

Independent Biodiversity Audit

Maules Creek Coal Pty Ltd

11 September 2023

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Independent Biodiversity Audit

Maules Creek Coal Pty Ltd



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CONTENTS

1.	INTRODUCTION	1
1.1	Background.....	1
1.2	Audit Team	1
1.3	Audit Objectives and Scope.....	1
1.4	Audit Period	2
1.5	Limitations.....	2
2.	AUDIT METHODOLOGY	3
2.1	Selection and Endorsement of Audit Team.....	3
2.2	Scope Consultation and Development.....	3
2.2.1	Agencies Consulted and Summary of Results	3
2.2.2	Summary of Consultation Results.....	3
2.3	Audit Process.....	3
2.3.1	Process Summary.....	3
2.3.2	Opening Meeting.....	4
2.3.3	Additional Site Personnel Interviewed.....	4
2.3.4	Site Inspection	4
2.3.5	Closing Meeting	4
2.3.6	Audit Report.....	4
2.4	Completion Criteria	5
2.4.1	Mine Site.....	5
2.4.2	Offset Areas	5
3.	RESULTS	6
3.1	Mine Site Rehabilitation Area.....	6
3.2	Biodiversity Offset Strategy Areas	7
3.2.1	Site Conditions.....	7
3.2.2	Management Actions	8
4.	CONCLUSION	20
5.	REFERENCES	21

APPENDIX A APPROVAL OF AUDIT TEAM

APPENDIX B DECLARATION OF INDEPENDENCE

APPENDIX C CONSULTATION RESPONSE RECEIVED

APPENDIX D PHOTOGRAPHIC REVEGETATION COMPARISON

List of Tables

Table 2-1: Site Inspection	4
Table 3-1 MCCM Mine Site Revegetation Performance.....	6
Table 3-2 Interim Performance Criteria for Habitat Complexity at Year 10 – 2025 (as per BMP Table 6-10)	9
Table 3-3 Site Performance with Performance Criteria (as per BMP Table 6-10).....	10
Table 3-4 Performance and Completion Criteria (as per Table 6-9 of the BMP).....	11
Table 4-1 Result Summary	20

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
DPIC	Department of Primary Industry Crown Lands
IBA	Independent Biodiversity Audit
LLS	Local Land Services
MCCM	Maules Creek Coal Mine
PCT	Plant Community Type
RMP	Rehabilitation Management Plan
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 Maules Creek Coal Mine (MCCM) for Maules Creek Coal Pty Ltd, which is responsible for management of the mine and is a wholly owned entity of Whitehaven Coal Limited (WHC). The mine is contained on CL375, ML1719, and ML1701, on the north-western slopes of New South Wales (NSW) approximately 18 kilometres (km) north-east of Boggabri in the Narrabri Local Government Area (LGA). The regional centres of Narrabri and Gunnedah are situated approximately 45 km to the north-west and 55 km to the south of MCCM respectively.

The purpose of the audit is to satisfy Project Approval PA 10_0138 Modification 8 of January 2022, specifically the Minister for Planning and Infrastructure's Condition of Approval (CoA). It requires the commissioning of an independent biodiversity audit by the end of June 2017 and every 5 years thereafter, unless the Planning Secretary agrees 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 140001 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 56 of Project Approval PA 10_0138 Modification 8 of January 2022. The CoA states that the audit must cover the following aspects:

- a) include consultation with BCS, North West LLS, DPIE (now DPE) Crown Lands, 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) 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.

1.4 Audit Period

The IBA covers the period April 2017 to 11 August 2023. The site inspection was conducted on 8 and 9 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). The Declaration of Independence is included in Appendix B.

2.2 Scope Consultation and Development

2.2.1 Agencies Consulted and Summary of Results

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 Crown Lands (Crown Lands);
- NSW Biodiversity Conservation and Science Directorate (BCS);
- Community Consultative Committee (CCC);
- North West Local Land Services (LLS); and
- Commonwealth Department of Agriculture, Water and the Environment (DAWE) (now 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 Crown Lands – no comment were received;
- 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 56 of Approval Development Consent PA 10_0138 Modification 8 of January 2022. 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 Group office on 8 August 2023. The opening meeting was attended by the auditor Dr.Toivo Zoete, and WHC/MCCM 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 MCCM personnel were interviewed during the course of the audit in addition to those present at the opening meeting (previous section):

- Emma Bulkeley (Environmental Superintendent MCCM)
- Angus Frend (Environmental Advisor MCCM).

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	
■ MCCM Offset Properties – revegetation and restoration areas	■ MCCM Offset Properties – threatened plant plantings
■ MCCM Offset Properties – enhancement areas	■ MCCM Mine Site – rehabilitation areas

Andrew Wright and Emma Bulkeley 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 Emma Bulkeley of WHC/MCCM 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.

MCCM 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, MCCM 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 CoA56 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) (MCCM 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 6 years of initial seeding (Table 10 of the RMP); and
- Ecosystem and land use development phase (completion) (Table 11 of the RMP):

With first revegetation occurring in 2019, no rehabilitation has yet been completed at MCCM. Therefore, this audit has compared monitoring results against Table 10 of the RMP (establishment phase) only. These criteria are shown together with the findings in Table 3-1 of this report.

2.4.2 Offset Areas

Performance and completion criteria included in the Biodiversity Management Plan (BMP) (MCCM 2017) for the off-site Biodiversity Offset Strategy areas 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 four sets, including:

- Performance and Completion Criteria (Table 6-9 of the BMP). These criteria are primarily to assess management actions, rather than the success of restoration itself;
- Interim Performance Criteria for Habitat Complexity for years 5 (2020) and 10 (2025) (Table 6-10 of the BMP);
- Completion Criteria, aimed to be met by year 21 (2036) (Table 6-11 of the BMP); and
- Interim Completion Criteria for Habitat Complexity at 21 Years (Table 6-12 of the BMP).

Enhancement, revegetation and restoration efforts have been undertaken over the past 10 years, with most revegetation occurring between 2017 and 2020 (nominal midpoint 2018). Criteria relating to rehabilitation at year 21 are not yet relevant, and, hence, Tables 6-11 and 6-12 of the BMP are not used in this audit. The criteria listed in Table 6-10 of the BMP are shown in Table 3-2, with a site performance assessment shown in Table 3-3. An assessment of management actions against the criteria of Table 6-9 of the BMP is provided in Table 3-4.

3. RESULTS

3.1 Mine Site Rehabilitation Area

Rehabilitation monitoring at MCCM occurs in the spring each year. The latest monitoring report available for the rehabilitation at MCCM is from monitoring undertaken on 22 and 23 November 2022 (Greenfields Agricultural and Environmental Services 2022). First revegetation occurred in 2019, with further revegetation in 2020. Three sites (MR1-MR3) monitored in 2022 were located in the 2019 rehabilitation area (three years since establishment), with the remaining eight sites (MR4-MR11) located in 2020 rehabilitation area (two years since establishment). All revegetation to date has been to re-establish BVT 226/PCT 1383.

The benchmark criteria for the mine site rehabilitation for years 1 and 6 since revegetation are provided in Table 10 of the RMP. Table 3-1 shows the benchmark criteria for BVT 226/PCT 1383 for the relevant years 2 and 3 together with the monitoring results obtained by Greenfields Agricultural and Environmental Services (2022).

Table 3-1 MCCM Mine Site Revegetation Performance

Sites	Target	Native Species Richness	Over-storey Cover (%)	Mid-storey Cover (%)	Native Groundcover (%)
Year 3 Benchmark Criteria	Mean Target	3	4	1	6
	Minimum Target	2	0	0	5
MR1	Result	37	8	28	30
	Targets met?	YES	YES	YES	YES
MR2	Result	28	6	12	24
	Targets met?	YES	YES	YES	YES
MR3	Result	30	6	28	3
	Targets met?	YES	YES	YES	NO
Year 2 Benchmark Criteria	Mean Target	2	3	1	4
	Minimum Target	1	0	0	3
MR4	Result	18	0	0	1
	Targets met?	YES	YES	YES	NO
MR5	Result	14	0	1	10
	Targets met?	YES	YES	YES	YES
MR6	Result	43	0	8	22
	Targets met?	YES	YES	YES	YES
MR7	Result	32	0	1	7
	Targets met?	YES	YES	YES	YES
MR8	Result	33	0	3	14
	Targets met?	YES	YES	YES	YES
MR9	Result	21	0	0	6
	Targets met?	YES	YES	YES	YES
MR10	Result	22	0	3	16
	Targets met?	YES	YES	YES	YES
MR11	Result	37	4	8	83
	Targets met?	YES	YES	YES	YES

The results indicate that all sites were above the minimum targets for their respective years, except for sites MR3 and MR4, both of which do not meet with the minimum target for Native Groundcover. This results in an overall performance of 95% for the 44 metrics (11 sites by 4 criteria) assessed.

As noted in Greenfields Agricultural and Environmental Services 2022, recent revegetation would have been affected by the prevailing climatic conditions at MCCM over the last three years. Significant above average rainfall was experienced which would have resulted in erosion following topsoiling and seeding, leading to loss of topsoil, loss of seeding mix, and a proliferation of exotic plant species. A higher incidence of weeds at site MR3 and MR4 is a likely contributing cause of lower Native Groundcover levels, with a relatively high weed occurrence observed at MR4 during monitoring (Greenfields Agricultural and Environmental Services 2022).

The above finding indicates that the annual monitoring undertaken at the MCCM mine site is effective in determining weaknesses in the revegetation undertaken to date. Section 10 of the RMP provides for Intervention and Adaptive Management to address underperformance of rehabilitation at MCCM. It includes a Trigger Action Response Plan (TARP) for a suite of rehabilitation risks, including for Native Groundcover and Exotic Plant Cover. Actions to be undertaken when underperformance detected in Native Groundcover include:

- Review methods used by revegetation contractor; seed or seedling quality, soil quality or weather conditions since time of revegetation to determine if it is the cause of delayed native groundcover (grasses);
- Engage a suitably qualified person to investigate causes for germination failure and recommend remedial actions;
- Undertake a field survey to identify likely causes of unsatisfactory germination rates; and
- Re-seed areas with unsatisfactory cover.

Actions to be undertaken when underperformance detected in Exotic Plant Cover include:

- Engage weed management contractor to remove / spray introduced weed species;
- Engage weed management contractor to remove 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.

Implementation of the above measures is expected to result in remediation of low Native Groundcover scores for MR3 and MR4. Given the recent age of the revegetation, and once measures have been implemented, the current hiatus in the growth of Native Groundcover is unlikely to significantly delay attainment of the completion criteria.

3.2 Biodiversity Offset Strategy Areas

3.2.1 Site Conditions

As for the mine site, biodiversity monitoring at the MCCM offsets occurs in the spring each year. A total of 50 sites have been monitored since 2015. The number of sites monitored was changed, with some discontinued and the location of others adjusted due to changes in the monitoring program requested by the NSW Biodiversity Conservation Trust, resulting in a current set of monitoring sites (AMBS Ecology and Heritage 2023a).

AMBS Ecology and Heritage (2023a) provides a review of the latest monitoring data collected in 2022 compared to the performance criteria listed in Table 6-10 of the BMP and reproduced in Table 3-2. Results of the 2022 monitoring results and an assessment of performance with the criteria for both

Enhancement sites and Revegetation/Restoration sites is provided in Tables 3.1 – 3.8 of AMBS Ecology and Heritage (2023a), summarised in Table 3-3 of this report. Although the attributes ‘% canopy recruitment’ and ‘exotic plant cover’ are included as assessable variables in the Maules Creek Mine offset area Biodiversity Management Plan (BMP), they were not able to be assessed against the performance criteria at Year 10 because the BVT 2017 does not provide benchmarks for the performance of these variables to be assessed against. Further, the “Habitat Management” Site VS25 is not included in the assessment, although the only variable reported for this site, “Number/length of Fallen Logs”, recorded a positive increase of 16m of fallen log in 2022 compared to the 0.7m recorded as baseline at this site (AMBS Ecology and Heritage 2023a).

Overall, 81% or 206/256 metrics assessed met the Year 10 Performance. All sites met with respect to Native Groundcover (Shrubs), Native Groundcover (Other), Number of Hollow-Bearing Trees, and Total length of Fallen Logs (100% performance), while only one site (VS37) did not meet the criterion for Native Species Richness (97% performance), and three sites did not meet the criterion for Native Groundcover (Grasses) (91% performance).

The two criteria with a greater number of sites not met were Native Mid-storey Cover (31% performance) and, particularly, Native Overstorey Cover (25% performance). A majority of sites that did not meet these criteria were within the “Revegetation” domain. Given that most of the revegetation was only in Year 5 since establishment in 2018 at the time of this audit, the relatively low performance for these two criteria (which are Year 10 criteria) is not surprising, as revegetation needs time to develop mid- and overstorey cover.

Management actions such as weed and feral animal control, removal of grazing and revegetation, and tree plantings are undertaken to facilitate progress towards achievement of the completion criteria as listed in Table 6-11 of the BMP (see next Section). Such actions are most influential on criteria such as Native Species Richness, Mid- and Overstorey Cover, and Native Groundcover (Grasses). However, criteria such as Mid- and Overstorey Cover are also highly dependent on the prevailing climatic conditions, with the lower than average rainfall inhibiting progress, and, conversely, higher rainfall promoting progress.

AMBS Ecology and Heritage (2023a) notes that “for Native Overstorey Cover and Native Mid-storey Cover it is likely that growth between Year 10 and Year 20 will contribute further to the required measure and that this performance criteria will be met in Year 15 of the monitoring program”. Assuming that the currently predicted El Nino weather pattern for the 2023 Australian summer will remain limited in extent, and that rainfall for the next ten years remains at the long term average or higher, this audit concurs with AMBS Ecology and Heritage (2023a).

3.2.2 Management Actions

Criteria for management actions for Year 1, Year 2, Year 3, and Year 4 to 21 are presented in Table 6-9 of the BMP. Of these, the Year 4 to 21 criteria are relevant to the current audit, which is in Year 10, as shown in Table 3-4. Management of the Biodiversity Offset Areas is comprehensive, and all management actions are undertaken as required.

Table 3-2 Interim Performance Criteria for Habitat Complexity at Year 10 – 2025 (as per BMP Table 6-10)


Condition Variable	BVT NA 226	Specific Performance Criteria at 10 years (2025) for Enhancement Domain	Enhancement Domain Criteria (numerical)	Specific Performance Criteria Performance Criteria at 10 years (2025) for Revegetation and Restoration Domains	Revegetation and Restoration Domain Criteria (numerical)
Native Plant Species Richness	23	Increase to at least 80% of lower benchmark.	18.4	Increase to at least 30% of lower benchmark.	6.9
Native Overstorey Cover	6 - 25	Increase to at least 20% of lower benchmark.	1.2-5	Increase to at least 30% of lower benchmark. No more than 100% of upper benchmark	1.8 - 7.5
Native Mid-storey Cover	0-5	Increase to at least 80% of lower benchmark.	0 - 4	Increase to at least 30% of lower benchmark. No more than 100% of upper benchmark	0 - 1.5
Native Groundcover (Grasses)	30-40	Increase to at least 80% of lower benchmark.	24 - 32	Increase to at least 30% of lower benchmark.	9 - 12
Native Groundcover (Shrubs)	n/a	Increase to at least 80% of lower benchmark.	n/a	Increase to at least 30% of lower benchmark.	n/a
Native Groundcover (Other)	3-5	Increase to at least 80% of lower benchmark.	2.4 - 4	Increase to at least 30% of lower benchmark.	0.9 - 1.5
Number of Trees with Hollows	1	No significant increase expected in 10 years	-	None expected after 10 years.	-
Total Length (m) of Fallen Logs	30	No significant increase expected in 10 years	-	None expected after 10 years (except salvaged.	-



Table 3-3 Site Performance with Performance Criteria (as per BMP Table 6-10)

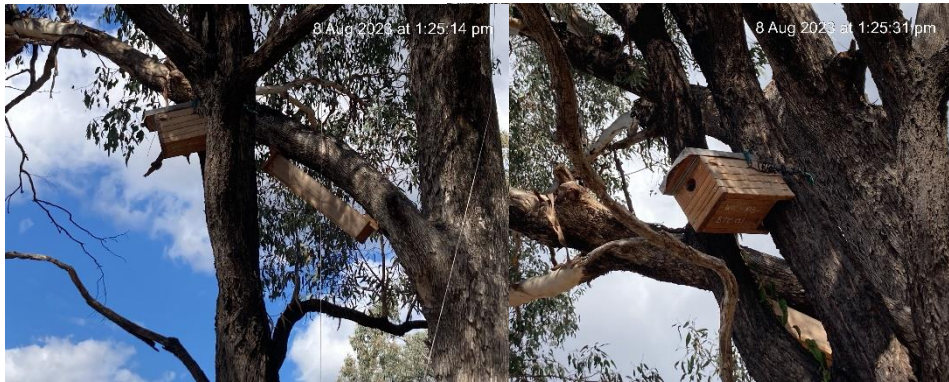
Site	Native species richness			Native Overstorey Cover			Native Midstorey Cover			Native ground cover (grass)			Native ground cover (Shrubs)			Native ground cover (Other)			Number of trees with hollows			Total Length of fallen logs		
	2022 Results	Meets WHC 10-year performance value?		2022 Results	Meets WHC 10-year performance value?		2022 Results	Meets WHC 10-year performance value?		2022 Results	Meets WHC 10-year performance value?		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?	
		E* (18.4)	Rv-R* (6.9)		E (1.2-5)	Rv-R (1.8-7.5)		E (0-4)	Rv-R (0-1.5)		E (24 - 32)	Rv-R (9 - 12)		E (-)	Rv-R (-)		E (2.4-4)	Rv-R (0.9-1.5)		E (-)	Rv-R (-)		E (-)	Rv-R (-)
VS01	53	YES	-	5.5	YES	-	0.6	NO	-	52	YES	-	6	YES	-	74	YES	-	0	YES	-	39	YES	-
VS02	48	YES	-	25	YES	-	0	NO	-	70	YES	-	4	YES	-	48	YES	-	1	YES	-	54	YES	-
VS03	52	YES	-	0	NO	-	0	NO	-	24	YES	-	0	YES	-	64	YES	-	0	YES	-	3	YES	-
VS04	23	YES	-	0	NO	-	0	NO	-	0	NO	-	4	YES	-	38	YES	-	0	YES	-	0	YES	-
VS05	44	YES	-	17.8	YES	-	0	NO	-	40	YES	-	0	YES	-	88	YES	-	0	YES	-	26	YES	-
VS07	64	YES	-	23.5	YES	-	1	NO	-	78	YES	-	0	YES	-	50	YES	-	0	YES	-	15	YES	-
VS08	51	YES	-	18.5	YES	-	2	YES	-	44	YES	-	2	YES	-	68	YES	-	0	YES	-	35	YES	-
VS09	58	YES	-	8	YES	-	0	NO	-	60	YES	-	0	YES	-	84	YES	-	0	YES	-	0	YES	-
VS10	51	-	YES	0	-	NO	2	-	YES	97	-	YES	1	-	YES	16	-	YES	0	-	YES	0	-	YES
VS11	60	-	YES	7.25	-	NO	3.5	-	YES	79	-	YES	0	-	YES	32	-	YES	0.5	-	YES	20	-	YES
VS12	64	-	YES	21	-	NO	0	-	NO	80	-	YES	0	-	YES	84	-	YES	0	-	YES	28	-	YES
VS13	61	YES	-	15.3	YES	-	2.8	YES	-	94	YES	-	1	YES	-	30	YES	-	0.3	YES	-	60	YES	-
VS15	36	YES	-	0	NO	-	0	NO	-	80	YES	-	6	YES	-	54	YES	-	0	YES	-	0	YES	-
VS16	34	YES	-	0	NO	-	0	NO	-	100	YES	-	2	YES	-	18	YES	-	0	YES	-	0	YES	-
VS17	61	YES	-	1.5	YES	-	9.7	YES	-	62	YES	-	16	YES	-	60	YES	-	1	YES	-	71	YES	-
VS18	50	YES	-	23.2	YES	-	8.2	YES	-	54	YES	-	4	YES	-	60	YES	-	4	YES	-	64	YES	-
VS22	34	-	YES	17.5	-	NO	0	-	NO	96	-	YES	0	-	YES	40	-	YES	0	-	YES	0	-	YES
VS23	42	-	YES	0	-	NO	0	-	NO	84	-	YES	22	-	YES	50	-	YES	0	-	YES	0	-	YES
VS24	43	-	YES	16.5	-	NO	0	-	NO	88	-	YES	0	-	YES	44	-	YES	0	-	YES	0	-	YES
VS26	27	YES		0	NO	-	0.1	NO		96	YES	-	0	YES	-	34	YES	-	0	YES	-	0	YES	-
VS27	41	YES	-	0	-	NO	0	-	NO	64	-	YES	0	-	YES	66	-	YES	0	-	YES	2	-	YES
VS28	26	YES	-	0	-	NO	0	-	NO	96	-	YES	0	-	YES	4	-	YES	1	YES	-	0	-	YES
VS29	21	YES	-	0	NO		0	NO	-	32	YES	-	6	YES	-	18	YES	-	1	-	-	0	YES	-
VS30	22	YES	-	0	NO	-	0	NO	-	92	YES	-	2	YES	-	14	YES	-	1	-	-	2	YES	-
VS31	32	YES	-	0	NO	-	0	NO	-	94	YES	-	6	YES	-	12	YES	-	0	YES	-	0	YES	-
VS32	32	YES	-	0	NO	-	0	NO	-	60	YES	-	42	YES	-	32	YES	-	1	YES	-	0	YES	-
VS33	28	YES	-	0	NO	-	0	NO	-	100	YES	-	0	YES	-	10	YES	-	0	YES	-	0	YES	-
VS36	27	YES	-	0	NO	-	2	YES	-	64	YES	-	2	YES	-	82	YES	-	0	YES	-	4	YES	-
VS37	17	NO	-	0	NO	-	0	NO	-	0	NO	-	4	YES	-	54	YES	-	0	YES	-	0	YES	-
VS38	41	YES	-	2.5	YES	-	2.5	YES	-	82	YES	-	0	YES	-	62	YES	-	0	YES	-	0	YES	-
VS48	25	YES	-	0	NO	-	0	NO	-	4	NO	-	0	YES	-	36	YES	-	0	YES	-	0	YES	-
VS49	28	YES	-	0	NO	-	0	NO	-	86	YES	-	0	YES	-	30	YES	-	0	YES	-	0	YES	-


* E = Enhancement Domain; Rv – R = Revegetation – Restoration Domain



Table 3-4 Performance and Completion Criteria (as per Table 6-9 of the BMP)

Action	Year 4 to 21 (July 2017 to meeting the Completion Criteria)	Assessment	Criteria Met?
Setting up the Offset Areas			
Long-term Conservation Security ^(A, B, C, D)	Long-term security of the offset areas that are subject to the approval of the revised offset strategy to be registered (Wongala, Roseglass, Bimbooria and Oakleigh/Onavale) Target Date – within 12 month of approval of the Stage 2 LFMPRA. Long-term security of offset areas required by Approval Decision EPBC 2010/5566 to be secured by 11 February 2018.	MCCM registered nine Conservation Agreements between 14 March 2020 and 2 June 2021 on the land titles for the 15 Offset properties being secured as part of the MCCM Biodiversity Offset Strategy (MCCM 2022 Annual Review). These have been secured through a number of Conservation Agreements (MCCM 2021). Agreements under the NSW National Parks and Wildlife Act 1974 include VCA0487 (Kelso, Velyama, Louenville), VCA0491 (Teston South), VCA0490 (Wollandilly), VCA0492 (Onavale), and VCA0489 (Rosegalss, Bimbooria). Agreements under the NSW Biodiversity Conservation Act 2016 include CA0234 (Wirradale and Wongala South) and CA0235 (Mt Lindesay).	YES
Inspection of Fences for Maintenance Purposes	Annually and as required at other times	Sighted annual biodiversity reporting by WSP (2019 - 2022) including several kilometres of new fencing and removal of redundant fencing. Sighted fences in good condition including many new fences during site inspection undertaken for this audit (photograph).	YES
Removal of Redundant Fences	Complete		
			
Signage Installation	Complete	Sighted signage for various purposes during site inspection undertaken for this audit, including for names of offset properties (see photographs)	YES

			
Inspection of Access Tracks for Maintenance Purposes	Annually and as required at other times	<p>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 (photographs).</p> 	YES
Seed Collection and Propagation			
Seed Collection	To be completed annually as required	<p>Sighted seed assessments by Stringybark Ecological (2020 - 2023), providing a prospectus of seed development across the WHC Offset estate, with recommendations on timing for seed collection.</p> <p>Sighted seed collection records containing details of seed species collected by weight and collection point across the WHC Offset estate for each year, including totals of 17.75kg (2020),</p>	YES
Seed Collection Propagation	To be completed annually as required		

		15.0kg (2021), and 12.57kg (2022). In addition, over 2,000kg of native grass seed was collected in March 2020 the Eurunderee property for revegetation purposes across the WHC Offset estate. A local revegetation provider are engaged to propagate the seed to produce Box Gum and non-EEC/CEEC Woodland overstorey species seedlings required for revegetation (MCCM 2022 Annual Review). Sighted revegetation activities during site inspection undertaken for this audit, including topsoil preparation and planting of seedlings.	
Revegetation			
Revegetation of Year 2 Areas (as listed in Table 6-3) (A, B, C, D)	Maintenance as required.	No additional maintenance required over the audit period in Year 2 Revegetation. See Appendix D for photographic comparison between past and current revegetation.	YES
Revegetation of Year 3 Areas (as listed in Table 6-3) (A, B, C, D)	Maintenance as required.	No additional maintenance required over the audit period in Year 3 Revegetation. See Appendix D for photographic comparison between past and current revegetation.	YES
Reuse of Salvaged Habitat Resources			
Relocation of salvaged habitat resources ^(D)	Continue	<p>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. While not a salvaged resource, WHC has installed a considerable number of nest boxes on trees mimicking tree hollows for use by a variety of fauna, including birds, bats, and other mammals. The nest boxes are designed to target specific fauna groups (photographs).</p> 	YES
Management of Cultural Heritage			
Comply with Cultural Heritage Requirements	Continue	Sighted Cultural Heritage signage and demarcations during site inspection undertaken for this audit (photograph).	YES

			
Weed Management			
Control of Major Weed Occurrences (noxious and WONS) ^(A)	Continue across all offset areas that require weed control as indicated through monitoring.	Sighted quarterly weed monitoring reports (Ecoplanning 2020, 2021, 2023) and a review of weed monitoring undertaken since 2015 (AMBS Ecology and Heritage 2023b). The latter report provides a review of the incidence of weeds 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.	YES
Weed extent (noxious and WONS)	50 % reduction in the cover of weeds (noxious and WONS) in the offset areas compared to baseline cover.		
Note: Weed species/coverage can vary substantially between seasons/years beyond the control of Whitehaven.			
Feral Animal Management			
Control of Feral Animals	Continue across all offset areas that require feral animal control as indicated through monitoring.	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 (2023c), 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 (2023c).	YES
Feral Animal Abundance	Stable or downward trend in feral animal abundance compared to previous year.		
Note: the movement patterns of some feral animals mean that some aspects of the feral population such as immigration of animals from outside the			

offset area are beyond the control of Whitehaven.		<p>Goat and pig trapping devices were observed during the site inspection undertaken for this audit (photographs).</p> 	
Control of Erosion			
Inspection of Offset Areas for Major Erosion and (if required) Control of Erosion	Annually and as required at other times	<p>Sighted Erosion register 2019-2022 spreadsheets, containing details of erosion description, location, proposed short-term and long-term works to repair/monitor erosion. Updates are provided on issues observed during previous years.</p> <p>No major signs of erosion were observed during the site inspection undertaken for this audit. Previously eroding surfaces at the old Teston North quarry (photograph) were observed to be largely vegetated. While there were some bare areas still, these were not eroding significantly.</p>  <p>See also entry under Inspection of Access Tracks for Maintenance Purposes above.</p>	YES
Management of Livestock			

Grazing Management (A, B, C, D)	Continue	Details of grazing management are provided in the Annual Reviews (MCCM 2017-2022). Destocking of the MCCM Offset estate has been ongoing over the audit period, as existing grazing licences expire and land is transferred over to biodiversity management. There have been some stock incursions from time to time, but these have been retrieved and fences repaired as required. A higher number of stock incursions was experienced during 2022 due to the number of heavy rainfall events resulting in damaged fences. As noted above, sighted many new fences during site inspection undertaken for this audit.	YES
Inspection of Fences for Maintenance Purposes	Annually and as required at other times		
Bushfire Management			
Establish Bushfire Management Measures	Reviewed and updated as required	Sighted assessments of fuel loads and fuel characteristics for WHC Offset estate (LRM Fire and Rescue 2020, 2021, 2022), providing details of both bushland and grassland habitats. The Annual Reports (MCCM 2017-2022) provide details of other bushfire management activities undertaken. These include fire break maintenance and ecological burns (2018, 2019). Due to the high degree of moisture during 2020-2022, minimal ecological burns were conducted over this period. After the 2018 ecological burn at Wirradale, the average native species richness increased by 42% and grass groundcover decreased by 13% at five monitoring sites. A large bushfire started from a lightning strike on 17th October 2019 that burnt out of the Mount Kaputar National Park into the Wirradale and Wongala South Biodiversity Offset Areas, impacting 620ha. WHC maintains regular communications throughout the reporting period with both the Liverpool Range and Namoi-Gwydir Zone RFS teams around planning of other WHC Biodiversity Offset Areas site ecological burn programs as well as providing WHC emergency contacts. WHC maintains a specialist fire-fighting contractor for an on-call engagement during the fire season to respond in the event of a bushfire on WHC BOAs and non-mining lands. Fire trails and breaks were observed to be in a good condition during the site inspection undertaken for this audit.	YES
Monitoring of Fuel Loads	Continue		
Controlled Burning	Fuel load reduction was undertaken (where required) without substantially damaging the integrity of the vegetation communities		
Translocation of <i>Tylophora linearis</i>			
Monitoring	Continue	Sighted Ecoplanning (2020 - 2023) providing details of <i>Tylophora linearis</i> translocation activities, with further details in the Annual Reports (MCCM 2017-2022). <i>T.linearis</i> seedlings have been propagated from seed collected at MCCM during 2014. A total of 77 individuals were transplanted into the Wollandilly Offset Area in 2015. Quarterly inspections are undertaken to determine viability and growth characteristics, including flowering. Enclosures containing translocated <i>T.linearis</i> were in a good condition during the site inspection undertaken for this audit (photograph).	YES

		 	
Translocation of <i>Pomaderris queenslandica</i>			
Monitoring	Continue	<p>Sighted Ecoplanning (2020 - 2023) providing details of <i>Pomaderris queenslandica</i> translocation activities, with further details in the Annual Reports (MCCM 2017-2022). <i>P.queenslandica</i> have been translocated at a number of occasions during the audit period, including plants grown from cuttings and seed. Monitoring of the translocated seedlings planted between 2020 and 2022 has recorded 95.2% survival including flowering and seed production from these plants during 2022. Twelve individuals of <i>P.queenslandica</i> have also germinated in a topsoil stockpile relocated from MCCM prior to being translocated to a dedicated area constructed with exclusion fencing on the Teston South Offset property, resulting in a further 134 individuals germinating in the translocation area.</p> <p>Enclosures containing translocated <i>P.queenslandica</i> were in a good condition during the site inspection undertaken for this audit (photograph).</p>	YES
			

Monitoring			
Vegetation and Habitat Monitoring ^(A, B, C, D)	Continue Target Timing - Spring	Sighted AMBS Ecology and Heritage (2020a, 2023a), containing a review of vegetation/habitat monitoring occurring at MCCM Biodiversity Offset Areas since 2014/2015. Habitat attributes monitored include tree hollows/standing dead timber/fallen logs, native plant species richness, native over- and mid-storey percent cover, ground layer percent cover, canopy recruitment, proximity to water, caves, rocks, and overhangs, evidence of erosion, dense stands of <i>Callitris glaucophylla</i> that require thinning, past disturbance, dieback, presence of flowering eucalypts, overall vegetation condition, among others.	YES
Fauna Monitoring	Continue Target Timing - Spring, summer, winter every three years	Sighted AMBS Ecology and Heritage (2020b, 2023c), containing a review of fauna monitoring occurring at MCCM Biodiversity Offset Areas since the 2014 spring season. Surveys were undertaken quarterly between November 2014 to May 2017 after which the surveys were repeated annually. Between 2020 and 2023, surveys targeting different fauna groups were undertaken at times best suited to that group. Thus, surveys were undertaken for birds in Sep/Oct annually, microbat surveys in Jan/Feb (2022, 2023), active surveys in Jan/Feb 2022, pitfall surveys in Dec-Feb 2021-22, nocturnal arboreal mammal in during Nov 2020, targeted Border Thick-tailed Gecko surveys in Jan/Feb 2022, and a general fauna monitoring survey in Nov 2020.	YES
Monitoring for Regent Honeyeater, Swift Parrot and Southern Long-eared Bat ^(B, C, D)	Continue	No Regent Honeyeaters (<i>Xanthomyza phrygia</i>) have been recorded during the bird surveys. However, two sightings of the Swift Parrot (<i>Lathamus discolor</i>) were made on MCCM offset properties during nest box installation surveys undertaken in 2022. The South-eastern (Corben's) Long-eared Bat (<i>Nyctophilus corbeni</i>) has been recorded every year during bat monitoring at MCCM Offset Areas, except in 2019.	
Weed Monitoring	Continue Indicative Timing – August, November, February, May	See entry under Weed Management above.	YES
Feral Animal Monitoring	Continue Indicative Timing – August, November, February, May	See entry under Feral Animal Management above.	YES
Recording			
Recording information summarised in Section 7.1	Annually	As noted in this report	YES
MCCM Annual Review	Annually	Sighted MCCM Annual Reports (MCCM 2017 - 2022)	YES
BMP Annual Report	Annually	Sighted Annual Biodiversity Summary Reports (WSP 2019 - 2022)	YES
Commonwealth Approval Compliance Reports	Annually Target Timing - March	Sighted EPBC 2010/5566 Compliance Reports (MCCM 2017 - 2023)	YES

<i>Tylophora linearis</i> Propagation and Translocation Program	Annually	Sighted Ecoplanning (2020 - 2023) providing details of <i>Tylophora linearis</i> translocation activities	YES
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- A Performance criteria relevant to the Box-Gum Woodland EEC/CEEC.
- B Performance criteria relevant to potential habitat for the Regent Honeyeater (*Xanthomyza phrygia*).
- C Performance criteria relevant to potential habitat for the Swift Parrot (*Lathamus discolor*).
- D Performance criteria relevant to potential habitat for the South-eastern Long-eared Bat (*Nyctophilus corbeni*).

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, DPE Crown Lands, 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 95% performance with the relevant RMP performance criteria. Remediation of sites that do not meet the criteria is not expected to significantly affect progress towards completion 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 sites achieved 81% performance with the relevant BMP performance criteria. Where criteria are not met, this is mostly related to un-met overstorey and mid-storey cover targets, most likely to be due to climatic factors rather than ineffective management actions. Targets are expected to be met through continued growth of revegetation over the next decade. Management actions are undertaken as required per the criteria.
d) identify any measures that should be implemented to improve the performance of rehabilitation, management and restoration within the rehabilitation and biodiversity offset areas	No management measures other than those identified in the RMP and BMP are recommended to improve rehabilitation outcomes
e) 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 (2020a) 5-Year Review of the Annual Flora Monitoring Program Data for the Maules Creek and Tarrawonga Mine Biodiversity Offset Areas. Prepared by AMBS Ecology & Heritage for Whitehaven Coal Limited.

AMBC Ecology and Heritage (2020b) 5 – Year Review of the Annual Fauna Monitoring Program Data for the Maules Creek and Tarrawonga Biodiversity Offsets Prepared by AMBS Ecology & Heritage for Whitehaven Coal Ltd.

AMBC Ecology and Heritage (2023a) Flora Monitoring Review at Year 10 (2023) against Performance Criteria in the Maules Creek Coal Mine Biodiversity Management Plan Prepared by AMBS Ecology & Heritage for Whitehaven Coal Limited.

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

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

Ecoplanning (2020 – 2022) Seasonal Weed Assessment Report.

Greenfields Agricultural and Environmental Services (2022) Annual Rehabilitation Monitoring Whitehaven Coal Ltd Maules Creek Coal Mine.

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.

MCCM Maules Creek Coal Mine (2017-2023) Annual Review.

MCCM Maules Creek Coal Mine (2017) Biodiversity Management Plan.

MCCM Maules Creek Coal Mine (2021) Offset Management Plan

MCCM Maules Creek Coal Mine (2022) Maules Creek 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

Emma Bulkeley
Environmental Superintendent
Whitehaven Coal Limited
Kamilaroi Country

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

13/01/2023

Dear Ms Bulkeley

**Maules Creek Coal (MP10_0138)
S3C56 auditor endorsement request**

Reference is made to your post approval matter, MP10_0138-PA-81, 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 19 December 2022. Further reference is made to your response to the department's request for information (RFI-52893708).

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



Heidi Watters
Team Leader Northern
Compliance

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 Maules Creek Coal Project

Consent Number MP10_0138

Description of Project Maules Creek Mine

Project Address THERRIBRI ROAD, BOGGABRI, NSW, 2382

Proponent Ashton Coal 2 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: AREQ0043116 | Maules Creek Mine Complex | Enquiry (external) | Other Enquiry | 21 Jul 2023 09:03:18
Date: Tuesday, 1 August 2023 3:56:53 PM
Attachments: [viewourvideos.pngx](#)
[default_banner.jpg](#)
[RegionalNSWLogo.pngx](#)
[visitourwebsite.pngx](#)
[subscribe.pngx](#)
[ERM_Maules Creek 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 Zeote,

Please find attached the Regulator's response to your request for consultation on the Independent Biodiversity Audit to be undertaken of the Maules Creek 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:MSG1043267_SRayJHqYLOWmTELlhG1v

AREQ0043116

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

By email: toivo.zoete@erm.com

Dear Mr Zoete,

Subject: Maules Creek 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 Maules Creek 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

From: [Toivo Zoete](#)
To: vicky.lyons@crowland.nsw.gov.au
Cc: [Andrew Wright](#); [Oliver Moore](#); [Heather McKay](#)
Subject: Independent Biodiversity Audit Maules Creek Coal Mine
Date: Friday, 21 July 2023 8:50:00 AM
Attachments: [image001.png](#)
[Independent Biodiversity Audit Tarrawonga and Maules Creek Mines Terms of Reference.pdf](#)

Dear Vicky,

I am currently completing the Independent Biodiversity Audit as per the Conditions of Approval 56 of PA 10_0138 for Maules Creek Coal Mine. The Condition requirements include:

- include consultation with BCS, LLS, DPIE Crown Lands, 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.

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.

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



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

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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.

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

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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- 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:

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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:

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- (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;
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Kind regards,

Dr Toivo Zoete
Principal Environmental Consultant

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APPENDIX D PHOTOGRAPHIC REVEGETATION COMPARISON

	2017	2023
Velyama West	 A landscape photograph from 2017 showing a wide, flat field of tall, green grass. In the background, there are dark, forested hills under a clear blue sky. A single tree stands in the middle ground.	 A landscape photograph from 2023 showing the same area. The grass is now dry and yellowish-brown. There are several small, dark trees or shrubs in the foreground and middle ground. The sky is overcast with grey clouds.

Wollandilly



	2020	2023
Willeroi	<div><div>SX99V25 Willeroi 2020/07/24 09:45:22</div></div>	<div><div>Willeroi: SX102-V25 2023/06/25 09:00:00</div></div>

Kelso



Wirradale



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