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Independent Biodiversity Audit

Tarrawonga Coal Pty Ltd

11 September 2023

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Independent Biodiversity Audit

Tarrawonga Coal Pty Ltd



Dr Toivo Zoete
Principal Consultant



Oliver Moore
Partner in Charge

Environmental Resources Management Australia Pty Ltd
Level 14 207 Kent Street
Sydney NSW 2000

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Acronyms and Abbreviations

Name	Description
BCS	Biodiversity Conservation and Science Directorate
BMP	Biodiversity Management Plan
BVT	Biometric Vegetation Type
CCC	Community Consultative Committee
CoA	Condition of Approval
DAWE	Department of Agriculture, Water and the Environment (Commonwealth)
DPE	Department of Planning and Environment
DPIE Water	Department of Primary Industry Water
IBA	Independent Biodiversity Audit
LLS	Local Land Services
PCT	Plant Community Type
RBS	Regional Biodiversity Strategy
RMP	Rehabilitation Management Plan
TCM	Tarrawonga Coal Mine
WHC	Whitehaven Coal Limited

1. INTRODUCTION

1.1 Background

Environmental Resources Management Australia Pty Ltd (ERM) was commissioned to perform an Independent Biodiversity Audit (IBA) of the Tarrawonga Coal Mine (TCM) for Tarrawonga Coal Pty Ltd, a wholly owned entity of Whitehaven Coal Limited (WHC). The mine is located approximately 16 km north-east of Boggabri, New South Wales (NSW), covering mining leases (ML) 1579, 1685, 1693 and 1749. The purpose of the audit is to satisfy Project Approval PA 11_0047 Modification 9 of 12 May 2021, specifically the Minister for Planning and Infrastructure's Condition of Approval (CoA) 50 of Schedule 3. It requires the commissioning of an independent biodiversity audit by the end of June 2014 and every 3 years thereafter unless the secretary directs otherwise.

1.2 Audit Team

Dr. Toivo Zoete (lead auditor) undertook the site visit and was approved by the Department of Planning and Environment (DPE) to conduct the audit (refer to correspondence from the DPE in Appendix A). Qualifications and experience are as follows:

Toivo Zoete – Lead Auditor

- Qualifications: BSc (Hons), MAppSc (Hons), PhD, CEnvP, EMS 14001 Lead Auditor (2015) (Exemplar)

Experience: Toivo is a Principal Consultant within ERM's Sustainable Mining Team. He is an environmental professional with 30 years' experience in a range of environmental studies, including mine closure, environmental audits, environmental impact studies, ecological assessments, among others in Australia, the Asia Pacific region, and Algeria. Relevant projects have included audits for resource developments (legal compliance, Towards Sustainable Mining, HSEC, and ISO 14001 certification), EIAs for resource and infrastructure developments, and numerous projects in NSW (including compliance audits). He has provided expert evidence at several Land and Environment Court cases in NSW.

1.3 Audit Objectives and Scope

The objective of this IBA was to assess the environmental performance of the project and assess whether it is complying with the requirements of CoA 50 of Schedule 3 of Approval Development Consent PA 11_0047 Modification 9 of May 2021. CoA 50 states that the audit must cover the following aspects:

- a) include consultation with BCS, LLS, DPIE (now DPE) Water, DAWE (now Department of Climate Change, Environment, Energy and Water (DCCEEW)), CCC and Resources Regulator;
- b) assess the performance of the revegetation in the rehabilitation area completed to date against the completion criteria in the Rehabilitation Management Plan;
- c) assess the performance of management and restoration in the off-site Biodiversity Offset Strategy areas completed to date against the completion criteria in the Biodiversity Management Plan;
- d) identify any measures that should be implemented to improve the performance of rehabilitation, management and restoration within the rehabilitation and biodiversity offset areas;
- e) identify any additional measures that should be applied in the establishment of native vegetation, including riparian vegetation around the realigned Goonbri Creek; and
- f) if the completion criteria have not been met, or are not adequately trending towards being met, determine the likely ecological value of the rehabilitation and restoration once completed, and recommend additional measures to augment the Biodiversity Offset Strategy to ensure that it adequately offsets the project's impacts on biodiversity.

The Goonbri Creek realignment has not yet commenced, and the audit of the relevant CoA have not yet been triggered.

1.4 Audit Period

The IBA covers the period 21 August 2020 to 11 August 2023. The site inspection was conducted on 8 and 10 August 2023.

1.5 Limitations

This disclaimer, together with any limitations specified in the report, apply to this report and its use.

This report was prepared in accordance with the contracted scope of services for the specific purpose stated and subject to the applicable cost, time and other constraints. In preparing this report, ERM relied on: (a) client/third party information which was not verified by ERM except to the extent required by the scope of services, and ERM does not accept responsibility for omissions or inaccuracies in the client/third party information; and (b) information taken at or under the particular times and conditions specified, and ERM does not accept responsibility for any subsequent changes.

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2. AUDIT METHODOLOGY

2.1 Selection and Endorsement of Audit Team

Prior to the commencement of the audit, approval of nominated audit personnel was sought from the DPE. These were approved as per letter from the DPE to WHC, dated 13 January 2023 (attached in Appendix A). Declarations of Independence are included in Appendix B.

2.2 Scope Consultation and Development

2.2.1 Agencies Consulted

The Terms of Reference were developed in consultation with WHC and submitted to the agencies and stakeholders listed in CoA 56 (a) on 21 July 2023 to obtain feedback and draw attention to any key issues, within the agreed scope of the audit.

External stakeholders consulted included the following:

- NSW Resources Regulator;
- NSW Department of Planning and Environment Water (DPE Water);
- NSW Biodiversity Conservation and Science Directorate (BCS);
- Community Consultative Committee (CCC);
- Local Land Services (LLS); and
- Commonwealth Department of Climate Change, Environment, Energy and Water (DCCEEW).

In each case, an email was sent to representatives of each agency requesting feedback on those issues considered most relevant by their department at the time of the audit.

2.2.2 Summary of Consultation Results

The results of the consultation referred to in the section above are as follows:

- The NSW Resources Regulator responded noting that it had reviewed the scope of the audit and has no additional specific requirements;
- The DPE Water – DPE Water responded noting that the Department had no comments;
- The BCS – no comments were received;
- The CCC responded noting they had received no responses from members from the CCC regarding the ToR;
- The LLS noted that LLS does not usually engage in audits that are not directly related to areas that LLS controls or manages; and
- The DCCEEW – no comments were received.

Consultation responses received are included in Appendix C.

Further, as noted in Section 2.1, the DPE responded approving the audit team and noting that the IBA must be prepared, undertaken, and finalised in accordance with the requirements of Schedule 3, Condition 56 of the MCCM consent.

2.3 Audit Process

2.3.1 Process Summary

The IBA was conducted against CoA 50 of Schedule 3 of Approval Development Consent PA 11_0047 Modification 9 of May 2021. The IBA process included:

- Off-site planning for the site audit;
- Collection of relevant background documentation;
- An opening meeting;
- Collecting audit evidence through information gathering, observations and interviews;
- Site inspections;
- A close out meeting;
- Evaluating audit documentation and rating performance with the relevant criteria; and
- Compiling this audit report.

2.3.2 Opening Meeting

The opening meeting was held at the WHC Gunnedah Group office on 8 August 2023. The opening meeting was attended by the auditor Dr.Toivo Zoete, and WHC/TCM personnel Tony Dwyer (Group Manager Approvals) and Andrew Wright (Group Superintendent – Biodiversity).

2.3.3 Additional Site Personnel Interviewed

Access was granted to all personnel requested for interview. The following TCM personnel were interviewed during the course of the audit in addition to those present at the opening meeting (previous section):

- Megan Martin (Environmental Superintendent TCM);
- Madeleine Wright (Environmental Advisor TCM).

2.3.4 Site Inspection

Site inspections were undertaken by Dr.Toivo Zoete. Site inspections included observations of internal and external areas of the site (Table 2-1).

Table 2-1: Site Inspection

Elements of the Site Inspected	
■ TCM Offset Properties – revegetation and restoration areas	■ TCM Offset Properties – bushfire impacted area
■ TCM Offset Properties – enhancement areas	■ TCM Mine Site – rehabilitation areas

Andrew Wright and Megan Martin provided assistance with collecting audit evidence by providing ERM with appropriate documentation for each approval condition before the audit, over the course of the two-day visit, and in the weeks following the completion of the audit.

2.3.5 Closing Meeting

The closing meeting was conducted on 11 August 2023 and included a discussion of preliminary audit findings. Dr.Toivo Zoete of ERM and Andrew Wright and Megan Martin of WHC/TCM attended.

2.3.6 Audit Report

An assessment of the biodiversity characteristics and actions undertaken against the criteria listed in the RMP (mine site) and BMP (offset areas) is provided in Section 3. ERM note the audit report is based on objective evidence.

TCM is required to submit a copy of this independent audit report to the DPE, together with its response to any recommendations contained in the independent audit report. As per the letter from DPE to WHC dated 26 August 2022, TCM is to complete the audit by 30 September 2023, or as otherwise agreed by the Planning Secretary.

2.4 Completion Criteria

Key requirements of the CoA50 are to assess the performance of biodiversity aspects against completion criteria, including:

- (b) assess the performance of the revegetation in the rehabilitation area completed to date against the completion criteria in the Rehabilitation Management Plan; and
- (c) assess the performance of management and restoration in the off-site Biodiversity Offset Strategy areas completed to date against the completion criteria in the Biodiversity Management Plan.

2.4.1 Mine Site

Completion criteria included in the Rehabilitation Management Plan (RMP) (TCM 2022) for the mine site rehabilitation area are based on the objective to regenerate White Box grassy woodland (BVT 226 and PCT 1383) and Narrow-leaved Ironbark - cypress pine - White Box shrubby open forest (BVT 316 and PCT 592). Criteria consist of two sets, including:

- Ecosystem and land use establishment phase: Minimum targets are set to allow for ecosystem and land use establishment phase to be achieved within 10 years of initial seeding (Table 15 of the RMP); and
- Ecosystem and land use development phase (completion) (Table 16 of the RMP).

Currently, revegetation is considered to be in the ecosystem and land use establishment phase, and, hence, revegetation is assessed against the criteria of Table 15 of the BMP only. The relevant criteria for this phase, together with an assessment of performance is presented in Table 3-1 of this report.

2.4.2 Offset Areas

Performance and completion criteria included in the Biodiversity Management Plan (BMP) (WHC 2022) for the off-site Biodiversity Offset Strategy areas are based on the objective to regenerate White Box grassy woodland (BVT 226/PCT 1383) and Narrow-leaved Ironbark - cypress pine – White Box shrubby open forest (BVT 316/PCT 592). Criteria consist of three sets, including:

- Performance criteria for Years 1-6 (Table 6-8 of the BMP, first part);
- Completion criteria (Table 6-8 of the BMP, second part); and
- Additional performance and preliminary completion criteria from the Leard Forest Regional Biodiversity Strategy Stage 2 – Strategy Report (Table 6-9 of the BMP).

Offset revegetation is currently in Year 6 for BVT NA228/PCT 1313 (substituting for BVT 316/PCT 592) and Year 4 for BVT 226/PCT 1383. The criteria for those years, together with an assessment of performance, is presented in Table 3-2 of this report. The additional criteria from Table 6-9 of the BMP, together with an assessment of performance, is presented in Table 3-3 of this report.

3. RESULTS

3.1 Mine Site Rehabilitation Area

3.1.1 Site Conditions

Rehabilitation monitoring at TCM occurs in the spring each year. The latest monitoring report available for the rehabilitation at TCM is from monitoring undertaken October-November 2022 (Aspect Ecology 2023). A total of 20 sites have been monitored to date, located in revegetation established in 2007 to 2021. All revegetation to date has been to re-establish Narrow-leaved Ironbark - cypress pine - White Box shrubby open forest (BVT 316/PCT 592).

The benchmark criteria for the mine site rehabilitation to Year 10 since revegetation are provided in Table 15 of the RMP. Table 3-1 shows the benchmark criteria for BVT 316/PCT 592 for the same period together with the monitoring results obtained by Aspect Ecology (2023).

The results indicate variable success of revegetation, with overall performance of 69% for the 100 metrics assessed. No clear trend is evident across the age of revegetation, with both older and younger revegetation containing sites which do not meet all five of the criteria assessed, indicating the significance of site specific factors such as quality/quantity of the topsoil, localised weed infestations, and variable climatic/moisture conditions during early revegetation establishment.

A relatively high 80% performance was obtained for vegetation surface cover, but only 40% for native groundcover (grasses). It indicates the important contribution of exotic species to vegetative cover at many monitoring sites. While the relatively high performance for vegetative cover suggests good surface protection to prevent or reduce any erosion potential, additional weed control is indicated to minimise competition of weed species with native species cover. This may include ensuring that topsoil used for rehabilitation does not have a weed seed bank by keeping topsoil stockpiles weed free and/or only harvesting topsoil in areas that are relatively free of weeds.

Relatively high performance was also recorded among species richness (75%), and particularly native mid-storey species abundance (90%). However, native overstorey species abundance had only 60%. It suggests the need to plant additional seedlings of a diverse range of overstorey species among the sites that did not meet the criteria.

3.1.2 Management Actions

The above finding indicates that the annual monitoring undertaken at the TCM mine site is effective in determining weaknesses in the revegetation undertaken to date. In short, these primarily include a high incidence of weed suppressing the establishment of native species, particularly native groundcover (grasses) and a low abundance of species that will contribute to native overstorey cover.

Section 10 of the RMP provides for Intervention and Adaptive Management to address underperformance of rehabilitation at TCM. It includes a Trigger Action Response Plan (TARP) for a suite of rehabilitation risks, including for Native Species Richness, Native Groundcover and Exotic Plant Cover (Weeds). Unfortunately, triggers are not linked to the RMP Table 15 performance criteria, and hence, where sites do not meet the criteria as recorded in this IBA this does not automatically trigger a management response, even though some of the management actions described in the TARP would be appropriate. Thus, TARP actions to be undertaken when underperformance detected in Exotic Plant Cover include:

- Engage weed management contractor to remove / spray introduced weed species;
- Investigate management measures to improve native plant establishment and weed suppression including additional soil amelioration, establishment and retention of cover crops until weed presence is at acceptable levels; and
- Implement recommendations as appropriate.

Additional actions recommended to supplement the above include:

- Ensure topsoil stockpiles remain free of weeds and/or only harvest topsoil in areas that are relatively free of weeds, ideally for direct placement.

TARP actions to be undertaken when underperformance detected in Native Groundcover include:

- Undertake a field survey to identify likely causes of unsatisfactory germination rates;
- Re-seed areas with unsatisfactory cover;
- Review seeding procedures incl. seasonal mixes, timing and seed rate per hectare;
- Undertake a field survey to identify which species are not present in revegetation areas; and
- Engage an independent specialist to review seed viability and others causes for revegetation failure and recommend remedial actions. Implement appropriate management actions including revising rehabilitation procedures if required.

TARP actions to be undertaken when underperformance detected in Native Species Richness:

- Undertake a field survey to identify which species are not present in revegetation areas;
- Re-seed or maintenance planting of revegetation areas with unsatisfactory species richness;
- Review viability results and modify seed species as required;
- Engage an independent specialist to review seed viability and others causes for revegetation failure and recommend remedial actions; and
- Implement appropriate management actions including revising rehabilitation procedures if required.

The above Native Species Richness actions includes maintenance planting to address the low performance recorded for the “Abundance of Species that will Contribute to Native Overstorey Cover” criterion.

Given the relatively young age of much of the mine site revegetation, there is considerable scope for remediation over the coming decade by implementing the above measures. To ensure that management action is triggered when sites do not meet the criteria, it is recommended to link the TARP to the performance criteria.

3.2 Biodiversity Offset Strategy Areas

3.2.1 Site Conditions

As for the mine site, biodiversity monitoring at the TCM offsets occurs in the spring each year. A total of 13 sites have been monitored in vegetation corresponding with the BVT NA228/PCT 1313 (substituting for the similar BVT 316/PCT 592) (seven sites) and BVT 226/PCT 1383 (six sites).

The 2022 monitoring results (Ecoplanning 2023) are provided in Table 3-2 together with an assessment of performance with the minimum criteria as per Table 6-8 of the BMP. There was a 100% performance among the 52 metrics assessed.

Good revegetation performance was observed during site inspection undertaken for this IBA, showing considerable growth of planted tree seedlings since the site was visited last in 2020, as illustrated in Figure 3-1 and Figure 3-2.

Table 3-1 TCM Mine Site Revegetation Performance (RMP Table 15)

Sites (year of establishment)	Target	Native Species Richness	Abundance of Species that will Contribute to Native Overstorey Cover	Abundance of Species that will contribute to Native Mid-storey Cover	Native Groundcover (Grasses) (%)	Vegetation Surface Cover (%)
Benchmark Criteria		At least 24 individuals per 20x20 plots (19 for 12-18 months)	At least 8 individuals per 20x20 plots (>2m for 5-10 yr, ie seeding prior to 2018)	At least 2 species present per 20x20 plots	20%	60%
TCR21347 (2007)	Result	43	6	14	20.2	84.4
	Targets met?	YES	NO	YES	YES	YES
TCR21487 (2007)	Result	33	7	8	1.4	67.6
	Targets met?	YES	NO	YES	NO	YES
TCR21467 (2009)	Result	47	10	15	4.6	61.8
	Targets met?	YES	YES	YES	NO	YES
TCR21507 (2011)	Result	26	0	1	28.5	96
	Targets met?	YES	NO	NO	YES	YES
TCR21517 (2012)	Result	32	10	26	58.2	80.8
	Targets met?	YES	YES	YES	YES	YES
TCR21307 (2013)	Result	22	3	27	21.3	100
	Targets met?	NO	NO	YES	YES	YES
TCR21327 (2013)	Result	17	1	5	1	100
	Targets met?	NO	NO	YES	NO	YES
TCR21357 (2013)	Result	21	10	11	26	82.2
	Targets met?	NO	YES	YES	YES	YES
TCR21427 (2015)	Result	38	20	75	3.1	79.6
	Targets met?	YES	YES	YES	NO	YES
TCR21387 (2016)	Result	43	4	94	12	68
	Targets met?	YES	NO	YES	NO	YES
TCR21317 (2019)	Result	53	9	14	37.8	80.4
	Targets met?	YES	YES	YES	YES	YES
TCR21407 (2019)	Result	45	9	82	23.4	50
	Targets met?	YES	YES	YES	YES	NO
TCR21497 (2019)	Result	30	1	6	7.9	87.8
	Targets met?	YES	NO	YES	NO	YES
TCR21377 (2020)	Result	37	22	41	37.2	79.6
	Targets met?	YES	YES	YES	YES	YES
TCR21397 (2020)	Result	43	21	52	5.5	58.6
	Targets met?	YES	YES	YES	NO	NO
TCR21417 (2020)	Result	34	18	41	17.6	69.6
	Targets met?	YES	YES	YES	NO	YES
TCR22357 (2020)	Result	34	0	0	7.2	78.8
	Targets met?	YES	NO	NO	NO	YES
TCR22367 (2021)	Result	39	9	14	11.3	32.6
	Targets met?	YES	YES	YES	NO	NO
TCR22407 (2021)	Result	11	11	11	0.3	57.2
	Targets met?	NO	YES	YES	NO	NO
TCR22710 (2021)	Result	21	8	8	2.9	60.2
	Targets met?	NO	YES	YES	NO	YES

Table 3-2 Offset Site Results against Performance Criteria (BMP Table 6-8)

Site	Native species richness			Native Overstorey Cover			Native Midstorey Cover			Native ground cover (grass)		
	2022 Results	Meets WHC 10-year performance value?		2022 Results	Meets WHC 10-year performance value?		2022 Results	Meets WHC 10-year performance value?		2022 Results	Meets WHC 10-year performance value?	
		BVT NA228 Year 6 (6)	BVT 226 Year 4 (3)		BVT NA228 Year 6 (0%)	BVT 226 Year 4 (0%)		BVT NA228 Year 6 (2%)	BVT 226 Year 4 (0%)		BVT NA228 Year 6 (6%)	BVT 226 Year 4 (6%)
Western Slopes Dry Sclerophyll Forests (BVT NA228 and PCT 1313)												
WIL-14-G	58.0	YES	-	22.9	YES	-	9.7	YES	-	40.0	YES	-
WIL-15-G	53.0	YES	-	18.0	YES	-	6.5	YES	-	44.0	YES	-
WIL-16-G	54.0	YES	-	15.4	YES	-	5.2	YES	-	46.0	YES	-
WIL-17-G	60.0	YES	-	19.5	YES	-	8.5	YES	-	76.0	YES	-
WIL-18-G	57.0	YES	-	21.0	YES	-	11.0	YES	-	50.0	YES	-
WIL-19-G	53.0	YES	-	30.5	YES	-	8.0	YES	-	60.0	YES	-
WIL-20-G	47.0	YES	-	32.0	YES	-	0.0	YES	-	62.0	YES	-
White Box grassy woodland (BVT 226 and PCT 1383)												
WIL-21-D	29.0	-	YES	0.0	-	YES	0.0	-	YES	94.0	-	YES
WIL-22-D	38.0	-	YES	0.0	-	YES	0.0	-	YES	90.0	-	YES
WIL-23-D	28.0	-	YES	0.0	-	YES	0.0	-	YES	64.0	-	YES
WIL-24-D	28.0	-	YES	0.0	-	YES	0.0	-	YES	72.0	-	YES
WIL-25-D	25.0	-	YES	0.0	-	YES	0.0	-	YES	94.0	-	YES
WIL-26-D	37.0	-	YES	0.0	-	YES	0.0	-	YES	82.0	-	YES



Figure 3-1 TCM Offset Site (Willeroi) January 2020



Figure 3-2 TCM Offset Site (Willeroi) August 2023

3.3 Additional Performance and Completion Criteria

Criteria for management actions are presented in Table 3-3, based on Table 6-9 of the BMP. Management of the Biodiversity Offset Areas is comprehensive, and most criteria are achieved 79.4% performance or not triggered (11.7%).

Of the three performance measures where criteria were not met (8.8%), two were related to legacy conditions from previous land use management at the property that take time to remedy (restoration of fauna habitat conditions for woodland species in cleared or disturbed vegetation and removal of weeds). However, the trends indicate that management actions are appropriate with results trending towards desirable outcomes.

A further criterion was not met due to below-target nest box occupancy rates recorded. As per AMBS Ecology and Heritage (2023a), the current criterion benchmark appears to be set unrealistically high for the conditions experienced at the TCM Offset Site, including its inland location and relatively small fauna populations due to lack of existing habitat in previously cleared land. It is recommended that this criterion be revisited for a more appropriate measure of success.

Table 3-3 Additional Performance and Completion Criteria (BMP Table 6-9)

Strategic Focus Areas/Management Component	Performance Measures and Preliminary Completion Criteria	Ongoing Performance Measured	Completion Timeframe	Assessment	Meets criteria?	Corrective Action
1.1 Natural regeneration (in semi-cleared and remnant native woodland vegetation in good condition)	100% of the White Box – Yellow Box – Blakely's Red Gum Woodland EEC and CEEC monitoring sites across the relevant vegetation zones in each offset site show all locally-occurring canopy species recruiting ³ (i.e. canopy tree species occurring in the moderate to good condition PCT at the offset site or surrounds are recruiting in the semi-cleared and remnant native woodland vegetation). Where monitoring is undertaken according to the BBAM sampling should occur across each entire vegetation zones. Where monitoring is undertaken according to the BAM sampling should be undertaken in the monitoring sites of each vegetation zone. ³ To meet the definition of "canopy species recruiting" there should be evidence of recruitment of at least 5 saplings per hectare.	Annually	By year 10	Sighted Ecoplanning (2021-2023) monitoring reports for each year. Map 2.3 in Ecoplanning (2023) shows map of monitoring site locations well spread out and including all vegetation zones. Sighted WSP (2020 – 2023) Annual Biodiversity Summary Report, showing that recruitment is occurring in the sites monitored. This is an improvement on the previous year of monitoring when no recruitment was recorded yet, indicating that the revegetation / restoration activities undertaken by TCM are effective.	YES	
	Naturally regenerated areas of White Box – Yellow Box – Blakely's Red Gum Woodland EEC and CEEC monitoring sites conform to the condition assessment outlined on page 5 of the EPBC Policy Statement 3.5 White Box – Yellow Box – Blakely's Red Gum Grassy Woodlands and Derived Native Grasslands across the relevant vegetation zones in each offset site.	Annually	By year 10	Sighted Ecoplanning (2021-2023) monitoring reports for each year. Monitoring sites have been selected in consultation with the NSW Biodiversity Conservation Trust.	YES	
	100% of the White Box – Yellow Box – Blakely's Red Gum Woodland EEC and CEEC across the relevant vegetation zones in each offset site show evidence of occupation or presence of at least 80% of the native fauna species comparative to approved benchmark or monitoring reference sites.	Annually	By year 10	Sighted AMBS Ecology and Heritage (2023b) monitoring report for 2020-2023. According to Table 4.1, this criterion has been partly achieved. Offset properties are showing changes in species composition that reflect improving habitat value for woodland fauna species. TARP measures have been undertaken to remediate.	NO	WHC has undertaken the following trigger action response plan measures: 1) A Habitat Needs Assessment to document densities of key habitat features including tree hollows, rock, coarse woody debris and key feed trees (AMBS 2021c) 2) Habitat Augmentation program that includes the installation of artificial hollows and a trial coarse woody debris deployment (AMBS 2023a & 2023b) 3) Fauna corridor habitat enhancement identification program which aims to document the presence/absence/density of key habitat features associated with remnant woodlands which could be used to augment revegetated habitats, including mistletoe richness and density, key feed shrub density and identification of habitat constraints. (AMBS in prep).
	100% of the White Box – Yellow Box – Blakely's Red Gum Woodland EEC and CEEC monitoring sites across the relevant vegetation zones in each offset site is within the benchmark ranges for the cover scores (i.e. overstorey, midstorey and groundcover) and at 80% or above for species richness benchmarks.	Annually	By year 10	See Table 3-2 for assessment with BMP Table 6-8 Performance Criteria	NT	Suggest this criterion be removed from Table 6-9, as it has been superseded by the criteria in Table 6-8 of the BMP
1.2 Collect and propagate seed	Seed collection records, including location of plantings and success rates (where available), are reported on in the Annual Summary Report.	Annually	All years	Sighted BioBankSeed Seed Collection Summary (2020-2022), showing seed collected at the TCM Offset Site. Seed are collected from a number of WHC Offset Properties in the vicinity of the TCM Offset Site.	YES	
	Seed is collected over a range of sites across the locality to adequately capture local variations within the offset sites and disturbance areas.	Annually	All years	As above	YES	
1.3 Active revegetation (in semi-cleared woodland, derived native grasslands and cleared land)	100% of the White Box – Yellow Box – Blakely's Red Gum Woodland EEC and CEEC monitoring sites across the relevant vegetation zones in each offset site show all locally-occurring canopy species recruiting ³ (i.e. canopy tree species occurring in the moderate to good condition PCT at the offset site or surrounds are recruiting in the semi-cleared and remnant native woodland vegetation). Where monitoring is undertaken according to the BBAM sampling should occur across each entire vegetation zones. Where monitoring is undertaken according to the BAM sampling should be undertaken in the monitoring sites of each vegetation zone. ³ To meet the definition of "canopy species recruiting" there should be evidence of recruitment of at least 5 saplings per hectare.	Annually following active regeneration	By year 15 following active revegetation	Sighted Ecoplanning (2021-2023) monitoring reports for each year. No monitoring data for recruitment was observed in this annual report. However, monitoring for recruitment in the revegetation is pre-mature given the young age of the revegetation.	NT	

	Active regeneration areas of White Box – Yellow Box – Blakely's Red Gum Woodland EEC and CEEC monitoring sites conform to the condition assessment outlined on page 5 of the EPBC Policy Statement 3.5 White Box – Yellow Box – Blakely's Red Gum Grassy Woodlands and Derived Native Grasslands across the relevant vegetation zones in each offset site.	Annually following active regeneration	By year 15 following active revegetation	Sighted Ecoplanning (2021-2023) monitoring reports for each year. Monitoring sites have been selected in consultation with the NSW Biodiversity Conservation Trust.	YES	
	100% of the White Box – Yellow Box – Blakely's Red Gum Woodland EEC and CEEC across the relevant vegetation zones in each offset site show evidence of occupation or presence of at least 80% of the native fauna species comparative to approved benchmark or monitoring reference sites.	Annually following active regeneration	By year 20 following active revegetation	Sighted AMBS Ecology and Heritage (2023b) monitoring report for 2020-2023. Criterion is not triggered, as revegetation is maximally 6 years of age at the time of this IBA.	NT	
	100% of the White Box – Yellow Box – Blakely's Red Gum Woodland EEC and CEEC monitoring sites across the relevant vegetation zones in each offset site is within the benchmark ranges for the cover scores (i.e. overstorey, midstorey and groundcover) and at 80% or above for species richness benchmarks.	Annually following active regeneration	By year 20 following active revegetation	Sighted AMBS Ecology and Heritage (2023b) monitoring report for 2020-2023. Criterion is not triggered, as revegetation is maximally 6 years of age at the time of this IBA.	NT	
2.1 Salvage of habitat resources	Salvaged resources that are reused or relocated in offset sites are in structurally good condition.	Annually following placement	By year 5 following placement	Sighted installed salvaged habitat resources during site inspection undertaken for this audit, including rock boulders and large woody debris, both on ground and standing as stags.	YES	
2.2 Habitat augmentation and nest box installation	80% of the nest boxes installed are being utilised or show signs of use by native species across the offset sites. Utilisation of nest boxes by pest species such as European honey bee (<i>Apis mellifera</i>), common myna (<i>Acridotheres tristis</i>), common starling (<i>Sturnus vulgaris</i>) and feral rodent species (<i>Rattus</i> and <i>Mus spp.</i>) should be recorded.	Each nest box should be monitored at least once every 5 years	Ongoing	Sighted AMBS Ecology and Heritage (2023a), providing a report on nest box installation and performance. Monitoring occurs multiple times per year. Utilisation rate at the TCM Offset Site was around 40%. However, as per AMBS Ecology and Heritage (2023a), the 80% criterion appears unrealistic, as nest box installation targets revegetation sites in which fauna populations are less numerous than in remnant habitat, particularly compared to more coastal sites.	NO	As noted above trigger action response plan measures implemented and as per AMBS Ecology and Heritage (2023a), it is recommended that the criteria be changed so that they reflect the ambitions of the nest box program, and the likely challenges of hitting prescribes rates of nest box use in habitats that are being revegetated and rehabilitated that are more implementable and repeatedly measurable for the objectives of the habitat augmentation projects being employed.
	Each nest box installed within the offset sites should be in good structural condition and functioning in the landscape.	Annually following installation	Ongoing	Nest boxes observed during the site inspection undertaken for this IBA were in a good structural condition	YES	
2.3 Access control	Livestock are excluded from restoration areas following planting and high quality woodland vegetation at the offset sites (it is acknowledged that strategic grazing may be required in some areas).	Annually	Ongoing	Sighted stock fences in good condition including many new fences during site inspection undertaken for this IBA. No stock observed inside restoration areas. The TCM Annual Reviews indicated that there were no reported stock incursion during the audit period.	YES	
	Wildlife-friendly fencing is utilised, where appropriate, within the offset sites.	1 year	By year 10	Fencing observed during the site inspection undertaken for this IBA includes smooth strand fencing. No barbed wire fencing was observed.	YES	
	Inspection of Erosion Areas and Boundary Fences	Annually	Ongoing	Sighted Minesoils (2020 - 2022) WHC Biodiversity Track Erosion Inspection. Tracks sighted during site inspection undertaken for this audit appeared in good order and easily trafficable, without signs of major erosion, and, in places, exhibiting evidence of recent repair work.	YES	
3.1 Weed and pest prevention and communication	Weed trends and control schedules are communicated across the Leard Forest Mining Precinct in the relevant forums.	Annually	Ongoing	Sighted TCM Annual Reviews (2020 – 2022) outlining weed trends. The Annual Reports are listed on the TCM website. Weed control schedules are based on sighted seasonal weed assessment reports prepared by Ecoplanning which are then disseminated on a daily or weekly basis via the sighted Daily Biodiversity Contractor Coordination email that is sent out to all Contractors and Environmental personnel including those working at BTM Mines and within the Leard Forest Precinct Offset Areas.	YES	
	The most recent offset monitoring summary reports containing information on weed and pest records, trends and issues are provided across the Leard Forest Mining Precinct and reported on in the Annual Summary Report.	Annually	Ongoing	Sighted Annual Biodiversity Summary Reports (WSP 2020-2022) containing information on weed and pest records and issues. These reports are prepared for and shared between WHC and Idemitsu Mines as part of the BTM (Andrew Wright pers.comm.). Sighted sample of monthly minutes (Jan 2023 - Jun 2023) showing evidence of weed and pest information discussed at BTM Mine Environmental personnel meetings.	YES	
	Key messages on weeds are effectively communicated, where appropriate, with relevant local land holders, managers and stakeholders.	Annually	Ongoing	Sighted emails (including "Daily Biodiversity Contractor Coordinations - Monday 17 July and 7 August 2023) from WHC/TCM reporting emerging weed (Tiger Pear) and pest (Deer) communications, toolbox talk to relevant stakeholders.	YES	
3.2 Weed control	Offset site flora monitoring shows an overall reduction in exotic plant cover following control measures implemented across the offset sites.	Annually	Ongoing	Sighted quarterly weed monitoring reports (Ecoplanning 2020, 2021, 2023) and a review of weed monitoring undertaken since 2015 (AMBS Ecology and Heritage 2023c). The latter report provides a review of the incidence of weeds	YES	

				in 286 monitoring plots across the WHC Offset estate between 2015 and 2023. The results indicate that weed control efforts by WHC have resulted in an 85% reduction in the cover of weeds and >50% reduction in living weed cover for 9 of the 13 target species, including an 50% reduction in weed cover for all "Priority (formerly Noxious) and WONS" weed species.		
	Weed species do not comprise more than 20% of any strata in the native vegetation communities within the offset sites.	Annually	Ongoing	It is unclear whether this criterion refers to species richness or cover. Sighted Ecoplanning (2023) monitoring report, which notes that 81% of the TCM Offset Sites had less than 20% exotic plant species cover, which is an improvement over the 73% of sites in 2021, suggesting that weed management actions are effective. In another study for the Maules Creek Coal Mine Offset Sites, in close proximity to the TCM Offset Sites and under the same WHC weed management regime, AMBS Ecology and Heritage (2023c) compared weed monitoring results from the years 2015 to 2023, finding that overall living weed cover has declined over this period, with an 85% reduction of weed cover and >50% reduction in weed cover of 9 or 13 target weed species.	NO	The weed populations at the TCM Offset Site largely consist of legacy infestations from previous land use management that were present prior to WHC/TCM ownership. Weed cover is reducing over the long term, reflecting the efficacy of management actions. Fluctuation in the abundance of many annual weed species is dependent on climatic conditions, more so than on weed control undertaken. Therefore, TCM proposes to have this RBS criterion amended to focus on perennial weed species that are less influenced by seasonal variation year on year, allowing for a better assessment of the efficacy of TCM weed management. No additional management intervention is recommended.
	Weed control is undertaken across the offset sites using methods outlined in the NSW Weeds Control Handbook (6 th Edition) (DPI 2018), Narrabri Shire Council Weed Management Plans, and/or the NSW WeedWise website.	Annually	Ongoing	As per BMP Section 6.7 Control of Weeds, weed control is undertaken across the offset sites by personnel who are required to hold valid licences/ permits for weeding works, including a chemical licence to use herbicides and a chainsaw certificate to operate chainsaws (where applicable), and having regard to methods outlined in the NSW Weeds Control Handbook (6 th Edition) (DPI 2018), Narrabri Shire Council Weed Management Plans, and/or the NSW WeedWise website.	YES	
	Significant weed infestations or newly identified weed species within the offset sites are reviewed and control measures implemented within 1 year of identification of the issue.	Annually	Ongoing	As noted above, weed monitoring is undertaken quarterly that guide ongoing weed control programs based on seasonal conditions.	YES	
3.3 Pest animal control	Offset site fauna monitoring shows an overall reduction in pest animal species and population sizes targeted by control measures implemented across the offset sites (in consideration of potential drought conditions and seasonal trends).	Annually	By year 5	Sighted quarterly Feral Animal Monitoring and Management Reporting (Hunter Land Management 2019 – 2022) and annual biodiversity reporting by WSP (2019 - 2022), presenting details of natural regeneration activities undertaken during each year, including pest management. Actions taken include 1080 baiting, pig trapping and baiting, goat mustering, and open range pest animal shooting. Sighted AMBS Ecology and Heritage (2023b), providing the results of fauna monitoring across the WHC Offset estate between 2020 and 2023. The results indicate that, for most pest species (fox, goat, pig, cat, deer, rabbit), a spike in detection rates occurred during the monitoring period, coinciding with several wet (La Nina) years when forage and water resources to promote pest numbers would have been plentiful. Detection was at pre-spike levels again by the conclusion of the monitoring period (end of La Nina event). Detection trends indicate a decrease for fox, goat, and pig, and a steady trend for cat, deer, and rabbit. The overall trend for pest animal detection is considered to be decreasing according to AMBS Ecology and Heritage (2023b). Goat and pig trapping devices were observed during the site inspection undertaken for this audit.	YES	
	Pest animal control is undertaken across the offset sites using methods approved under the NSW Codes of Practices (COPs) and Standard Operating Procedures (SOPs).	Annually	Ongoing	As per Section 6.8 of the BMP, control measures are implemented by mine staff or by an appropriate Pest Control Contractor(s). All personnel involved in feral animal control will be required to hold valid licences/permits, including any relevant chemical licences for pesticide use or a firearms licence. The Humane Pest Animal Control: Code of Practice and Standard Operating Procedures (DPI, 2013, or its revision) will be followed. Particular techniques are shown in Table 6-6 of the BMP.	YES	
	Significant pest animal occurrences or newly identified pest species within the offset sites are reviewed and control measures implemented (if required) within 1 year of identification of the issue.	Annually	Ongoing	As noted above, pest monitoring is undertaken quarterly that guide ongoing pest control programs based on seasonal conditions.	YES	

4.1 Managing fuel loads	If determined to be suitable following recommendations from monitoring or the RFS, strategic grazing will not be used in management zones to manage fuel loads.	No grazing to occur in TCM Offsets	No grazing to occur in TCM Offsets	Sighted Annual Reviews (TCM 2020 – 2022) which state that no cattle grazing has occurred in the TCM Offset Site during this IBA period.	YES	
4.3 Ecological control burns	Fuel reduction is undertaken in the form of controlled burning (as per recommendations in Rawlings et al. 2010) as deemed required and in consultation with the RFS.	Every 5 years	Ongoing	Sighted ecological burns register for May 2023, involving multiple burns across multiple WHC Offset Properties. Sighted email trails, including to and from the RFS, related to planned control burns at two locations in the Willeroi property in 2022/2023. Emails were accompanied by Burn Plans and Maps. Emails include emails from LRM Fire and Rescue (WHC contractor) to RFS on 4/3/2022, 1/3/2023 and email from RFS to LRM Fire and Rescue on 15/3/2022 and 17/4/2023. Sighted presentation (May 2021) by WHC to the Liverpool Range Zone RFS Bushfire Management Committee outlining WHC bushfire management.	YES	
	The impacts of control and mosaic burning on native and weed species diversity is reported on and information made available to all Leard Forest Mining Precinct sites.	Within 1 year of completed Monitoring reports	Ongoing	Sighted Annual Review (TCM 2020 – 2022) reporting on Bushfire Management. No burns were undertaken in 2020, 2021. A report on the 2022 ecological burns are reported in the Annual Review 2022, which is publicly available on the TCM website.	YES	
5.1 Connected landscapes and broader regional corridors	Corridors within the offset sites are in accordance with the performance indicators outlined in Strategic Focus Area 3 in relation to weeds and pests.	As per Strategic Focus Area 3	As per Strategic Focus Area 3	Sighted AMBS Ecology and Heritage (2023b and 2023c). Weed and pest monitoring and control is undertaken throughout the WHC Offset estate, including the TCM Offset site. Ongoing reduction of weeds and pests assists to restore the east west corridor between Mt Kaputar National Park, Leard State Forest, and the Namoi River	YES	
	Targeted fauna monitoring indicates that the offset site corridors provide habitat for native fauna species in the locality through monitoring as outlined in Table 6-15.	Annually	By year 10	Sighted AMBS Ecology and Heritage (2023a) monitoring report for 2020-2023. Section 4.3 of this report notes that for both microbats and birds, woodland species are utilising the revegetated habitats and naturally regenerating habitats within this corridor. The increasing trend of detection of woodland bird species within revegetated and naturally regenerating habitat supports the conclusion that the corridor functionality is improving.	YES	
5.2 Mine rehabilitation and the vegetated buffer corridor for habitat connectivity	The rehabilitated habitat in mine rehabilitation and the vegetated buffer corridor provides a wildlife corridor linking habitats from conservation areas in the east, linking Leard State Forest and to west towards the Namoi River.	Annually following rehabilitation	By year 30 (subject to relinquishment of mining lease by DRG)	Fauna monitoring on the mine site is reported in the Annual Reviews (2020 - 2022). Fauna habitat at the mine sites broadly consists of stag trees, rocks of mixed size, coarse woody debris, emerging tree canopies, and pondage areas. Bird species recorded during 2022 include a total of 39 bird species during the winter survey and 36 during the spring survey. Bats recorded during the 2020 surveys include 8 and potentially 14 species, including potentially 2 species listed as Vulnerable under the NSW Biodiversity Conservation Act 2016. Further numerous macropods were observed during the site inspection undertaken for this IBA. The results indicate that the site provides some wildlife habitat, which will likely improve with age of rehabilitation as the vegetation increases in complexity, both in species composition and structure.	YES	
6.1 Biodiversity management consultation	Targeted consultation with key stakeholders, land managers and agencies regarding biodiversity issues is demonstrated through the development of resources and workshops involving stakeholders	Annually	Ongoing	Sighted emails (including “Daily Biodiversity Contractor Coordinations - Monday 17 July and 7 August 2023) from WHC/TCM reporting emerging weed (Tiger Pear) and pest (Deer) communications, toolbox talk to relevant stakeholders.	YES	
	An annual summary report is to be prepared detailing the overall biodiversity performance and outcomes of the offset sites across the region.	Annually	Ongoing	Sighted Annual Biodiversity Summary Reports (WSP 2020-2022) detailing the overall biodiversity performance and outcomes of the offset sites associated with the Boggabri, Tarrawonga, and Mauls Creek coal mines.	YES	

4. CONCLUSION

A summary of the audit results is provided in Table 4-1.

Table 4-1 Result Summary

Criterion	Results
a) include consultation with BCS, North West LLS, DPIE water, DAWE, CCC and Resources Regulator	Consultation has been undertaken, with some responses received (Appendix C).
b) assess the performance of the revegetation in the rehabilitation area completed to date against the completion criteria in the Rehabilitation Management Plan	Mine site revegetation achieved 69% performance with the relevant RMP performance criteria. Given the relatively young age of much of the mine site revegetation, at sites where criteria are not met there is considerable scope for remediation over the coming decade by implementing the measures provided in the TARP. To ensure that management action is triggered when criteria are not met, it is recommended to link the TARP to the performance criteria.
c) assess the performance of management and restoration in the off-site Biodiversity Offset Strategy areas completed to date against the completion criteria in the Biodiversity Management Plan	Offset Site vegetation achieved 100% performance with the relevant BMP Table 6-8 performance criteria. Additional Performance and Completion Criteria from BMP Table 6-9 also achieved 91% performance or not triggered. Where criteria are not met, appropriate management is already in place criteria can be met immediately by initiating appropriate measures
d) identify any measures that should be implemented to improve the performance of rehabilitation, management and restoration within the rehabilitation and biodiversity offset areas	Management measures in the RMP and BMP are effective in improving rehabilitation outcomes. The following additional measures are recommended for the mine site: - Triggers in the RMP TARP should be linked to the criteria to ensure that where criteria are not met, management action are triggered; and - Ensure topsoil stockpiles remain free of weeds and/or only harvest topsoil in areas that are relatively free of weeds, ideally for direct placement.
e) identify any additional measures that should be applied in the establishment of native vegetation, including riparian vegetation around Goonbri Creek;	The establishment of native vegetation, including riparian vegetation around Goonbri Creek has not yet commenced, so this requirement is not triggered.
f) if the completion criteria have not been met, or are not adequately trending towards being met, determine the likely ecological value of the rehabilitation and restoration once completed, and recommend additional measures to augment the Biodiversity Offset Strategy to ensure that it adequately offsets the project's impacts on biodiversity	Revegetation is progressing adequately towards the completion criteria. No additional measures are required to augment the Biodiversity Offset Strategy to ensure that it adequately offsets the project's impacts on biodiversity.

5. REFERENCES

AMBC Ecology and Heritage (2023a) WHC Biodiversity Habitat Augmentation Project: Implementation and Monitoring August 2022 to July 2023. Prepared by AMBS Ecology & Heritage for Whitehaven Coal Limited.

AMBC Ecology and Heritage (2023b) Fauna Monitoring of the Whitehaven Coal Biodiversity Offset Properties – July 2020 to June 2023 Prepared by AMBS Ecology & Heritage for Whitehaven Coal Limited.

AMBC Ecology and Heritage (2023c) Maules Creek Coal Mine: Weed Monitoring in the Offset Areas 2023 Report prepared by AMBS Ecology & Heritage Pty Ltd for Whitehaven Coal Limited.

Aspect Ecology (2020 – 2022) Tarrawonga Coal Mine. Rehabilitation Monitoring Report for Whitehaven Coal

Ecoplanning (2021 – 2022) Annual Spring Flora Monitoring. Whitehaven Coal, Biodiversity Offset Areas.

Hunter Land Management (2019 – 2022) Feral Animal Monitoring and Management Reporting for the Whitehaven Coal Biodiversity Offset Areas.

LRM Fire and Rescue (2020 – 2022) Assessment of Fuel Loads and Fuel Characteristics for Whitehaven Coal Biodiversity Offset Areas.

TCM Coal Mine (2020-2022) Annual Review.

TCM Creek Coal Mine (2017) Biodiversity Management Plan.

TCM Coal Mine (2022) Rehabilitation Management Plan.

Minesoils (2020 – 2023) WHC Biodiversity Track Erosion Inspection Annual Update.

Stringybark Ecological Pty Ltd (2021-2023) Seed Assessments for Whitehaven Coal.

WSP (2019-2022) Annual Biodiversity Summary Reports. Reports prepared for Boggabri Operations Pty Limited and Whitehaven Coal Limited.

APPENDIX A APPROVAL OF AUDIT TEAM

Department of Planning and Environment

Megan Martin
Environmental Superintendent
Whitehaven Coal Limited
Kamilaroi Country

By email only: TAR-approval@whitehavencoal.com.au

13/01/2023

Dear Ms Martin

Tarrawonga Coal Expansion (MP11_0047)
S3C50 biodiversity auditor endorsement request

Reference is made to your post approval matter, MP11_0047-PA-58, request for the Planning Secretary's approval of suitably qualified, experienced, and independent persons to undertake Biodiversity Audits of the Maules Creek Coal Mine (MCCM) and Tarrawonga Coal Mine (TCM), submitted as required by Schedule 3, Condition 56 of MP10_0138 as modified (the MCCM consent) and Schedule 3, Condition 50 of MP11_0047 as modified (the TCM consent), to the Department of Planning and Environment (the department) on 12 January 2023.

The department has reviewed the nominations and information you have provided and is satisfied that these persons are suitably qualified, experienced, and independent. In accordance with Schedule 3, Condition 56 of the MCCM consent and Schedule 3, Condition 50 of the TCM consent, the Planning Secretary has agreed to the following audit team:

- Mr Toivo Zoete – Biodiversity Auditor
- Ms Heather McKay – Project Manager
- Oliver Moore – Partner in Charge

Please ensure this correspondence is appended to the Biodiversity Audit Reports.

The Biodiversity Audits must be prepared, undertaken, and finalised in accordance with the requirements of Schedule 3, Condition 56 of the MCCM consent and Schedule 3, Condition 50 of the TCM consent for the respective mines. Failure to meet these requirements will require revision and resubmission.

Should you wish to discuss the matter further, please contact Joel Curran, Senior Compliance Officer on 02 4904 2702 or compliance@planning.nsw.gov.au

Yours sincerely

APPROVERSIGNATUREANDDETAILSWILLBEINSERTEDHERE

As nominee of the Planning Secretary

APPENDIX B DECLARATION OF INDEPENDENCE

6. Appendices

Appendix A – Declaration of Independence Form Template

Declaration of Independence - Auditor

Project Name Tarrawonga Coal Project

Consent Number PA11_0047

Description of Project Tarrawonga Mine

Project Address 469 GOONBRI ROAD, BOGGABRI, NSW, 2382

Proponent Tarrawonga Coal Pty Ltd

Date 09/01/2023

I declare that:

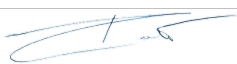
- i. I am not related to any proponent, owner, operator or other entity involved in the delivery of the project. Such a relationship includes that of employer/employee, a business partnership, sharing a common employer, a contractual arrangement outside an Independent Audit, or that of a spouse, partner, sibling, parent, or child;
- ii. I do not have any pecuniary interest in the project, proponent or related entities. Such an interest includes where there is a reasonable likelihood or expectation of financial gain (other than being reimbursed for performing the audit) or loss to the auditor, or their spouse, partner, sibling, parent, or child;
- iii. I have not provided services (not including independent reviews or auditing) to the project with the result that the audit work performed by themselves or their company, except as otherwise declared to the Department prior to the audit;
- iv. I am not an Environmental Representative for the project; and
- v. I will not accept any inducement, commission, gift or any other benefit from auditee organisations, their employees or any interested party, or knowingly allow colleagues to do so.

Notes:

- a) Under section 10.6 of the *Environmental Planning and Assessment Act 1979* a person must not include false or misleading information (or provide information for inclusion in) in a report of monitoring data or an audit report produced to the Minister in connection with an audit if the person knows that the information is false or misleading in a material respect. The proponent of an

approved project must not fail to include information in (or provide information for inclusion in) a report of monitoring data or an audit report produced to the Minister in connection with an audit if the person knows that the information is materially relevant to the monitoring or audit. The maximum penalty is, in the case of a corporation, \$1 million and for an individual, \$250,000; and

b) The *Crimes Act 1900* contains other offences relating to false and misleading information: section 307B (giving false or misleading information – maximum penalty 2 years imprisonment or 200 penalty units, or both)

Name of Proposed Auditor	Toivo Zoete
Signature	
Qualification	BSc Hons, MAppIsc Hons, PhD
Company	Environmental Resources Management Australia Pty Ltd

APPENDIX C CONSULTATION RESPONSE RECEIVED

From: [Resources Regulator](#)
To: [Toivo Zoete](#)
Subject: AREQ0043127 | Tarrawonga Coal Mine | Enquiry (external) | Other Enquiry | 21 Jul 2023 11:34:13
Date: Tuesday, 1 August 2023 4:01:44 PM
Attachments: [viewourvideos.pngx](#)
[default_banner.jpg](#)
[RegionalNSWLogo.pngx](#)
[visitourwebsite.pngx](#)
[subscribe.pngx](#)
[ERM_Tarrawonga Biodiversity Audit response_August 2023.pdf](#)

You don't often get email from nswresourcesregulator@service-now.com. [Learn why this is important](#)

EXTERNAL MESSAGE

Dear Mr Zoete,

Please find attached the Regulator's response to your request for consultation on the Independent Biodiversity Audit to be undertaken of the Tarrawonga Coal Mine.

Regards,

Jenny Ehmsen

Principal Compliance Auditor

MAI - Enforcement | Resources Regulator

T 4063 6443 M 0438 735 010



Department Regional NSW



The Department of Regional New South Wales acknowledges that it stands on Country which always was and always will be Aboriginal land. We acknowledge the Traditional Custodians of the land and waters, and we show our respect for Elders past, present and emerging. We are committed to providing places in which Aboriginal people are included socially, culturally and economically through thoughtful and collaborative approaches to our work.



Ref:MSG1043270_YHDEvTCpKbB1bvpFBCCs

AREQ0043127

Dr Toivo Zoete
ERM
Level 9
260 Queen Street
Brisbane QLD 4000

By email: toivo.zoete@erm.com

Dear Mr Zoete,

Subject: Tarrawonga Coal Mine – Independent Biodiversity Audit

Thank you for your email dated 21 July 2023 requesting consultation on the independent biodiversity audit to be undertaken of the Tarrawonga Coal Mine.

The Regulator has reviewed the scope of the audit and has no additional specific requirements.

The audit should note observations where rehabilitation procedures, practices and outcomes represent best industry practice. It would be appreciated if a copy of the final audit report could be sent to the Regulator at nswresourcesregulator@service-now.com upon completion of the audit.

Yours sincerely

Jenny Ehmsen
Principal Compliance Auditor
1 August 2023

Department of Planning and Environment

Our ref: OUT23/12094

Toivo Zoete

Email: toivo.zoete@erm.com

3 August 2023

Subject: **Tarrawonga Coal (MP_0047-PA-62)**

Dear Toivo

I refer to your request for advice sent on 1 August 2023 to the Department of Planning and Environment (DPE) Water about the above matter.

The Department of Planning and Environment- Water has no comments on this matter.

Should you have any further queries in relation to this submission please do not hesitate to contact DPE Water Assessments at water.assessments@dpie.nsw.gov.au

Yours sincerely,

A handwritten signature in black ink, appearing to read "P. Panaretos".

Panayiotis Panaretos
Projects Officer, Assessments, Knowledge Division
Department of Planning and Environment: Water

From: [Toivo Zoete](#)
To: ben.ellis@environment.nsw.gov.au
Cc: [Andrew Wright](#); [Oliver Moore](#); [Heather McKay](#)
Subject: Independent Biodiversity Audit Tarrawonga and Maules Creek Coal Mines
Date: Friday, 21 July 2023 8:53:00 AM
Attachments: [image001.png](#)
[Independent Biodiversity Audit Tarrawonga and Maules Creek Mines Terms of Reference.pdf](#)

Dear Ben,

I am currently completing the Independent Biodiversity Audit as per the Conditions of Approval 50 of PA 11_0047 for Tarrawonga Coal Mine and Condition 56 of PA 10_0138 for Maules Creek Coal Mine. The Condition requirements are largely the same for both mines, namely:

- include consultation with BCS, LLS, DPIE Crown Lands (Maules Creek only), DPIE Water (Tarrawonga only), DAWE, CCC and Resources Regulator;
- assess the performance of the revegetation in the rehabilitation area completed to date against the completion criteria in the Rehabilitation Management Plan;
- assess the performance of management and restoration in the off-site Biodiversity Offset Strategy areas completed to date against the completion criteria in the Biodiversity Management Plan;
- identify any measures that should be implemented to improve the performance of rehabilitation, management and restoration within the rehabilitation and biodiversity offset areas;
- if the completion criteria have not been met, or are not adequately trending towards being met, determine the likely ecological value of the rehabilitation and restoration once completed, and recommend additional measures to augment the Biodiversity Offset Strategy to ensure that it adequately offsets the project's impacts on biodiversity.

For Tarrawonga, there is also the requirement to:

- identify any additional measures that should be applied in the establishment of native vegetation, including riparian vegetation around Goonbri Creek.

As per the first requirement, this email invites you to raise any questions or concerns within the scope of the above requirements that you would like the audit to address.

The attached Terms of Reference outlines the audit process, and also introduces the approved team of suitably qualified, experienced and independent experts who will be undertaking the audit. It would be appreciated if there are any concerns, areas of focus etc., they are raised by 3 August 2020.

I can be contacted at the details outlined below to discuss further.

Kind regards,

Dr Toivo Zoete
Principal Environmental Consultant

ERM

From: [David Ross - VUCA Strategist](#)
To: [Toivo Zoete](#)
Subject: RE: Independent Biodiversity Audit Tarrawonga and Maules Creek Coal Mines
Date: Thursday, 3 August 2023 5:12:50 PM
Attachments: [image001.png](#)

You don't often get email from david.ross@phoenixstrategic.com.au. [Learn why this is important](#)

EXTERNAL MESSAGE

Dear Toivo,

Further to your email, I wanted to inform you that I have received no responses from members from the two CCCs regarding the ToR that you had sent me.

Regards
David

From: Toivo Zoete <Toivo.Zoete@erm.com>
Sent: Friday, July 21, 2023 8:52 AM
To: David Ross - VUCA Strategist <david.ross@phoenixstrategic.com.au>
Cc: Andrew Wright <AWright@whitehavencoal.com.au>; Oliver Moore <Oliver.Moore@erm.com>; Heather McKay <Heather.McKay@erm.com>
Subject: Independent Biodiversity Audit Tarrawonga and Maules Creek Coal Mines

Dear David,

I am currently completing the Independent Biodiversity Audit as per the Conditions of Approval 50 of PA 11_0047 for Tarrawonga Coal Mine and Condition 56 of PA 10_0138 for Maules Creek Coal Mine. The Condition requirements are largely the same for both mines, namely:

- include consultation with BCS, LLS, DPIE Crown Lands (Maules Creek only), DPIE Water (Tarrawonga only), DAWE, CCC and Resources Regulator;
- assess the performance of the revegetation in the rehabilitation area completed to date against the completion criteria in the Rehabilitation Management Plan;
- assess the performance of management and restoration in the off-site Biodiversity Offset Strategy areas completed to date against the completion criteria in the Biodiversity Management Plan;
- identify any measures that should be implemented to improve the performance of rehabilitation, management and restoration within the rehabilitation and biodiversity offset areas;
- if the completion criteria have not been met, or are not adequately trending towards being met, determine the likely ecological value of the rehabilitation and restoration once completed, and recommend additional measures to augment the Biodiversity Offset Strategy to ensure that it adequately offsets the project's impacts on biodiversity.

For Tarrawonga, there is also the requirement to:

- identify any additional measures that should be applied in the establishment of native vegetation, including riparian vegetation around Goonbri Creek.

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I can be contacted at the details outlined below to discuss further.

Kind regards,

Dr Toivo Zoete
Principal Environmental Consultant

ERM

L9, 260 Queen Street | Brisbane Q4000 | Australia

GPO Box 2892 | Brisbane Q4001

M +61 428 382 375

E toivo.zoete@erm.com | **W** www.erm.com



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From: [Caleb Doyle](#)
To: [Toivo Zoete](#)
Subject: Re: Independent Biodiversity Audit Tarrawonga and Maules Creek Coal Mines
Date: Friday, 28 July 2023 1:50:36 PM
Attachments: [image001.png](#)

EXTERNAL MESSAGE

Hi Toivo

Thank you for your email and time today over the phone. As discussed LLS does not usually engage in audits that are not directly related to areas that LLS controls or manages. The Biodiversity Conservation Trust or the Department of Planning and Environment may be able to assist further.

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

Regards

Caleb Doyle | Project Coordinator

Natural Resource Management

Local Land Services

35-37 Abbott St, Gunnedah NSW 2380 |

PO Box 546 Gunnedah NSW 2380 |

M: 0428 641 858

E: caleb.doyle@lls.nsw.gov.au | W: www.lls.nsw.gov.au

From: Toivo Zoete <Toivo.Zoete@erm.com>

Sent: Friday, 21 July 2023 8:52 AM

To: Caleb Doyle <caleb.doyle@lls.nsw.gov.au>

Cc: Andrew Wright <AWright@whitehavencoal.com.au>; Oliver Moore <Oliver.Moore@erm.com>; Heather McKay <Heather.McKay@erm.com>

Subject: Independent Biodiversity Audit Tarrawonga and Maules Creek Coal Mines

Dear Caleb,

I am currently completing the Independent Biodiversity Audit as per the Conditions of Approval 50 of PA 11_0047 for Tarrawonga Coal Mine and Condition 56 of PA 10_0138 for Maules Creek Coal Mine. The Condition requirements are largely the same for both mines, namely:

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- assess the performance of management and restoration in the off-site Biodiversity Offset Strategy areas completed to date against the completion criteria in the Biodiversity Management Plan;
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if the completion criteria have not been met, or are not adequately trending towards being met, determine the likely ecological value of the rehabilitation and restoration once completed, and recommend additional measures to augment the Biodiversity Offset Strategy to ensure that it adequately offsets the project's impacts on biodiversity.

For Tarrawonga, there is also the requirement to:

- identify any additional measures that should be applied in the establishment of native vegetation, including riparian vegetation around Goonbri Creek.

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I can be contacted at the details outlined below to discuss further.

Kind regards,

Dr Toivo Zoete
Principal Environmental Consultant

ERM

L9, 260 Queen Street | Brisbane Q4000 | Australia

GPO Box 2892 | Brisbane Q4001

M +61 428 382 375

E toivo.zoete@erm.com | **W** www.erm.com



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From: [Glover, Kimberly](#)
To: [Toivo Zoete](#)
Cc: [Andrew Wright](#); [Oliver Moore](#); [Heather McKay](#)
Subject: RE: Independent Biodiversity Audit Tarrawonga and Maules Creek Coal Mines [SEC=OFFICIAL]
Date: Friday, 21 July 2023 9:59:47 AM
Attachments: [image002.jpg](#)
[image003.png](#)

Some people who received this message don't often get email from kimberly.glover@dcceew.gov.au. [Learn why this is important](#)

EXTERNAL MESSAGE

Good morning Dr Zoete,

Thank you for reaching out to me.

I believe this request is better suited to our compliance and auditing team, I will pass on the below, including the Terms of Reference and an officer in that team will contact you.

Regards,

Kimberly Glover

Assistant Director – Post Approvals

Nature Positive Regulation Division | NSW/ACT Post Approval Section

Bindal & Wulgurukaba Country, TOWNSVILLE QLD

Department of Climate Change, Energy, the Environment and Water

P 0415 111 228 | E Kimberly.Glover@dcceew.gov.au



From: Toivo Zoete <Toivo.Zoete@erm.com>

Sent: Friday, July 21, 2023 8:47 AM

To: Glover, Kimberly <Kimberly.Glover@dcceew.gov.au>

Cc: Andrew Wright <AWright@whitehavencoal.com.au>; Oliver Moore <Oliver.Moore@erm.com>; Heather McKay <Heather.McKay@erm.com>

Subject: Independent Biodiversity Audit Tarrawonga and Maules Creek Coal Mines

Dear Kimberly,

I am currently completing the Independent Biodiversity Audit as per the Conditions of Approval 50 of PA 11_0047 for Tarrawonga Coal Mine and Condition 56 of PA 10_0138 for Maules Creek Coal Mine. The Condition requirements are largely the same for both mines, namely:

- include consultation with BCS, LLS, DPIE Crown Lands (Maules Creek only), DPIE Water

- (Tarrawonga only), DAWE, CCC and Resources Regulator;
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