


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
RMP start date	23 August 2022
Annual review start date	1 January 2023
Annual review end date	31 December 2023
<p>I, Mark Stevens, certify that this audit report is a true and accurate record of the compliance status of Canyon Coal Mine for the period 1st January 2023 until 31st December 2023, 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	Mark Stevens
Title of authorised reporting officer	EGM – Project Delivery
Signature of authorised reporting officer	
Date	28.02.24

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1. STATEMENT OF COMPLIANCE

The compliance status of the Canyon Coal Mine (CCM) as at the 31st December 2023 is summarised in Table 1.

Table 1 - Statement of Compliance

Approval	Were all conditions of the relevant approval(s) complied with?
Development Consent DA 8-1-2005	Yes
Mining Lease 1471	Yes
Mining Lease 1464	Yes
Water Access Licence 29458	Yes
Mining Operations Plan	Yes

2. INTRODUCTION

This is the twenty-second Annual Review (AR), formally Annual Environmental Management Report (AEMR), produced for the CCM. It has been prepared in accordance with Condition 3 of Mining Leases (MLs) 1464 and 1471 issued under Part 5 of the *Mining Act 1992* and Schedule 5, Condition 5 of DA 8-1-2005, as modified. The AR follows the format required by the NSW Government's Annual Review Guideline (October, 2015). The AR covers the period from the 1st January 2023 until the 31st December 2023.

CCM is located within the Narrabri Shire Council (NSC) local government area, 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 - Project locality**). Mining at CCM ceased in July 2009, and the mine is now in closure.

Development Consent (SSD-7480) was granted to VCPL on 12 August 2020 by the NSW Independent Planning Commission as the declared consent authority, under section 4.38 of the *NSW Environmental Planning and Assessment Act 1979* (EP&A Act). The Development Consent allows for the development of an open cut mine and associated infrastructure with a 25 year mine life, extracting run-of-mine (ROM) coal at up to 10 million tonnes per annum (Mtpa) and processing the coal, as well as coal from WHC's Tarrawonga Mine, at an on-site coal handling and processing plant (CHPP) for off-site transport by rail.

WHC commenced development under Development Consent SSD-7480 for the Vickery Coal Mine Extension Project (VCM) on 28 April 2022 to undertake pre-construction activities. Pursuant to Schedule 2, Condition A18(b), DA-8-1-2005 was to be surrendered within 12 months of the date of commencement of development under this consent, or other time frame agreed by the planning secretary. A 12 month extension was approved by the planning secretary.

2.1 Mine Contacts

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

- Mr Mark Stevens, Executive General Manager – Project Delivery. Contact (07) 3738 2000.

CCM is now included as part of SSD-7480 and any relevant information will be included in future Annual Reviews submitted under that development consent. Management of SSD-7480 falls under the Gunnedah Open Cuts (GOC) management led by:

- Mr Dean Scott, General Manager – Open Cut Operations. Contact (02) 6741 9300

3. APPROVALS

3.1 Tenements, Licences and Approvals

Table 2 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 2 - Tenements, Licences and Approvals

Issuing/Responsible Authority	Type of Lease, Licence, Approval	Date of Issue	Expiry
Department of Planning, Infrastructure & Environment (DPIE)	Development Consent: DA 8-1-2005, Mod. 3	30 th June 2005	N/A. To be surrendered prior to 30 April 2024.
Department of Regional NSW – Division of Mining, Exploration and Geoscience (DMEG)	ML 1471	7 th Sept 2000	6 th Sept 2042
Department of Regional NSW – Division of Mining, Exploration and Geoscience (DMEG)	ML 1464	31 st Oct 2023	20 th Dec 2043
Department of Primary Industry - Water	WAL 29458 (90WA822498)	12 th Sept 2012	In perpetuity

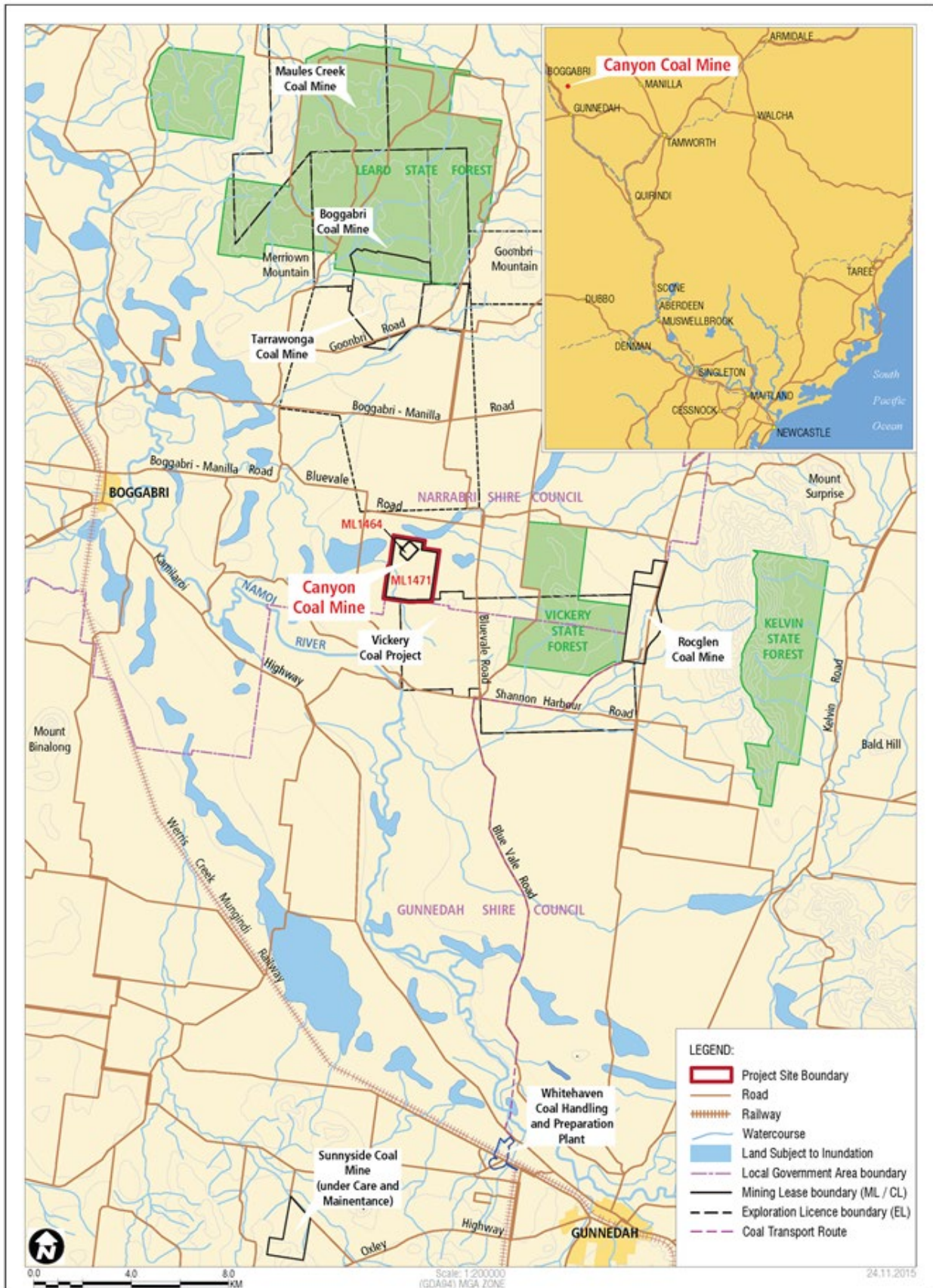


Figure 1 - Project locality

4. OPERATIONS SUMMARY

4.1 Mining Operations

No mining operations have occurred at the CCM during the reporting period (refer to Table 3).

Table 3 – Production Summary

Material	Approval 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

WHC commenced development under Development Consent SSD-7480 for the VCM on 28 April 2022 to undertake pre-construction activities. DA-8-1-2005 is currently required to be surrendered prior to 30 April 2024.

CCM is now included as part of SSD-7480 and any relevant information will be included in future Annual Reviews submitted under that development consent.

5. ACTIONS REQUIRED FROM PREVIOUS ANNUAL REVIEW

There were no actions required from DPE in relation to the 2023 Annual Review. Table 4 summarises the commitments made by Whitehaven Coal (WHC) in the last Annual Review.

Table 4 - Actions from 2021 Annual Review

Action required from previous Annual Review	Requested by	Action taken by the Operator	Where discussed in Annual Review
Implementation of feral animal control.	Operator	Feral animal control undertaken.	Section 6.2.5
Weed control for African Boxthorn, Prickly Pear and Paterson's Curse	Operator	Ongoing	Section 6.2
Continued implementation of DA 8-1-2005 until surrender, environmental monitoring and management and relevant management plans	Operator	Ongoing	Section 3

6. ENVIRONMENTAL PERFORMANCE

6.1 Air Quality

Dust and air quality criteria for CCM is noted in DA 8-1-2005 however operational activities only occurred in relation to SSD-7480.

6.1.1 Key Environmental Performance/Management Issues

The TEOM at Wil-gai experienced operational errors in the latter half of the reporting year, Replacement of the TEOM was undertaken in August 2023.

Dust Monitoring

Operational activities in the vicinity of CCM during the reporting period consisted of part of the water management system for VCM being constructed. This construction activity occurred primarily off the CCM Mining Lease with some of the water management infrastructure in the South west of the CCM mining lease.

Monitoring of deposited dust was undertaken on a monthly basis, results were within the criteria of 4 g/m²/month (Figure 2).

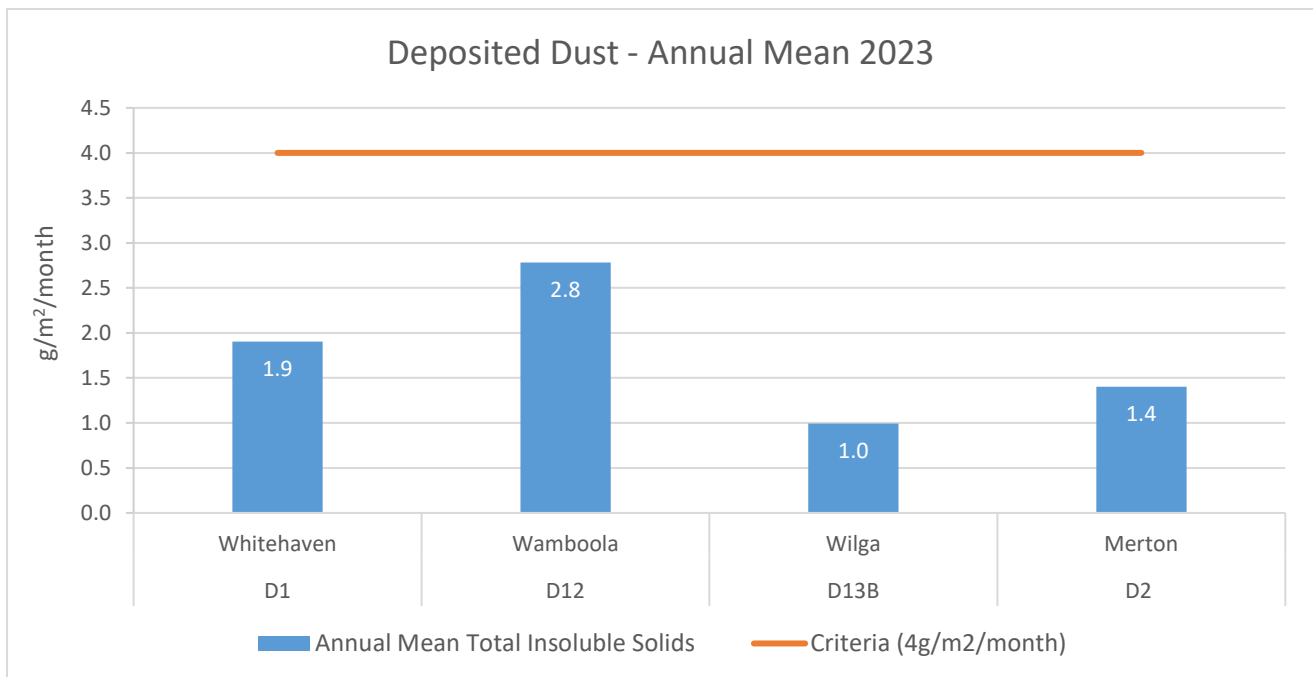


Figure 2 - Deposited Dust Annual Mean (actual values for each site shown on bars)

Air Quality Monitoring

PM₁₀ is measured in real time at a Whitehaven Coal owned property, Wil-gai, approximately 1.5 km to the east of the north-eastern boundary of ML 1471. The results were within required criteria with a mean annual PM₁₀ particulate level of 9.1 µg/m³ against criteria of 30 µg/m³ (Figure 3). This value is below the predicted mean annual PM₁₀ particulate levels in the EIS (between 15 µg/m³ and 35 µg/m³).

The 24-hour average PM10 particulate level (50 µg/m³) was not exceeded in 2023(Figure 3).

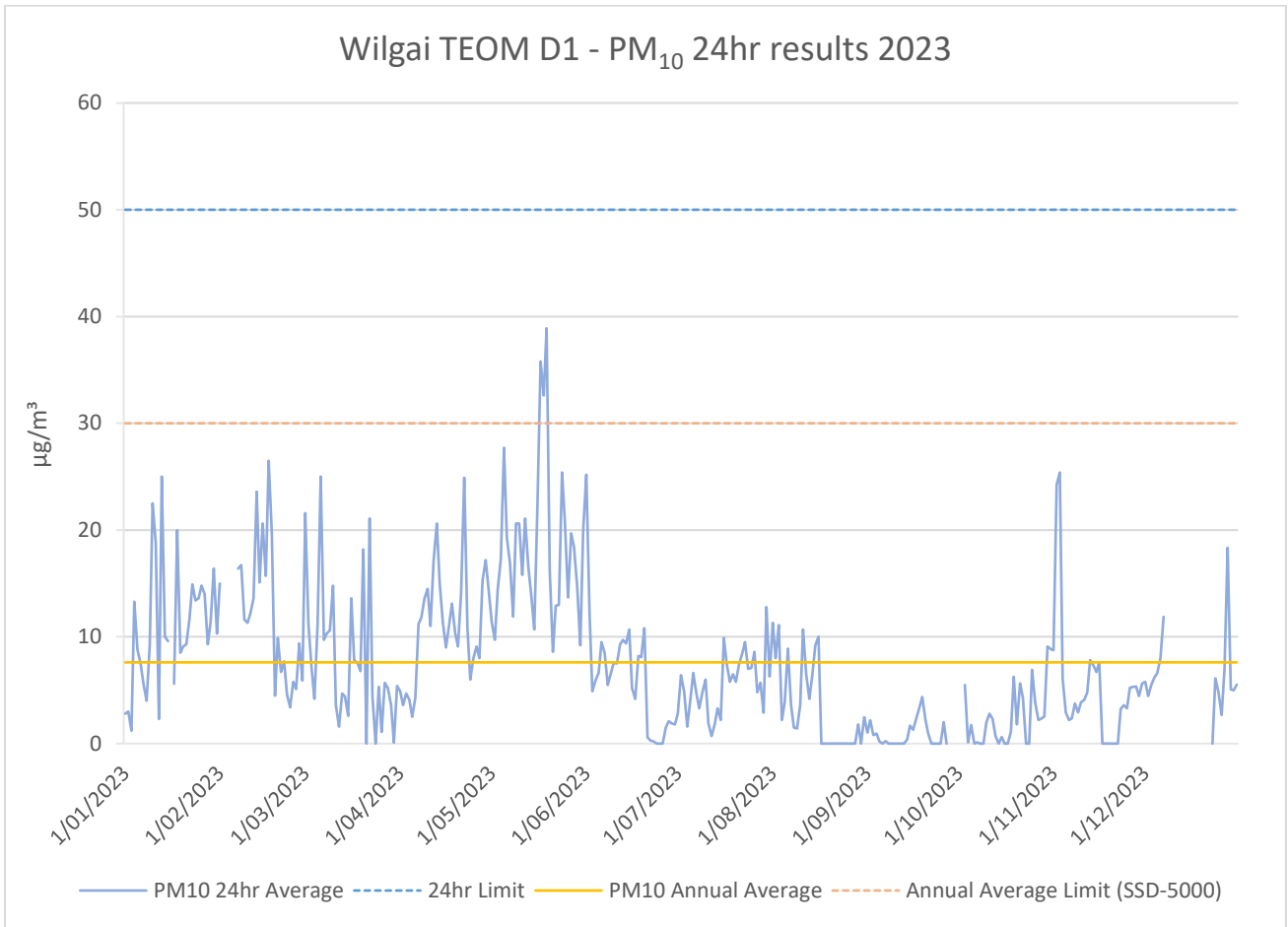


Figure 3 - “Wil-gai” Particulate Matter (PM10)

Total suspended particulate (TSP) matter was within target criteria during the year with a mean value of 15.9 µg/m³ against a criteria of 90 µg/m³ (Figure 4).

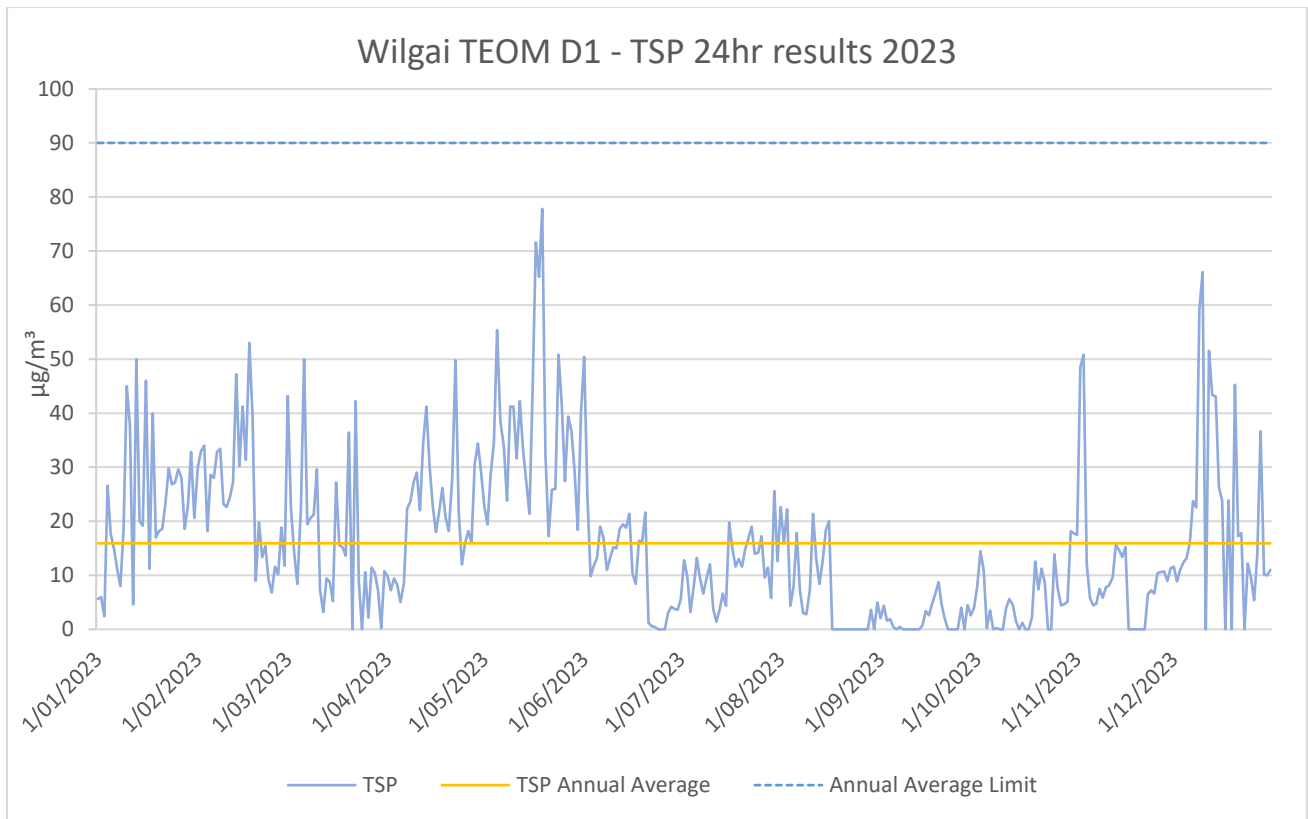


Figure 4 - “Wil-gai” Total Suspended Particulate (TSP) Matter

6.1.2 Proposed Improvements to Environmental Management

No improvements are proposed within the next reporting period. Air quality monitoring will be undertaken in accordance with SSD-7480 and associated management plans and reported in the Annual Review for that development consent from 2024 onwards.

6.2 Onsite Biodiversity

Introduction

A detailed annual ecological assessment of rehabilitated areas and analogue sites was undertaken during October/November 2023. Monitoring was undertaken using the Whitehaven Annual Rehabilitation Monitoring Methodology (WARMM).

Completion criteria targets are limited to mean targets derived from analogue site values or specific values provided in the RMP. The New South Wales Department of Planning and Environment BioNet benchmarks listed in the RMP have been superseded in a recent revision (Oliver et al., 2019) and have been omitted from this report. Analogue benchmark values have been derived using all available analogue site data from current and prior monitoring years.

Monitoring in the Woodland Domain comprised:

- one repeat monitoring woodland rehabilitation site; and
- one repeat monitoring analogue woodland site.

Monitoring in the Pasture Domain comprised:

- five repeat monitoring pasture rehabilitation sites;
- one repeat monitoring analogue pasture site ; and
- one newly established analogue pasture sites.

6.2.1 Woodland Domain

Surface Cover

Surface cover represents the summed groundcover components of vegetation, litter, and mulch. This serves as an indicator of the rehabilitation objective for soil nutrient cycling and structure to be self-sustaining. To achieve the completion criterion target for this indicator, surface cover is to be greater than 50%.

The rehabilitation met the target for the indicator (Figure 5).

Species Composition

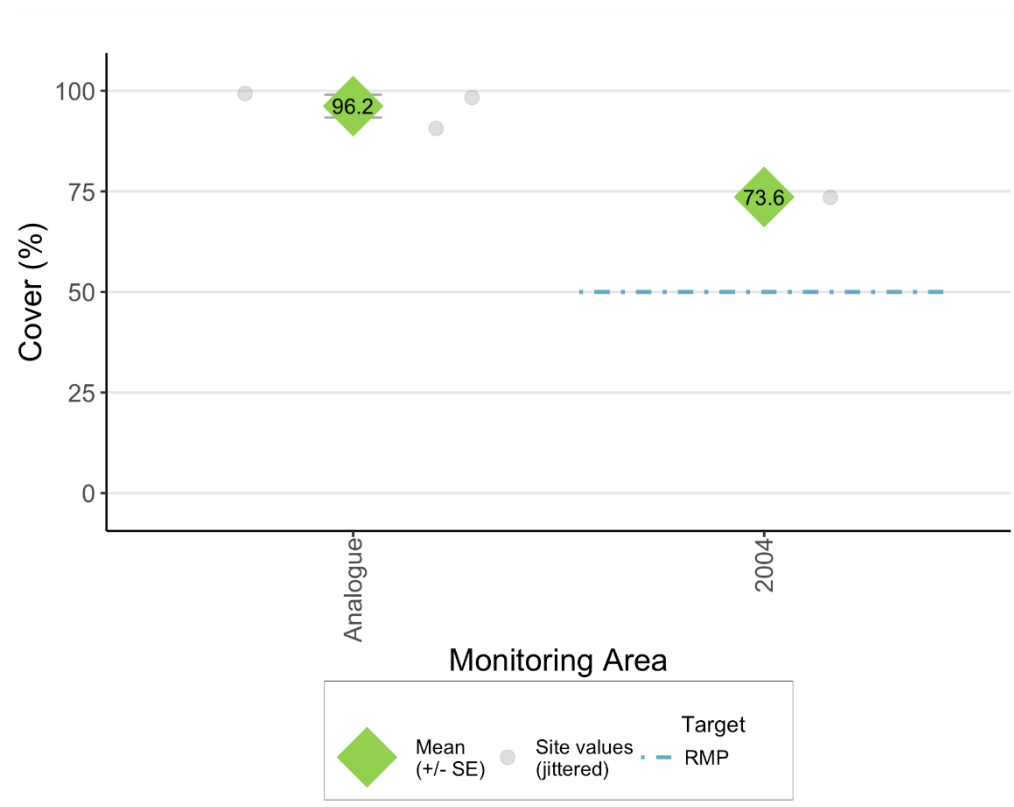


Figure 5 – Woodland surface cover at Canyon Coal Mine and Analogue sites.

Woodland species composition serves as an indicator of the rehabilitation objective for woodland rehabilitation areas to have species diversity similar to analogue sites.

The analogue site mean native species richness was 41 and for the rehabilitation this value was 34. There were no statistically significant differences between the rehabilitation and analogue site native species richness values.

Habitat Structure

Habitat structure serves as an indicator of the rehabilitation objective for woodland rehabilitation to be similar to the analogue site community. Results are provided for native grass cover, mid-storey cover and overstorey cover in Figure 6, Figure 7 and Figure 8.

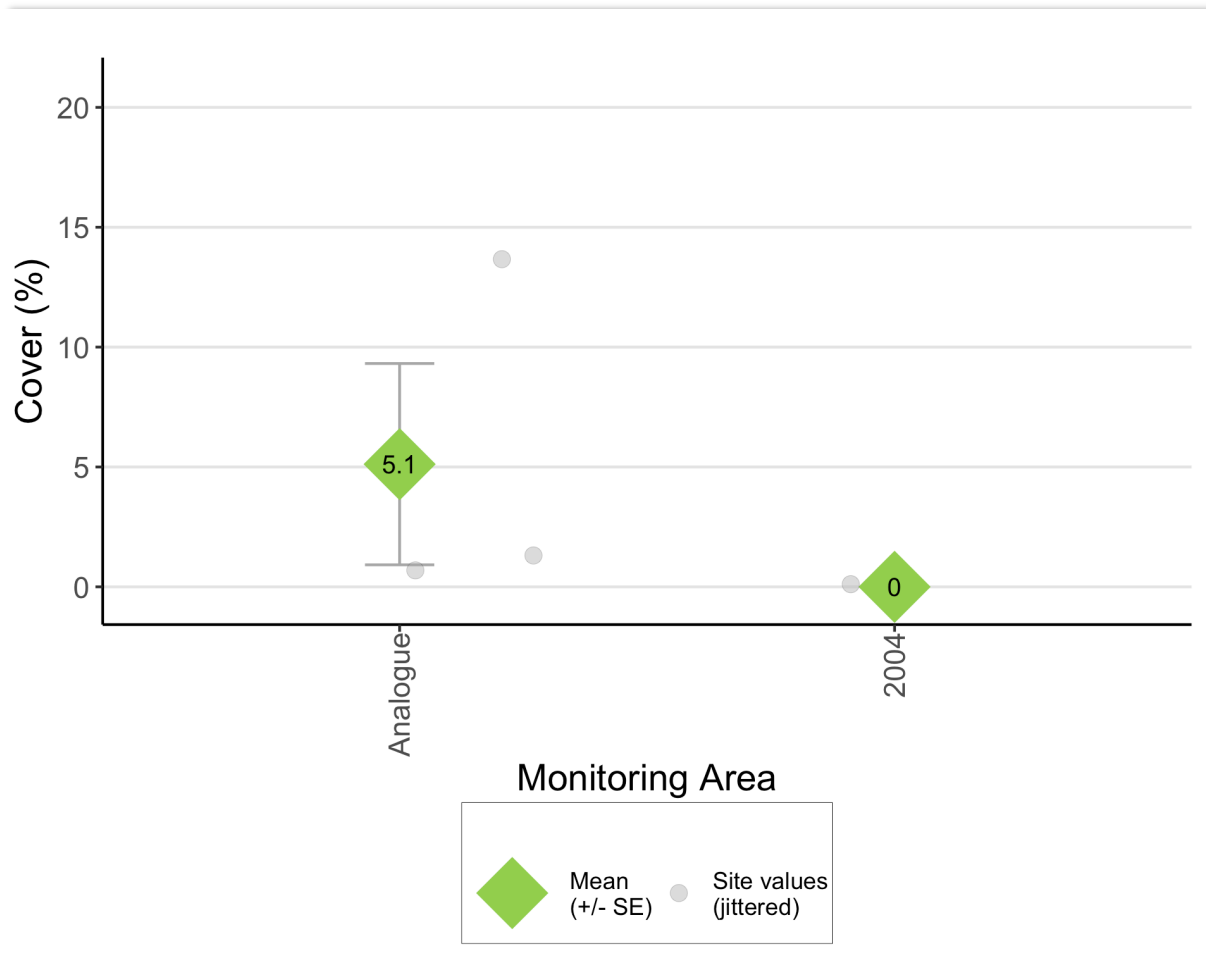


Figure 6 - Woodland native grass cover at Canyon Coal Mine and Analogue sites.

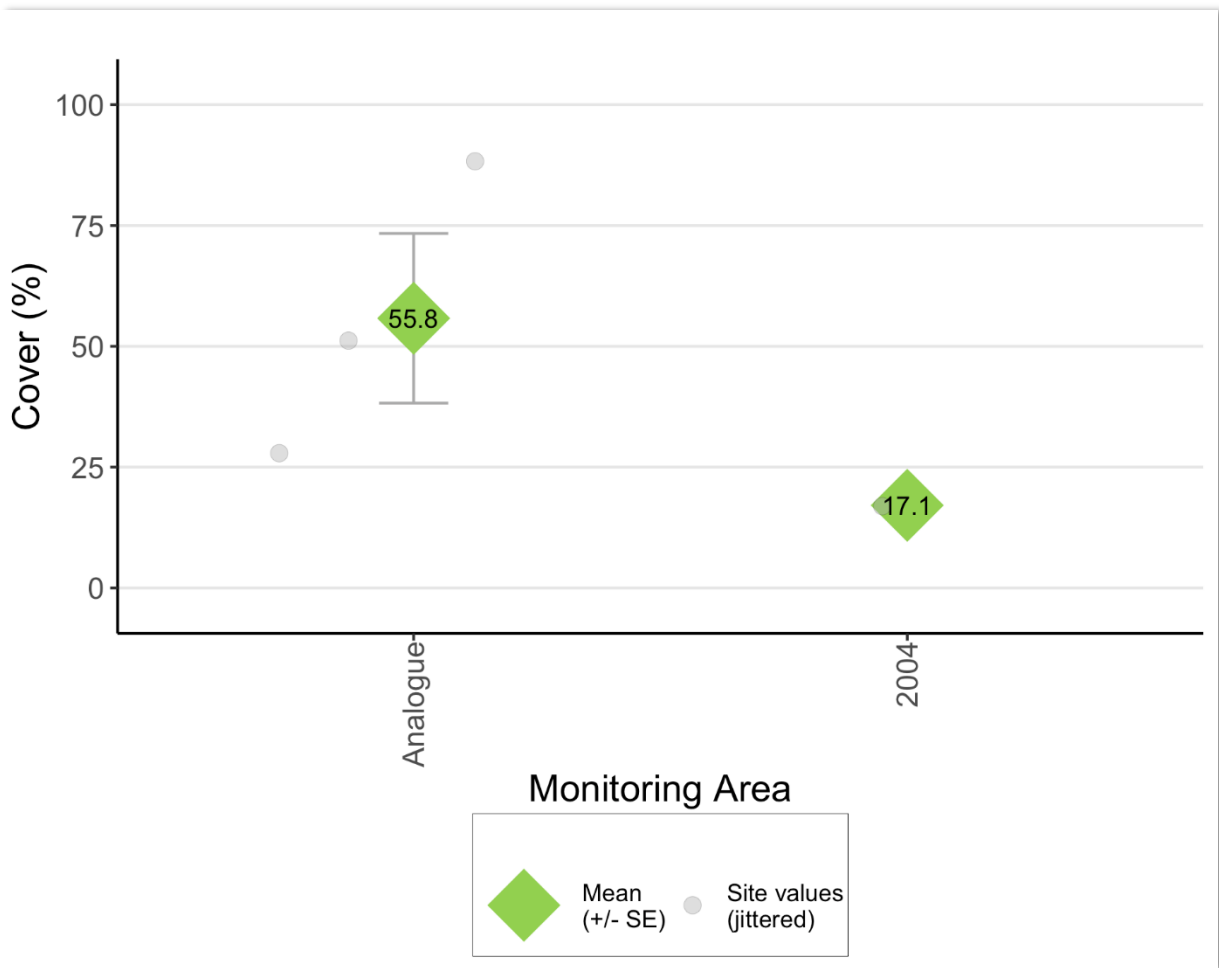


Figure 7 - Woodland native mid-storey cover at Canyon Coal Mine and Analogue sites.

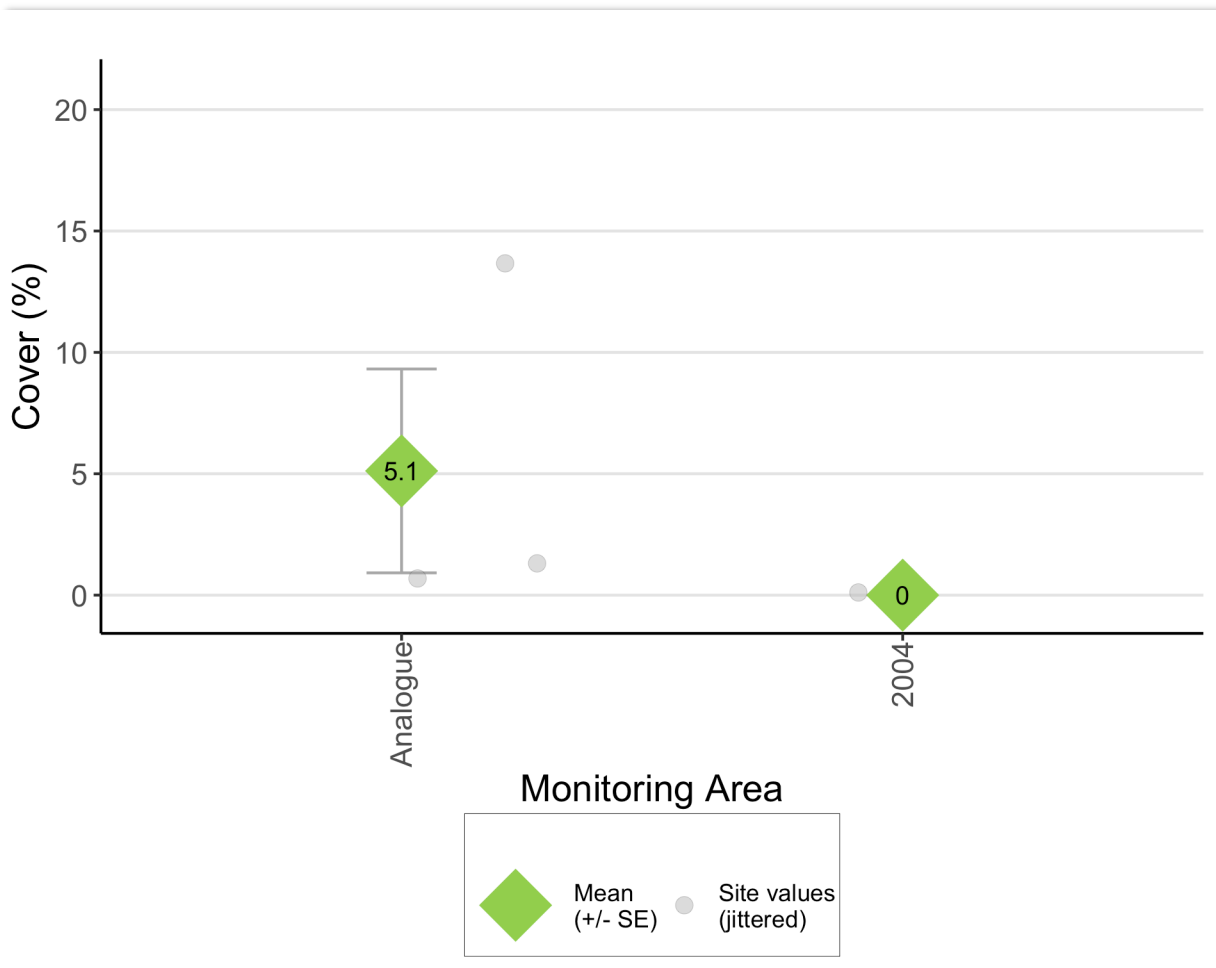


Figure 8 - Woodland native overstorey cover at Canyon Coal Mine and Analogue sites.

Life stage and health of trees

Vegetation health and reproduction serve as indicators of the rehabilitation objective for woodland rehabilitation to be similar to the analogue site community.

In the 2023 monitoring year, 100% of trees in the rehabilitation were recorded as having crown health of greater than 85%. Although no trees were observed with flowers or fruit, 15 second-generation seedlings were recorded, indicating tree reproduction is occurring.

Erosion

In the 2023 monitoring year, no erosion was recorded in the rehabilitation.

Fauna habitat

CCM has abundant maturing Eucalyptus and Acacia trees which are now providing resources such as nectar and seed for a variety of birds. Course woody debris was present in a few survey plots, and together with occasional small rocks present in two sites, this may provide habitat for reptiles and invertebrates.

Fauna observations

Numerous birds were observed on site. Macropod scats were observed within three plots.

6.2.2 Pasture Domain

Species Composition

Species composition serves as an indicator of the rehabilitation objective for pasture areas to be capable of sustaining grazing.

The proportion of palatable pasture species relative to species with unknown palatability was 41.4% (Figure 9). Whilst this is below the 75% target for the proportion of sown species, the rehabilitation had a slightly higher proportion of known palatable species than the analogue sites, which suggests that the objective for this indicator has been achieved (Figure 9)

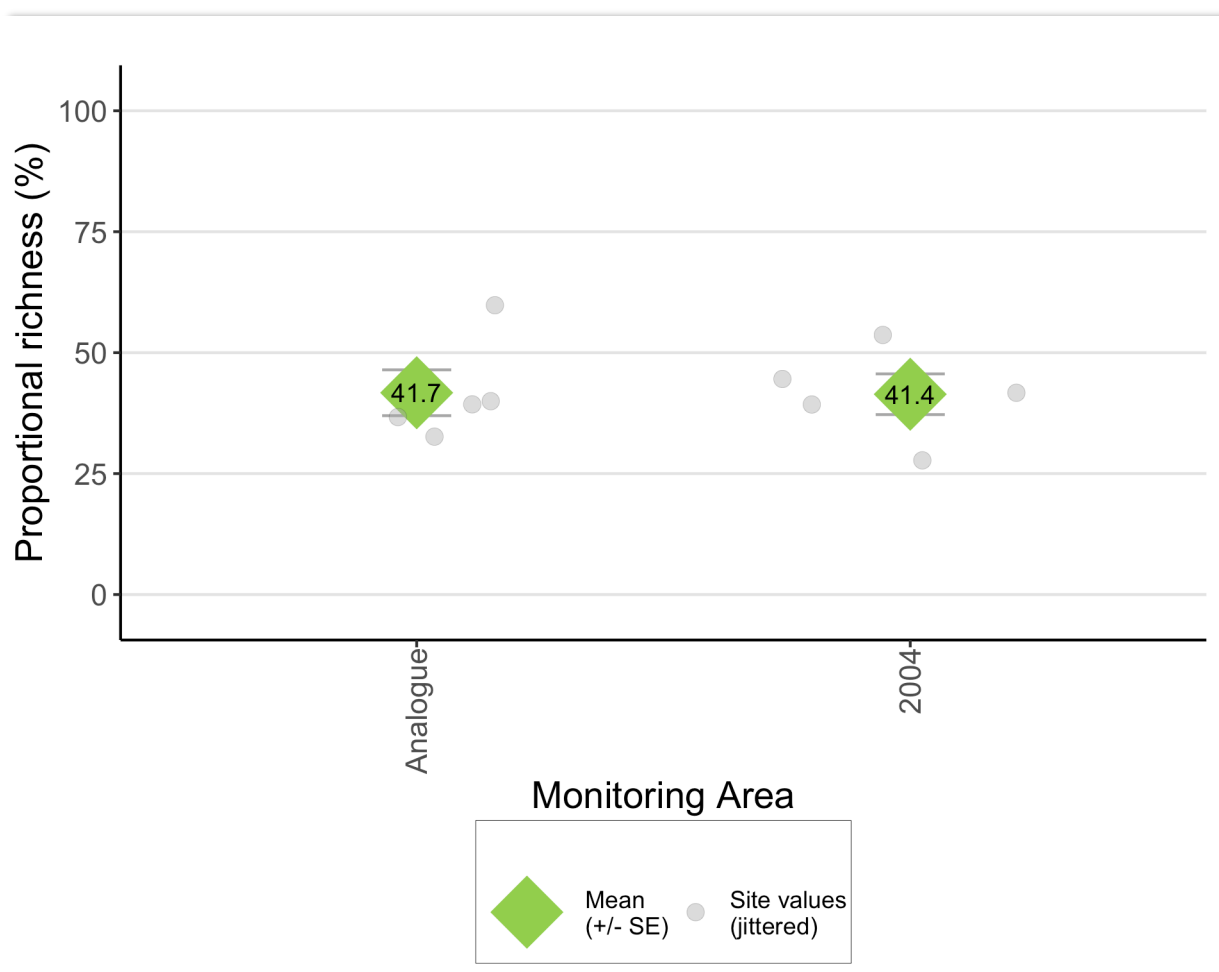


Figure 9 - Proportion of palatable pasture species relative to species with unknown palatability, expressed as a percentage, at Canyon Coal Mine and Analogue sites.

Surface Rock Density

Surface rock density serves as an indicator of the rehabilitation objective for pasture areas to be capable of sustaining grazing.

Pasture surfaces were generally rock free, indicating that the rehabilitation has met the target for this indicator.

Pasture productivity

Pasture productivity serves as an indicator of the rehabilitation objective for pasture areas to be capable of sustaining grazing. Results are presented for an Analysis of Variance (ANOVA) between rehabilitation and analogue herbage mass values.

There were no statistically significant differences between rehabilitation and analogue site biomass values (Figure 10).

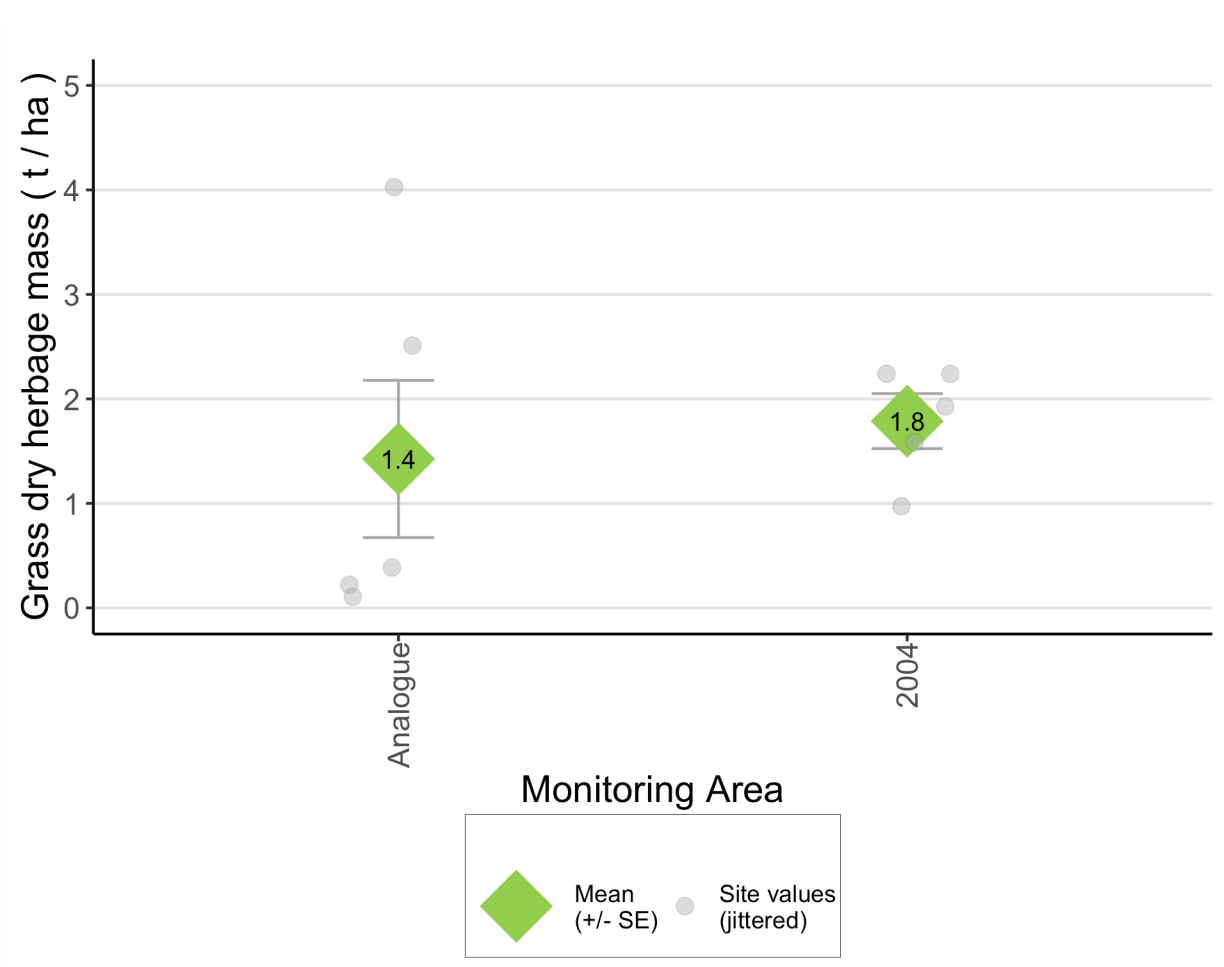


Figure 10 - Pasture biomass at Canyon Coal Mine and Analogue sites.

6.2.3 Recommendations

For areas of Canyon Mine that are to be retained, it is recommended that:

- *Eucalyptus populnea* is introduced into the woodland rehabilitation with tubestock plantings;
- Weed control continue; and
- feral pigs continue to be controlled.

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

A weed control program will be implemented on site at VCM targeting Paterson's Curse, African Boxthorn and Prickly Pear

A Feral Animal control will be implemented in conjunction with Vickery Coal Mine Feral animal management campaigns. Feral animal control has been conducted on the surrounding offset properties (Section 6.3.9).

6.3 Biodiversity Offsets

The approved WHC Biobank Biodiversity Offset Management Plan (BOMP, 2013) outlines the Biodiversity Offset Strategy (BOS) requiring 1,524ha of native woodland to be maintained and improved on the Yarrari and Belah properties (the approved Offset Areas collectively known as Biobank Biodiversity Management Area (BMA)). Biobanking Agreement 43 generated 13,754 biobanking credits that were retired against the Rocglen Coal Mine, Canyon Coal Mine and the original Tarrawonga Coal Mine in February 2013; with the final biobanking credits retired against the Vickery Coal Mine in December 2022.

6.3.1 Offset Security Management

The Biobank BMA was secured on title by Biobanking Agreement 43 on 28 June 2012 (now considered a Biodiversity Stewardship Agreement under the Biodiversity Conservation Act 2016). The BOMP outlines the intention to transfer the property to the National Parks Estate as an addition to the Boonalla Aboriginal Area (formerly Kelvin State Forest) after Year 10 (~2023), subject to NPWS negotiation and agreement.

6.3.2 Weather Summary of Biobank Offset Properties

Regionally central meteorological station to the BMA is the Gunnedah Pool site (BOM 2023) which has recorded highly variable rainfall over the last 5 years; from the driest on record in 140 years of 237mm in 2019, followed by above average rainfall years in 2020, 2021 and 2022 of 833mm, 990mm and 860mm respectively (resulting in numerous major flooding events of the Namoi River). In 2023, the Gunnedah Pool site recorded 496mm being below annual average rainfall of 615mm. WHC maintains a meteorological station adjacent to the Biobank BMA with a summary of weather conditions experienced at the Roseglass biodiversity property during the 2023 reporting period being the maximum monthly average temperature was 35°C in January 2023; minimum monthly average temperature was 9°C in July 2023; annual temperature ranges were between 4°C to 41°C in 2023 and the total annual rainfall in 2023 was 434mm with the maximum in March (152mm) and minimum in May (0mm).

6.3.3 Infrastructure Management

During the reporting period, existing fencing (fauna friendly) was maintained along the perimeter of Biobank BMA as well as maintenance of signage and gates were undertaken as required to continue

to restrict unauthorised access and minimise livestock incursion. There are no known remaining derelict assets/infrastructure items to be removed but if any are found, those items will continue to be assessed, removed and remediated as required prior to transfer of Yarrari and Belah Offset properties to National Park Estate. Remediation of hazardous material sites on the Belah biodiversity property occurred during the reporting period with five of the six sites receiving clearance certificates free of asbestos containing materials that originated from derelict assets/infrastructure items associated with previous agricultural management onsite.

6.3.4 Seed Management

The routine seed assessments on the Biobank BMA aims to identify on a seasonal basis the life cycle stage and development of native plants to identify what, where, when and how to target appropriate resources to collect seed for future revegetation programs. During the reporting period, 1 species was collected resulting in 320 grams of local provident seed from the Yarrari biodiversity property that was incorporated with other local and regionally provident seed sourced by reputable seed collectors as part of the WHC group wide revegetation planning.

6.3.5 Revegetation Management

The revegetation schedule within Biobanking Agreement 43 requires enhancement planting to occur between Year 8 (2021) and 10 (2023) as required. During the reporting period, no specific revegetation works were undertaken as the revegetation program in the BOMP was completed in 2021.

6.3.6 Heritage Management

During the reporting period, annual heritage inspections were completed on the 35 known Archaeological Heritage Sites and Historical Heritage Sites within the Biobank BMA. The sites are maintained with 5.1km of demarcation fencing around the heritage site perimeter and signage to mitigate access and inadvertent disturbance. During this reporting period, no new Heritage Sites were found but 1 existing Archaeological Heritage Site was updated in AHIMS due to a change in its coordinate system so that it is now projected on the Yarrari property. Further, 32m of heritage fence maintenance was carried out during 2023.

6.3.7 Habitat Management

During the reporting period, habitat augmentation was undertaken with 11 new nest boxes established targeted for Microbats, Turquoise Parrots, Small Gliders and Pale-headed Snakes installed on the Biobank BMA.

6.3.8 Weed Management

WHC coordinated routine weed monitoring and inspections being undertaken across the Biobank BMA in February, June, October and November 2023. The priority weeds identified included legacy weeds inherited from previous owner's management regimes such as African/Consul Lovegrass, Buffel Grass, African Box Thorn, Lippia and Prickly Pear as well as a range of broadleaf weeds within revegetation areas. The weed monitoring/inspections ensure that timely and prioritised weed control is undertaken on a seasonal basis with the information directly given to spraying contractors

to identify what, where, when and how to target appropriate resources across the Biobank BMA for weed control. During the reporting period, WHC implemented a weed control program across the Biobank BMA including 30ha treated in January, May, September and December 2023 targeting primarily African/Consul Lovegrass and Buffel Grass, Prickly Pear plus other broadleaf weeds as required. Only appropriately qualified and experienced weed contractors (AQF3 accreditation or higher for use of herbicide) were engaged to undertake weed control works for WHC.

6.3.9 Pest Animals Management

WHC aims to apply an even and consistent pest animal management effort by routinely scheduling rolling monitoring and control programs across the Biobank BMA. This standardised approach can also be supplemented with periodic targeted programs that focus on specific areas with high pest animal detection, or, on species which have increasing rates of detection. Both the overall management and targeted programs are planned using data collected from grid-based motion detection camera monitoring program, pest animal observations and the results of previous control programs. Monitoring demonstrated that certain animals like Feral Pigs were highly detectable across the year; while other pest animal species had a scarce detectability. The pest animal monitoring ensures that timely and prioritised pest animal control is undertaken on a seasonal basis identifying what, where, when and how to target appropriate resources across the Biobank BMA for pest animal management. During the reporting period, WHC implemented a comprehensive pest animal control program across the Biobank BMA with routine Canid pest ejectors, Hoggone baits and trapping programs as well as Open Range Shooting undertaken throughout 2023. During the reporting period; there were 52 Canid Pest Ejectors triggered from 286 deployed and 642 Hoggone baits consumed from 1518 presented across the Biobank BMA. A further 27 Feral Pigs were trapped and removed from the Biobank BMA. Night time open range shooting programs were implemented in conjunction with the other pest animal programs resulting in an additional 4 Feral Pigs being controlled in 2023. Feral Goat mustering continued during the reporting period resulted in 210 Feral Goats being captured with the saleable Goats on sold to an abattoir. Only appropriately qualified and experienced pest animal contractors (appropriate pest animal management qualifications, NSW fire arm licence and pesticide accreditation where relevant) were engaged to undertake pest animal control works for WHC.

6.3.10 Soil & Erosion Management

Annual inspections were undertaken including unsealed fire break tracks and associated drainage structures across the Biobank BMA to review appropriate erosion and sediment control measures required in accordance with the Blue Book (Managing Urban Stormwater: Soils and Construction Volume 1 (Landcom 2004)). A total of 4 observations were recorded within the Biobank BMA with no locations requiring targeted additional track maintenance. The remaining tracks/drainage structures are maintained during routine WHC Biodiversity fire break track maintenance program.

6.3.11 Grazing Management

Biobank BMA was destocked in 2016 and continued to be destocked with no strategic grazing occurring during the reporting period. There were no instances of stock incursion during the reporting period.

6.3.12 Bushfire Management

The Biobanking Agreement 43 prohibits the use of fire within the Biobank BMA until Year 40. During the reporting period, no bushfires occurred and no ecological burns were undertaken. Other fire management implemented by WHC during the report period was maintenance on 33.8 kilometres to zero fuel barrier standard across the Biobank BMA. WHC maintains regular communications throughout the reporting period with the Liverpool Range Zone RFS team around planning of WHC Biodiversity's ecological burn programs as well as maintaining contact points in case of emergency. 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 BMAs and non-mining lands.

6.3.13 Monitoring Program

The 2023 ecological monitoring program of the Biobank BOA included winter bird surveys that were undertaken in July and August 2023; annual spring flora monitoring of 32 plots across five vegetation zones (VZs) undertaken during September and November 2023 and annual fauna monitoring program including 4 motion detection camera sites, 3 pitfall/funnel trap sites and 1 harp trap monitoring site undertaken between January 2023 and November 2023. During the winter bird surveys, no threatened species were recorded. During flora monitoring, two VZs were recorded as meeting or exceeding completion criteria for all four biometrics. Native plant species richness (NPS) completion criteria (NPS benchmark for relevant biometric vegetation communities) was met or exceeded at 3 out of 5 VZs. Native overstorey cover (NOS) completion criteria (minimum NOS benchmark for relevant biometric vegetation communities) was met or exceeded at 2 out of 5 VZs. Native midstorey cover (NMS) completion criteria (minimum NMS benchmark for relevant biometric vegetation communities) was met or exceeded at 4 out of 5 VZs. Native ground cover grass (NGCG) completion criteria (minimum NGCG benchmark for relevant biometric vegetation communities) was met or exceeded at all five VZs. Comparison of individual plot data shows that NPS decreased from 25 out of 32 plots last year to 22 out of 32 plots meeting or exceeding completion criteria in 2023. Native overstorey cover (NOS) increased from 13 out of 32 plots last year to 14 out of 32 plots meeting or exceeding the completion criteria in 2023. Native midstorey cover (NMS) decreased from 30 out of 32 plots last year to 27 out of 32 plots meeting or exceeding the completion criteria in 2023. Native ground cover grass (NGCG) increased from 27 out of 32 plots last year to 28 out of 32 plots meeting or exceeding the completion criteria in 2023. Pitfall and funnel trapping surveys on the Biobank BMA detected 11 fauna species in total including 3 frog, 7 reptiles and 1 mammal species. Site species richness ranged between 4 and 7 and averaged 5.7. Habitat type species richness averaged 7 species detected at woodland sites and 8 species detected at revegetated sites (average 5, range 4 to 6). Harp trapping surveys detected eight species of microbat with habitat type species richness of 4 species detected at revegetation sites and 6 species detected in woodland sites. The motion detection cameras recorded 2 native mammal species and 5 native bird species.

6.4 Blasting

6.4.1 Criteria

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

6.4.2 Key Environmental Performance/Management Issues

No blasting was undertaken during the reporting period.

6.4.3 Proposed Improvement to Environmental Management

No blasting is proposed within the next reporting period.

6.5 Operational Noise

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 as CCM is no longer operational.

6.5.1 Key Environmental Performance/Management Issues

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

6.5.2 Proposed Improvements to Environmental Management

No improvements are proposed within the next reporting period.

6.6 Aboriginal Heritage Management

6.6.1 Environmental Management Measures

Four Aboriginal heritage sites have been recorded since 1999, during investigations for the CCM. Two of these sites, Whitehaven 3 and Whitehaven 4, were located within ML 1471. 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 ML 1464 or ML 1471, have also been fenced and demarcated to avoid disturbance.

No additional consultation with Aboriginal stakeholders was required during the reporting period.

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

In accordance with the VCM Aboriginal Cultural Heritage Management Plan, the condition of fencing at Whitehaven 1 and Whitehaven 2 will be inspected as part of the annual inspections of the Aboriginal cultural heritage site fencing installed at VCM, in accordance with the VCM Aboriginal Cultural Heritage Management Plan.

6.7 Non-Aboriginal Heritage

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

6.8 Bushfire Management

6.8.1 Environmental Management Measures

CCM is located within an area of cleared agricultural land, and WHC personnel liaise with the local Rural Fire Service, as required. No bushfire incidents occurred on, or adjacent to, the mine site during the calendar year.

6.8.2 Key Environmental Performance/Management Issues

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

6.8.3 Proposed Improvements to Environmental Management

The perimeter access roads will be graded and cleared of vegetation and utilised as fire breaks.

6.9 Environmental Performance Summary

An environmental performance summary for CCM is presented in Table 5 below.

Table 5 - Environmental Performance

Aspect	Approval Criteria/EIS Prediction	Performance during the Reporting Period	Trend/Key Management Implications	Implemented/ Proposed Management Actions
Blasting	DA 8-1-2005, Schedule 3 (12 & 13)	N/A. No blasting on site.	No blasting on site.	No blasting on site.
Noise	DA 8-1-2005, Schedule 3 (6)	N/A. No operational activity on site.	N/A	N/A
Air Quality	DA-8-1-2005, Schedule 3 (1)	Compliance with the annual average depositional dust criterion General compliance with annual average PM ₁₀ level and 24-hour PM ₁₀ level.	N/A	N/A
Rehabilitation	DA 8-1-2005, Schedule 3 (28)	Rehabilitation progresses	Continue monitoring, and manage weeds and pests as required.	Ongoing environmental monitoring and management

7. WATER MANAGEMENT

7.1 Surface Water Management & Performance

Surface water management on site is limited to the lower void. Water monitoring occurs on a 6-monthly basis for water level and quality in the void. 2023 sampling results show a slight Increase in Electrical Conductivity (EC) at the beginning of the reporting period, which then slightly increased again later in the reporting period, likely due to lower rainfall in the last quarter of the reporting period. pH in the lower void was within criteria is at 8.60 which is generally consistent with the average pH recorded on the site (8.69). Total Suspended Solids (TSS) were within criteria <40mg.L and oil and grease levels were not detectable (<5mg/L). The void water level in January 2024 was recorded at 165.1 ML which is a decrease of 23.6 ML from the 188.7 ML reported in December 2022.

7.1.1 Water Balance Model

The CCM water balance model was run for the period between January 2023 and December 2023 to assess and validate the performance of the model against site observations. The objective of this exercise was to confirm or infer the following:

- net groundwater inflow rate to the void; and
- suitability of catchment yield model parameters.

Validation of the CCM water balance model was undertaken against the observed inventory of the Lower Canyon Void, with results presented in Table 6. Key model settings/assumptions associated with the presented results include the following:

- Groundwater inflow of 14.7 ML to Canyon void for the 2023 calendar year; and
- No change to catchment yield parameters.

Table 6 - Site water balance – Year 2023

Aspect	Year 2023 Volume (ML)	Basis
<u>Water inflows</u>		
Rainfall and runoff	43.6	Estimated (section 3.2, section 3.4)
In-void groundwater inflows	14.7	Inferred (section 3.7)
Total inflows	58.3	
<u>Water outflows</u>		
Dust suppression and construction use (VCM)	28.3	Measured (section 3.8)
Evaporation	63.7	Estimated (section 3.2)
Offsite discharges	0	Measured
Total outflows	92.0	
<u>Change in storage</u>		
Start of Jan 2023 ¹	203.2	
End of Dec 2023 ¹	169.6	
Net change in storage	-33.6	
WATER BALANCE	-33.7²	

7.1.2 Water Take

As groundwater inflows to the void are not able to directly measured, the validation of the CCM water balance model was used to estimate the indicative groundwater inflows between January 2023 and December 2023.

The groundwater inflows in the water balance model were modelled on a monthly basis and at an average inflow rate in each month. The estimated total groundwater inflow to the pit during the one-year period of 2023 was approximately 14.7 ML (on average, 0.04 ML/d).

The model validation results described in Table 6 shows that the estimated groundwater inflows should provide a good indication of groundwater inflows into the water management system over 2023.

7.1.3 Wet Weather Discharge

There are no licensed discharge points at CCM. There were not wet weather discharges at CCM.

7.2 Groundwater Management & Performance

Current monitoring requirements include six (6) monthly monitoring as per Table 7 below.

Table 7 - Groundwater Monitoring Parameters

GW Bore	Parameters					
	Standing Water Level (SWL)	pH	Conductivity	Cl	Na	Oil & Grease
GW-7	✓					
GW-8	✓					
GW-9	✓					
GW-11	✓	✓	✓	✓	✓	✓
P3	✓	✓	✓	✓	✓	✓

Results show the Standing Water Level (SWL) of sites GW-7, GW-9, GW-11 and P3 remain generally consistent. Site GW-8 historically showed regular fluctuations in SWL over the long term which was due to being connected to a solar pump. (Figure 11). All sites continued to display water quality results that are generally consistent with the long-term trends at the beginning of the reporting period (Figure 11). GW9 returned back to normal levels in Electrical Conductivity (EC). EC was consistent with long term trends at all other sites. pH was consistent with long-term trends and within criteria at all sites. No oil and grease have been identified in monitoring bores or were below the limit of reporting (<5 mg/L).

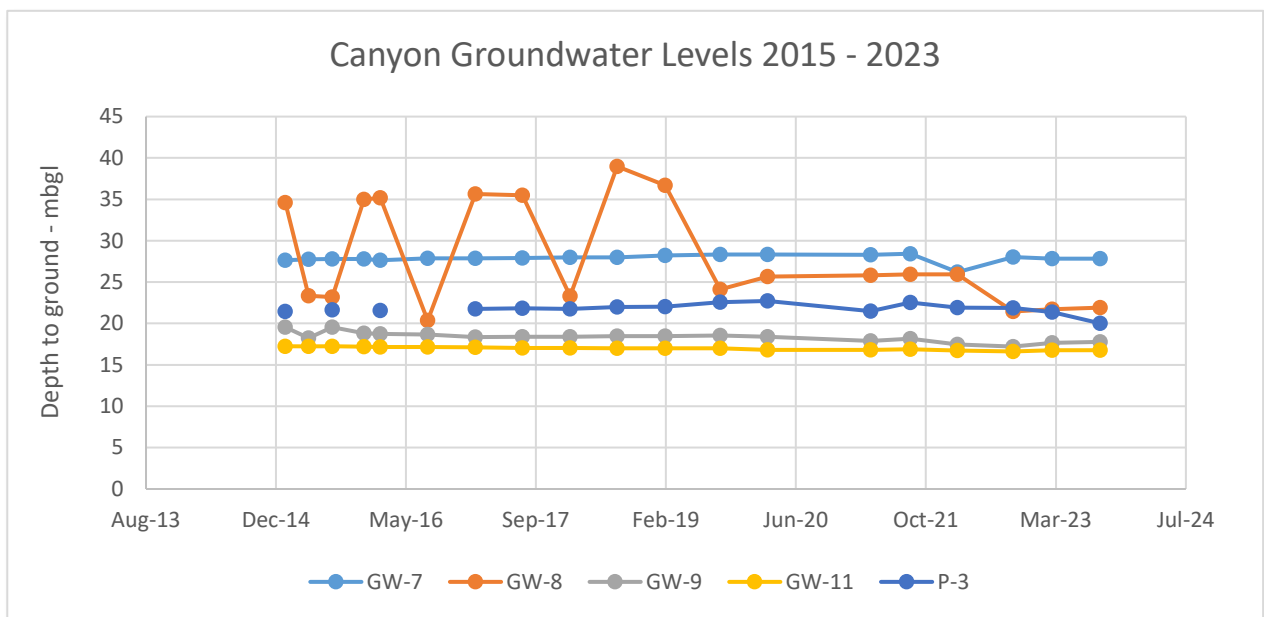


Figure 11 - Groundwater levels 2015 - 2022

7.1.1 Water Take

During the reporting period, no water was taken from any bores on site. WHC has a groundwater approval for 50 ML take.

8. REHABILITATION

8.1 Rehabilitation during the reporting period

8.1.1 Status of Mining and Rehabilitation

Table 8 summarises the rehabilitation status at CCM. The site is in closure and no further rehabilitation is planned.

Table 8 - Rehabilitation Status

Mine Area Type ¹	Previous Reporting Period (Actual)	This Reporting Period (Actual)	Next Reporting Period (Forecast)
	2022 (ha)	2023 (ha)	2024 (ha)
A. Total Mine Footprint	416.98	416.98	NA SSD-500 is planned to be surrendered and rehabilitation status to be reported under SSD7480.
B. Total Active Disturbance	2.9	9.1	NA SSD-500 is planned to be surrendered and rehabilitation status to be reported under SSD7480.
C. Land Being Prepared for Rehabilitation	0	0	NA SSD-500 is planned to be surrendered and rehabilitation status to be reported under SSD7480.
D. Land Under Active Rehabilitation	249.8	249.8	NA SSD-500 is planned to be surrendered and rehabilitation status to be reported under SSD7480.
E. Completed Rehabilitation	0	0	NA SSD-500 is planned to be surrendered and rehabilitation status to be reported under SSD7480.

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

8.1.2 Post Rehabilitation Land Uses

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

8.1.3 Renovation or Removal of Buildings

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

8.1.4 Other Rehabilitation Undertaken

No additional rehabilitation occurred during the reporting period.

8.1.5 Departmental Sign-off of Rehabilitated Areas

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

8.1.6 Variations in Activities against MOP/RMP

Not applicable.

8.1.7 Trials, Research Projects Initiatives

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

8.1.8 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 Vickery Coal Mine Rehabilitation Management Plan approved in August 2023 by the NSW Resources Regulator.

8.2 Actions for Next Reporting Period

Proposed actions include the implementation of controls for feral animals and weeds, and ongoing environmental management.

9. COMMUNITY

A Community Consultative Committee (CCC) for Canyon Coal Mine is covered under the terms of reference of the Vickery Coal Mine CCC. Two meetings were held in 2023 in conjunction with the Vickery Extension Project. A copy of each Annual Review is provided to Narrabri and Gunnedah Councils, relevant agencies, CCC and project website.

No complaints have been received for the site since 2008.

Community contributions are managed in accordance with the Whitehaven Coal Donations and Sponsorship Policy. Whitehaven Coal donated \$245,490.80 to local Gunnedah groups and over \$339,094.89 to support local groups in Narrabri during the reporting period. Groups and activities which received contributions included, but were not limited to the following;

Gunnedah LGA:

yawiriawiri murri ganuur descendants
rotary club gunnedah west
carroll community bus incorporated
swimming gunnedah incorporated
Extent
the combined catholic schools p&f
Winganga Li Early Learning and Care Sevices
CrossFit Gunnedah
Gunnedah High School
Gunnedah Filipino Australia Community
Gunnedah Junior Rugby Club Incorporated
Gomerioi Roos
Australian Whipcrackers & Plaiters Association
Multicultural Women's Association Inc Charity no.
Gunnedah and District Bulldogs AFL
Naidoc Week Committee Incorporated
The Central Noth Rugby Union
Gunnedah Bulldogs
Gunnedah Shire Council
Gunnedah and District Chamber of Commerce
Women in Mining
Gomerioi Allstars
Gunnedah Pistol Club
Lions Club of Gunnedah
Gunnedah Junior Rugby Club Incorporated
Eric & Carol Hannan
Boggabri gunnedah Gun club
Gunnedah Ministers Fraternal
Dorothea Mackellar Poetry Awards
Lake Keepit Fishing Club
The Red Chief - Local Aboriginal Local Council

Gunnedah Shire Council
Gunnedah Shire Council
Gunnedah Swimming
cougar warriors
Gunnedah Shire Council
Plains of Plenty
Gunnedah Meals on Wheels
Curlewis PS P&C
Movember Foundation
Gunnedah and District Chamber of Commerce
Gunnedah South Public School P&C Association
Gunnedah Can Assist
Gunnedah Shire Council
Gunnedah High School
Gunnedah High School
Gunnedah & District Chamber of Comm
Pcyc Gunnedah

Narrabri LGA:

North Branding
Narrabri industrial network inc
education public schools
North western courier
Boggabri Golf Club
Forest Coaches
Narrabri Arts Eisteddfod Inc
Eulah Creek Recreation Reserve Trust
Wee waa & District Historical Society Inc
Presbyterian Social Service
Narrabri district junior rugby league club
rotary club narrabri
Narrabri Shire Community Radio Inc
The Rotary Club Of Narrabri Inc.
narrabri and district chamber of commerce
Narrabri High School
Narrabri & District Community Aid Service Incorporated
Narrabri Dolphins Water Polo Club Incorporated
Wee Waa Community Band Inc.
Narrabri Dolphins Water Polo Club Incorporated
Wee Waa Show Society Inc.
Narrabri industrial network inc
Narrabri Oztag
Narrabri Rugby League Football Club
Namoï Women's Shed Incorporated
Narrabri industrial network inc

Richard Barry
Narrabri RSL sub-Branch
Maules Creek Campdraft and Junior Rodeo 2023
Yarrie Lake Flore & Fuana Trust
St Xaviers Narrabri
Boggabri Rugby League Football Club
Nosh Narrabri Committee
Nosh Narrabri Committee
Boggabri Public School
WHC - Clontarf

10. INDEPENDENT AUDIT

The most recent Independent Environmental Audit (IEA) of CCM was undertaken by an independent audit team from Environmental Resource Management Australia Pty Ltd (ERM) in September 2021, who were endorsed as the independent and qualified auditors by DPI&E.

The key audit outcomes related to the distribution of Annual Review documents to the council and CCC in 2020. An action from the IEA relating to DA 8-1-2005 advised that WHC are required under condition 10 of schedule 5 of this consent to provide a copy of the approved documents to Narrabri Shire Council (NSC), Gunnedah Shire Council (GSC), relevant agencies and the CCC, and ensure that a copy of the relevant documents is made publicly available at NSC and GSC offices, to the satisfaction of the Secretary. This action has now been completed and measures are now in place to ensure the Annual Review is distributed in a timely manner to relevant parties.

11. INCIDENTS AND NON-COMPLIANCES DURING THE REPORTING PERIOD

11.1 Reportable Incidents

No incidents occurred during the reporting period.

11.2 Non-compliances

There were no non-compliances during the reporting period.

11.3 Regulatory Actions

There were no regulatory actions during the reporting period.

12. 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:

- Continued implementation of controls for feral animals;
- Weed control for African Boxthorn, Prickly Pear and, Paterson's Curse
- Continued implementation of DA 8-1-2005 until surrendered, environmental monitoring, management and relevant environmental management plans.
- After care and maintenance of rehabilitated areas as required

WHC commenced development under Development Consent SSD-7480 for the VCM on 28 April 2022 to undertake pre-construction activities. Formal surrender of the development consent DA-8-1-2005 is planned to occur during the 2024 reporting period in accordance with condition A18 of SSD-7480 and subsequent extension.

13. REFERENCES

New South Wales Government (2015) Annual Review Guideline – Post Approval requirements for State significant mining developments, available:

<https://www.planning.nsw.gov.au/en/Policy-and-Legislation/Mining-and-Resources/~media/3AA21D35168042FE813DD0FB92E00E58.ashx>, accessed on 4/01/2022

North West Local Land Services (2017) North West Regional Strategic Weed Management Plan 2017 – 2022.

R. W. Corkery & Co Pty. Ltd (2000) Environmental Impact Statement for the Stage 2 “Whitehaven” Open Cut Coal Mine Development near Boggabri.