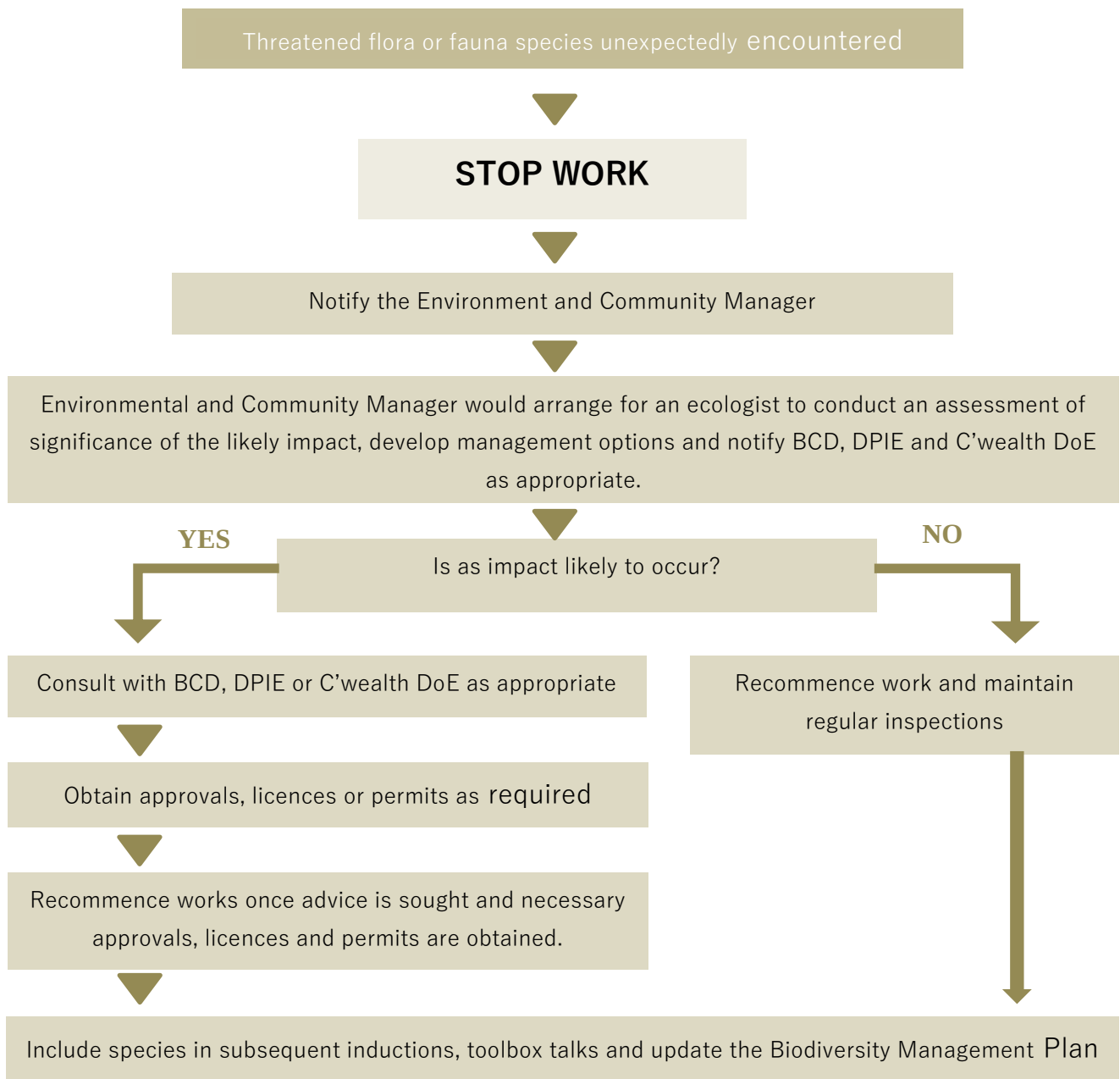
TGO Unexpected threatened species finds procedure.

Unexpected threatened species finds procedure

Purpose

This procedure details the actions to be taken when a threatened flora or fauna species is unexpectedly encountered on site.

Procedure



Appendix 6: PCT's

Vegetation Community Descriptions and Benchmarks.

Inland Grey Box endangered ecological community (EEC)

PCT ID: 76

Vegetation type: Western Grey Box tall grassy woodland on alluvial loam and clay soils in the NSW South Western Slopes and Riverina Bioregions

Upper stratum species: *Eucalyptus microcarpa*; *Callitris glaucophylla*; *Allocasuarina luehmannii*;

Mid stratum species: *Dodonaea viscosa* subsp. *cuneata*; *Acacia buxifolia* subsp. *buxifolia*; *Bursaria spinosa* subsp. *spinosa*; *Acacia oswaldii*; *Acacia pycnantha*; *Acacia hakeoides*; *Acacia brachybotrya*; *Santalum acuminatum*; *Acacia homalophylla*; *Templetonia stenophylla*; *Exocarpos aphyllus*;

Ground stratum species: *Austrodanthonia caespitosa*; *Chloris truncata*; *Sida corrugata*; *Austrostipa scabra* subsp. *falcata*; *Wahlenbergia gracilis*; *Einadia nutans* subsp. *nutans*; *Paspalidium constrictum*; *Themeda australis*; *Austrostipa aristiglumis*; *Aristida behriana*; *Elymus scaber* var. *scaber*; *Austrodanthonia setacea*; *Carex inversa*; *Poa sieberiana*; *Vittadinia gracilis*; *Dianella porracea*; *Salsola tragus* subsp. *tragus*; *Oxalis perennans*; *Atriplex semibaccata*; *Chamaesyce drummondii*; *Lomandra filiformis* subsp. *coriacea*; *Asperula conferta*; *Convolvulus erubescens*; *Rhodanthe corymbiflora*; *Austrostipa bigeniculata*; *Enchylaena tomentosa*; *Leiocarpa panaetioides*; *Podolepis jaceoides*; *Atriplex semibaccata*;

Landform pattern: Plain or Peneplain

Vegetation description: Low to mid-high woodland or open woodland dominated by Belah (*Casuarina cristata*) intergrading with Black Oak (*Casuarina pauper*) with Western Rosewood (*Alectryon oleifolius* subsp. *canescens*) and Wilga (*Geijera parviflora*), Leafless Cherry (*Exocarpos aphyllus*) and Warrior Bush (*Apophyllum anomalum*) and low shrubs dominated by Bluebushes (*Maireana*) and other chenopods. Occurring on texture contrast soils of brown to red-brown sandy loams sometimes overlying red to red-brown clays or on claypans of silty clay on the eastern and northern edges of the Hay Plain from near Lake Cowal in the east to Gunbar to Ivanhoe to Round Hill/Hillston mainly in the Riverina Bioregion on the south west plains of NSW with outliers on the lower slopes of the NSW South-western Slopes Bioregion. Largely cleared especially in eastern areas.

BENCHMARK COMPOSITION – Species richness- Count

	Trees	Shrubs	Grass and grass like	Forbs	Fern	Other
Benchmark	3	5	7	11	1	1

BENCHMARK STRUCTURE – Percent cover

	Trees	Shrubs	Grass and grass like	Forbs	Fern	Other
Benchmark	31	2	23	5	0	0

BENCHMARK FUNCTION – Habitat values etc

	Coarse woody debris (m)	Litter cover (percent)	Number of large trees
Benchmark	49	65	3

Fuzzy Box EEC

PCT ID: 201

PCT name: Fuzzy Box Woodland on alluvial brown loam soils mainly in the NSW South Western Slopes Bioregion

Upper stratum species: *Eucalyptus conica*; *Eucalyptus melliodora*; *Eucalyptus microcarpa*; *Allocasuarina luehmannii*; *Eucalyptus blakelyi*; *Brachychiton populneus* subsp. *populneus*; *Eucalyptus populnea* subsp. *bimbil*; *Callitris glaucophylla*;

Mid stratum species: *Acacia deanei* subsp. *deanei*; *Maireana microphylla*; *Dodonaea viscosa* subsp. *cuneata*; *Geijera parviflora*; *Senna form taxon artemisioides*; *Myoporum montanum*; *Acacia implexa*; *Cassinia aculeata*; *Sclerolaena muricata* var. *muricata*; *Maireana enchylaenoides*; *Acacia penninervis* var. *penninervis*; *Amyema miquelii*; *Dendrophthoe glabrescens*; *Swainsona galegifolia*;

Ground stratum: *Austrostipa scabra* subsp. *scabra*; *Chloris truncata*; *Calotis cuneifolia*; *Eremophila debilis*; *Sida corrugata*; *Einadia hastata*; *Austrodanthonia setacea*; *Austrodanthonia fulva*; *Vittadinia cuneata*; *Themeda australis*; *Carex appressa*; *Bulbine semibarbata*; *Aristida ramosa*; *Austrostipa verticillata*; *Glycine clandestina*; *Dianella revoluta* var. *revoluta*; *Xerochrysum viscosum*; *Oxalis chnoodes*; *Elymus scaber* var. *scaber*; *Cheilanthes sieberi* subsp. *sieberi*; *Hydrocotyle laxiflora*; *Einadia nutans* subsp. *nutans*; *Hypericum gramineum*; *Dichondra* sp. A; *Wahlenbergia luteola*; *Atriplex spinibractea*; *Cyperus gracilis*; *Carex inversa*; *Desmodium varians*; *Rumex brownii*; *Glycine tabacina*; *Veronica calycina*; *Bothriochloa macra*;

Landform pattern: Alluvial plain, Flood plain, Low hills.

Vegetation description: Tall woodland or open forest dominated by Fuzzy Box (*Eucalyptus conica*) often growing with Western Grey Box (*Eucalyptus microcarpa*), Yellow Box (*Eucalyptus melliodora*) or Kurrajong (*Brachychiton populneus* subsp. *populneus*). Buloke (*Allocasuarina luehmannii*) is common in places. Shrubs are generally sparse and include *Acacia deanei* subsp. *deanei*, *Dodonaea viscosa* subsp. *cuneata*, *Geijera parviflora*, *Acacia implexa*, *Senna artemisioides* sens lat., *Myoporum montanum* and *Cassinia aculeata*. Small shrubs include *Maireana enchylaenoides*, *Maireana microphylla* and *Sclerolaena muricata* var. *muricata*. The ground cover may be dense after rain but is usually mid-dense and may be dominated by weed species. Native forbs include *Calotis cuneifolia*, *Eremophila debilis*, *Sida corrugata*, *Einadia hastata*, *Dianella revoluta* var. *revoluta* and *Xerochrysum viscosa*. Native grasses include *Austrostipa scabra* subsp. *scabra*, *Chloris truncata*, *Elymus scaber* var. *scaber*, *Themeda australis* and *Austrodanthonia setacea*. Weeds may be very common. They include the pepper Tree *Schinus areica* and forb species such as *Plantago lanceolata*, *Lepidium africanum*, *Verbena bonariensis* and *Marrubium vulgare* and the grass species *Bromus diandrus*, *Vulpia myuros*, *Lolium perenne* and *Paspalum dilatatum*. This community occurs on brown loam or clay, alluvial or colluvial soils on flats, low slopes, prior streams and abandoned channels or slight depressions on the undulating plains mainly in the NSW South-western Slopes Bioregion but extending into the Cobar Peneplain and Brigalow Belt South Bioregions. Outliers occur near Byalong in the east. Most abundant in the Forbes district but extends north to Narromine. This community often occurs upslope from River Red Gum communities just above frequently inundated areas on the floodplain. Less than 5% of this community is estimated to remain compared to pre-European times due to past clearing. Clearing has largely ceased now but other ecological problems prevail such as senescence, lack of fire and weed invasion. It is considered a critically endangered community with less than 0.5% in protected areas. as of 2005 a small stand of 27 ha was represented in a reserve - at Weddin Mountains National Park. This community requires both protection in reserves or on private land and rehabilitation. Grades into and is like ID202 in the central part of the Brigalow Belt South Bioregion.

BENCHMARK COMPOSITION – Species richness- Count

	Trees	Shrubs	Grass and grass like	Forbs	Fern	Other
Benchmark	3	4	7	9	1	1

BENCHMARK STRUCTURE – Percent cover

	Trees	Shrubs	Grass and grass like	Forbs	Fern	Other
Benchmark	11	2	20	5	0	0

BENCHMARK FUNCTION – Habitat values etc

	Coarse woody debris (m)	Litter cover (percent)	Number of large trees
Benchmark	34	35	2

River Red Gum riverine woodland forest

PCT ID: 78

PCT name: River Red Gum riparian tall woodland / open forest wetland in the Nandewar Bioregion and Brigalow Belt South Bioregion

Upper stratum species: *Eucalyptus camaldulensis*; *Angophora floribunda*; *Casuarina cunninghamiana*; *Eucalyptus melliodora*; *Eucalyptus blakelyi*; *Eucalyptus albens*; *Eucalyptus melanophloia*; *Callitris glaucophylla*; *Melaleuca bracteata*; *Brachychiton populneus* subsp. *populneus*;

Mid stratum species: *Callistemon sieberi*; *Leptospermum polygalifolium*; *Acacia deanei*; *Leptospermum brachyandrum*; *Leptospermum brevipes*; *Notelaea microcarpa* var. *microcarpa*; *Nyssanthus diffusa*; *Maireana microphylla*; *Jasminum lineare*; *Clematis glycinoides* var. *glycinoides*; *Cymbidium canaliculatum*; *Geijera parviflora*; *Acacia spectabilis*; *Acacia leucoclada* subsp. *leucoclada*; *Atriplex muelleri*; *Amyema cambagei*;

Ground stratum species: *Arundinella nepalensis*; *Austrostipa verticillata*; *Elymus scaber* var. *scaber*; *Lomandra longifolia*; *Aristida vagans*; *Cynodon dactylon*; *Swainsona galegifolia*; *Ajuga australis*; *Einadia trigonos* subsp. *stellulata*; *Urtica incisa*; *Sida rhombifolia*; *Commelina cyanea*; *Cheilanthes austrotenuifolia*; *Gahnia aspera*; *Eremophila debilis*; *Cymbopogon refractus*; *Carex incomitata*; *Cyperus gracilis*; *Cyperus gymnocaulos*; *Carex appressa*; *Rumex brownii*; *Cullen tenax*; *Dichanthium sericeum* subsp. *sericeum*; *Boerhavia dominii*; *Paspalidium aversum*; *Lachnagrostis filiformis*; *Chenopodium pumilio*; *Paspalum distichum*; *Mentha sativoides*; *Elymus scaber* var. *scaber*; *Sorghum leiocladum*; *Imperata cylindrica* var. *major*; *Lepidium pseudohyssopifolium*; *Juncus ochrocoleus*; *Daucus glochidiatus*; *Poa sieberiana*; *Ranunculus sessiliflorus* var. *sessiliflorus*; *Echinopogon ovatus*; *Bothriochloa decipiens*; *Austrostipa ramosissima*; *Dichelachne micrantha*; *Aristida vagans*; *Juncus continuus*; *Olearia elliptica* subsp. *elliptica*; *Hypericum gramineum*; *Plantago debilis*; *Alternanthera denticulata*; *Oxalis radicata*;

Landform pattern: Flood plain, Hills, Low hills

Vegetation description: Tall open forest or woodland to 30 m high composed of River Red Gum (*Eucalyptus camaldulensis*) often with Rough-barked Apple (*Angophora floribunda*), Yellow Box (*Eucalyptus melliodora*) or River Oak (*Casuarina cunninghamiana*). Blakely's Red Gum (*Eucalyptus blakelyi*) may intergrade with River Red Gum. Small trees include *Melaleuca bracteata* and in northern rivers *Callistemon viminalis*. The shrub layer is sparse but may contain thickets of *Callistemon sieberi*, wattles such as *Acacia deanei*, tea tree species such as *Leptospermum polygalifolium*, *Leptospermum brachyandrum* and mock olive (*Notelaea microcarpa* var. *microcarpa*). Small shrubs include *Swainsona galegifolia*, *Nyssanthus erecta* and *Maireana microphylla*. Due to its presence near rivers or creeks the ground cover is often dense and is composed of a mixture of forbs, graminoids and sedges. Forbs include *Alternanthera denticulata*, *Commelina cyanea*, *Einadia hastata*, *Ajuga australis* and *Urtica incisa*. Graminoids include *Lomandra longifolia* and the grasses *Arundinella nepalensis*, *Austrostipa verticillata*, *Cynodon dactylon*, *Aristida vagans*, *Cymbopogon refractus*, *Paspalidium aversum*, *Lachnagrostis filiformis*, *Paspalum distichum* and *Paspalidium jubiflorum*. Sedges include *Cyperus gracilis*, *Cyperus gymnocaulos*, *Carex incomitata* and *Carex appressa*. Weeds are often abundant and include the willow (*Salix babylonica*), Pepper Tree (*Schinus areira*), African Boxthorn (*Lycium ferrosissimum*), *Phalaris* (*Phalaris paradoxa*) and ground weeds such as *Xanthium* spp. *Aster subulatus*, *Datura ferox*, *Cirsium vulgare* and Coolatai Grass (*Hyparrhenia hirta*). This community occurs on alluvial loamy soils, on the banks or watercourses and on adjoining flats in undulating low hills or hill landscapes in the Nandewar and Brigalow Belt South Bioregion. The watercourses flood regularly. Merges downstream with the River Red Gum communities on the Darling Riverine Plains (ID36) where Black Box, Coolabah, Lignum and River Cooba (*Acacia stenophylla*) become more abundant. Grades upslope into White Box (*Eucalyptus albens*), Grey Box (*Eucalyptus moluccana*) or Poplar Box (*Eucalyptus populnea*) woodlands.

BENCHMARK COMPOSITION – Species richness- Count

	Trees	Shrubs	Grass and grass like	Forbs	Fern	Other
Benchmark	3	3	4	9	1	0

BENCHMARK STRUCTURE – Percent cover

	Trees	Shrubs	Grass and grass like	Forbs	Fern	Other
Benchmark	36	0	18	4	0	0

BENCHMARK FUNCTION – Habitat values etc

	Coarse woody debris (m)	Litter cover (percent)	Number of large trees
Benchmark	82	51	4

Poplar Box – Belah woodland – Preliminary listing as Poplar Box grassy Woodland on Alluvial Plains TEC
PCT ID: 56

PCT name: Poplar Box - Belah woodland on clay-loam soils on alluvial plains of north-central NSW

Upper stratum species: *Eucalyptus populnea* subsp. *bimbi*; *Casuarina cristata*; *Allocasuarina luehmannii*; *Callitris glaucophylla*; *Eucalyptus microcarpa*; *Atalaya hemiglauca*; *Corymbia tessellaris*;
Mid stratum species: *Geijera parviflora*; *Alectryon oleifolius* subsp. *canescens*; *Rhagodia spinescens*; *Sclerolaena birchii*; *Sclerolaena muricata*; *Capparis mitchellii*; *Enchylaena tomentosa*; *Myoporum montanum*; *Alectryon oleifolius* subsp. *elongatus*; *Apophyllum anomalum*; *Capparis lasiantha*; *Santalum acuminatum*; *Abutilon oxycarpum*; *Citrus glauca*; *Maireana decalvans*; *Eremophila deserti*; *Notelaea microcarpa* var. *microcarpa*;

Ground stratum species: *Chloris truncata*; *Einadia nutans* subsp. *nutans*; *Enteropogon acicularis*; *Oxalis chnoodes*; *Austrostipa scabra* subsp. *scabra*; *Dichanthium sericeum* subsp. *sericeum*; *Aristida jerichoensis* var. *jerichoensis*; *Tetragonia moorei*; *Austrostipa verticillata*; *Aristida behriana*; *Bulbine alata*; *Erodium crinitum*; *Wahlenbergia fluminalis*; *Brachyscome heterodonta* var. *heterodonta*; *Galium gaudichaudii*; *Diplachne muelleri*; *Pycnosorus globosus*; *Goodenia fascicularis*; *Ptilotus exaltatus* var. *exaltatus*; *Calocephalus sonderi*; *Sida filiformis*; *Thellungia advena*; *Pratia concolor*; *Velleia paradoxa*; *Phyllanthus virgatus*; *Ajuga australis*; *Malvastrum coromandelianum*; *Eragrostis leptostachya*; *Vittadinia sulcata*; *Wahlenbergia communis*; *Eragrostis elongata*; *Cyperus betchei* subsp. *betchei*; *Atriplex leptocarpa*; *Sporobolus actinocladius*; *Maireana decalvans*; *Sclerolaena stelligera*; *Sclerolaena tricuspidis*; *Maireana coronata*; *Hypericum gramineum*; *Brunoniella australis*; *Wahlenbergia gracilis*;

Landform pattern: Alluvial plain.

Vegetation description: Tall to mid-high woodland dominated by Poplar Box (*Eucalyptus populnea* subsp. *bimbi*) and Belah (*Casuarina cristata*) commonly with the small tree Western Rosewood (*Alectryon oleifolius*). Tall shrubs are sparse and include Wilga (*Geijera parviflora*), Warrior Bush (*Apophyllum anomalum*), *Capparis* spp., *Citrus glauca* and Thorny Rhagodia (*Rhagodia spinescens*). Low shrubs include Galvanized Burr (*Sclerolaena birchii*), Black Roly Poly (*Sclerolaena muricata*), other copperburs, *Maireana coronata*, *Maireana decalvans* and *Enchylaena tomentosa*. The ground cover is sparse during dry times but mid-dense after rain and includes grasses such as *Chloris truncata*, *Enteropogon acicularis* and *Austrostipa scabra* subsp. *scabra*. Forb species include *Einadia nutans* subsp. *nutans*, *Oxalis chnoodes*, *Bulbine alata*, *Erodium crinitum*, *Wahlenbergia fluminalis* and *Brachyscome heterodonta*. Generally occurring on pink to brown loamy sand or light clay in the transition zone between the floodplain and the peneplain in the central and northern plains of the NSW wheatbelt in the temperate (no dry season - hot summer) and dry subtropical climate zones with annual precipitation between 300 and 550 mm. As of 2008, more than half of this community had been cleared. On-going threats include clearing, weed invasion and lack of recruitment of some species due to grazing pressure.

BENCHMARK COMPOSITION – Species richness- Count

	Trees	Shrubs	Grass and grass like	Forbs	Fern	Other
Benchmark	3	6	5	7	0	1

BENCHMARK STRUCTURE – Percent cover

	Trees	Shrubs	Grass and grass like	Forbs	Fern	Other
Benchmark	22	5	18	5	0	0

BENCHMARK FUNCTION – Habitat values etc

	Coarse woody debris (m)	Litter cover (percent)	Number of large trees
Benchmark	55	36	3

Belah/ Black Oak woodland

PCT ID: 57

PCT name: Belah/Black Oak - Western Rosewood - Wilga woodland of central NSW including the Cobar Peneplain Bioregion

Upper stratum species: *Casuarina cristata*; *Casuarina pauper*; *Eucalyptus populnea* subsp. *bimil*; *Eucalyptus intertexta*; *Callitris glaucophylla*;

Mid stratum species: *Alectryon oleifolius* subsp. *canescens*; *Geijera parviflora*; *Apophyllum anomalum*; *Exocarpos aphyllus*; *Senna form taxon filifolia*; *Maireana decalvans*; *Maireana georgei*; *Rhagodia spinescens*; *Maireana pyramidata*; *Eremophila mitchellii*; *Eremophila sturtii*; *Eremophila glabra*; *Eremophila deserti*; *Capparis mitchellii*; *Olearia pimeleoides*; *Hakea tephrosperma*; *Hakea leucoptera* subsp. *leucoptera*; *Eremophila longifolia*; *Dodonaea viscosa* subsp. *cuneata*; *Jasminum lineare*;

Ground stratum species: *Enchylaena tomentosa*; *Atriplex stipitata*; *Sclerolaena diacantha*; *Sclerolaena birchii*; *Zygophyllum glaucum*; *Salsola tragus* subsp. *tragus*; *Chenopodium desertorum* subsp. *anidiophyllum*; *Calotis cuneifolia*; *Rhodanthe floribunda*; *Aristida jerichoensis* var. *subspinulifera*; *Austrodanthonia caespitosa*; *Austrostipa scabra* subsp. *scabra*;

Landform pattern: Plain or peneplain

Vegetation description: Low to mid-high woodland or open woodland dominated by Belah (*Casuarina cristata*) intergrading with Black Oak (*Casuarina pauper*) with Western Rosewood (*Alectryon oleifolius* subsp. *canescens*) and Wilga (*Geijera parviflora*), Leafless Cherry (*Exocarpos aphyllus*) and Warrior Bush (*Apophyllum anomalum*) and low shrubs dominated by Bluebushes (*Maireana*) and other chenopods. Occurring on texture contrast soils of brown to red-brown sandy loams sometimes overlying red to red-brown clays or on claypans of silty clay on the eastern and northern edges of the Hay Plain from near Lake Cowal in the east to Gunbar to Ivanhoe to Round Hill/Hillston mainly in the Riverina Bioregion on the south west plains of NSW with outliers on the lower slopes of the NSW South-western Slopes Bioregion. Largely cleared especially in eastern areas.

BENCHMARK COMPOSITION – Species richness- Count

	Trees	Shrubs	Grass and grass like	Forbs	Fern	Other
Benchmark	4	10	5	7	0	1

BENCHMARK STRUCTURE – Percent cover

	Trees	Shrubs	Grass and grass like	Forbs	Fern	Other
Benchmark	8	9	6	2	0	0

BENCHMARK FUNCTION – Habitat values etc

	Coarse woody debris (m)	Litter cover (percent)	Number of large trees
Benchmark	45	40	5

Appendix 7: Conservation Bond



20 June 2014

NSW Planning & Environment
GPO Box 39
Sydney NSW 2001

Attn: Mr Kane Winwood
Team Leader, Mining Projects

REGISTERED POST

Dear Mr Winwood,

**MP 09_0155 - BIODIVERSITY BOND
TOMINGLEY GOLD PROJECT**

We refer to previous correspondence between yourself and Mark Williams from our site office and enclose original Banker's Undertaking in respect of the required Biodiversity Bond for the Tomingley Gold Project:

Please contact Mark at site (02 6867 9780) or myself at head office (08 9227 5677) if you have any further requirements or queries.

Yours sincerely,



Karen Brown
Tomingley Gold Operations Pty Ltd
Joint Company Secretary

cc. Mark Williams

Enc.



Westpac Banking Corporation ABN 33 007 457 141

Business Loan Centre NSW
1 King Street
Concord West NSW 2138
General Enquiries Telephone: 0287673310
Facsimile: 0287673239
To enquire about a demand on a Guarantee: (02) 8767 3310

BANKER'S UNDERTAKING

To: NSW Department of Planning & Environment ABN 38 755 709 681 of 23-33 Bridge Street, Sydney NSW 2000 (the "Favouree")

At the request of: TOMINGLEY GOLD OPERATIONS PTY LTD ACN 149 040 371 (the "Customer")

and in consideration of the Favouree accepting this Undertaking to satisfy condition 38 of the Tomingley Gold Project Approval (MP 09_0155)

, WESTPAC BANKING CORPORATION (the "Bank") unconditionally undertakes to pay on demand any amount or amounts which may from time to time be demanded in writing purporting to be signed by or on behalf of the Favouree, up to a maximum aggregate sum of \$105,941.17 (the "Amount").

Payment of the Amount or any part thereof will be made by the Bank to the Favouree without reference to the Customer and regardless of any notice from the Customer to the Bank not to pay any amount.

The Bank's obligations under this Undertaking cease on the earliest of the following:

- written notification is received by the Bank from the Favouree that the Undertaking is no longer required
- the Undertaking is returned to the Bank
- all payments by the Bank to the Favouree under the Undertaking total the Amount
- the Favouree notifies the Bank that the payments made by the Bank constitute the total amount required to be paid

Notwithstanding any other obligations of the Bank under this Undertaking the Bank may at any time, without being required to do so, extinguish any liability it has under the Undertaking by paying to the Favouree the Amount less any amount or amounts it has previously paid under this Undertaking, or any lesser amount the Favouree notifies the Bank as being acceptable to it.

The benefit of this Undertaking is personal to the named Favouree and is not capable of assignment.

BANKER'S UNDERTAKING

By: WESTPAC BANKING CORPORATION ABN 33 007 457 141 (the "Bank")

To: NSW Department of Planning & Environment ABN 38 755 709 681 of 23-33 Bridge Street, Sydney NSW 2000 (the "Favouree")

At the request of: TOMINGLEY GOLD OPERATIONS PTY LTD ACN 149 040 371 (the "Customer")

Amount: \$105,941.17

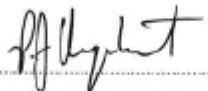
Liability No: GXL12171

Dated at 1 King Street, Concord West, NSW 2138, this 16 June 2014

I certify that the Attorney for the Bank, with whom I am personally acquainted or as to whose identity I am otherwise satisfied, signed this instrument in my presence.

SIGNED by
as attorney for Westpac Banking Corporation ABN 33 007 457 141 under power of attorney registered 17 January 2001.

Robert Abbot
Tier 3 Attorney

Signature of Witness: 

Name of Witness: PHILIP J URDUNHART

Address of Witness: 109 ST GEORGES TCE
PERTH WA 6000

Signature 
By executing this instrument the attorney states that the attorney has received no notice of the revocation of the power of attorney.

Please forward all notices and correspondence to The Manager, Westpac Banking Corporation at Business Loan Centre NSW 1 King Street Concord West NSW 2138 (ref: Commercial Banking, 109 St Georges Terrace, WA branch).

Appendix 8: RSF Monitoring Sheet

RESIDUE STORAGE FACILITY

Name: _____ Date: _____ Shift: am / pm D/S or N/S

CONDITION INSPECTIONS	TIME	
Water Against Walls Inside RSF	Y / N	Y / N
Pipeline - Any leaks?	Y / N	Y / N
Dam Wall- Any cracks, erosion or slumping?	Y / N	Y / N
Water Freeboard < 1.0m	Y / N	Y / N
Slurry Freeboard < 0.5m	Y / N	Y / N
Seepage - Any signs of seepage from RSF?	Y / N	Y / N

South Wall Drainage		
Time		
Totaliser (m ³)		

WILDLIFE OBSERVATIONS: CIRCLE THE RELEVANT OBSERVATION

Weather	Hot	Cold	Windy	Rainy		
Number of Fauna on the Cells	0	1	2-5	6-10	11-25	25+
Type of Fauna	Bird	Kangaroo	Other mammal	Reptile	Other	
Fauna Location	Wall	Dry tailings	Wet tailings			

Any Observable Deaths

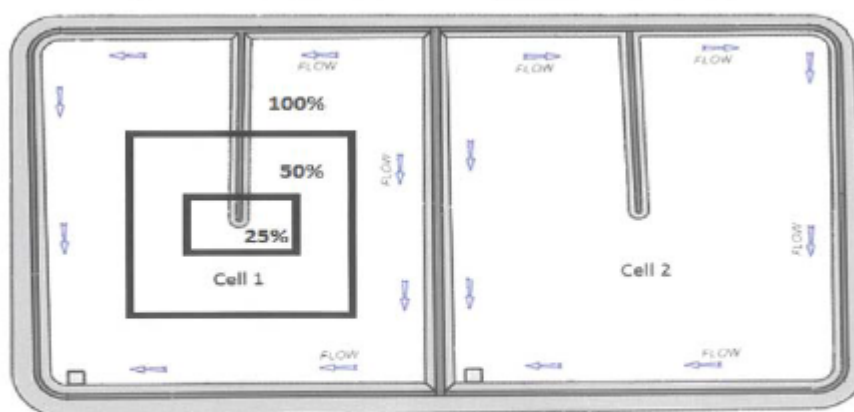
Y / N

If YES, notify Production Superintendent (or on call person) and ensure the area is not disturbed. Do not retrieve or handle dead carcasses as they can contain disease.

Draw Decant Water Area on both cells

Cell 1 Decant Pond Area (%)

Cell 2 Decant Pond Area (%)



Comments

Safety/Environmental

If YES for any of the above make a comment below: