

Annual Review

Canyon Coal Mine

Name of operation	Canyon Coal Mine
Name of operator	Whitehaven Coal Mining Ltd
Development consent/project approval number	DA 8-1-2005
Name of holder of development consent/project approval	Whitehaven Coal Mining Ltd
Mining lease number	ML 1464, ML 1471
Name of holder of mining lease	Whitehaven Coal Mining Ltd
Water licence number	WAL 29458
Name of holder of water licence	Whitehaven Coal Mining Ltd
MOP start date	7 September 2015
MOP end date	6 September 2022
Annual review start date	1 January 2017
Annual review end date	31 December 2017
<p>I, Nigel Woods, certify that this audit report is a true and accurate record of the compliance status of Canyon Coal Mine for the period 1st January 2017 until 31st December 2017, and that I am authorised to make this statement on behalf of Whitehaven Coal Mining Pty Ltd.</p> <p><i>Note. a) The Annual Review is an 'environmental audit' for the purposes of section 122B (2) of the Environmental Planning and Assessment Act 1979. Section 122E provides that a person must not include false or misleading information (or provide information for inclusion in) an audit report produced to the Minister in connection with an environmental audit if the person knows that the information is false or misleading in a material respect. The maximum penalty is, in the case of a corporation, \$1 million and for an individual, \$250,000.</i></p> <p><i>b) The Crimes Act 1900 contains other offences relating to false and misleading information: section 192G (Intention to defraud by false or misleading statement—maximum penalty 5 years imprisonment); sections 307A, 307B and 307C (False or misleading applications/information/documents—maximum penalty 2 years imprisonment or \$22,000, or both).</i></p>	
Name of authorised reporting officer	Nigel Woods
Title of authorised reporting officer	Director- Whitehaven Coal Mining Ltd
Signature of authorised reporting officer	
Date	30.5.18

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1 STATEMENT OF COMPLIANCE

The compliance status of the Canyon Coal Mine (CCM) as at 31st December 2017 is summarised in Table 1. Table 2 notes non-compliances that occurred during the reporting period.

Table 1 - Statement of Compliance

Were all conditions of the relevant approval(s) complied with? ¹	
ML 1471	Yes
ML 1464	Yes
DA 8-1-2005	No
WAL 29458	Yes

Table 2 - Non-compliances

Relevant Approval	Condition Schedule and Number	Condition Description (summary)	Compliance status	Comment	Where Addressed in Annual Review
DA- 8-1-2005	2(2)	The Proponent shall carry out the development: Generally in accordance with the EIS; and In accordance with the conditions of this consent.	NC	Non-compliances with the Development Consent are identified below.	Sections 9 and 10.2
DA- 8-1-2005	5(12)	Revision of strategies and plans within 3 months of submission of an Annual Review.	NC	Revision of the Water Management Plan (WMP) not undertaken during reporting period, pending results from groundwater assessment.	Section 10.2

Note: Non-compliances identified within the most recent Independent Environmental Audit are listed in Table 8 .

Compliance status key for Table 2

Risk level	Colour code	Description
High	Non-compliant	Non-compliance with potential for significant environmental consequences, regardless of the likelihood of occurrence
Medium	Non-compliant	Non-compliance with: <ul style="list-style-type: none"> potential for serious environmental consequences, but is unlikely to occur; or potential for moderate environmental consequences, but is likely to occur
Low	Non-compliant	Non-compliance with: <ul style="list-style-type: none"> potential for moderate environmental consequences, but is unlikely to occur; or potential for low environmental consequences, but is likely to occur
Administrative non-compliance	Non-compliant	Only to be applied where the non-compliance does not result in any risk of environmental harm (e.g. submitting a report to government later than required under approval conditions)

2 INTRODUCTION

This is the 17th Annual Review (AR), formally Annual Environmental Management Report, produced for the CCM, and it has been prepared in accordance with Condition 3 of Mining Leases (MLs) 1464 and 1471 (Mining Act 1992) and Condition 5 (Schedule 5) of DA 8-1-2005, as modified. The AR follows the format required by the NSW Government Annual Review Guideline (October, 2015). The AR covers the period from 1st January 2017 until 31st December 2017.

CCM is located within the Narrabri Shire, approximately 30 km north-west of Gunnedah, 16 km east-south-east of Boggabri and immediately north of the former Vickery Coal Mine (Figure 1).

Mining at CCM ceased in July 2009, and the mine is now in Closure, with a small area leased to Hitachi as a maintenance compound.

2.1 Mine Contacts

The management personnel responsible for the CCM and their relevant contact details are as follows:

- Mr Nigel Wood, General Manager, Open Cut Operations - oversees Open Cut Operations for the Whitehaven Group. Contact: (02) 6741 9309.
- Miss Emily Clements, Graduate Environmental Officer – oversees day to day environmental and rehabilitation performance across the site. Contact: (02) 6740 7009.

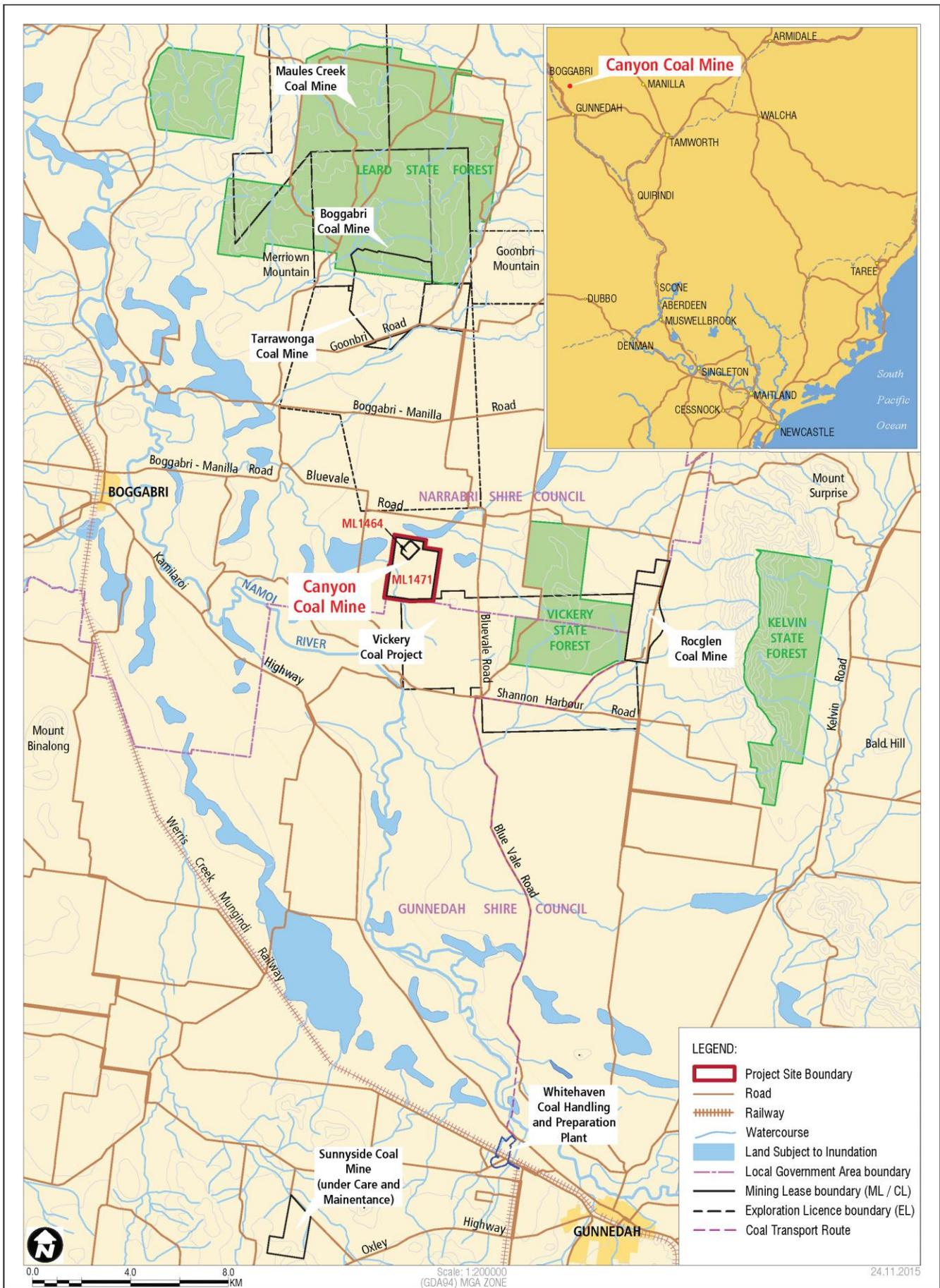


Figure 1 - Locality Plan

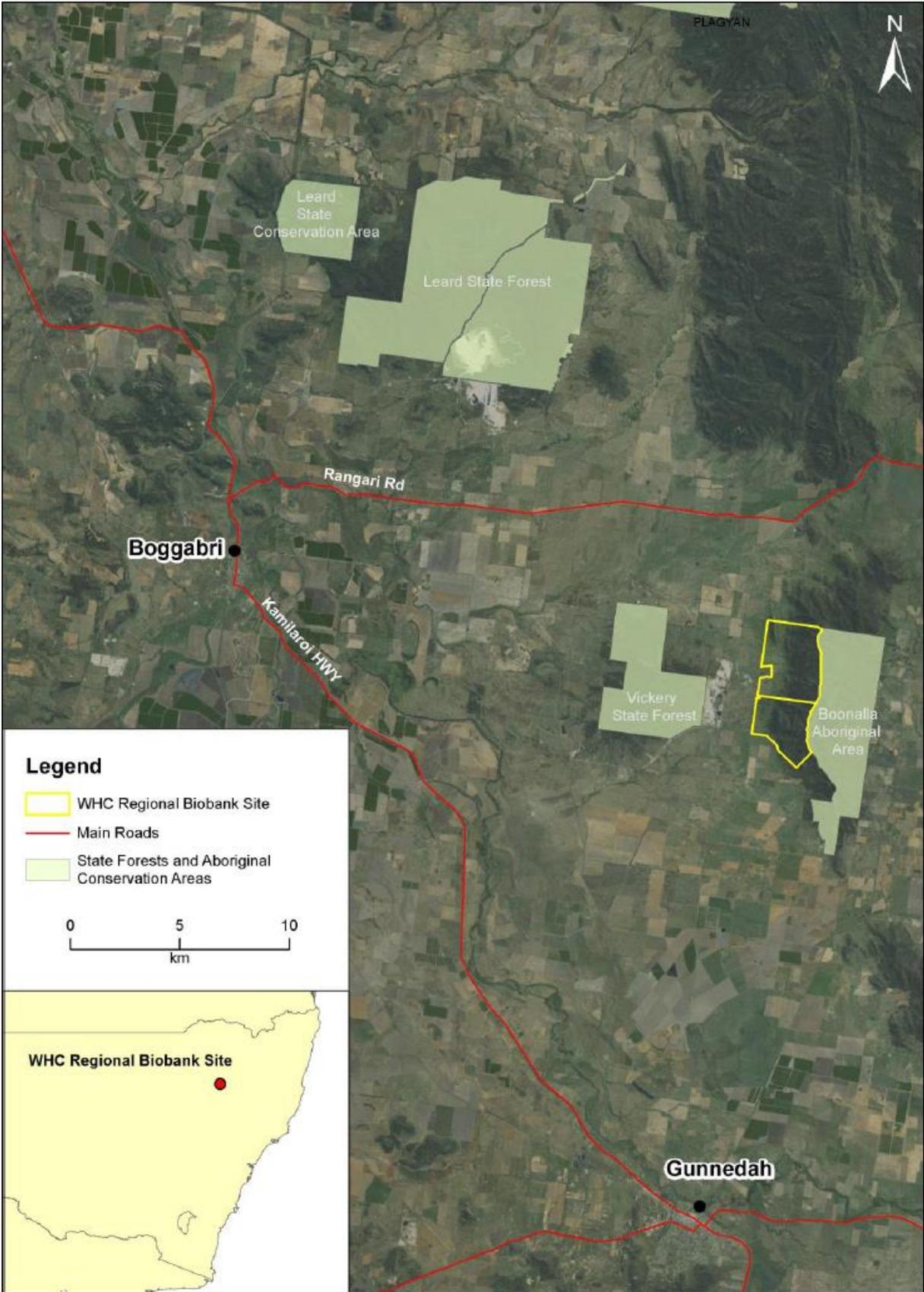


Figure 2 – Location of Biobank Site

3 APPROVALS

3.1 Tenements, Licences, and Approvals

Table 3 identifies the approvals in place for the CCM at the end of the reporting period, the issuing / responsible Authority, dates of issue, expiry date and relevant comments.

Table 3 - Tenements, Licences and Approvals

Issuing / Responsible Authority	Type of Lease, Licence, Approval	Date of Issue	Expiry	Comments
Department of Planning and Environment (DP&E)	Development Consent DA 8-1-2005, Modification 3	3 September 2015	N/A	-
Department of Primary Industry-Division of Resources and Geoscience (DRG)	ML 1471	7 th September 2000	7 th September 2021	-
Department of Primary Industry-Division of Resources and Geoscience	ML 1464	21 August 2006	21 st August 2027	-
Department of Primary Industry - Water	WAL 29458 (90WA822498)	12 September 2012	In perpetuity	-

4 OPERATIONS SUMMARY

4.1 Mining Operations

No mining operations have occurred at the CCM during the reporting period.

Table 4 – Production Summary

Material	Approved Limit	Previous Reporting Period (actual)	This Reporting Period (actual)	Next Reporting Period (forecast)
Waste Rock/Overburden	n/a	0	0	0
ROM Coal/Ore	n/a	0	0	0
Coarse Reject	n/a	0	0	0
Fine Reject (Tailings)	n/a	0	0	0
Saleable Product	n/a	0	0	0

4.2 Next Reporting Period

Operations forecast for the next reporting period are expected to be limited to environmental monitoring and maintenance earthworks, if and as required.

5 ACTIONS REQUIRED FROM PREVIOUS ANNUAL REVIEW

DP&E's response in July 2017 to the 2016 Annual Review requested that ongoing monitoring and necessary maintenance is undertaken of areas of erosion on the void batters at CCM. These inspections are captured in the Monthly Environmental Inspections, and addressed in Table 6.

DRG have requested the removal of concrete and tyres located on site. This work has been completed.

6 ENVIRONMENTAL PERFORMANCE

The following sub-sections document the implementation and effectiveness of the various control strategies adopted at the CCM.

6.1 Air Quality

6.1.1 Criteria

The air quality criteria applicable to the CCM are specified in DA 8-1-2005, and are summarised below.

- Maximum increase in deposited dust – 2 g/m²/month.
- Maximum mean total deposited dust level (insoluble solids) – 4 g/m²/month.
- Mean annual Total Suspended Particulate (TSP) matter (all sources) concentration – 90 µg/m³.
- Mean annual PM₁₀ particulate level – 30 µg/m³.
- 24 hour average PM₁₀ particulate level – 50 µg/m³.

6.1.2 Dust Monitoring

Monitoring of deposited dust is undertaken on a monthly basis, with results presented below in Table 5.

Table 5 - Deposited Dust Monitoring Data

Site	Property Name	Annual Mean Total Insoluble Solids (g/m ² /month)	Annual Mean Ash (g/m ² /month)
D1	Whitehaven	1.9	0.8
D2	Merton	2.3	1.1
D12	Whitehaven	1.9	0.6
D13b	Womboola	2.8	1.6

A review of Table 5 shows that the annual average limit for deposited dust was not exceeded at any location during the reporting period.

6.1.3 Key Environmental Performance/Management Issues

No key environmental performance/management issues were identified during the reporting period.

6.1.4 Proposed Improvements to Environmental Management

No improvements are proposed within the next reporting period.

6.2 Biodiversity

6.2.1 Flora

Biodiversity management of the Biobank Offset Site for CCM was ongoing during the reporting period, with the latest Annual Biobank Report received in February 2017, and available in Appendix 3.

6.2.2 Fauna

A series of investigations into the occurrence of Threatened fauna within the DA Area were undertaken by Countrywide Ecological Service as part of the Stage 2 EIS preparation phase, with two vulnerable micro bat species and a koala recorded within open woodland areas

within the “Womboola” property. No targeted fauna monitoring was completed during the short reporting period.

6.2.3 Weeds

Weed spraying was undertaken by Whitehaven’s own qualified personnel following the detection of weeds within the monthly environmental inspections during the reporting period. Spraying occurred in February, March, May, June and August 2017, and was predominately spot spraying for African Boxthorn and Prickly Pear, with broad leaf weeds also targeted around the leased Hitachi compound.

6.2.4 Feral Animal Control

Feral animals are not a significant land management issue on CCM’s landholding and are limited to isolated occurrences of pigs, foxes, hares and rabbits. In view of the low frequency of occurrence, and in the absence of an extensive programme by all surrounding landowners, no broad scale feral animal control programme was considered warranted during the reporting period. One pig trap has been in place on site since April 2016, with 7 feral pigs trapped during the reporting period.

6.2.5 Key Environmental Performance/Management Issues

No key environmental performance/management issues were identified during the reporting period.

6.2.6 Proposed Improvements to Environmental Management

Ongoing campaign weed spraying will be undertaken as required on site, along with opportunistic feral animal control.

6.3 Blasting

6.3.1 Criteria

Blasting criteria for the CCM are noted in DA 8-1-2005, however they are not relevant for this reporting period, as no blasting has been undertaken onsite.

6.3.2 Key Environmental Performance/Management Issues

No blasts were undertaken during the reporting period.

6.3.3 Proposed Improvements to Environmental Management

No blasting is proposed within the next reporting period.

6.4 Operational Noise

6.4.1 Criteria

DA 8-1-2005 details the noise criteria for site operations and coal haulage, however there was no requirement for noise monitoring during the reporting period.

6.4.2 Key Environmental Performance/Management Issues

No key environmental performance/management issues were identified during the reporting period.

6.4.3 Proposed Improvements to Environmental Management

No improvements are proposed within the next reporting period.

6.5 Transport

6.5.1 Criteria

Schedule 3 Condition 36 of DA 8-1-2005 details the monitoring requirements for gravel and coal haulage. There was no transport of either gravel or coal during the reporting period.

6.5.2 Key Environmental Performance/Management Issues

No key environmental performance/management issues were identified during the reporting period.

6.5.3 Proposed Improvements to Environmental Management

No improvements are proposed within the next reporting period.

6.6 Greenhouse Gas

6.6.1 Criteria

Schedule 3 Condition 39 of DA 8-1-2005 details the monitoring, management and reporting requirements for greenhouse gas emissions, however no operations were undertaken on site during the reporting period.

Canyon is included in Whitehaven Coal's annual National Greenhouse and Energy Reporting.

6.6.2 Key Environmental Performance/Management Issues

No key environmental performance/management issues were identified during the reporting period.

6.6.3 Proposed Improvements to Environmental Management

No improvements are proposed within the next reporting period.

6.7 Aboriginal Heritage Management

6.7.1 Environmental Management Measures

Four Aboriginal heritage sites have been discovered since 1999, during investigations for the CCM. Two of these sites, Whitehaven 3 and Whitehaven 4, were located within the Mining Lease area. Whitehaven 3, a scar tree located adjacent to the southern mine lease boundary, has been protected by fencing to minimise the potential for adverse impacts. Whitehaven 4 was located within the extraction area, and artefacts at this site were salvaged by representatives of the Red Chief LALC in accordance with a Section 90 Permit (No 2051) prior to disturbance. The remaining two heritage sites, Whitehaven 1 and Whitehaven 2, although not located within the Mine Lease boundary, have also been fenced and demarcated to avoid disturbance.

6.7.2 Consultation

No soil stripping has been undertaken for the CCM. No additional Aboriginal cultural heritage items have been discovered during the reporting period, and no consultation with Aboriginal stakeholders was conducted.

6.7.3 Environmental Management Measures

Given the status of the site the environmental management measures for Aboriginal Heritage are limited to ensuring that any identified heritage sites remain undisturbed.

6.7.4 Key Environmental Performance/Management Issues

No key environmental performance/management issues were identified during the reporting period.

6.7.5 Proposed Improvements to Environmental Management

No improvements are proposed within the next reporting period.

6.8 Natural Heritage

There are no features of natural heritage within the Project Approval area and hence no specific management procedures are required.

6.9 Bushfire Management

6.9.1 Environmental Management Measures

CCM is located within an area of cleared agricultural land, and Whitehaven Coal personnel liaise with the local Rural Fire Service, as required. All fire breaks were last graded in November 2016. There have been no bushfire incidents on, or adjacent to, the mine site during this reporting period.

6.9.2 Key Environmental Performance/Management Issues

No key environmental performance/management issues were identified during the reporting period.

6.9.3 Proposed Improvements to Environmental Management

No improvements are proposed within the next reporting period.

6.9.4 Environmental Management Measures

Access to the site is restricted to authorised personnel only.

6.9.5 Key Environmental Performance/Management Issues

No key environmental performance/management issues were identified during the reporting period.

6.9.6 Proposed Improvements to Environmental Management

No improvements are proposed within the next reporting period.

6.10 Waste

No waste was produced by Whitehaven Coal Mining (WHC) at the Canyon mine site during the reporting period. The small compound currently leased to Hitachi is managed by the tenants, who maintain responsibility of their own waste treatment and removal.

6.11 Environmental Performance Summary

An environmental performance summary for CCM is presented in Table 6 below.

Table 6 – Environmental Performance

Aspect	Approval Criteria / EIS Prediction	Performance during the reporting period	Trend / Key Management Implications	Implemented / proposed management actions
Erosion Control	N/A	Previous areas of erosion seeded with a cover crop for stabilisation. Monthly inspections undertaken.	Nil	The sowing of a cover crop was undertaken in the previous reporting period. Ongoing monitoring of the erosion was undertaken on a monthly basis, and will continue in the next reporting period, with maintenance works completed as required.

7 WATER MANAGEMENT

7.1 Surface Water Management

Surface water monitoring on site is limited to the void, and wet weather monitoring as required, with the complete surface water monitoring results presented in Appendix 1.

This period has seen a return to normal oil and grease levels, following two high readings in late 2015, while the long term water results are continuing to show a slight upward trend in pH and EC readings. During the reporting period CCM engaged the services of a Hydrogeologist with SLR Consulting Australia to determine the basis of these observed trends. The findings of this work concluded that water percolating through waste-rock on the site and into the groundwater system, which then flows to the upper and lower void onsite, is the most likely cause of the observed water chemistry. These findings are further discussed in Section 7.2.1.

7.1.1 Discharges

There were no wet weather discharges during the reporting period.

7.1.2 Water Take

During the reporting period no water was taken from any bores on site.

7.2 Groundwater Management

7.2.1 Environmental Performance/Management

Current requirements include 6 monthly monitoring of:

- Standing water level, pH, conductivity, Cl, Na, and oil and grease at GW-11 and P3; and
- Standing water level at GW-7, GW-8, AND GW-9.

Groundwater testing was undertaken twice during the reporting period, in February and August 2017.

Water quality results and standing water levels have remained relatively consistent throughout the monitoring period. GW11 results continue to indicate a slightly increasing conductivity trend, while all other monitored parameters remain consistent. As discussed in Section 7.1, during the reporting period CCM engaged the services of a Hydrogeologist with SLR Consulting Australia to determine the basis of the observed trends. The findings of this work concluded that water percolating through waste-rock on the site and into the groundwater system is the most likely explanation for the trends observed at GW11. The findings also noted that the groundwater system on site at CCM and surrounding GW11 is a closed system in respect to the regional system, with the area of CCM flowing towards the void onsite. This therefore limits the impacts of waste-rock leachate on the regional system. There have been no changes in groundwater chemistry recorded at any of the other bores in the CCM network.

GW8 continues to show large fluctuations in standing water level, as it has for the previous 3 years. GW8 is located on mine owned land, and is currently leased. It is expected that the drawn down is being caused by farm use, with a solar pump installed on the bore, and therefore unrelated to CCM.

Full monitoring data results for GW11 and GW8, along with all other groundwater monitoring sites, are included in Appendix 2.

7.3 Rehabilitation Performance during the Reporting Period

7.3.1 Status of Mining and Rehabilitation

Table 7 – Rehabilitation Status

Mine Area Type ¹	Previous Reporting Period (Actual) 2016 (ha)	This Reporting Period (Actual) 2017 (ha)	Next Reporting Period (Forecast) 2018 (ha)
A. Total Mine Footprint	416.98	416.98	416.98

B. Total Active Disturbance	2.9	2.9	2.9
C. Land Being Prepared for Rehabilitation	0	0	0
D. Land Under Active Rehabilitation	249.8	249.8	249.8
E. Completed Rehabilitation	0	0	0

¹ Refer Annual Review Guideline (p.11) for description of mine area types.

7.3.2 Annual Rehabilitation Monitoring

Flora

Remote Sensing Monitoring

Remote sensing monitoring analysis identified significant increases in Photosynthetically Active Biomass (PAB) due to substantial groundcover increases over much of the rehabilitation area and any decreases were generally associated with ponded water in 2016. These increases/decreases respectively are attributed to higher than average rainfall in the months preceding monitoring in 2016 and this increase in groundcover was confirmed during the field surveys (Eco Logical, 2017).

Species Richness

All rehabilitation zones have increased in flora species richness from 2015 except for Wood_05 which decreased slightly in 2016 (Eco Logical, 2017). Burnt_2013 species richness has increased substantially from the previous monitoring period, and is comparable with initial 2011 survey records. Both control zones had substantial increases in species richness (Eco Logical, 2017). Exotic species richness follows the same trend as native species, with a slight increase across all zones excepting Wood_06a. As with native species the control zones show a uniform increase in exotic species and remain higher than 2011 levels, though the rehabilitation zones still fluctuate (Eco Logical, 2017).

Vegetation Cover

Variations in mean native species cover has stabilised from the 2015 monitoring period and shows an overall decrease in native species cover in most zones in 2016 mostly likely due to be smoothed by the significant exotic species cover in response to the high rainfall in 2016.

Fauna

Birds

Bird species composition analysis shows that species composition fluctuates at both the control and rehabilitation zones, though this fluctuation is marginally less at the control zones in 2016 (Eco Logical, 2017). The Grey-crowned Babbler (*Pomatostomus temporalis temporalis*) was seen for the second consecutive year during the 2016 monitoring period (Eco Logical, 2017). The Turquoise Parrot (*Neophema pulchella*) remains unrecorded. Other threatened species identified during 2016 were the Black Falcon (*Falco subniger*), Little Eagle (*Hieraaetus morphnoides*), Hooded Robin (*Melanodrayas cucullata*) and Diamond Firetail (*Stagonopleura guttata*).

Terrestrial Fauna

Seven mammal species were observed during the 2016 monitoring period, all of which have been recorded in previous monitoring periods. *Macropus giganteus* (Eastern Grey Kangaroo), *Macropus robustus* (Common Wallaroo) and *Wallabia bicolor* (Swamp Wallaby) have been seen at the Control Zones in previous survey periods and continued to be present and widespread in the current monitoring period (Eco Logical, 2017). Four exotic species - *Lepus capensis* (Hare), *Oryctolagus cuniculus* (Rabbit), *Vulpes vulpes* (Fox) and *Sus scrofa* (Feral Pig) - recorded in the previous monitoring period, were present in the control zones during the current monitoring period; however, only Hare and Fox were present in the rehabilitation zones. Unlike the previous monitoring report, no amphibians or reptiles were recorded during the current monitoring period. The survey zones had dense and high groundcover which may have limited the visibility of amphibians and reptiles, though none were seen basking either (Eco Logical, 2017).

7.3.3 Post Rehabilitation Land Uses

The overall closure goal for Canyon is for the restored landform to be capable of sustaining pre-mining land-uses.

7.3.4 Renovation or Removal of Buildings

No renovation or removal of buildings occurred during the reporting period.

7.3.5 Other Rehabilitation Undertaken

No additional rehabilitation of explorations areas, infrastructure, shafts, adits, dams, fence lines or bunds occurred during the reporting period.

7.3.6 Departmental Sign-off of Rehabilitated Areas

No departmental sign-off of rehabilitated areas was received during the reporting period.

7.3.7 Variations in Activities against MOP/RMP

Not applicable.

7.3.8 Trials, Research Projects and Initiatives

No rehabilitation trials, research projects or other initiatives were undertaken during the reporting period.

7.3.9 Key Issues to Achieving Successful Rehabilitation

The key issues to achieving successful rehabilitation are:-

- Landform stability (Final Void);
- Soil quality;
- Water quality;
- Pasture development; and
- Land management, including weed control.

Management measures to address these key issues, including both trigger levels and response, are described in the Closure MOP prepared by SLR Consulting Australia, and approved in September 2015 by the Division of Resources and Energy.

7.4 Actions for Next Reporting Period

Ongoing environmental monitoring and management, as per DA 88-1-2005 and relevant environmental management plans.

8 COMMUNITY

Whitehaven Coal maintains an open door policy for interested local groups, including local residents, landholders, schools and community groups, to visit the mine where practically possible. Furthermore, Canyon has a designated complaints line advertised on the Whitehaven Coal website and, in the event of a complaint, details pertaining to the complainant, complaint and action taken are recorded. A complaints register is maintained on Whitehaven's website. No complaints have been received for the site since 2008.

A Community Consultative Committee (CCC) for Canyon is covered under the terms of reference of the Vickery Coal Mine CCC, which last met in March 2017.

Community contributions are managed in accordance the Whitehaven Coal Donations and Sponsorship Policy.

9 INDEPENDENT AUDIT

The most recent independent audit of CCM was undertaken by Environmental Resource Management Australia Pty Ltd (ERM) in early 2016, with the site component completed on the 23rd March 2016. Outstanding items from the 2016 Audit Action Plan, and how they are being addressed, are summarised in Table 8 below.

Table 8 – 2016 Independent Audit- Outstanding Actions

Condition/Plan	Proposed Action	Status
Minister's Conditions of Approval DA 8-1-2005	Ensure the transport management plan for the Vickery Project outlines the requirements of this consent condition for any material transported to the Canyon Mine prior to works commencing.	TMP to be updated prior to commencement of Vickery construction. Not yet triggered.
	Consider including the requirement to report volume discharged from site and the method for estimating /calculating the volume of any discharges from site into the Water Management Plan	WMP to be revised in accordance with DA 8-1-2005 Schedule 5 Condition 12.
	Consider submitting the revised plan to DPI (Water), EPA and DP&E requesting comment. Consider including evidence of any consultation and liaison into the annex of the plan.	Consultation to be undertaken as part of WMP revision. Consultation and liaison records not to be included in WMP.
Water Access Licence 29458	Consider including record keeping requirement for the water access licence into the Water Management Plan.	WMP to be revised in accordance with DA 8-1-2005 Schedule 5 Condition 12.
Closure Mining Operations Plan	Consider including in the references section of the Rehabilitation Monitoring Reports the list of operational records as discussed in this commitment to indicate these records have been considered.	There were no operational records utilised in the 2016 Rehabilitation Monitoring report (received during the reporting period), given that there was no additional rehabilitation undertaken.
	MOP to be updated to reflect EPL surrender.	Next MOP amendment.
Rehabilitation Monitoring Program	Consider completing LiDAR assessment as detailed in the Rehabilitation Monitoring Plan	Consideration into the utilisation of LiDAR assessment has been discussed between CCM and

		EcoLogical Australia, however has been deemed to be unnecessary for the site in conjunction with the multi-spectral imagery and on-ground assessments already undertaken.
	Consider updating the Rehabilitation Monitoring Program to reflect the review recommendations once stakeholder feedback has been requested and received (see below).	Next MOP amendment.
	Consider issuing the letter outlining the review to key stakeholders to ensure acceptance of the proposed changes.	Next MOP amendment.

10 INCIDENTS AND NON-COMPLIANCES DURING THE REPORTING PERIOD

10.1 Reportable Incidents

No environmental incidents occurred at CCM during the reporting period.

10.2 Non-compliances

Non-compliances with relevant approvals have been ranked as either administrative or low, with very limited potential for environmental harm, as addressed below.

- Condition 5(12) of DA- 8-1-2005 requires the revision of all strategies and plans as required by the approval. The WMP was not updated during the reporting period. During the reporting period CCM engaged a hydrogeologist to prepare a report on trends observed onsite in both surface water and ground water. This report was received in November 2017. The plan will be reviewed, and revised as necessary given the findings of the report, during the next reporting period. This revision will also capture the outstanding actions required from the IEA.

10.3 Regulatory Actions

There were no regulatory actions received for the Canyon Coal Mine during the reporting period.

11 ACTIVITIES TO BE COMPLETED IN THE NEXT REPORTING PERIOD

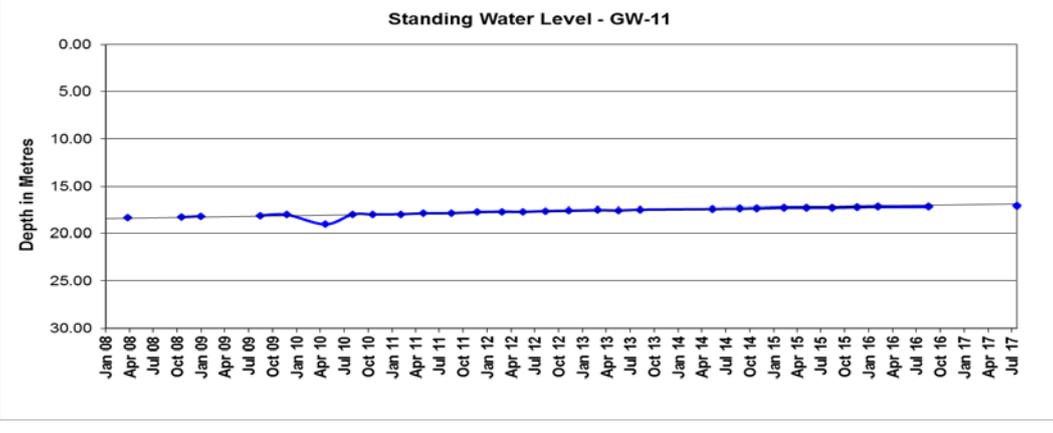
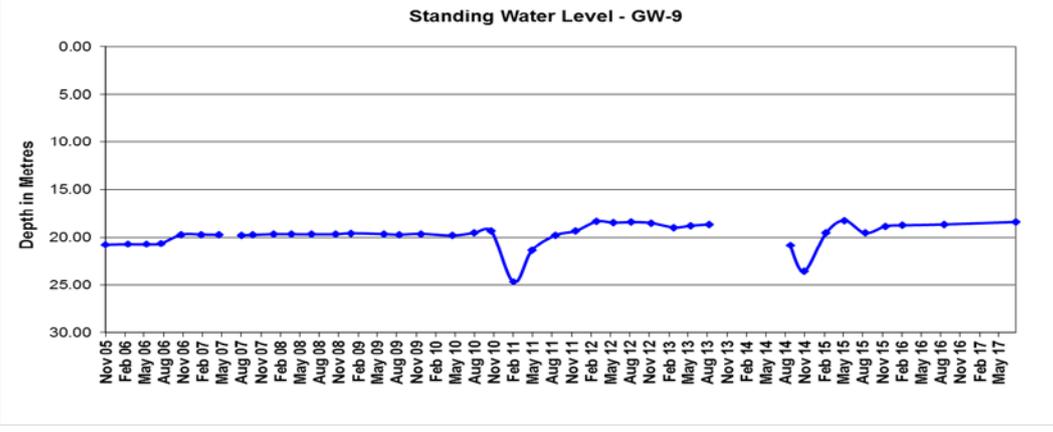
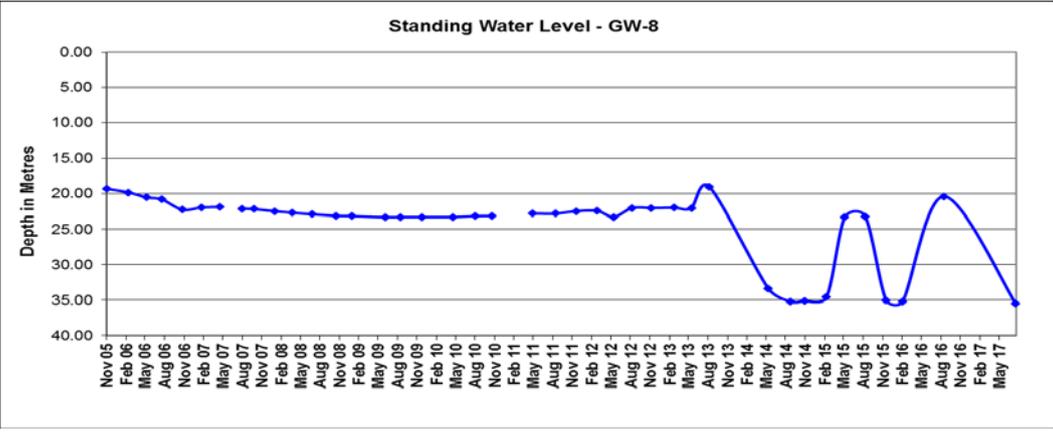
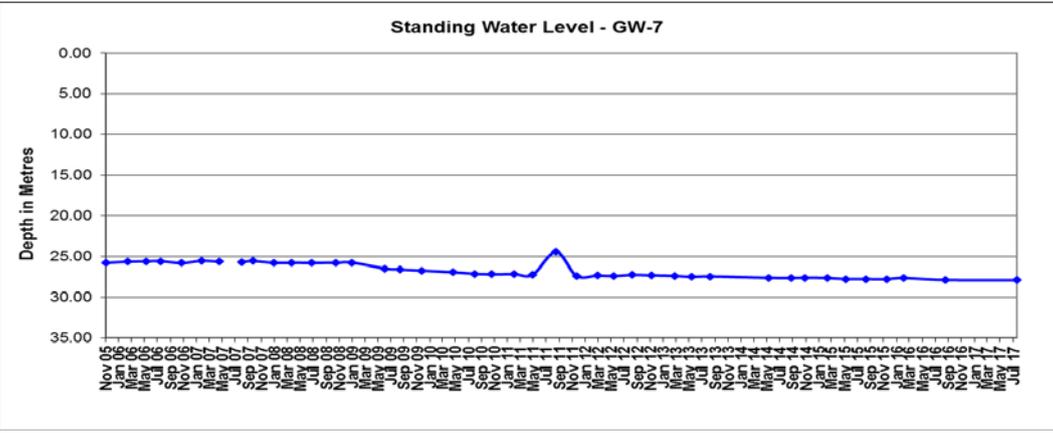
The following measures will be continued, or implemented, in the next reporting period to improve the environmental or community performance of the operation:-

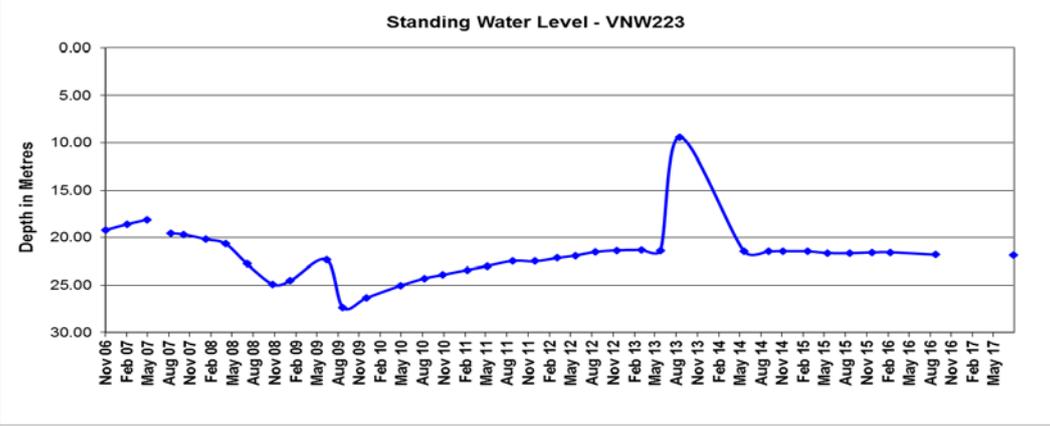
- The maintenance of woodland and rehabilitated areas,
- Continued implementation of DA 88-1-2005 and relevant environmental management plans;
- Completion of outstanding Independent Environmental Audit actions, as per Table 8; and
- The continuation of environmental monitoring and management, as per DA 88-1-2005 and relevant environmental management plans.

APPENDIX 1 SURFACE WATER MONITORING RESULTS

Sample No.	Date	Time	Sample Location	pH Field	pH	Electricity Conductivity Field	Electrical Conductivity (µS/cm)	Total Suspended Solids (mg/L)	Hydroxide Alkalinity as CaCO3	Carbonate Alkalinity as CaCO3	Bicarbonate Alkalinity as CaCO3	Total Alkalinity as CaCO3	Antimony	Arsenic	Molybdenum	Selenium	Chloride	Sodium	Aluminium	Arsenic	Manganese	Iron	Total Organic Carbon (TOC)	Grease & Oil (mg/L)	Comments
ES0909246-001	24 June 2009	1125	WW8		8.42		4110	45															5	<10	Limit of Reporting (LOR) was raised for Oil and Grease due to insufficient samples
ES0909246-002	24 June 2009	1140	WW9		6.77		135	114															43	<10	
ES1000714-001	15 January 2010	1250	WW9		6.82		204	38															20	<5	
ES1000714-002	15 January 2010	1320	WW11		6.77		76	69															5	<5	
ES1000714-003	15 January 2010	1340	WW12		6.5		132	72															9	<5	
ES1103385-001	16 February 2011	1200	VOID SMALL		8.33		264	19															2	<5	
ES1103385-002	16 February 2011	1250	VOID LARGE		8.19		346	14															3	<5	
ES1109073-001	2 May 2011	1240	VOID UPPER		8.66		293	<5															4	<5	
ES1109073-002	2 May 2011	1330	VOID LOWER		8.89		395	48															7	<5	
ES1117879-001	17 August 2011	1350	VOID UPPER		8.39		321	182	<1	3	114	117					17	58	0.29	0.004	0.056	0.17	5	<5	
ES1117879-002	17 August 2011	1410	VOID LOWER		8.52		451	22	<1	12	136	149					31	85	0.41	0.004	0.035	0.33	5	<5	
ES1119820-001	9 September 2011	900	WW 11		7.02		131	147															15	<5	
ES1119820-002	9 September 2011	920	WW 12		6.58		52	282															10	<5	
ES1121348-001	29 September 2011	1015	WW 12		6.97		109	236															16	<5	
ES1121348-002	29 September 2011	1030	WW 11		7.09		58	412															7	<5	
ES1124941-001	14 November 2011	910	WW 12		7.45		84	60															16	<5	
ES1124941-002	14 November 2011	925	WW 11		7.26		183	50															35	<5	
ES1211262-001	8 May 2012	920	VOID UPPER		8.48		242	13															3	<5	
ES1211262-002	8 May 2012	940	VOID LOWER		7.98		376	8															4	<5	
ES1227199-001	15 November 2012	1150	VOID UPPER		8.39		315	20															3	<5	
ES1227199-002	15 November 2012	1230	VOID LOWER		8.68		446	18															4	<5	
ES1303393-001	13 February 2013	1130	VOID UPPER		9.58	9.33	324	12															5	<5	
ES1303393-002	13 February 2013	1210	VOID LOWER		9.02	8.79	496	23															5	8	
ES1310050-001	1 May 2013	1120	UPPER VOID		9.81	9.68	349	353	17				<0.001	0.004	0.003	<0.01							6	<5	
ES1310050-002	1 May 2013	1150	LOWER VOID		8.78	8.63	523	553	97				<0.001	0.004	0.003	<0.01							7	<5	
ES1313688-001	13 June 2013	1001	WW1 R		7.08		48	74															14	<5	
ES1317466-001	5 August 2013	1135	UPPER VOID		8.7	8.56	574	601	9														6	<5	
ES1317466-002	5 August 2013	1100	LOWER VOID		8.97	8.1	341	348	11														8	6	
ES1323917-001	4 November 2013	1220	UPPER VOID		9.6	9.4	391	429	12	<1	88	117	205				17	71	0.42	0.005	0.017	0.31	8	<5	
ES1323917-002	4 November 2013	1200	LOWER VOID		8.8	8.54	681	776	23	<1	41	234	275				78	119	0.85	0.003	0.072	0.71	8	<5	
ES1402413-001	5 February 2014	1130	UPPER VOID		10.3	9.22	481	533	25				<0.001	0.006	0.003	<0.01							9	<5	
ES1402413-002	5 February 2014	1200	LOWER VOID		9.6	8.74	936	1070	33				<0.001	0.004	0.003	<0.01							7	<5	
ES1409710-001	1 May 2014	905	UPPER VOID		9.6	8.74	478	496	<5	<1	32	202	234				26	90	0.71	0.005	0.075	0.45	7	<5	
ES1409710-002	1 May 2014	935	LOWER VOID		9.4	8.54	1100	1150	<5	<1	26	287	313				165	184	0.25	0.005	0.074	0.18	5	<5	
ES1424402-001	5 November 2014	940	UPPER VOID		10.3	9.66	567	535	6				<0.001	0.004	0.003	<0.01							11	<5	
ES1424402-002	5 November 2014	1015	LOWER VOID		9.2	8.83	1470	1510	36				<0.001	0.003	0.003	<0.01							9	<5	
ES1503935-001	17 February 2015	900	UPPER VOID		10.2	9.34	612	626	44				<0.001	0.005	0.003	<0.01							12	<5	
ES1503935-002	17 February 2015	935	LOWER VOID		9.4	8.5	1800	1900	37				<0.001	0.006	0.005	<0.01							11	7	
ES1521402-001	6 May 2015	1105	UPPER VOID		9.4	8.87	633	626	<5	<1	50	231	280				31	163	0.51	0.005	0.016	0.38	4	9	
ES1521402-002	6 May 2015	1135	LOWER VOID		9.2	8.76	1870	1950	8	<1	71	275	346				425	425	0.53	0.004	0.037	0.42	<1	8	
ES1528268-001	12-August-2015	1100	UPPER VOID		9.8	9.13	617	622	12														15	15	
ES1528268-002	12-August-2015	1025	LOWER VOID		9.3	8.71	1970	1870	46														5	9	
ES1535953-001	10 November 2015	1225	UPPER VOID		9.5	9.3	674	692	12														14	25	
ES1535953-002	10 November 2015	1250	LOWER VOID		9.2	9	2180	2350	20														10	15	
ES1602961-001	9 February 2016	1135	UPPER VOID		9.7	9.06	784	846	19														13	<5	
ES1602961-002	9 February 2016	1205	LOWER VOID		9.5	8.95	2430	2730	111														8	<5	
ES1619369-001	31 August 2016	910	LOWER VOID		9	8.73	2730	2830	13															<5	
ES1703109-001	9 February 2017	1100	LOWER VOID		9.2	9.07	3230	3440	43															<5	

APPENDIX 2 GROUNDWATER MONITORING RESULTS





APPENDIX 3 ANNUAL BIOBANK REPORT



Whitehaven Coal Mining Pty Ltd

ABN: 65 086 426 253

Biobank Site Annual Report 2016-2017



Tree Planting on Belah Property, Whitehaven Biobank Site

Biodiversity Banking and Offsets Scheme

Biobanking agreement

ID Number 43

Annual reporting template

Biobank Site Annual Report						
Location details						
Biobanking agreement ID: 43				Name of landowner/s: <i>Whitehaven Coal Mining Pty Limited</i>		
Reporting date: <i>28th July 2017</i>				Property address: <i>“Yarrari” & “Belah”, Wean Road, Kelvin 2380</i>		
Records of management actions undertaken						
Management Action	Item Reference Number	Required completion time and frequency	Action completed (Yes/No)	Actual completion date/s	Description of actions undertaken (including where undertaken (including reference to management zones), any variations and the reasons for variation).	Visual observations and other comments (including reasons for non completion)
1. Management of grazing for conservation	1.1	<i>Ongoing from commencement date</i>	Yes	<i>1st July 2016</i>	<i>Grazing excluded from all areas of Biobank Site during Year 4.</i>	<i>Consol Grass under control and no longer requiring grazing management.</i>
	1.2	<i>Ongoing from first payment date (i.e. Year 1) until end of Year 4</i>	Yes	<i>1st July 2016</i>	<i>No grazing of MZ1 during Year 4.</i>	<i>As per 1.1</i>
	1.3	<i>Ongoing from first payment date</i>	Yes	<i>1st July 2016</i>	<i>No stock present where replanting undertaken during Year 4.</i>	<i>As per 1.1</i>
	1.4	<i>Ongoing from commencement date</i>	Yes	<i>1st July 2016</i>	<i>No stock present on Biobank Site during Year 4.</i>	<i>As per 1.1</i>

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2. Weed control	2.1	<i>Ongoing from first payment date</i>	Yes	<i>Various</i>	<i>Fire Management Plan implemented during Year 4. Weed control undertaken included Prickly Pear, Consol Grass, African Boxthorn, Noogoora & Bathurst Burr.</i>	<i>Weed control being undertaken on Biobank Site.</i>
	2.2	<i>Ongoing from first payment date</i>	<i>N/A in this period</i>	<i>Ongoing</i>	<i>N/A in this reporting period.</i>	<i>As required by the Biobanking Agreement; a review of the Weed Management Plan will be undertaken in Year 5 and submitted to the Director General who will determine if the plan needs to be updated.</i>
3. Management of fire for conservation	3.1	<i>Ongoing from commencement date</i>	<i>Not yet required</i>	<i>Not yet required</i>	<i>Fire Management Plan implemented during Year 4. Biobanking Agreement indicates no ecological burns until Year 40.</i>	<i>Ecological burns not required under management plan.</i>
	3.2	<i>Ongoing from first payment date</i>	<i>N/A in this period</i>	<i>Ongoing</i>	<i>N/A in this reporting period.</i>	<i>As required by the Biobanking Agreement; a review of the Fire Management Plan will be undertaken in Year 5 and submitted to the Director General who will determine if the plan needs to be updated.</i>
	3.3	<i>Ongoing from commencement date</i>	Yes	<i>Ongoing</i>	<i>No fires lit on Biobank Site during Year 4.</i>	<i>N/A in this reporting period.</i>

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4. Management of human disturbance	4.1	<i>Ongoing from commencement date</i>	<i>Yes Ongoing</i>	<i>Ongoing</i>	<i>Human activities that affect biodiversity values have not occurred during Year 4.</i>	<i>No unauthorised human disturbance has occurred at Biobank.</i>
	4.2	<i>Ongoing from commencement date</i>	<i>Ongoing</i>	<i>Ongoing</i>	<i>Human activities undertaken on Biobank are in accordance with management actions and plans during Year 4.</i>	<i>As per 4.1</i>
	4.4	<i>Ongoing from commencement date</i>	<i>Ongoing</i>	<i>Ongoing</i>	<i>No waste disposed of on Biobank Site during Year 4.</i>	<i>As per 4.1</i>
	4.5	<i>Ongoing from commencement date</i>	<i>Ongoing</i>	<i>Ongoing</i>	<i>No waste deposited by others on Biobank Site during Year 4.</i>	<i>As per 4.1</i>
	4.6	<i>Ongoing from commencement date</i>	<i>Yes Ongoing</i>	<i>Ongoing</i>	<i>Fencing, locked gates and signage in place during Year 4. Property Manager has been nominated to implement the management plan for the Biobank Site.</i>	<i>Fencing, locked gates and signage previously undertaken.</i>
5. Retention of native vegetation	5.1	<i>Ongoing from commencement date</i>	<i>Yes Ongoing</i>	<i>Ongoing</i>	<i>No vegetation removal during Year 4.</i>	<i>No activities have been undertaken on site to date that have resulted in vegetation removal.</i>
	5.2	<i>Ongoing from commencement date</i>	<i>Ongoing</i>	<i>Ongoing</i>	<i>There have been no requirements to burn native vegetation under the fire management plan.</i>	<i>N/A in this reporting period.</i>

Biodiversity Banking and Offsets Scheme

Biobanking agreement

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6. Planting or seeding	6.1	<i>Commence from first payment date</i>	<i>Yes Ongoing</i>	<i>Ongoing</i>	<i>Planting (including tree guards) and seeding undertaken over ~277ha during Year 4 following intensive goat and Consol Grass control.</i>	<i>Planting commenced in 2014-2015. Significant revegetation program undertaken during 2016-2017 across Biobank Site.</i>
	6.3	<i>Conduct the first survey 24 months after the completion of planting or seeding in each area of planting or seeding and then every 12 months thereafter.</i>	<i>Yes Ongoing</i>	<i>Ongoing</i>	<i>First survey of Planting from 2014-2015 undertaken.</i>	<i>Establishment and survival rates of plants from 2014-2015 were below usual and supplementary planting undertaken during 2016-2017.</i>
	6.4	<i>As required; from the date that planting or seeding areas are established</i>	<i>Yes Ongoing</i>	<i>Ongoing</i>	<i>Management of planting areas was undertaken to assist establishment and survival.</i>	<i>Good early signs of survival of planting and seeding areas from 2016-2017 (Year 4).</i>
	6.5	<i>As required (from commencement date if relevant to prepare for future planting)</i>	<i>Ongoing</i>	<i>Ongoing</i>	<i>No seed collection during Year 4 was undertaken on Yarrari & Belah.</i>	<i>Seed previously collected from White Box on the Biobank Site during 2015-2016 (Year 3) used in planting during 2016-2017 (Year 4).</i>

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	6.6	<i>From the start of Year 4 until the end of Year 6. Enhancement planting start of Year 7 until end of Year 10</i>	<i>Yes Ongoing</i>	<i>Ongoing</i>	<i>Planting of MZ1 and MZ2 during Year 4 included White Box tubestock. Seeding of MZ1 during Year 4 included Themeda triandra, Austrostipa scabra, Bothriochloa macra, Chloris truncate, Eragrostis sp., Panicum sp. and Aristida sp.</i>	<i>White Box density/spacing in accordance with Biobanking Agreement. Other species not available at time of planting but will be included within supplementary plantings in future years.</i>
7. Retention of dead timber	7.1	<i>Ongoing from commencement date</i>	<i>Yes Ongoing</i>	<i>Ongoing</i>	<i>No dead timber removed during Year 4.</i>	<i>Dead timber is retained on site in accordance with the management plan.</i>
	7.2	<i>When required</i>	<i>Not yet required</i>	<i>Not yet required</i>	<i>N/A in this reporting period.</i>	<i>No timber introduced to Biobank Site during Year 4.</i>
8. Erosion control	8.1	<i>Commence from first payment date</i>	<i>No – not yet required</i>	<i>Ongoing</i>	<i>No active erosion identified during Year 4.</i>	<i>There have been no areas of active erosion identified as a cause of concern during this reporting period.</i>
9. Retention of rocks	9.1	<i>Ongoing from commencement date</i>	<i>Yes Ongoing</i>	<i>Ongoing</i>	<i>No rocks have been removed during Year 4.</i>	<i>Rocks retained on site in accordance with the management plan.</i>
	9.2	<i>When required</i>	<i>Not yet required</i>	<i>Not yet required</i>	<i>NA in this reporting period.</i>	<i>No rocks introduced to Biobank Site during Year 4.</i>

Biodiversity Banking and Offsets Scheme

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<p>10. Control of feral and over abundant native herbivores</p>	<p>10.1</p>	<p><i>Ongoing from first payment date</i></p>	<p><i>Yes Ongoing</i></p>	<p><i>Ongoing</i></p>	<p><i>Feral and Overabundant Native Herbivores Management Plan implemented during Year 4. Feral animal control has been ongoing by the resident property manager. Contract goat harvester mustered and trapped over 300 goats and kids during Year 4.</i></p>	<p><i>The resident property manager has undertaken feral animal control throughout the reporting period, removing 1,220 goats and approximately 70 rabbits from the property since 2008.</i></p>
	<p>10.2</p>	<p><i>Ongoing from first payment date</i></p>	<p><i>N/A in this reporting period.</i></p>	<p><i>Ongoing</i></p>	<p><i>N/A in this reporting period.</i></p>	<p><i>As required by the Biobanking Agreement; a review of the Feral and Overabundant Native Herbivores Management Plan will be undertaken in Year 5 and submitted to the Director General who will determine if the plan needs to be updated.</i></p>
<p>11. Vertebrate pest management</p>	<p>11.1</p>	<p><i>Ongoing from first payment date</i></p>	<p><i>Yes Ongoing</i></p>	<p><i>Ongoing</i></p>	<p><i>Vertebrate Pest Management Plan implemented during Year 4. Vertebrate pest control has been ongoing by the resident property manager. Professional feral animal contractor conducted fox baiting programs during Year 4.</i></p>	<p><i>The resident property manager has undertaken vertebrate pest management, removing 409 pigs and 44 foxes from the property since 2008 by opportunistic shooting and/or trapping.</i></p>

Biodiversity Banking and Offsets Scheme

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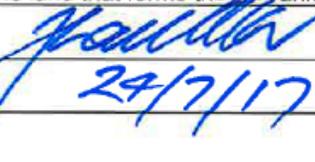
ID Number 43

	11.2	<i>Ongoing from first payment date</i>	<i>N/A in this reporting period.</i>	<i>Ongoing</i>	<i>N/A in this reporting period.</i>	<i>As required by the Biobanking Agreement; a review of the Vertebrate Pest Management Plan will be undertaken in Year 5 and submitted to the Director General who will determine if the plan needs to be updated.</i>
12. Nutrient control	12.1	<i>Ongoing from commencement</i>	<i>Yes Ongoing</i>	<i>Ongoing</i>	<i>No fertilisers were applied during Year 4.</i>	<i>Pesticides and herbicides may be applied to the Biobank in accordance with the management plan requirements.</i>
13. Control of exotic fish species	13.1	<i>Not Applicable</i>	<i>Not Applicable</i>	<i>Not Applicable</i>	<i>Not Applicable.</i>	<i>Not Applicable</i>
14. Maintenance or reintroduction of natural flow regimes	14.1	<i>Commence from first payment date</i>	<i>Yes Ongoing</i>	<i>Ongoing</i>	<i>Natural flow regimes maintained during Year 4.</i>	<i>All nominated dams on the Biobank Site were filled and seeded in September 2014.</i>
	14.2	<i>When required from date an artificial structure is removed</i>	<i>Yes Ongoing</i>	<i>Ongoing</i>	<i>Revegetation of infilled dams incorporated into planting and seeding of Biobank Site during Year 4.</i>	<i>Good early signs of survival of planting and seeding areas from 2016-2017 (Year 4).</i>
	14.3	<i>Ongoing from commencement</i>	<i>N/A in this reporting period.</i>	<i>Ongoing</i>	<i>N/A in this reporting period.</i>	<i>No dams or levee banks were constructed on Biobank Site during Year 4.</i>

Biodiversity Banking and Offsets Scheme

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Incident or event that has adverse effect on biodiversity values on biobank site	
Incident or event including adverse impacts (eg. natural events)	Action taken and proposed recommended actions
<i>None.</i>	<i>Not required.</i>
Records submitted with this report	
✓ Photographs taken at the photo points set in the biobanking agreement	
✓ Results of the inspections required to be conducted in item 1.3 of Annexure D to the biobanking agreement	
✓ Results of any monitoring, inspections or surveys required in Annexures C and D to the biobanking agreement	
Signature and certification	
I hereby declare that the information supplied in this report is accurate and complies with the reporting requirements under item 2 of the Annexure D to the biobanking agreement. Note: If the land that forms the biobank site is owned by multiple persons, each landowner must sign this annual report.	
Signed 	Signed
Date <i>29/7/17</i>	Date

Biodiversity Banking and Offsets Scheme

Biobanking agreement

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Photo Points

Photo Point 1	E 240629	N 6593772	13/07/17	3:33pm
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From South West Corner



From North West Corner



Biodiversity Banking and Offsets Scheme

Biobanking agreement

ID Number 43

From North East Corner



From South East Corner



Biodiversity Banking and Offsets Scheme

Biobanking agreement

ID Number 43

Photo Point 2	E240925	N6593562	22/07/17	5:05pm
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From South West Corner



From North West Corner



Biodiversity Banking and Offsets Scheme

Biobanking agreement

ID Number 43

From North East Corner



From South East Corner



Biodiversity Banking and Offsets Scheme

Biobanking agreement

ID Number 43

Photo Point 4	E240439	N6592054	13/07/17	3:10pm
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From South West Corner



From North West Corner



Biodiversity Banking and Offsets Scheme

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From North East Corner



From South East Corner



Biodiversity Banking and Offsets Scheme

Biobanking agreement

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Photo Point 5	E240595	N6593324	13/07/17	2:31pm
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From South West Corner



From North West Corner



Biodiversity Banking and Offsets Scheme

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From North East Corner



From South East Corner



Biodiversity Banking and Offsets Scheme

Biobanking agreement

ID Number 43

Photo Point 8	E241170	N6594590	23/07/17	2:05pm
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From South West Corner



From North West Corner



From North East Corner



From South East Corner



Biodiversity Banking and Offsets Scheme

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Photo Point 9	E241424	N6594095	22/07/17	3:27pm
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From South West Corner



From North West Corner



Biodiversity Banking and Offsets Scheme

Biobanking agreement

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From North East Corner



From South East Corner



Biodiversity Banking and Offsets Scheme

Biobanking agreement

ID Number 43

Photo Point 10	E241780	N6591054	22/07/17	4:36pm
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From South West Corner



From North West Corner



From North East Corner



From South East Corner



Biodiversity Banking and Offsets Scheme

Biobanking agreement

ID Number 43

Photo Point 11	E241101	N6591953	22/07/17	4:09pm
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From South West Corner



From North West Corner



From North East Corner



From South East Corner



Biodiversity Banking and Offsets Scheme

Biobanking agreement

ID Number 43

Photo Point 12	E241321	N6593399	22/07/17	4:54pm
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From South West Corner



From North West Corner



From North East Corner



From South East Corner



Biodiversity Banking and Offsets Scheme

Biobanking agreement

ID Number 43

Photo Point 14	E241172	N6593839	22/07/17	3:20pm
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From South West Corner



From North West Corner



Biodiversity Banking and Offsets Scheme

Biobanking agreement

ID Number 43

From North East Corner



From South East Corner



Biodiversity Banking and Offsets Scheme

Biobanking agreement

ID Number 43

Photo Point 15	E243373	N6594221	24/07/17	4:29pm
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From South West Corner



From North West Corner



From North East Corner



From South East Corner



Biodiversity Banking and Offsets Scheme

Biobanking agreement

ID Number 43

Photo Point 17	E243026	N6593081	25/07/16	3:36pm
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From South West Corner



From North West Corner



Biodiversity Banking and Offsets Scheme

Biobanking agreement

ID Number 43

From North East Corner



From South East Corner



Biodiversity Banking and Offsets Scheme

Biobanking agreement

ID Number 43

Photo Point 20	E241993	N6595399	23/07/17	3:52pm
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From South West Corner



From North West Corner



Biodiversity Banking and Offsets Scheme

Biobanking agreement

ID Number 43

From North East Corner



From South East Corner



Biodiversity Banking and Offsets Scheme

Biobanking agreement

ID Number 43

Photo Point 21	E241317	N6594719	23/07/17	2:11pm
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From South West Corner



From North West Corner



Biodiversity Banking and Offsets Scheme

Biobanking agreement

ID Number 43

From North East Corner



From South East Corner



Biodiversity Banking and Offsets Scheme

Biobanking agreement

ID Number 43

Photo Point 22	E241476	N6595059	23/07/17	2:25pm
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From South West Corner



From North West Corner



Biodiversity Banking and Offsets Scheme

Biobanking agreement

ID Number 43

From North East Corner



From South East Corner



Biodiversity Banking and Offsets Scheme

Biobanking agreement

ID Number 43

Photo Point 23	E241304	N6595199	23/07/17	2:33pm
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From South West Corner



From North West Corner



From North East Corner



From South East Corner



Biodiversity Banking and Offsets Scheme

Biobanking agreement

ID Number 43

Photo Point 24	E241672	N6597031	23/07/17	2:55pm
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From South West Corner



From North West Corner



From North East Corner



From South East Corner



Biodiversity Banking and Offsets Scheme

Biobanking agreement

ID Number 43

Photo Point 26	E241410	N6596513	26/07/16	11:48am
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From South West Corner



From North West Corner



Biodiversity Banking and Offsets Scheme

Biobanking agreement

ID Number 43

From North East Corner



From South East Corner



Biodiversity Banking and Offsets Scheme

Biobanking agreement

ID Number 43

Photo Point 27	E241465	N6591717	22/07/17	4:18pm
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From South West Corner



From North West Corner



Biodiversity Banking and Offsets Scheme

Biobanking agreement

ID Number 43

From North East Corner



From South East Corner



Biodiversity Banking and Offsets Scheme

Biobanking agreement

ID Number 43

Photo Point 30	E241383	N6592453	22/07/17	3:53pm
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From South West Corner



From North West Corner



Biodiversity Banking and Offsets Scheme

Biobanking agreement

ID Number 43

From North East Corner



From South East Corner



Biodiversity Banking and Offsets Scheme

Biobanking agreement

ID Number 43

Photo Point 35	E241839	N6595941	23/07/17	3:32pm
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From South West Corner



From North West Corner



Biodiversity Banking and Offsets Scheme

Biobanking agreement

ID Number 43

From North East Corner



From South East Corner



Biodiversity Banking and Offsets Scheme

Biobanking agreement

ID Number 43

Photo Point 38	E242139	N6596965	23/07/17	3:13pm
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From South West Corner



From North West Corner



Biodiversity Banking and Offsets Scheme

Biobanking agreement

ID Number 43

From North East Corner



From South East Corner



Biodiversity Banking and Offsets Scheme

Biobanking agreement

ID Number 43

Photo Point 40	E241161	N6595487	24/07/16	3:50pm
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From South West Corner



From North West Corner



Biodiversity Banking and Offsets Scheme

Biobanking agreement

ID Number 43

From North East Corner



From South East Corner



Biodiversity Banking and Offsets Scheme

Biobanking agreement

ID Number 43

Photo Point 42	E240603	N6597014	23/07/17	3:00pm
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Dam site that has been in-filled
From South West Corner



From North West Corner



Biodiversity Banking and Offsets Scheme

Biobanking agreement

ID Number 43

From North East Corner



From South East Corner



Biodiversity Banking and Offsets Scheme

Biobanking agreement

ID Number 43

Photo Point 43	E240603	N6591987	13/07/17	3:03pm
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From South West Corner



From North West Corner



Biodiversity Banking and Offsets Scheme

Biobanking agreement

ID Number 43

From North East Corner



From South East Corner



Biodiversity Banking and Offsets Scheme

Biobanking agreement

ID Number 43

INSPECTION OUTCOMES (SECTION 1.3 OF ANNEXURE D)

BIOBANK SITE VISUAL INSPECTION PROFORMA – QUARTERLY STOCK ACCESS INSPECTION

Who: Trevor Jones, Property Manager

Date: 16th July 2016

INSPECTION ITEM	PHOTO NO.	CO-ORDINATES	COMMENT	ACTION COMPLETED
Evidence of Stock accessing the Biobank	N/A	N/A	No evidence of stock within Biobank site during this inspection.	No action required.

Who: Trevor Jones, Property Manager

Date: 30th October 2016

INSPECTION ITEM	PHOTO NO.	CO-ORDINATES	COMMENT	ACTION COMPLETED
Evidence of Stock accessing the Biobank	N/A	N/A	No evidence of stock within Biobank site during this inspection.	No action required.

Who: Trevor Jones, Property Manager

Date: 18th January 2017

INSPECTION ITEM	PHOTO NO.	CO-ORDINATES	COMMENT	ACTION COMPLETED
Evidence of Stock accessing the Biobank	N/A	N/A	No evidence of stock within Biobank site during this inspection.	No action required.

Who: Trevor Jones, Property Manager

Date: 4th April 2017

INSPECTION ITEM	PHOTO NO.	CO-ORDINATES	COMMENT	ACTION COMPLETED
Evidence of Stock accessing the Biobank	N/A	N/A	No evidence of stock within Biobank site during this inspection.	No action required.


 Signature

24-7-17
 Date

Biodiversity Banking and Offsets Scheme

Biobanking agreement

ID Number 43

BIOBANK SITE VISUAL INSPECTION PROFORMA – 6 MONTHLY HUMAN DISTURBANCE, EROSION AND WASTE INSPECTION

Who: Trevor Jones, Property Manager

Date: 16th July 2016

INSPECTION ITEM	PHOTO NO.	CO-ORDINATES	COMMENT	ACTION COMPLETED
Evidence of Disturbance	N/A	N/A	Biobank Site is in good condition with no evidence of active human disturbance present across the site.	No action required.
Evidence of Erosion	N/A	N/A	No evidence of active erosion occurring within the Biobank site requiring remediation activities.	No action required.
Evidence of Waste	N/A	N/A	No evidence of waste disposal occurring within the Biobank site.	No action required.

Who: Trevor Jones, Property Manager

Date: 18th January 2017

INSPECTION ITEM	PHOTO NO.	CO-ORDINATES	COMMENT	ACTION COMPLETED
Evidence of Disturbance	N/A	N/A	Biobank Site is in good condition with no evidence of active human disturbance present across the site.	No action required.
Evidence of Erosion	N/A	N/A	No evidence of active erosion occurring within the Biobank site requiring remediation activities.	No action required.
Evidence of Waste	N/A	N/A	No evidence of waste disposal occurring within the Biobank site.	No action required.


Signature


Date

Biodiversity Banking and Offsets Scheme

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BIOBANK SITE VISUAL INSPECTION PROFORMA – ANNUAL GROUNDCOVER %, AND CONDITION OF FENCING INSPECTION

Who: Trevor Jones, Property Manager

Date: 13th July 2017

INSPECTION ITEM	PHOTO NO.	CO-ORDINATES	COMMENT	ACTION COMPLETED
Percentage of Groundcover across Biobank Site	See all Photo Monitoring Point Photo's.	As per Photo Monitoring Points	Groundcover across MZ3 would be averaging above 70% which is good. Groundcover across MZ1 & 2 reduced due to significant African (Consul) Lovegrass and Broadleaf weed control to between 10% and 50% ahead of revegetation program.	Undertake Year 4 direct seeding revegetation of native grass seed across MZ1 and MZ2.
Physical condition of fencing to determine if they can control the movement of stock, control human disturbance, control movement of overabundant native herbivores and control vertebrate pests	N/A	N/A	General maintenance is ongoing to maintain control of stock. As there is no fencing between the Biobank and adjoining Kelvin Aboriginal Area, it can be difficult to control movement of goats and pigs, however ongoing pest control will improve this aspect over time.	No action required.


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Signature

24-7-17
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Date

Biodiversity Banking and Offsets Scheme

Biobanking agreement

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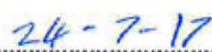
REPORTING FORM – FIRE FOR CONSERVATION MANAGEMENT

Who: Trevor Jones, Property Manager

Date: 21st July 2016

MANAGEMENT ZONES	DATE	OBSERVATIONS AND ASSESSMENT OF MONITORING
All	21 st July 2016	During Year 4, no burning for conservation purposes was undertaken on the Biobank Site in accordance with the fire management plan. Monitoring for bushfire control will continue, and firebreaks will be maintained annually in Spring prior to the summer bushfire period.


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Signature


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Date

Biodiversity Banking and Offsets Scheme

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BIOBANKING FERAL ANIMAL AND OVERABUNDANT HERBIVORE AND VERTEBRATE PEST MONITORING ACTIVITIES FORM

MONITORING ACTIVITIES FORM			
Date	Management Zone/s	Current level of impact on vegetation or native fauna (This column must record impact As Negligible, Minimal, Moderate or High)	Minor Variations (details/reasons)
July 2016	1/2/3	Negligible – No cats, wild dogs or rabbits/hare sighted. Minimal – One fox and 2 pigs sighted but plenty of pig sign. High – A number of small mobs of Goats sighted.	No evidence of excessive grazing by kangaroos.
October 2016	1/2/3	Negligible – No cats, wild dogs or rabbits sighted. Minimal – One fox and 2 pigs sighted. High – A number of small mobs of Goats sighted.	Due to fire break maintenance and revegetation ground preparation – no pig sign evident. No evidence of excessive grazing by kangaroos.
December 2016	1/2/3	Negligible – No cats, foxes, wild dogs or rabbits sighted. High – Mob of Goats sighted >100.	Record wet winter/spring in 2016 has limited access to undertake goat harvesting. No evidence of excessive grazing by kangaroos.
May 2017	1/2/3	Negligible – No cats, foxes or wild dogs sighted. Minimal – 11 hares sighted. Moderate – Goats in small mobs sighted. 22 pigs sighted.	High number of Kangaroos observed.


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Biodiversity Banking and Offsets Scheme

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**BIOBANKING FERAL ANIMAL AND OVERABUNDANT HERBIVORE MANAGEMENT
ACTIVITIES FORM**

MANAGEMENT ACTIVITIES FORM			
Date	Management Zone/s	Description and type of activity undertaken (This column must include details of the feral and overabundant herbivores targeted, control techniques applied and numbers controlled.)	Observations & assessment of monitoring
2008-2015	1,2 & 3	1,220 feral goats and 70 rabbits have been removed from site through both trapping and opportunistic shooting.	At commencement of ownership feral goat numbers were excessive, however ongoing management by the property manager has reduced this number.
September 2016	3	2 goats removed by shooting.	None.
December 2016	2 & 3	39 goats trapped and removed to depot/abattoir.	None.
April 2016	2 & 3	32 goats trapped and removed to depot/abattoir.	None.
May 2017	1,2 & 3	11 hares shot.	None.
June 2016	2 & 3	133 goats trapped and removed to depot/abattoir.	None.

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Biodiversity Banking and Offsets Scheme

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BIOBANKING VERTEBRATE PEST MANAGEMENT ACTIVITIES FORM

MANAGEMENT ACTIVITIES FORM			
Date	Management Zone/s	Description and type of activity undertaken (This column must include details of the feral and overabundant herbivores targeted, control techniques applied and no. controlled.)	Observations & assessment of monitoring
2008-2016	1, 2 and 3	376 pigs removed from biobank through opportunistic trapping and shooting and 40 foxes removed by opportunistic shooting.	Pig numbers were very high when WHC acquired the property. General management by the property manager over this time has reduced pig numbers.
July 2016	2 & 3	5 pigs removed by trapping and shooting	None.
August 2016	2 & 3	6 pigs removed by trapping and shooting	None.
December 2016	2 & 3	4 pigs removed by trapping and shooting	None.
December 2016	1	2 foxes removed by shooting	None.
March 2017	2	1 fox removed by shooting	None.
April 2017	2	1 fox removed by shooting	None.
April 2017	2	1 pig removed by trapping and shooting	None.
May 2017	2 & 3	22 pigs removed by trapping and shooting	None.
June 2017	2	2 pigs removed by trapping and shooting	None.

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 Signature

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 24-7-17
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Biodiversity Banking and Offsets Scheme

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BIOBANKING WEED MONITORING ACTIVITIES FORM

MONITORING ACTIVITIES FORM			
Date	Management Zone/s	Current level of impact on vegetation	Minor Variations (details/reasons)
28 July 2016	2/3	Small number of Box Thorn plants reshooting.	Previously controlled with many individuals dead.
12 January 2017	1/2/3	Bathurst Burr, Thornapple and Heliotrope observed.	None.


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Signature

24-7-17
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Date

Biodiversity Banking and Offsets Scheme

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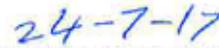
ID Number 43

BIOBANKING WEED MANAGEMENT ACTIVITIES FORM

MANAGEMENT ACTIVITIES FORM			
Date	Management Zone/s	Description and type of activity undertaken	Observations & assessment of monitoring
July 2016	1,2 & 3	A couple of small Box Thorns sprayed. Much of MZ1 sprayed for African (Consul) Grass sprayed.	None.
September 2016	1, 2 & 3	A couple of small Box Thorns sprayed. MZ1 and 2 all sprayed for broadleaf weeds and part of MZ3.	Broadleaves included variegated thistle and pattersons curse.
December 2016	1 & 2	Follow up spraying for African (Consul) Grass.	Initial spraying >80% effective.
January 2016	2 &3	Bathurst Burr, Thornapple and Heliotrope sprayed.	None.
May 2017	1 & 2	MZ1 and 2 all sprayed for broadleaf weeds.	None.



Signature



Date