

Annual Review Vickery Coal Mine

Name of operation	Vickery Coal Mine	
Name of operator	Whitehaven Coal Mining Ltd	
Development consent/project approval number	DA 8-1-2005	
	SSD-5000	
	SSD-7480	
Name of holder of development consent/project approval	Whitehaven Coal Mining Ltd	
Mining lease number	ML 1471, CL 316, ML 1718, ML 1838	
Name of holder of mining lease	Whitehaven Coal Mining Ltd (ML 1471),	
	Whitehaven Coal Mining Ltd (CL 316),	
	Whitehaven Coal Mining Ltd (ML 1718),	
	Vickery Coal Pty Ltd (ML 1838)	
Water licence number	WAL No. 12651	
	WAL No. 12653	
Name of holder of water licence	Whitehaven Coal Mining Ltd	
FWP start date	1 st January 2024 / 31 st December 2024	
	(FWP1337)	
FWP end date	31 st December 2024	
Annual review start date 1 st January 2024		
Annual review end date 31 st December 2024		
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STATEMENT OF COMPLIANCE

The compliance status of the Vickery Coal Mine as at the 31st December 2024, is summarised in Table 1 below.

Table 1 - Statement of Compliance

Approval	Were all conditions of the relevant approval(s) complied with?
Development Consent DA 8-1-2005, SSD-5000	Yes
and SSD-7480	
Coal Lease 316	Yes
Forward Program	Yes
ML 1471	Yes
ML 1718	Yes
ML 1838	Yes
WAL No. 12651	Yes
WAL No. 12653	Yes
Environmental Protection Licence (No. 21283)	No



1. INTRODUCTION

This is the tenth Annual Review (AR) produced for the Vickery Coal Mine (VCM), and has been prepared in accordance with Schedule 5, Condition 4 of Development Consent SSD-5000 and Schedule 2, Condition E9 of Development Consent 7480. The AR follows the format required by the NSW Government Annual Review Guideline (October, 2015).

The VCM is located approximately 15 kilometres (km) south-east of Boggabri and approximately 25 km north of Gunnedah in New South Wales (refer to Figure 1 and Figure 2). Mining operations at the previous VCM ceased in 1998 when approval from the NSW Department of Primary Industries (DPI) was granted to suspend operations and complete rehabilitation works on-site. Whitehaven (WHC) acquired 100 percent (%) of the Coal Lease (CL) 316 and Authorisation (AUTH) 406 from Rio Tinto Limited in January 2010. ML 1718 and ML 1838 were issued under Part 5 of the NSW *Mining Act, 1992* by the NSW Minister for Mineral Resources in September 2015 and September 2022 respectively.

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 VCM on 28 April 2022 to undertake pre-construction activities. The Development Consents SSD-5000 and DA 8-1-2005 were not surrendered in the reporting period. Therefore this AR addresses Development Consent SSD-5000 (Vickery Coal Project), DA 8-1-2005 (Canyon Coal Mine) and Development Consent SSD-7480 (Vickery Extension Project). SSD-5000 is planned to be surrendered in the 2025 reporting period. It was confirmed by the DPHI on the 22/08/2024 that the Canyon AR could be incorporated into the Vickery AR (this document).

Mining activities commenced on 26th October 2023 at Vickery Coal Mine and have continued through the 2024 reporting period. Construction of the Project Rail Spur and Coal Handling and Processing Plant (CHPP) has not yet commenced. ROM coal extracted from the VCM continues to be transported via the approved coal haulage route to the Gunnedah CHPP.

1.1 Mine Contacts

The management personnel responsible for the VCM during the reporting period and their relevant contact details are as follows. VCM is managed as an operating asset. The management of SSD-7480 falls under the Gunnedah Open Cuts (GOC) Operations led by:

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

Key site personnel include:

- Mr Matthew Sparkes Operations Manager and Mining Engineering Manager ('MEM'); and
- Mrs Megan Martin Environmental Superintendent (02 6741 9300).





Source: LPMA - Topographic Base (2010); NSW Department of Industry (2015)

Figure ES-1

Figure 1 - Locality Plan





Figure 2 – VCM Location and Current Mining Status



2. APPROVALS

2.1 Tenements, Licences and Approvals

Table 2 identifies the approvals in place for the VCM at the end of the reporting period, the issuing/responsible Authority, date of issue and expiry date.

Table 2 - Tenements, Licences and Approvals

Issuing/Responsible Authority	Type of Lease, Licence,	Date of Issue	Expiry
	Approval		
Independent Planning	Development Consent SSD-7480	12 th August 2020	11 th August 2045
			31 st December 2044.
Department of Planning and	Development Consent SSD-5000	19 th September 2014	Must be surrendered
Environment (DPE)			prior to 31st October
			2025.
Department of Planning,	Development Consent: DA 8-1-		N/A. Must be
Infrastructure & Environment	2005, Mod. 3	30th June 2005	surrendered prior to
(DPIE)			31st October 2025.
Australian Department of Climate			
Change, Energy, the Environment	EPBC 2012/6263	17 th May 2012	Continuing
and Water (DCCEEW)			
Australian Department of Climate			
Change, Energy, the Environment	EPBC 2016/7649	15 th September 2021	31 st December 2051
and Water (DCCEEW)			
Environment Protection Licence	EDI 21283	17th May 2010	Continuing
(EPL) – NSW (EPA)	EFL 21203	17 May 2019	Continuing
Department of Regional NSW –			
Division of Mining, Exploration	Mining Lease 1471 (ML 1471)	7 th September 2000	6 th September 2042
and Geoscience (MEG)			
Department of Regional NSW –			
Division of Mining, Exploration	Coal Lease 316 (CL 316)	15 th June 1988	15 th June 2033
and Geoscience (MEG)			
Department of Regional NSW –			
Division of Mining, Exploration	Mining Lease 1718 (ML 1718)	15 th September 2015	15 th September 2036
and Geoscience (MEG)			
Department of Regional NSW –			
Division of Mining, Exploration	Mining Lease 1464 (ML 1464)	31 st October 2023	20 th December 2043
and Geoscience (MEG)			
Department of Regional NSW –			
Division of Mining, Exploration	Mining Lease 1838 (ML 1838)	13 th September 2022	13 th September 2043
and Geoscience (MEG)			



WaterNSW	Water Access Licence (WAL 36576)	17/02/2014	30/03/2053
WaterNSW	Water Access Licence (WAL 12701)	1/11/2006	31/10/2029
WaterNSW	Water Access Licence (WAL 12731)	1/11/2006	31/10/2029
WaterNSW	Water Access Licence (WAL 13051)	1/07/2004	1/01/2025
WaterNSW	Water Access Licence (WAL 12645)	1/11/2006	31/10/2026
WaterNSW	Water Access Licence (WAL 12651)	1/11/2006	31/10/2029
WaterNSW	Water Access Licence (WAL 12653)	1/11/2006	31/10/2029
WaterNSW	Bore licence (90CA807002)	01/11/2006	31/10/2029

3. OPERATIONS SUMMARY

3.1 Mining Operations

Mining operations have continued in 2024 with first coal mined in the June Quarter of 2024 (refer to Table 3). Mining operations undertaken in the 2024 reporting period consisted of overburden/waste rock movement and the first ROM coal produced. As per Schedule 2, Condition B76 of SSD-7480 relating to monitoring of coal transport, the coal transport and railing records are recorded in Appendix A.

No mining activities associated with DA 8-1-2005 have been undertaken as the area is integrated into the Vickery Coal Mine project (SSD-7480). Therefore, all CCM is included as part of SSD-7480 requirements and any relevant information is included in this Annual Review.

Material	Approved Limit	Previous Reporting Period (actual)	This Reporting Period (actual)	Next Reporting Period (forecast)
Waste Rock/Overburden	1 830 Mbcm ¹	1 372 772	17 378 515	19 086 644
(bcm)		1,012,112	17,570,515	13,000,044
ROM Coal/Ore (T)	10 Mtpa ²	0	681,038	1,945,704
Coarse Reject(T)	25 Mt ¹	0	222,173	487,000
Fine Reject (Tailings) (T)	N/A	0	96,689	213,000
Saleable Product(T)	N/A	0	329,587.3	1,070,137 ³

Table 3 - Production Summary

¹ VEP Environmental Impact Statement – Life of Mine (BCM = Bank Cubic Meter)

² Development Consent SSD-7480. Note: Approved coal extraction limit under Development Consent SSD-5000 is 4.5 Mtpa.

^{3.} Anticipated volumes are based on an estimated washed product percentage of ROM coal mined.



3.2 Road Haulage Operations

Road coal haulage operated from Tarrawonga and Vickery Coal Mines into the Gunnedah CHPP during the reporting period. The first coal haulage from Vickery Coal Mine occurred on the 15th of April 2024. Road haulage continued from VCM throughout the year. Annual road haulage numbers are recorded in Table 4 below.

Table 4 – 2024 Roal Haulage Tonnes

Site	2024 Road Hauled Coal (T)
Vickery Coal Mine	588,806
Tarrawonga Coal Mine	2,015,761
Total	2,604,567

3.3 Next Reporting Period

Vickery Coal mine is expected to mine over 19 million cubic meters of overburden in 2025 and produce nearly 2 million Tonnes of Coal as per Table 3. Clearing will continue to allow for mine expansion.

Formal surrender of the development consent SSD-5000 and DA 8-1-2005 is planned to occur during the 2025 reporting period in accordance with condition A18 of SSD-7480 and the extension granted by DPHI until 31st October 2025.



4. ACTIONS REQUIRED FROM PREVIOUS ANNUAL REVIEW

There were three actions required from DPE in relation to the 2023 Annual Review. Table 5 indicates commitments identified by WHC from the last Annual Review.

Table 5 - Actions from the previous Annual Review

Action required from previous Annual	Requested	Action taken by the Operator	Where discussed
Review	by		in Annual Review
Continue CCC Meetings	Operator	CCC Meetings held in April, July and October 2024	Section 8
Continuation of weed and feral animal monitoring on-site to guide management actions at VCM offset properties	Operator	Weed and feral animal monitoring was undertaken	Section 5.2.9
Implementation of applicable approved Environmental Management Plans to support construction activities	Operator	Management plans have been implemented as VCM construction and mining initiated.	Section 3.1
Continue environmental monitoring and reporting, as required	Operator	Environmental monitoring was continued	Section 5
Inspection of completion and condition of fencing at Aboriginal cultural heritage sites.	Operator	Heritage fencing inspection was undertaken	Section 5.5
A graphic, displaying the Vickery Coal Mine offset areas.	DPHI	Graphic has been included to Biodiversity Section	Figure 16
Table 3, 'Production Summary' to contain consistent units of measurement (currently a mix of Mtpa and bcm).	DPHI	Mining Production is calculated as per following: Product - Tonnes Overburden - Bank Cubic Meter (BCM)	Table 3
Analysis and reporting of greenhouse gas emissions. Both comparison to EIS predictions and discussion of management and mitigation measures employed throughout the reporting period.	DPHI	Greenhouse Gas has been Included	Section 5.1.1



5. ENVIRONMENTAL PERFORMANCE

This section describes the environmental performance of the VCM and includes a summary of monitoring results. The locations of these monitoring points are shown in Figure 3. A description of the environmental performance of the VCM regarding biodiversity, Aboriginal Heritage, Historic Heritage and Waste is also included in this section.



Figure 3 – EPL Monitoring Locations



5.1 Air Quality

Air quality criteria for VCM is stipulated in SSD-5000 and SSD-7480, Schedule 3 condition 18 and Part B condition B32 respectfully. Air Quality Criteria for DA 8-1-2005 has also been included to cover Canyon Coal Mine. Air Quality Criteria is summarised in Table 6 below:

Table 6 – Air Quality Criteria

Dollutent	Averaging	SSD-7480 (AQ	SSD-5000 (AQ		
Foliulant	Period	Criteria)	Criteria)	DA 6-1-2005	
Total suspended particulate					
(TSP) matter	Annual	90 µm/m³	90 µm/m³	90 µm/m³	
Particulate matter < 10 µm					
(PM ₁₀)	Annual	25 µm/m³	30 µm/m³	30 µm/m ³	
Particulate matter < 10 µm	ate matter < 10 μm				
(PM ₁₀)	24 Hour	50 µm/m³	50 µm/m³	50 µm/m³	
Particulate matter < 2.5 μm					
(PM _{2.5})	Annual	8 µm/m³	-	-	
Particulate matter < 2.5 µm					
(PM _{2.5})	24 Hour	25 µm/m³	-	-	
			Max increase: 2	Max increase: 2	
Deposited Dust	Annual		g/m ³ /month	g/m ³ /month	
	Annuai	-	Max Total: 4	Max Total: 4	
			g/m ³ /month	g/m ³ /month	



5.1.1 Environmental Performance/Management

Greenhouse Gas

Scope 1 Emissions

GHG emissions are reported through participation in the National Pollutant Inventory (NPI) and as part of the Whitehaven Group in the National Greenhouse and Energy Reporting Scheme (NGERS).

The total of Scope 1 and Scope 2 GHG emissions reported for NGERS FY2024 at VCM were 27,465t CO2-e. The EA prediction for FY24 for total Scope 1 and Scope 2 GHG emissions includes Scope 2 emissions assuming Vickery is connected to the electricity grid and purchasing electricity. Vickery is not yet connected to the electricity grid and therefore comparison to the EA predictions for Scope 2 emissions is not available. The total Scope 1 GHG emissions for FY2024 was 27,451 t CO2-e and the EA prediction for Scope 1 GHG emissions was 19,952 t CO2-e.

Diesel combustion accounts for >98% of the Scope 1 emissions at Vickery (refer Table 7 below). 10,027kL of diesel (stationary and transport use) was consumed equating to 27,172 tCO2-e GHG Emissions. Diesel usage was slightly higher than estimated in the EA. This can be attributed to the non-connection to the electricity grid and the total reliability on Diesel power for construction and early mining activity.

	Predicted GHG Emissions EA	Actual Emissions 2024	+/-
Scope 1	19,952 t CO2-е	27,451 t CO2-e	+7,499 t CO2-e

Scope 2 Emissions

Approximately 20,935 kWh electricity was purchased by the mine during the FY2024 reporting period equating to 14 t CO2-e GHG emissions. Vickery is not connected to the electricity grid and relies on generators for power generation. The electricity purchased was from VCM owned properties that contain monitoring equipment. From October 2022 WHC offset Scope 2 emissions by purchasing 100% carbon neutral electricity across all sites.



DA 8-1-2005 Deposited Dust Monitoring

Operational activities in the vicinity of CCM were minimal during the reporting period and consisted of environmental monitoring activities and Lepidium exclusion extension works.

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



Figure 4 - Deposited Dust Annual Mean (actual values for each site shown on bars)

SSD-5000 Deposited Dust Monitoring

Construction and mining activities at the VCM continued in the reporting period. Monitoring of deposited dust is undertaken monthly, with results within the mean annual dust deposition criterion of 4 g/m2/month (Table 8).

Table 8 - Depositional Dust

Site	Property Name	2023	2024
		Annual mean total insoluble	Annual mean total insoluble
		solids (g/m²/month)	solids (g/m²/month)
DG1	Ingleburn	1.6	2.7
DG2	Mirrabinda	1.5	2.0
V1	Greenwood/Shannon Harbour	1.3	0.9
V2	Greenwood/Shannon Harbour	0.7*	0.8
V3	Welkaree/Tralee	2.2	2.4
V4	Shannon Harbour	1.6	1.6
V5	Wilga	1.4	1.8

*1 anomalous sample excluded due to localised farming activity and no mining activity undertaken in early 2023



Air Quality Monitoring

SSD-5000 & DA 8-1-2005 - TEOMs

Particulate matter for SSD-5000 and DA 8-1-2005 is measured at a Whitehaven Coal owned property (Willgai), approximately 1.5 km to the east of the north-eastern boundary of ML 1471. Sampled data was analysed from the real time monitoring unit, with a validation process undertaken.

For the 2024 reporting period, the mean annual PM10 particulate level (14.22 μ g/m3) was within the criteria noted in SSD-5000 (30 μ g/m3) (Figure 5).

This value is below the predicted mean annual PM10 particulate levels in the EIS (between $15 \mu g/m3$ and $35 \mu g/m3$).

For the 2024 reporting period, the mean annual PM TSP particulate level (28.4 μ g/m3) was within the criteria stipulated in SSD-5000 (90 μ g/m3) (Figure 6).









Figure 6 – "Willgai Particulate Matter (TSP)



SSD-7480 - TEOMs

Mining activities have ramped up and continued at Vickery Coal Mine in 2024. Particulate matter for SSD-7480 is measured at privately owned properties (TEOM 1- "Lanreef" & TEOM 2 – "Mirrabinda") approximately 5 km to the South and South West of Vickery Coal Mine. Sampled data was analysed from the real time monitoring unit, with a validation process undertaken. The Vickery TEOMs (PM1 & PM2) became operational in mid-August 2023 and have continued operations throughout 2024.

Compliance Overview

Compliance TEOM's 1 and 2 did not exceed 24hr or annual criteria for both PM₁₀ and PM_{2.5}.

TEOM 1- "Lanreef"

For the 2024 reporting period, the mean annual PM10 particulate level (9.1 μ g/m3) at TEOM 1 was within the criteria noted in SSD-7480 (25 μ g/m3) (Figure 7). For the 2024 reporting period the 24-hour average PM10 Particulate level criterion (50 μ g/m3) was not exceeded at TEOM 1.



Figure 7 – "Lanreef" TEOM 1 Particulate Matter (PM10)

The mean annual PM2.5 particulate level (4.1 μ g/m3) was also within the criterion noted in SSD-7480 of 8 μ g/m3. For the 2024 reporting period the 24-hour average PM2.5 Particulate level criterion (25 μ g/m3) was not exceeded at TEOM 1. (Figure 8).





Figure 8 - "Lanreef" TEOM 1 Particulate Matter (PM2.5)

For the 2024 reporting period, the mean annual PM TSP particulate level (18.2 µg/m3) at TEOM 1 was within the criteria noted in SSD-7480 (90 µg/m3) (Figure 9).





Figure 9 - "Lanreef" TEOM 1 Particulate Matter (TSP)



TEOM 2- "Mirrabinda"

For the 2024 reporting period, the mean annual PM10 particulate level (9.1 μ g/m3) at TEOM 2 was within the criteria noted in SSD-7480 (25 μ g/m3). For the 2024 reporting period the 24-hour average PM10 Particulate level criterion (50 μ g/m3) was not exceeded at TEOM 2. (Figure 10).



Figure 10 - "Mirrabinda" TEOM 2 Particulate Matter (PM10)



The mean annual PM2.5 particulate level (4.0 μ g/m3) was also within the criterion noted in SSD-7480 of 8 μ g/m3. For the 2024 reporting period the 24-hour average PM2.5 Particulate level criterion (25 μ g/m3) was not exceeded at TEOM 2. (Figure 11).



Figure 11 - "Mirrabinda" TEOM 2 Particulate Matter (PM2.5)



For the 2024 reporting period, the mean annual PM TSP particulate level (18.1 μ g/m3) at TEOM 2 was within the criteria noted in SSD-7480 (90 μ g/m3) (Figure 12).



Figure 12 - "Mirrabinda" TEOM 2 Particulate Matter (TSP)

Rocglen TEOM- "Roseberry"

Roseberry TEOM is not a compliance TEOM however is used as an additional site for operational review and background monitoring. Roseberry did not exceed the 24hr or the annual average limits for compliance (Figure 13, Figure 14 and Figure 15)



Figure 13 – Roseberry Particulate Matter (PM10)





Figure 14 – Roseberry Particulate Matter (PM10)



Figure 15 – Roseberry Particulate Matter (TSP)



5.1.2 Key Environmental Management/Performance Issues

Continue to maintain, calibrate and inspect TEOMs for optimal performance.

5.1.3 Proposed Improvements to Environmental Management

Continue to operate as per the Vickery Coal Mine Air Quality and Greenhouse Gas Management Plan (AQGGMP).

5.2 Biodiversity

5.2.1 Biodiversity Offset Area (BOA) Management

VCM implemented the Revised Biodiversity Offset Strategy (RBOS) approved on 13 March 2024 with the requirements of SSD 7480 Conditions B56/B57 and B58/B59 and EPBC Approval 2016/7649 Conditions 19-21. The Revised Biodiversity Offset Strategy for VCM includes the initial Offset Area of Willeroi East 1591ha adjacent to the south eastern boundary of Mount Kaputar National Park and the Substitute Offset Areas (Glenroc, Costavale and Wean North, collectively 656ha) for a total RBOS of 2247ha. In addition, Biodiversity Stewardship Sites were approved (Mt Somner, Blue Vale, Greenwood and Wean Amalgamated which includes parts of the biodiversity properties Bull Mountain, Gundawarra, Woodlands, Wear/Silkdale, Wean, Yarrawonga) and in application (Bundaleer) during 2024 totalling 3862ha that will establish a restoration corridor linking remnant vegetation adjoining the Vickery State Forest with the Nandewar Range that will collectively be known as the Vickery Biodiversity Management Area (BMA), Figure 16.

5.2.2 Offset Security Management

VCM previously registered the Conservation Agreement CA0060 over the whole Willeroi property (including Willeroi East Offset Area) on 24 June 2021. Then a further 3 Conservation Agreements for the VCM Substituted Offset Areas were registered between 23 and 26 April 2024 securing the VCM overall RBOS package under Part 5 Division 3 of the *Biodiversity Conservation Act 2016* and completing the in-perpetuity legal mechanism required by the Commonwealth EPBC Act Approval 2016/7649 Condition 19 and SSD 7480 Condition B57. WHC has recommenced consultation with National Parks and Wildlife Service (NPWS) for those Offsets Areas previously shown interest in being transferred to the National Park Estate. Following commencement of the VCM development consent on 28 April 2022; WHC submitted the final six-monthly report to NSW DPHI in April 2024 to confirm the retirement of Biodiversity Credits required by SSD 7480 Condition B58/B59. A total Biodiversity Credits of 7,069 Ecosystem Credits and 2,980 Species Credits was retired on behalf of VCM.

5.2.3 Weather Summary of Offset Properties

Regionally central meteorological station to the BMA is the Gunnedah Airport site (BOM 2024) which has recorded highly variable rainfall over the last 5 years; from the driest on record of 233mm in 2019, followed by above average rainfall years in 2020, 2021 and 2022 of 844mm, 990mm and 860mm respectively (resulting in numerous major flooding events of the Namoi River). While in 2023 and 2024, the Gunnedah Airport site (BOM 2024) recorded 496mm and 572mm which are closer to the annual average rainfall of 572mm. WHC maintains a meteorological station within the Willeroi BMA and a summary of weather conditions experienced during the 2024 reporting period was maximum monthly average temperature was 32°C in January 2024. Minimum monthly average temperature was 6°C in June 2024. Annual temperature ranges were 2°C to 38°C in 2024. The total annual rainfall in 2024 was 456mm with the maximum in February (63mm) and minimum in September (18mm).



5.2.4 Infrastructure & Waste Management

During the reporting period, a total of 16.5km of new or repaired fencing (fauna friendly) was constructed along the perimeter of Vickery BMA including Glenroc, Yarrawonga, Bull Mountain, Wean, Mt Somner and Greenwood as well as maintenance of signage and gates undertaken as required to continue to restrict unauthorised access and minimise livestock incursion. Also during the reporting period, 43.1km of redundant internal fences were removed from the Glenroc, Costavale, Wean North, Yarrawonga, Woodlands, Bull Mountain, Wean and Greenwood properties. Any remaining derelict assets/infrastructure items will continue to be assessed, removed, and remediated as required prior to potential transfer of certain VCM biodiversity properties to the National Park Estate.

5.2.5 Seed Management

The routine seed assessments on the Vickery BMA aims to identify on a seasonal basis the life cycle stage and development of native plants to identify where, when and how to target appropriate resources for seed collection for future revegetation programs. During the reporting period, a total of 2 species were collected resulting in 342g of locally provenant seed from across the VCM BMA that was incorporated with other local and regionally provenant seed sourced by suitably qualified seed collectors as part of the WHC group wide revegetation planning. A local revegetation provider was engaged to propagate the seed to produce Box Gum and non-EEC/CEEC Woodland overstorey species seedlings required for the completed 2024 revegetation program as well as planning for the 2025 revegetation program for the Vickery BMA.

5.2.6 Revegetation Management

The Vickery BMA revegetation strategy focuses on restoration and revegetation of previously cleared non-native grassland and native grasslands and assisting natural regeneration in better quality woodland areas. During the reporting period, revegetation ground preparation utilised tractors and skidsteers to auger holes (to a depth >0.3m) to relieve compaction, improve permeability and infiltration to increase sub-surface soil moisture for planting. WHC coordinated two revegetation programs during the reporting period consisting of an understorey revegetation (direct seeding) program and an overstorey planting program. The understorey revegetation was undertaken on Costavale in June 2024 with 42ha sown including 549kg of native grass seed (19 species), 69kg of native forb seed (8 species) and 2,139kg of bulking agent (calcipril). There was also 1ha of understorey revegetation carried out during the reporting period associated with the Willeroi East erosion rehabilitation area. The overstorey revegetation program was undertaken between April and November 2024 with 50,359 hiko seedlings of woodland species planted over 591ha on the Willeroi East, Costavale, Wean North, Woodlands, Bull Mountain and Mt Somner biodiversity properties. Routine tree watering and maintenance activities post planting have been successful to ensure that 71% average survival has been achieved for the Vickery BMA which is commensurate with the target woodland vegetation structure.

5.2.7 Heritage Management

During the reporting period, annual heritage inspections were completed on the 125 known heritage sites (Aboriginal archaeological) within the Vickery BMA. Heritage sites are maintained with 19.3km of demarcation fencing around the heritage site perimeter and signage to mitigate access and inadvertent disturbance. During this reporting period, 1 new heritage site (Aboriginal archaeological) was identified on the Willeroi East biodiversity property. Further, 541m of new heritage site fencing or fence maintenance was carried out during 2024.



5.2.8 Habitat Management

During the reporting period, no specific habitat management works were undertaken for the Vickery BMA.

5.2.9 Weed Management

WHC coordinated routine formal weed monitoring/inspections undertaken across Vickery BMA in March, May, June, September, November, and December 2024. The priority weeds identified included legacy weeds inherited from previous owners' management regimes such as African Box Thorn, Prickly Pear, Pattersons Curse and Velvet Pear. The weed monitoring/inspections ensure that timely and prioritised weed control is undertaken on a seasonal basis with the spatial information directly given to spraying contractors to enable appropriate resources to be mobilised across the Vickery BMA for weed control. During the reporting period, WHC implemented a weed control program across 835ha between January and December 2024 targeting primarily broadleaf weeds within revegetation areas and along fire break tracks as well as Coolatai Grass, Sweet Briar, Prickly Pear, Tiger Pear, Green Cestrum, African Box Thorn, St Johns Wort. Patterson Curse and Mother of Millions weed species. This was required within the Willeroi East, Glenroc, Costavale, Wean North, Yarrawonga, Woodlands, Bull Mountain, Wear/Silkdale, Wean, Gundawarra, Mt Somner, Blue Vale, Greenwood and Bundaleer biodiversity properties. Only appropriately qualified and experienced weed contractors (AQF3 accreditation or higher for use of herbicide) were engaged to undertake weed control works for WHC.

5.2.10 Pest Animal Management

WHC aims to apply an even and consistent pest animal management effort by routinely scheduling seasonal monitoring and control programs across the Vickery 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 a grid-based motion detection camera monitoring program, pest animal observations and the results of previous control programs. Monitoring demonstrated that certain animals like Eastern Grey Kangaroos were highly detectable and Feral Pigs were moderately detectable across the year. All other pest animal species had scarce to low detection levels across 2024. The pest animal monitoring ensures that timely and prioritised pest animal control is undertaken on a seasonal basis identifying and deploying appropriate resources across the Vickery BMA for pest animal management. During the reporting period, WHC implemented a pest animal control program across the Vickery BMA with routine 1080 canid pest ejectors as well as Hoggone baits and Open Range Shooting undertaken throughout 2024. During the reporting period, there were 246 canid pest ejectors triggered from 1280 deployed and 1086 Hoggone baits consumed from 2220 presented across the Vickery BMA. A further 27 Feral Pigs were trapped and removed from the Vickery BMA. Open range shooting programs were implemented in conjunction with the other pest animal programs resulting in an additional 25 Goats, 3 Foxes, 28 Feral Pigs and 2 Deer being controlled in 2024. Feral Goat mustering continued during the reporting period resulting in 92 Goats being captured with saleable Goats on sold to an abattoir. Only appropriately qualified and experienced feral animal contractors (appropriate feral animal management qualifications, NSW firearm licence and pesticide accreditation where relevant) were engaged to undertake feral animal control works for WHC.



5.2.11 Soil & Erosion Management

Annual inspections were undertaken including unsealed fire break tracks and associated drainage structures across the Vickery 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 1 observation was recorded within the Vickery 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. There are also a number of legacy erosion sites inherited from previous owners' management regimes that are subject to a separate annual inspection process and updates to the WHC erosion register made. During the reporting period, the Willeroi East Site 1 erosion site commenced rehabilitation so that future monitoring and investigations commensurate to the risk can reduce from 3 erosion sites remaining within VCM biodiversity properties.

5.2.12 Grazing Management

Vickery BMA continued to be destocked with no strategic grazing occurring during the reporting period. Willeroi East has been destocked since 2015, Glenroc since 2021 and remaining the biodiversity properties since 2023. There were 9 instances of stock incursion during the reporting period; with the stock on each occasion retrieved and fencing repaired as required.

5.2.13 Bushfire Management

The Vickery BMA annual fuel load monitoring was undertaken between September and November 2024 as part of planning and assessment of bushfire hazard and ecological burn program for 2025; with the results indicating moderate to high overall fuel loads present. During the reporting period, no bushfires occurred. There was one controlled ecological burn in May 2024, which resulted in 61.3ha being burnt on the Mt Somner property of a low intensity. Other fire management implemented by WHC during the reporting period was fire break track maintenance carried out over 203.2km to a zero-fuel barrier standard across the Vickery BMA. WHC maintains regular communications throughout the reporting period with both the Liverpool Range and Namoi-Gwydir Zone RFS teams around planning of WHC Biodiversity's ecological burn programs as well as maintaining contact points in case of emergency. WHC maintains a specialist firefighting contractor for an on call engagement during the fire season to respond in the event of a bushfire on Vickery BMA and non-mining lands.

5.2.14 Threatened Flora Management

During the reporting period, threatened flora inspections were completed on the 6 known threatened flora sites for *Tylophora linearis*, within the Vickery BMA within the Narrabri BMA maintained with signage and/or demarcation fencing around the site perimeter to mitigate access and inadvertent disturbance. During the reporting period, there were two new threatened flora sites were identified on the Wean and Greenwood biodiversity properties.

5.2.15 Monitoring

The 2024 ecological monitoring program of the Vickery BOA included winter bird surveys that were undertaken in July and August 2024; annual spring flora monitoring of 19 plots across four Vegetation Zones (VZ) during September and October 2024 and the fauna monitoring program completed surveys at 27 bird survey sites, 4 Harp Trap Sites, 12 echolocation monitoring sites and 6 Motion detection camera sites between January 2024 and November 2024. During the winter bird surveys no threatened species were recorded. During flora monitoring two VZs (VZ 36 and 37) were recorded as meeting or exceeding completion criteria for all four

biometrics. Native plant species richness (NPS) completion criteria (native species richness benchmark for relevant biometric vegetation communities) was met or exceeded at 3 out of 4 VZs. Native overstorev cover (NOS) completion criteria (minimum overstorey cover benchmark for relevant biometric vegetation communities) was met or exceeded at 2 out of 4 VZs. Native midstorey cover (NMS) completion criteria (minimum midstorey cover benchmark for relevant biometric vegetation communities) was met or exceeded at all four VZs. Native ground cover grass (NGCG) completion criteria (minimum groundcover benchmark for relevant biometric vegetation communities) was met or exceeded at all four VZs. Comparison of individual plot data shows that NPS slightly decreased from 18 out of 19 plots meeting or exceeding completion criteria in 2023, to 17 out of 19 plots in 2024. Native overstorey cover (NOS) remained consistent between 2023 and 2024, with 9 out of 19 plots meeting or exceeding completion criteria in both years. Native midstorey cover (NMS) remained consistent between 2023 and 2024, with all 19 plots meeting or exceeding completion criteria in both years. Native ground cover grass (NGCG) decreased from 18 out of 19 plots meeting or exceeding completion criteria in 2023, to 15 out of 19 plots in 2024. Apart of the annual fauna monitoring program were standardised bird surveys across 27 survey sites resulting in 97 bird species were recorded compared to 81 species in 2023. Bird richness across woodland habitats was 74 (average 26; range 19 to 33); 42 species were detected at revegetation sites (average = 10.8; range 8 to 13) and 78 species were recorded at naturally regenerating sites (average 22.9; range 12 to 35). During echolocation and harp trap surveys, a total of 22 microbat species were detected including 7 threatened species listed under the BC Act. Habitat type species richness averaged 16 species detected in remnant woodland (average 9.5, range 9 to 14), 18 species in natural regeneration (average 11.6, range 10 to 14) and 14 species in revegetation sites (average, 10.66, 5 to 14). Fifteen species of fauna were recorded at motion detection camera sites including six species of introduced animals.





Figure 16 – Regional Setting of Biodiversity Properties and WHC Coal Mines



5.2.16 Mine Site Biodiversity

Lepidium monoplocoides Management

In accordance with the relevant approvals (SSD-7480 and EPBC 2012/6263), monitoring of Winged Peppercress (*Lepidium monoplocoides*) within the Canyon Protection Area and Vickery Impact Area occurred from spring to summer 2024-25. A total of 453 individuals were observed within the Canyon Protection Area, and a total of 1,400 individuals were observed between the five reference transects in the Pilliga National Park.

All Winged Peppercress observed within the Canyon Protection Area developed seed during the 2024-25 monitoring period, indicating that the species continues to complete its annual life-cycle within the Canyon Protection Area. During the monitoring period no Winged Peppercress were observed within cells where direct seeding occurred in 2020, nor were individuals observed at locations of previous plantings (whole plant translocations and tubestock) in 2021. No Winged Peppercress were observed within the Vickery Impact Area from spring to summer 2024-25 and therefore no translocations occurred during the reporting period.

Digitaria Porrecta Management

In 2023 an area of topsoil associated with a population of *Digitaria porrecta* was direct-placed and fenced off to construct a *Digitaria porrecta* nursery area on a life-of-mine drain that will not be subject to future disturbance. This area has been demarcated and protected with appropriate signage in the 2024 reporting period and growth has been monitored for *Digitaria porrecta*. No individuals have been observed in this area in 2024 most likely sue to lower rainfall in the germination periods. In 2025 a trial of seeding with *Digitaria porrecta* seeds collected prior to topsoil stripping (in accordance with the Biodiversity Management Plan) will be undertaken to augment the natural seedbank population.

5.2.17 Key Environmental Performance/Management Issues

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

5.2.18 Proposed Improvements to Environmental Management

No improvements are proposed within the next reporting period.



5.3 Blasting

5.3.1 Environmental Performance/Management

Blasting criteria for the VCM are noted in SSD 5000 and SSD-7480 and outlined in Table 9 below.

Table 9 – SSD-7480 Blasting Criteria

Location	Airblast Overpressure (dB(Lin Peak))	Ground Vibration (mm/s)	Allowable Exceedance
Residence on Privately-	120	10	0%
Owned Land (B03)	115	5	5% of the total number of blasts
			over a calendar year
Kurrumbede (B01)	133	10	0%
Grinding Grooves (B02)	-	80	0%
All other public	-	50	0%
Infrastructure			

During the 2024 reporting period there were 42 blasts initiated.

The maximum ground vibration recorded at Vickery Coal Mine during the reporting period was 2.29mm/s recorded at B-01 on 25th September 2024 which is within compliance limits. All blasts on non-project related residences during the reporting period were within the ground vibration criteria.

The maximum overpressure recorded at Vickery Coal Mine during the reporting period was 115.20 dBL recorded at B-02 on 14th August 2024 which is within Compliance Limits. All blasts on non-project related residences during the reporting period were within the overpressure criteria.



Location	Parameter	Units of Measure	Frequency	No. of Blasts for the Year	Average Value	Max Value	100%ile Limit	Non- compliance	Date of Max. Value Obtained
B-01	Blast Noise	dB (Lin Peak)	Every Blast	42	100.58	110.20	133	No	25/09/2024
- •-	Blast Vibration	mm/s	Every Blast	42	0.49	2.29	10	No	25/09/2024

Location	Parameter	Units of Measure	Frequency	No. of Blasts for the Year	Average Value	Max Value	100%ile Limit	Non- compliance	Date of Max. Value Obtained
B-02	Blast Noise	dB (Lin Peak)	Every Blast	42	103.43	115.20	N/A	N/A	14/08/2024
	Blast Vibration	mm/s	Every Blast	42	0.78	2.22	80	No	21/10/2024

Location	Parameter	Units of Measure	Frequency	No. of Blasts for the Year	Average Value	Max Value	100%ile Limit	Non- compliance	Date of Max. Value Obtained
В-03	Blast Noise	dB (Lin Peak)	Every Blast	42	96.13	105.10	120	No	14/08/2024
	Blast Vibration	mm/s	Every Blast	42	0.23	0.93	10	No	05/08/2024



5.3.2 Key Environmental Performance/Management issues

No Blasting issues

5.3.3 Proposed Improvements to Environmental Management

Continue to monitor all blasts.

5.4 Operational Noise

5.4.1 Environmental Performance/Management

Attended monitoring is undertaken on a monthly basis by an independent consultant and is used to assess compliance with licence and approval limits for mine contributed noise. Attended noise monitoring identified no exceedances of the noise criteria in Table 1, Condition B1 of SSD 7480 during the reporting period (2024).

In summary the measured noise levels from VCM contributions throughout all monitoring periods during 2024 display VCM's noise levels as generally below EIS predictions (Tables 10, 11, 12 and 13). Some minor exceedances of the modelled EIS predictions were recorded for one day time period, two evening periods, and one night time period at N-AT1, for the 15 minute compliance measurement periods. There we no exceedances of Lmax modelled predictions throughout the 2024 reporting period.

The attended noise monitoring results show that, under the operating and meteorological conditions throughout 2024, for the 15 minute and Lmax compliance measurement periods, the mine noise from VCM was inaudible or below all applicable noise criteria.

Month	Location	Time / Date	dB(A), Leq	VCM Contribution dB(A),Leq	Criterion dB(A),Leq	Wind speed (m/s),dir	Stability Class	Exceedance (Yes/No)	EA Predicted Level ²	Difference ³
lary	N-AT1	4:25pm (25/01/24)	41	IA	40	2.9 / 244	В	No	21	-
Janı	N-AT2	2:02pm (25/01/24)	38	IA	40	2.2 / 186	В	No	30	-
uary	N-AT1	11:47am (27/02/24)	42	IA	45 ¹	4.0 / 261	В	No	21	-
Febr	N-AT2	4:30pm (26/02/24)	40	IA	40	2.8 / 247	В	No	30	-
ch	N-AT1	4:27pm (11/03/24)	40	IA	45 ¹	4.2 / 098	С	No	21	-
Mai	N-AT2	2:12pm (11/03/24)	48	IA	45 ¹	4.5 / 097	С	No	30	-
April	N-AT1	3:21pm (23/04/24)	34	31	45 ¹	3.5 / 124	С	No	21	+10

Table 11 - VCM Operational Noise Monitoring Results Leq(15min) – Day-Time Period


Month	Location	Time / Date	dB(A), Leq	VCM Contribution dB(A),Leq	Criterion dB(A),Leq	Wind speed (m/s),dir	Stability Class	Exceedance (Yes/No)	EA Predicted Level ²	Difference ³
	N-AT2	9:21am (22/04/24)	40	IA	40	1.6 / 141	В	No	30	-
Þ	N-AT1	10:02am (18/05/24)	33	21	45 ¹	3.6 / 165	С	No	21	0
Ma	N-AT2	12:11pm (18/05/24)	51	IA	45 ¹	6.3 / 171	D	No	30	-
е	N-AT1	10:05am (18/06/24)	32	IA	40	1.9 / 274	В	No	21	-
ηη	N-AT2	2:45pm (17/06/24)	45	IA	40	2.8 / 242	С	No	30	-
Ŋ	N-AT1	1:28pm (30/07/24)	46	IA	45 ¹	5.2 / 169	С	No	21	-
٦u	N-AT2	3:46pm (30/07/24)	47	IA	45 ¹	4.7 / 164	D	No	30	-
ust	N-AT1	1:57pm (15/08/24)	45	IA	40	1.4 / 216	С	No	21	-
Aug	N-AT2	4:12pm (15/08/24)	48	IA	40	1.4 / 173	С	No	30	-
mber	N-AT1	1:40pm (24/09/24)	37	IA	40	2.7 / 300	С	No	21	-
Septe	N-AT2	3:53pm (24/09/24)	46	IA	45 ¹	3.2 / 301	D	No	30	-
ber	N-AT1	1:50pm (28/10/24)	47	IA	40	4.0 / 170	С	No	21	-
Octo	N-AT2	4:08pm (28/10/24)	48	IA	40	2.3 / 153	D	No	30	-
nber	N-AT1	8:08am (26/11/24)	45	IA	40	1.6 / 020	D	No	21	-
Nove	N-AT2	10:24am (26/11/24)	44	IA	40	6.1 / 310	D	No	30	-
mber	N-AT1	1:11pm (23/12/24)	53	IA	45 ¹	6.4 / 263	В	No	21	-
Decer	N-AT2	3:28pm (23/12/24)	55	IA	45 ¹	7.2 / 248	В	No	30	-

1. Applicable meteorological conditions not met, noise limit is the equivalent of those described in Table 2 plus 5dB.

2. 'Max' predicted level as per Tables 5 to 8 of the EA Report.

3. '-' in column means VCM was 'inaudible', therefore comparison is not possible.

Throughout the attended noise monitoring surveys conducted in the 2024 calendar year, the identified noise sources during the day-time period attended noise monitoring included birds, traffic, insects, aeroplanes, residential, and VCM operational noise.



VCM was audible and quantifiable during two day-time period attended noise monitoring surveys at N-AT1 and was below the applicable noise criterion.

Month	Location	Time	dB(A), Leq	VCM Contribution dB(A),Leq	Criterion dB(A),Leq	Wind speed (m/s),dir	Stability Class	Exceedance (Yes/No)	EA Predicted Level ²	Difference ³
uary	N-AT1	6:00pm (25/01/24)	40	IA	40 ¹	3.5 / 261	D	No	29	-
Janı	N-AT2	9:30pm (25/01/24)	48	IA	37	2.1 / 330	E	No	36	-
February	N-AT1	9:30pm (26/02/24)	44	24	35	2.8 / 147	D	No	29	-5
	N-AT2	6:00pm (26/02/24)	52	IA	42 ¹	3.9 / 134	D	No	36	-
rch	N-AT1	9:30pm (11/03/24)	39	30	35	2.1 / 116	Е	No	29	+1
Ma	N-AT2	8:18pm (11/03/24)	36	29	42 ¹	4.9 / 068	D	No	36	-5
ril	N-AT1	7:07pm (22/04/24)	36	34	35	2.3 / 121	Е	No	29	+6
Ap	N-AT2	9:27pm (22/04/24)	44	22	37	2.3 / 132	Е	No	36	-14
λε	N-AT1	9:26pm (17/05/24)	32	28	35	0.6 / 112	E	No	29	-1
M	N-AT2	8:19pm (17/05/24)	47	IA	37	1.9 / 307	D	No	36	-
ne	N-AT1	8:16pm (17/06/24)	29	IA	35	1.8 / 281	E	No	29	-
ŗ	N-AT2	9:23pm (17/06/24)	42	IA	37	2.5 / 325	E	No	36	-
ly	N-AT1	9:23pm (30/07/24)	30	28	35	0.7 / 126	E	No	29	-1
'n	N-AT2	8:16pm (30/07/24)	39	25	37	1.4 / 165	F	No	36	-11
ust	N-AT1	9:28pm (15/08/24)	32	IA	35	1.7 / 155	D	No	29	-
Aug	N-AT2	8:19pm (15/08/24)	43	IA	37	2.3 / 088	E	No	36	-
Sept	N-AT1	9:20pm (24/09/24)	32	IA	40 ¹	3.6 / 028	E	No	29	-

Table 12- VCM Operational Noise Monitoring Results Leq(15min) – Evening Period



Month	Location	Time	dB(A), Leq	VCM Contribution dB(A),Leq	Criterion dB(A),Leq	Wind speed (m/s),dir	Stability Class	Exceedance (Yes/No)	EA Predicted Level ²	Difference ³
	N-AT2	8:18pm (24/09/24)	38	IA	42 ¹	3.6 / 026	E	No	36	-
ber	N-AT1	9:27pm (28/10/24)	32	IA	35	2.4 / 127	D	No	29	-
Octo	N-AT2	8:16pm (28/10/24)	42	IA	37	0.5 / 059	E	No	36	-
mber	N-AT1	9:28pm (25/11/24)	30	IA	35	2.1 / 325	E	No	29	-
Nove	N-AT2	8:14pm (25/11/24)	41	IA	37	2.6 / 334	E	No	36	-
mber	N-AT1	9:26pm (23/12/24)	48	IA	40 ¹	5.1 / 225	С	No	29	-
Decei	N-AT2	8:14pm (23/12/24)	46	IA	42 ¹	4.3 / 241	С	No	36	-

1. Applicable meteorological conditions not met, noise limit is the equivalent of those described in Table 2 plus 5dB.

2. 'Max' predicted level as per Tables 5 to 8 of the EA Report.

3. '-' in column means VCM was 'inaudible', therefore comparison is not possible.

Throughout the attended noise monitoring surveys conducted in the 2024 calendar year, the identified noise sources during the evening period attended noise monitoring included birds, dogs, traffic, insects, frogs, residential, aeroplanes, and VCM operational noise.

VCM was audible and quantifiable during five evening period attended noise monitoring surveys at N-AT1 and three evening period attended noise monitoring surveys at N-AT2, but was below the applicable noise criterion.

Table 13 - VCM Operational Noise Monitoring Results Leq(15min) – Night-Time Period

Month	Location	Time	dB(A), Leq	VCM Contribution dB(A),Leq	Criterion dB(A),Leq	Wind speed (m/s),dir	Stability Class	Exceedance (Yes/No)	EA Predicted Level ²	Difference ³
uary	N-AT1	11:33pm (25/01/24)	46	25	35	2.8 / 040	E	No	29	-4
Janı	N-AT2	10:00pm (25/01/24)	46	IA	37	2.7 / 222	E	No	36	-
uary	N-AT1	10:00pm (26/02/24)	42	22	40 ¹	4.5 / 127	D	No	29	-7
Febr	N-AT2	12:06am (27/02/24)	44	29	42 ¹	5.5 / 141	D	No	36	-7
Marc	N-AT1	10:00pm (11/03/24)	36	23	35	2.8 / 149	E	No	29	-6



Month	Location	Time	dB(A), Leq	VCM Contribution dB(A),Leq	Criterion dB(A),Leq	Wind speed (m/s),dir	Stability Class	Exceedance (Yes/No)	EA Predicted Level ²	Difference ³
	N-AT2	11:53pm (11/03/24)	38	25	42 ¹	3.5 / 123	D	No	36	-11
ri	N-AT1	12:10am (23/04/24)	35	33	35	2.6 / 125	D	No	29	+4
Ap	N-AT2	10:00pm (22/04/24)	43	25	37	1.9 / 141	E	No	36	-11
Ā	N-AT1	12:20am (18/05/24)	28	23	35	2.5 / 308	E	No	29	-6
Ma	N-AT2	10:40pm (17/05/24)	46	IA	37	1.8 / 316	E	No	36	-
ЭС	N-AT1	11:41pm (17/06/24)	26	IA	40 ¹	3.3 / 298	E	No	29	-
ηη	N-AT2	10:00pm (17/06/24)	34	IA	42 ¹	3.1 / 268	E	No	36	-
Ŋ	N-AT1	10:00pm (30/07/24)	33	21	35	1.6 / 110	E	No	29	-8
Jul	N-AT2	11:50pm (30/07/24)	41	IA	37	2.1 / 099	D	No	36	-
ust	N-AT1	10:01pm (15/08/24)	33	22	35	0.9 / 158	D	No	29	-7
Aug	N-AT2	11:48pm (15/08/24)	39	IA	37	1.2 / 165	D	No	36	-
mber	N-AT1	10:02pm (24/09/24)	36	IA	35	1.3 / 129	E	No	29	-
Septe	N-AT2	11:40pm (24/09/24)	41	IA	37	0.8 / 200	E	No	36	-
ber	N-AT1	10:00pm (28/10/24)	30	20	35	1.0 / 267	E	No	29	-9
Octo	N-AT2	11:49pm (28/10/24)	38	IA	37	1.7 / 309	E	No	36	-
nber	N-AT1	10:01pm (25/11/24)	29	IA	35	2.9 / 329	E	No	29	-
Novei	N-AT2	11:51pm (25/11/24)	34	IA	37	2.5 / 358	E	No	36	-
nber	N-AT1	10:00pm (23/12/24)	39	IA	40 ¹	3.6 / 236	D	No	29	-
Decer	N-AT2	11:43pm (23/12/24)	44	IA	42 ¹	4.3 / 225	D	No	36	-

1. Applicable meteorological conditions not met, noise limit is the equivalent of those described in Table 2 plus 5dB.

2. 'Max' predicted level as per Tables 5 to 8 of the EA Report.

3. '-' in column means VCM was 'inaudible', therefore comparison is not possible.



Throughout the attended noise monitoring surveys conducted in the 2024 calendar year, the identified noise sources during night-time period attended noise monitoring included birds, frogs, traffic, insects, cows, horses, and VCM operational noise.

VCM was audible and quantifiable during eight night-time period attended noise monitoring surveys at N-AT1, and three night-time period attended noise monitoring surveys at N-AT2, but was below the applicable noise criterion.

Table 14 - VCM Operational Noise Monitoring Results LAmax – Sleep Disturbance

Month	Location	Time	dB(A), LA _{max}	VCM Contribution dB(A),LA _{max}	Criterion dB(A),LA _{max}	Wind speed (m/s),dir	Stability Class	Exceedance (Yes/No)	EA Predicted Level ²	Difference ³
lary	N-AT1	11:33pm (25/01/24)	61	29	52	2.8 / 040	E	No	38	-9
Janı	N-AT2	10:00pm (25/01/24)	58	IA	52	2.7 / 222	E	No	42	-
uary	N-AT1	10:00pm (26/02/24)	57	25	57 ¹	4.5 / 127	D	No	38	-13
Febr	N-AT2	12:06am (27/02/24)	64	33	57 ¹	5.5 / 141	D	No	42	-9
rch	N-AT1	10:00pm (11/03/24)	58	29	52	2.8 / 149	E	No	38	-9
Mar	N-AT2	11:53pm (11/03/24)	61	33	57 ¹	3.5 / 123	D	No	42	-9
ril	N-AT1	12:10am (23/04/24)	62	38	52	2.6 / 125	D	No	38	0
Ap	N-AT2	10:00pm (22/04/24)	57	30	52	1.9 / 141	E	No	42	-12
ay	N-AT1	12:20am (18/05/24)	55	27	52	2.5 / 308	E	No	38	-11
M	N-AT2	10:40pm (17/05/24)	62	IA	52	1.8 / 316	E	No	42	-
ne	N-AT1	11:41pm (17/06/24)	43	IA	57 ¹	3.3 / 298	E	No	38	-
ηſ	N-AT2	10:00pm (17/06/24)	50	IA	57 ¹	3.1 / 268	E	No	42	-
ly	N-AT1	10:00pm (30/07/24)	55	24	52	1.6 / 110	E	No	38	-14
ηſ	N-AT2	11:50pm (30/07/24)	68	IA	52	2.1 / 099	D	No	42	-



Month	Location	Time	dB(A), LA _{max}	VCM Contribution dB(A),LA _{max}	Criterion dB(A),LA _{max}	Wind speed (m/s),dir	Stability Class	Exceedance (Yes/No)	EA Predicted Level ²	Difference ³
ust	N-AT1	10:01pm (15/08/24)	55	26	52	0.9 / 158	D	No	38	-12
Aug	N-AT2	11:48pm (15/08/24)	61	IA	52	1.2 / 165	D	No	42	-
mber	N-AT1	10:02pm (24/09/24)	66	IA	52	1.3 / 129	E	No	38	-
Septer	N-AT2	11:40pm (24/09/24)	63	IA	52	0.8 / 200	E	No	42	-
ber	N-AT1	10:00pm (28/10/24)	52	24	52	1.0 / 267	E	No	38	-14
Octo	N-AT2	11:49pm (28/10/24)	48	IA	52	1.7 / 309	E	No	42	-
mber	N-AT1	10:01pm (25/11/24)	54	IA	52	2.9 / 329	E	No	38	-
Nove	N-AT2	11:51pm (25/11/24)	56	IA	52	2.5 / 358	E	No	42	-
mber	N-AT1	10:00pm (23/12/24)	48	IA	57 ¹	3.6 / 236	D	No	38	-
Decer	N-AT2	11:43pm (23/12/24)	53	IA	57 ¹	4.3 / 225	D	No	42	-

1. Applicable meteorological conditions not met, noise limit is the equivalent of those described in Table 2 plus 5dB.

2. 'Max' predicted level as per Tables 5 to 8 of the EA Report.

3. '-' in column means VCM was 'inaudible', therefore comparison is not possible.

Throughout the attended noise monitoring surveys conducted in the 2024 calendar year, the identified LAmax noise sources during night-time period attended noise monitoring included insects, traffic, birds, cows, horses, frogs, and wind.

VCM LAmax noise was audible and quantifiable during eight night-time period attended noise monitoring surveys at N-AT1, and three night-time period attended noise monitoring surveys at N-AT2, but was below the applicable noise criterion.

Sound Power Level Testing

Annual Sound Power Level testing was undertaken on the 28th June 2024 for the mining equipment at VCM as the fleet has grown. The majority of the mining equipment used at Vickery coal mine has been transported from Werris Creek Coal Mine as this site's production declined towards the operation ceasing mining in May 2024. These machines have been power level tested historically at that operation.

Sound power levels are calculated in accordance with the methodologies of ISO 6395, for the uphill and downhill motion for trucks and first gear operation for dozers, are summarised in Table 15.



Plant Item		dB(A) Leq	dB(A) Leq
Туре	No.	(2023)	(2024)
Excavator Hitachi EX5600	EXC570		116
Excavator Hitachi EX3600	EXC810	114	-
CAT D11T Dozer	DOZ895	121	-
CAT D11T Dozer	DOZ885	-	117
Haul truck CAT 785C	RDT615	116	-
Haul truck CAT 785C	RDT617	-	118
Haul truck CAT 785D	RDT802	-	115
Haul truck CAT 793F XQ	RDT665	-	115
Haul truck CAT 793F XQ	RDT666	115	
Haul truck CAT 793F XQ	RDT667	-	113
Haul truck CAT 793F XQ	RDT668	113	114
Haul truck CAT 793F XQ	RDT808	114	
Water Cart CAT 777F	WAT818	115	
Water Cart CAT 777F	WAT817	-	116

Table 15 – Calculated Sound Power Levels =(+/- 1.0dB)

The noise emissions from the mine are the result of the combined noise emissions from all individual plant items working concurrently. As such the critical factors are the combined sound power levels of all plant items and the location of each relative to any individual receiver. The overall aim of the noise measurement process is to ensure that the mine is operating in compliance with off-site noise limits.

Noise levels well below VCM's criteria have been recorded during the 2024 calendar year, suggesting that no plant items are producing excessive noise. No plant items measured during the survey exhibited unusual noise emissions in terms of quality or level and no further noise monitoring of the measured items is recommended within the current three-year measurement cycle. Additional mining equipment has mobilised to site since the sound power levels were measured in 2024. These items of plant will be targeted in the next reporting period.

5.4.2 Key Environmental Performance/Management Issues

No Noise Management Issues

5.4.3 Proposed Improvements to Environmental Management

Continue to monitor noise levels as the mine progresses



5.5 Aboriginal Heritage Management

5.5.1 Environmental Performance/Management

Whincop Archaeology has undertaken the 2024 Annual Aboriginal Cultural Heritage Sites Audit in for the Vickery Coal Mine. The rationale for which Aboriginal cultural heritage sites are included in the audit is based on several factors: all existing sites within the Vickery approved disturbance boundary with a buffer of 1 km, including the adjacent Stratford property, but excluding ACH sites that are monitored annually by other Whitehaven projects.

The 2024 Audit was undertaken on 18-20 January 2024. AHIMS contains recorded ninety-one (91) ACH sites within the 2024 Audit search areas. Sixteen (16) AHIMS sites were located west of the Namoi River and were not visited as part of the 2024 Audit due to limited access. One additional site (Broadwater 2, AHIMS 20-4-0290) is part of a much larger artefact scatter (VEP AS19, AHIMS 20-4-0665) and, therefore, will be wholly contained within the proposed fence for the larger site; Broadwater 2 will be considered part of VEP AS19. Finally, the location of one artefact site (BBS: Red Chief LALC; Vickery SF 1, AIHMS 20-4-0066) needs further clarification (the AHIMS site card has been requested) and will be included in the 2025 Audit.

Fence maintenance will be required at some sites, most commonly due to wildlife or livestock damaging the fencing. Fences at several sites are yet to be installed; this should be undertaken as a priority, to ensure inadvertent impacts to these sites are avoided. Whincop Archaeology recommends that permanent fencing be installed, where practicable, to minimise ongoing maintenance demands.

A Heritage Fencing review is set to take place during the 2025 reporting period. Only sites that require fencing according to the ACHMP will have more permanent, stock proof fencing installed.



Figure 17: Scar Tree at Stratford ST2



5.5.2 Key Environmental Performance/Management Issues

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

5.5.3 Proposed Improvements to Environmental Management

In accordance with the VCM Aboriginal Cultural Heritage Management Plan, annual inspections of the fencing will be undertaken, and recommendations actioned.

Aboriginal cultural heritage sites required to be salvaged will be salvaged in accordance with the ACHMP.

5.6 Historic Heritage Management

The Kurrumbede Homestead Complex was listed on the State Heritage Register during the 2022 reporting period, in accordance with the decision made by the Minister for Environment and Planning made on 28 April 2022.

Whitehaven continues its annual Kurrumbede open day hosted by Whitehaven Coal and the Dorothea Mackellar Memorial Society, the 2024 event held in June, provided an opportunity for visitors from across the region to explore the history of the heritage-listed Kurrumbede property, originally owned by the iconic Mackellar family. The open day showcased the Gunnedah region's iconic heritage and underscored Dorothea Mackellar's enduring bond with our community. It provided a heartfelt tribute to her legacy and the historical significance of Kurrumbede.

The Kurrumbede Homestead Complex is managed in accordance with the approved Vickery Coal Mine Historic Heritage Management Plan. Management activities in this reporting period were limited to ongoing maintenance of the gardens.

The first annual structural assessment of the homestead was completed in December 2023 prior to blasting operations commencing. The 2024 annual inspection has been undertaken in December 2024 and defects will be actioned where necessary.



Figure 18 – Kurrumbede Homestead



5.7 Waste

5.7.1 Environmental Performance/Management

VCM aims to implement all reasonable and feasible measures to minimise waste and ensure it is appropriately stored, handled and disposed of. Waste materials at VCM are managed in accordance with:

- Schedule 2 Condition 92 of SSD-7480;
- Schedule 3 Condition 40 of SSD-5000;
- VCM Waste Management Plan; and
- NSW legislative requirements.

VCM waste streams include general waste and sewage that are collected and disposed of at authorised waste disposal sites by a licenced contractor. The engaged waste management service provider records waste generation quantities at the point of either disposal or collection. The quantities of each generated waste type removed from site by licenced contractor have been summarised in **Table 16** for the 2024 period.

Sewage and wastewater from on-site ablution facilities is collected and treated in a biocycle aerated wastewater/sewage treatment system and serviced by a licenced waste management contractor on an as needs basis. Treated effluent will be irrigated at a small wastewater disposal area in accordance with the *Environmental Guidelines: Use of Effluent by Irrigation* (NSW Department of Environment and Conservation, 2004). This Onsite Aerated wastewater treatment system was granted approval by Gunnedah Shire Council under a Section 68 Approval granted on the 18th October 2024.

Waste Stream	2023	2024	+/-
Waste Oil (kL)	5.7	186.1	+180.4
Scrap Metal (tons)	1.0	19.2	+18.2
General Waste (tons)	34.8	265.22	+230.42
Co-Mingled Recycling (tons)	0.46	6.51	+6.05
Timber (tons)	0.82	6.7	+5.88
Liquid Waste – J120 / Septic (kL)	510.8	550.7	+39.9
Empty IBCs (each)	0	19	+19
Hydraulic Hoses + Filters (tons)	0	8.95	+8.95
Batteries (tons)	0	1.35	+1.35
Tyres (each)	0	0	=

Table 16 – Approximate Waste Quantities Removed From Site By Licenced Contactor



Asbestos

One Asbestos contaminated location within the project boundary was cleared and contaminated material collected for disposal during the reporting period. Approximately 100 tonnes of contaminated material was collected and transported to licenced waste facilities. The site is outlined in detail below:

Sites 1 – Old Garage/Shed

Approximately 100 tonnes of waste was generated during the asbestos removal works on the 31st May 2024. The waste was transported and disposed of at the Gunnedah Waste Management Facility (loads transported via rigid 15 t and rigid 12 t trucks) as "Asbestos waste" under NSW Environment Protection Authority waste tracking protocols (NSW EPA Waste Locate).

5.7.2 Key Environmental Performance/Management Issues

No management issues.

5.7.3 Proposed Improvements to Environmental Management

Waste tracking to continue as mine increases in size and other waste streams come online.



5.8 Environmental Performance Summary

An environmental performance summary for VCM is presented in Table 17 below.

Table 17 - Environmental Performance

	Approval Criteria/	Performance	Trend/Key	Implemented/Proposed
Aspect	EIS Prediction	During the	Management	Management Actions
		Reporting Period	Implications	
	Day-40 LAeq (15 min)			
Noise	Evening-35 L _{Aeq (15 min)}	Compliant with	Within criteria	Continue Regular
	Night-35 LAeq (15 min)	criterion.		Monthly Monitoring
	Night–52 L _{AF max}			
	120dBL & 10mm/s			
Blasting	(100%)	Compliant with	Within criteria	Continue Regular
Diasting	115dBL & 5mm/s	criterion.		Monitoring
	(95%)			
Mean annual dust	4 g/m ² /month (SSD-	Compliant with	Within criteria	Nil
deposition	5000 only)	criterion.		
Mean annual	30 ug/m ³ (SSD-5000)	1/1 22 µg/m ³		Continue Regular
PM ₁₀ particulate	$25 \mu\text{g/m}^3$ (SSD-7480)	9.1 μα/m ³	Within criteria	Monitoring
level	20 µg/m (00D-7400)	5.1 µg/m		Worldoning
Mean annual				Continue Regular
PM _{2.5} particulate	8 μg/m³ (SSD-7480)	4.1 µg/m³	Within criteria	Monitoring
level				
24 hour average				Continue Regular
PM ₁₀ particulate	50 µg/m³	<criterion< td=""><td>Within criteria</td><td>Monitoring</td></criterion<>	Within criteria	Monitoring
level				
24 hour average				Continue Regular
PM _{2.5} particulate	25 µg/m³ (SSD-7480)	<criterion< td=""><td>Within criteria</td><td>Monitoring</td></criterion<>	Within criteria	Monitoring
level				
Mean annual				Continue Regular
Total Suspended	90 µg/m ³	18.2 μg/m³	Within criteria	Monitoring
Particulate (TSP)	00 µg/m			
matter				
		Waste Streams	Increase in Waste	Continue Regular
Waste	No Approval Criteria	Tracked and	volumes to due mining	Monitoring
		compared to 2023	ramp up	Workoning
	EPBC 2012/6263 and			
	3(33) of SSD-5000,	Winged		Continue regular
Biodiversity	requires the	Peppercress	N/A	monitoring and
	translocation and	protection area		maintenance of fence
	protection of the	Expanded		
	Winged Peppercress.			



6. WATER MANAGEMENT

6.1 Surface Water Management

6.1.1 Environmental Performance/Management

The VCM is largely located within the Stratford Creek and Driggle Draggle Creek catchments, which ultimately flow into the Namoi River south of Boggabri. Areas to the south-west of the Vickery Extension Project drain directly to the Namoi River catchment.

The water management strategy for VCM is based on targeted management of water from different sources based on water quality. Water on the site is categorised as either:

- clean water water from areas not disturbed by mining;
- dirty water runoff from areas disturbed by stripping or placement of waste rock material (sediment laden);
- mine water surface runoff in mining areas that is likely to have come into contact with coal or other contaminates; or
- external water Water imported to site from licensed extraction points, either surface water or bore water

The objectives of the site water management system are to ensure:

- clean water runoff from undisturbed catchment areas is diverted away from the mining area, where possible and practical to do so;
- dirty water runoff from disturbed areas is re-used in the mine water management system or released into the receiving environment if water quality meets EPL requirements (i.e. treatment may be required);
- no discharge of mine water off-site; and
- mine water (including water that accumulates within, or drains from, active mining areas, coal reject emplacement areas and Coal Processing Plant (CPP) infrastructure areas) and groundwater collected within open cut pits is contained and reused on-site;
- on-site water demands are satisfied whilst minimising external water supply requirements.

In the 2024 reporting period the Vickery Extension Project (SSD-7480) finalised the Water Management Infrastructures. SD-A, a licenced discharge point has been fully operational, and no discharge occurred during the reporting period.



6.1.2 Surface Water Monitoring

Surface water monitoring is undertaken monthly at the locations outlined in Table 18. The monthly monitoring began in August 2023, in line with the commencement of mining activities. Over the 2024 reporting period local rivers and drainage lines lowered in level and in most cases ceased to flow or dried up.

MWD2 did not finish construction in 2024, however, water sampling was conducted during the reporting period. There were no water discharges during the 2024 reporting period and site surface water will be monitored when not dry.

Off-site surface water monitoring results from the Namoi River and local ephemeral creeks are displayed in Figure 19. Figure 20 contains monitoring data obtained from Water NSW website and shows EC plotted alongside river height. The VCM surface water monitoring points NR-US and NR-DS returned monitoring results that are consistent with this data. The resultant water quality from this monitoring is commensurate with the lower rainfall experienced in 2024. As no discharges occurred from VCM these monitoring results are relevant baseline data. The VCM Monitoring Regime is outlined below in Table 18 and Table 19.

Monitoring Location		Parameters	Frequency
Onsite		Rainfall	Continuous
Namoi River	NR-US NR-DS1 NR-DS2	Table 19	Monthly if flowing; within 12 hours of a discharge
Driggle Draggle Creek	DDS-US DDS-DS1 DDS-DS2	Table 19	Monthly if flowing; within 12 hours of a discharge
North-West Drainage Line	VUS	Table 19	Monthly if flowing;
Stratford Creek	SC-US SC-DS1 SC-DS2	Table 19	Monthly if flowing; within 12 hours of a discharge
MWD2		Table 19	Quarterly
All Dams		Water Level	Weekly
Sediment Dam Overflows		Table 19	As soon as practicable and not more than 12 hours after discharge

Table 18 – Surface water Monitoring Summary

Table 19 – Discharge and Receiving Environment Water Quality Parameters

Parameter	Unit
pH (in situ and lab)	-
Turbidity (in situ and lab)	NTU
TSS (Lab)	mg/L
EC (in situ and lab)	μs/cm
Oil and Grease	mg/L
Total Dissolved Solids	mg/L
Iron (Fe) – Filtered and total	mg/L



Parameter	Unit
Sulphate as SO₄⁻ - Turbidimetric	mg/L
Bicarbonate Alkalinity as CaCO ₃	mg/L
Carbonate Alkalinity as CaCO ₃	mg/L
Hydroxide Alkalinity as CaCO ₃	mg/L
Total Alkalinity as CaCO₃	mg/L
Chloride	mg/L
Calcium	mg/L
Magnesium	mg/L
Sodium	mg/L
Potassium	mg/L
Aluminium (filtered)	mg/L
Antimony (filtered)	mg/L
Arsenic (filtered)	mg/L
Barium (filtered)	mg/L
Boron (filtered)	mg/L
Bromine (filtered)	mg/L
Cadmium (filtered)	mg/L
Copper (filtered)	mg/L
Iron (filtered)	mg/L
Lead (filtered)	mg/L
Lithium (filtered)	mg/L
Manganese (filtered)	mg/L
Mercury (filtered)	mg/L
Molybdenum (filtered)	mg/L
Nickel (filtered)	mg/L
Rubidium (filtered)	mg/L
Selenium (filtered)	mg/L
Silver (filtered)	mg/L
Strontium (filtered)	mg/L
Zinc (filtered)	mg/L
Ammonia as N	mg/L
Nitrite as N	mg/L
Nitrate as N	mg/L
Nitrite + Nitrate as N	mg/L
Total Phosphorus as P	mg/L



		pH Field	pHLab	EC Field	EC at 25°C (Lab)	DS (dried at 180°C)	Turbidity	TSS	Calcium (dissolved)	Sodium (dissolved)	Magnesium (dissolved)	Sulphate (SO4)	Chloride	Arsenic (dissolved)	Barium (dissolved)	Cadmium (dissolved)	Copper (dissolved)	Iron (dissolved)	Iron (total)	Lead (dissolved)	Manganese (dissolved)	Nickel (dissolved)	Zinc (dissolved)	Mercury (dissolved)	Ammonia (N)	Phosphorus (total)	Nitrate (as N)	Nitrite (as N)	Oil & Grease
L	JNIT	рН	рН	μS/c m	μS/cm	mg/L	NTU	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	μg/L	mg/L	mg/L	mg/L	mg/L	mg/L	μg/L	μg/L	μg/L	μg/L	mg/L	μg/L	mg/L	mg/L	mg/L
Vickery WI	MP Triggers AR	> 6.5, < 8.6	> 6.5, < 8.6	<670	<670	<400	> 6, < 50	< 70	< 50	< 60	< 30	< 50	< 70	< 0.013	< 1000	< 0.0002	< 0.005	< 1.9	<1.9	< 0.0034	< 100	<11	< 20	< 0.6	< 0.03	< 200	< 0.7	<1	<10
POINTS	SAMPLE TIME																												
	19/12/2024	8.47	8.11	848	860	482	22.2	41	52	498	35	72	74	0.002	45	< 0.0001	< 0.001	< 0.05	1.26	< 0.001	<1	<1	< 5	< 0.1	< 0.01	120	0.04	< 0.01	< 5
	21/11/2024	8.2	8.12	439	511	328	34.5	36	38	39	21	49	38	0.001	0.03	< 0.0001	< 0.001	< 0.05	0.55	< 0.001	< 0.001	0.001	<0.005	< 0.0001	0.02	0.1	1.17	< 0.01	<5
	24/10/2024	8.12	8.58	6/3	612	372	12.5	6	48	430	30	43	52	0.001	30	< 0.0001	< 0.001	< 0.05	0.54	< 0.001	<1	<1	< 5	< 0.1	0.04	110	0.07	< 0.01	< 5
	26/09/2024	8.7	8.3	610	698	3/4	26	28	50	4/6	32	54	42	0.001	34	< 0.0001	< 0.001	< 0.05	1.53	< 0.001	<1	1	< 5	< 0.1	0.04	140	< 0.01	< 0.01	<5
NR-DS 3	18/06/2024	8.03	7.55	907	755	336 //17	27.4	- 22	50	124	20	40	45	0.001	20	< 0.0001	< 0.001	< 0.05	2.88	< 0.001	<1	1	< 5	< 0.1	0.04	210	1.60	0.01	<5
1111 05 5	23/05/2024	8.61	8 25	10/0	968	550	65		60	580	/3	80	13/	< 0.001	/18	< 0.0001	< 0.001	< 0.05	0.2	< 0.001	<1	- 1	~5	< 0.1	< 0.00	60	2.0.01	< 0.05	25
	23/04/2024	9.52	8 55	673	564	346	28.1		37	408	28	57	67	0.001	30	< 0.0001	0.001	< 0.05	0.2	< 0.001	7	1	8	< 0.1	0.03	170	< 0.01	0.01	<5
	21/03/2024	8.28	8.1	643	584	304	18.1		51	44	26	43	42	0.002	0.04	< 0.0001	0.002	< 0.05	2.01	<0.001	0.012	0.001	<0.005	<0.0001	0.02	0.12	<0.01	<0.01	<5
	22/02/2024	8.54	8.34	494	421	363	15.2		34	31	20	38	27	0.001	0.028	< 0.0001	< 0.001	< 0.05	0.67	< 0.001	0.003	< 0.001	<0.005	<0.0001	0.01	0.11	<0.01	<0.01	< 5
	25/01/2024	8.4	8.04	437	427	286	15.5		33	29	18	36	22	< 0.001	0.027	< 0.0001	< 0.001	< 0.05	0.35	< 0.001	0.002	< 0.001	<0.005	< 0.0001	0.04	0.09	0.09	< 0.01	< 5
	19/12/2024	7.72	8	1029	854	440	7.5	35	50	71	35	79	71	0.002	46	< 0.0001	< 0.001	< 0.05	1.32	< 0.001	<1	<1	< 5	< 0.1	0.02	150	< 0.01	< 0.01	< 5
	21/11/2024	8.4	8.28	449	508	327	17.6	52	36	39	21	44	37	0.001	0.029	< 0.0001	< 0.001	< 0.05	0.67	< 0.001	< 0.001	< 0.001	<0.005	< 0.0001	0.02	0.06	<0.01	< 0.01	<5
	24/10/2024	9.08	8.57	707	653	414	23.6	36	50	58	32	44	61	0.002	29	< 0.0001	< 0.001	< 0.05	0.74	< 0.001	<1	<1	< 5	< 0.1		110	< 0.01	< 0.01	6
	26/09/2024	8.46	8.25	939	735	390	15.1	19	54	58	35	54	64	0.001	33	< 0.0001	< 0.001	< 0.05	0.99	< 0.001	<1	<1	< 5	< 0.1	0.07	80	0.03	< 0.01	< 5
	27/08/2024	8.2	8.04	668.5	570	325	65.9	77	43	44	27	43	39	< 0.001	40	< 0.0001	0.003	0.6	6.6	< 0.001	137	3	5	< 0.1	0.12	260	0.58	< 0.01	< 5
	24/07/2024	8.23	7.29	681.6	648	388	51.3	50	38	56	29	47	57	< 0.001	21	< 0.0001	< 0.001	< 0.05	0.68	< 0.001	<1	<1	< 5	< 0.1	0.04	280	0.71	< 0.01	< 5
INR-DS 1	18/06/2024	8.07	7.91	875.9	732	412	56.9		48	56	31	72	68	0.001	39	< 0.0001	< 0.001	< 0.05	2.71	< 0.001	< 1	1	< 5	< 0.1	0.12	280	1.81	0.06	< 5
	23/05/2024	8.45	8.22	1035	980	548	7.5		58	77	40	88	136	< 0.001	45	< 0.0001	< 0.001	< 0.05	0.24	< 0.001	< 1	<1	< 5	< 0.1	0.01	80	< 0.01	< 0.01	< 5
	23/04/2024	8.7	8.24	701.4	581	391	21.6		42	48	26	52	69	0.001	34	< 0.0001	0.006	< 0.05	0.5	< 0.001	4	1	16	< 0.1	0.06	160	0.81	0.03	< 5
	21/03/2024	8.07	8.16	619	560	318	8.6		48	44	25	40	38	0.002	0.038	< 0.0001	0.003	< 0.05	1.04	< 0.001	0.025	0.001	<0.005	< 0.0001	0.03	0.1	<0.01	<0.01	<5
	22/02/2024	8.18	8.2	493	423	394	17.9		34	31	20	38	27	0.001	0.029	< 0.0001	< 0.001	0.06	0.79	< 0.001	0.002	< 0.001	<0.005	< 0.0001	0.03	0.13	0.05	< 0.01	<5
	25/01/2024	8.3	7.97	447	437	278	8.3		34	30	19	36	22	<0.001	0.028	< 0.0001	< 0.001	< 0.05	< 0.05	< 0.001	< 0.001	< 0.001	<0.005	< 0.0001	0.03	0.11	0.09	<0.01	<5
	19/12/2024	8.13	8.05	845	860	454	5.4	30	50	71	35	79	74	0.002	44	< 0.0001	< 0.001	< 0.05	1.12	< 0.001	<1	<1	< 5	< 0.1	0.01	160	< 0.01	< 0.01	< 5
	21/11/2024	8.59	8.28	463	510	305	41.7	40	36	39	21	48	39	0.001	0.028	< 0.0001	< 0.001	< 0.05	0.46	< 0.001	< 0.001	0.001	<0.005	< 0.0001	0.02	0.06	0.86	<0.01	<5
	24/10/2024	9.06	8.62	708	659	392	16.9	22	52	57	32	66	60	0.002	31	< 0.0001	< 0.001	< 0.05	0.91	< 0.001	1	<1	< 5	< 0.1		120	< 0.01	< 0.01	< 5
	26/09/2024	8.73	8.33	706	713	402	14.5	16	51	56	32	53	57	0.001	33	< 0.0001	< 0.001	< 0.05	0.96	< 0.001	1	1	6	< 0.1	0.06	90	< 0.01	< 0.01	< 5
	27/08/2024	8.25	8.06	653.5	555	298	56.9	63	43	44	27	43	38	< 0.001	37	< 0.0001	0.003	0.5	4.11	< 0.001	98	2	< 5	< 0.1	0.07	220	0.61	< 0.01	< 5
NR-DS 2	24/07/2024	8.38	7.77	694.4	672	411	47	56	40	58	30	49	63	< 0.001	23	< 0.0001	< 0.001	< 0.05	1.93	< 0.001	<1	<1	< 5	< 0.1	0.04	280	0.77	0.02	< 5
	18/06/2024	8.38	7.72	835.3	714	408	47.1		48	56	30	70	66	0.001	37	< 0.0001	< 0.001	< 0.05	2.23	< 0.001	<1	1	< 5	< 0.1	0.13	260	1.9	0.06	6
	23/05/2024	8.56	8.24	1021	950	499	5.5		60	79	41	88	132	< 0.001	46	< 0.0001	< 0.001	< 0.05	0.17	< 0.001	<1	<1	< 5	< 0.1	< 0.01	50	< 0.01	< 0.01	< 5
	23/04/2024	8.68	8.25	715	593	379	13.6		44	50	25	50	72	0.002	34	< 0.0001	0.002	< 0.05	0.32	< 0.001	<1	1	< 5	< 0.1	0.06	130	1.45	0.04	<5
	21/03/2024	7.93	8.02	600	544	294	8.7		48	40	24	41	35	0.002	0.036	< 0.0001	0.002	< 0.05	0.68	< 0.001	0.002	0.001	< 0.005	< 0.0001	0.02	0.09	< 0.01	< 0.01	<5
	22/02/2024	8.41	8.18	492	421	370	15.6		34	31	21	38	27	0.001	0.029	< 0.0001	< 0.001	< 0.05	0.87	<0.001	0.001	<0.001	<0.005	< 0.0001	0.02	0.16	0.06	0.01	<5
	25/01/2024	8.1	8.03	429.3	428	289	11.6	76	2/	30	18	36	23	<0.001	0.026	< 0.0001	0.004	<0.05	<0.05	< 0.001	< 0.001	< 0.001	<0.005	<0.0001	0.03	0.07	0.08	<0.01	<5
	19/12/2024	8.63	7.89	420	6/8	384	42.3	76	43	52	28	59	48	0.002	3/	< 0.0001	< 0.001	< 0.05	2.4	< 0.001	< 1	< 1	< 5	< 0.1	0.01	150	< 0.01	< 0.01	< 5
	21/11/2024	8.33	8.24	430	500	288		49	30	37	20	48	30	0.001	0.028	< 0.0001	< 0.001	<0.05	0.46	< 0.001	< 0.001	0.001	<0.005	<0.0001	0.02	0.08	0.65	<0.01	<
	24/10/2024	9.00	0.04	752	762	374	12.6	10	4/ E4	57	32	56	60	0.002	29	< 0.0001	< 0.001	< 0.05	0.0	< 0.001	<1	1	< 5	< 0.1	0.19	120	< 0.01	< 0.01	0
	26/09/2024	8.07	8.33	753 662 2	762	422	12.6	71	54	59	30	30	20	0.001	37	< 0.0001	< 0.001	< 0.05	0.95	< 0.001	125	1	< 5	< 0.1	0.18	270	< 0.01	< 0.01	< 5
	2//06/2024	7.97	7 39	626.6	608	304	56.2	55	44 37	44	2/	40	/18	< 0.001	42 28	< 0.0001	< 0.003	< 0.0	3.62	< 0.001	155	 1	- 11	< 0.1	0.03	270	0.62	< 0.01	25
NR-US	18/06/2024	8 30	7.86	874 1	737	415	16.2	55	50	56	24	40 60	68	0.001	40	< 0.0001	< 0.001	< 0.05	2.67	< 0.001	<1	1	~5	< 0.1	0.03	230	1.7	0.05	25
	23/05/2024	8 37	8 24	1091	964	53/	9.3		62	83	14	91	13/	< 0.001	40	< 0.0001	< 0.001	< 0.05	0.38	< 0.001	<1	- 1	~5	< 0.1	0.05	70	< 0.01	< 0.05	25
	23/04/2024	9.37	8.6	653	557	3/11	21.5		40	46	26	50	62	0.001	32	< 0.0001	0.001	< 0.05	0.30	< 0.001	1	~1	7	< 0.1	0.03	150	0.01	0.02	25
	21/03/2024	8 37	8.03	617	564	296	45.8		40	40	25	44	39	0.002	0.038	< 0.0001	0.003	<0.05	5 18	< 0.001	0.007	0.001	<0.005	<0.001	0.04	0.36	0.02	<0.02	<5
	22/02/2024	8.41	8.32	484	418	368	21.7		34	32	20	38	27	0.001	0.028	<0.0001	< 0.001	<0.05	1.72	< 0.001	0.002	<0.001	<0.005	<0.0001	0.04	0.13	<0.01	<0.01	<5
	25/01/2024	8.2	8.06	431	423	279	8		34	30	19	36	22	<0.001	0.027	<0.0001	0.002	<0.05	1.08	< 0.001	< 0.001	< 0.001	<0.005	<0.0001	0.02	0.09	0.09	<0.01	<5
SC-DS1	27/08/2024	7.7	7.25	275 5	222	288	169	65	14	25	7	< 10	13	0.003	50	< 0.0001	0.006	1.63	6.26	0.001	116	8	13	< 0.1	0.29	680	< 0.01	0.12	<5
50 551	27/08/2024	7.5	6.98	234 7	182	640	618	92	14	23	6	< 10	8	0.002	190	< 0.0001	0.007	1.4	10.5	0.005	372	8	11	< 0.1	0.1	1380	< 0.01	< 0.01	<5
	24/07/2024	8.28	6.75	144.6	120	641	285	7	5	18	3	3	14	0.001	50	< 0.0001	0.006	4.02	18	< 0.001	29	7	< 5	< 0.1	0.05	640	0.03	< 0.01	< 5
DDC-DS 1	18/06/2024	7.34	6.65	230.2	166	586	282		7	19	3	12	16	0.001	56	< 0.0001	0.003	1.08	11	< 0.001	12	4	< 5	< 0.1	0.05	620	0.02	< 0.01	< 5
	23/05/2024	7.83	7.46	177.5	123	565	423		6	12	3	2	7	< 0.001	66	< 0.0001	< 0.001	0.33	13.8	< 0.001	5	2	< 5	< 0.1	0.04	480	0.02	< 0.01	< 5
	23/04/2024	8.29	7.24	134.6	104	222	284		5	12	3	< 10	8	< 0.001	48	< 0.0001	0.001	0.24	0.93	< 0.001	1	2	< 5	< 0.1	0.03	160	0.01	< 0.01	< 5
DDC-DS 2	24/07/2024	7.88	6.75	136.7	118	299	233	6	8	6	4	<1	6	< 0.001	16	< 0.0001	0.002	0.3	8.37	< 0.001	7	2	< 5	< 0.1	0.12	260	0.06	< 0.01	< 5
VUS	24/07/2024	7.8	7.09	202.4	183	231	76.6	< 5	17	9	5	<1	9	< 0.001	116	< 0.0001	0.002	0.14	3.55	< 0.001	18	2	< 5	< 0.1	0.08	110	0.08	0.02	< 5

Figure 19 - VCM Offsite Surface Water Monitoring

Orange = Exceedance of preliminary Trigger Value (VCM WMP). NB. No discharges have occurred from VCM during 2024





Figure 20 - Water NSW 2023 Namoi River Data

¹ Data obtained from: <u>https://realtimedata.waternsw.com.au/water.stm</u> (March 2024)



6.1.3 Key Environmental Performance/Management Issues

Some offsite water quality monitoring locations remain dry due to climatic conditions. Samples will be labelled as Dry when a sample cannot be taken.

6.1.4 Proposed Improvements to Environmental Management

No improvements are proposed for the next reporting period.

6.2 Groundwater Management

6.2.1 Environmental Performance/Management

Groundwater monitoring was undertaken in the reporting period as construction and mining activities commenced.

The VCM Ground Water Management Plan (GWMP) outlines the groundwater monitoring network of 49 monitoring sites outlined below and shown in Figure 21:

- 32 monitoring locations in Alluvial aquifer; and
- 29 monitoring locations in Permian aquifer.

A comprehensive survey was completed of the proposed additional eleven monitoring sites in 2023 and 2024. Two seepage monitoring bores were installed during January 2024 (WR1 and WR).

The following monitoring locations have been inspected/installed and are suitable for long term monitoring:

- Two locations (WR1 and WR2) positioned to the north-west of the mine to monitor the potential for seepage from the spoil dump;
- One location screening the alluvium to the south east of the mine, situated outside the 1 metres predicted drawdown impact zone of the mine;
- Four locations screening the permian to the north of the mine in proximity of the proposed VEP bore field;
- One location screening the Alluvium aquifer to the north of the mine.





Figure 21 – VCM Groundwater Monitoring Locations



Groundwater Levels

Groundwater levels in Alluvial bores have primarily (89%) shown an increase in water levels between April and June. For those bores with more than three water level readings, all excluding GW-11 and VN395 are within historical fluctuations. GW-11 had an observed increase of 2.49 metres between April and July, previous stable between January and April. It is now recording its shallowest groundwater level. Additionally, VN395 showed an increase of 1.0 metres between April and June, previously showing a small decline between January and April. It is shallowest water level. Ongoing monitoring it requires to establish if an increasing trend is ongoing, however it is presumed likely a response to notably high rainfall during the reporting period.(Figure 22)

Groundwater levels in the Permian have shown minor increase and decrease across the suite of bores. The largest decline in water level was observed at TR7, with a decline of 1.13 metres between April and June. Further monitoring it required to establish if a declining trend is occurring. (Figure 23)

It was noted that the potential of groundwater intersection occurred during this reporting period, as observed by increased in-pit water. Additionally, higher than average rainfall was recorded. The stable to increasing groundwater levels in the alluvial, and relatively stable water levels in the Permian do not indicate significant flux of water from the aquifer resulting in groundwater drawdown. Historically, groundwater levels have typically shown a strong correlation to rainfall trends and any review of trends will need to consider mining operations and climatic conditions.

Given the current status of mining and the stable to increasing groundwater levels, the current groundwater levels are considered to be reflective of natural conditions and not impacted by extraction activities. Additionally, review against the newly derived triggers does not indicate any breach in trigger levels. Therefore, the groundwater levels do not result in the enactment of the TARPs.





Figure 23 – VCM Permian Hydrographs



Ground Water Quality

Continued Groundwater quality monitoring has been undertaken during 2024. Table 20 summarises the bores that have exceeded the interim trigger values as set out in Table 8-3 of the GWMP.

Groundwater Bore ID	Parameters	Unit	Trigger Value	Monitoring Results
GW02	рН	pH unit	7.2 – 8.6	7.14
GW03	EC	µS/cm	811	862
GW-11	рН	pH unit	7.0 – 9.3	6.55
CW 7	pН	pH unit	7.7 – 8.5	8.79
Gw-7	SO4 ²⁻	mg/L	86	399
GW-8	SO4 ²⁻	mg/L	86	100
GW-9	SO4 ²⁻	mg/L	86	128
MD01	pН	pH unit	6.7 – 8.4	10.73#
MD02	pН	pH unit	6.7 – 8.4	6.59
SB02	SO4 ²⁻	mg/L	365	1,106
SB05	SO4 ²⁻	mg/L	365	520
	pН	pH unit	6.7 – 8.4	6.69
TR18	EC	µS/cm	12,315	12,730
	SO4 ²⁻	mg/L	86	592
TR26	SO4 ²⁻	mg/L	86	180
TR35	EC	µS/cm	12,315	16,740
	SO4 ²⁻	mg/L	86	622
	pН	pH unit	7.4 – 7.8	6.71
TR7	EC	µS/cm	12,970	14,410
	SO4 ²⁻	mg/L	365	501
VKY034C	SO4 ²⁻	mg/L	86	116
VKY035C	SO4 ²⁻	mg/L	86	88
VKY036C	SO4 ²⁻	mg/L	86	281
	pН	pH unit	6.7 – 8.4	6.61
VI(10420	SO4 ²⁻	mg/L	86	312
VNIW/200	pН	pH unit	6.7 – 8.4	6.59
1100390	SO4 ²⁻	mg/L	86	106
VNW391	SO4 ²⁻	mg/L	86	96
VNIW/202	pН	pH unit	6.7 – 8.4	6.66
VINV0392	SO4 ²⁻	mg/L	86	296
VNW393	SO4 ²⁻	mg/L	86	200
VNW394	SO4 ²⁻	mg/L	365	560
GW-2	pН	pH unit	6.9 - 8.3	6.85
	pН	pH unit	6.9 - 8.3	6.70
VVIX-1	EC	µS/cm	10,083	26,500

Table 20 – Summary of GW Interim Trigger Values Compared to Initial Results



Groundwater Bore ID	Parameters	Unit	Trigger Value	Monitoring Results
	SO4 ²⁻	mg/L	365	1,320
	рН	pH unit	6.9 - 8.3	6.57
WR-2	EC	µS/cm	10,083	25,340
	SO4 ²⁻	mg/L	365	1,540

- value considered not representative of aquifer. Bore investigation and purge undertaken in Feb 2024, found bore potentially failed and high pH due to grout contamination.

The trigger level exceedances summarised in Table 20 are unlikely to be a result of mining and highly likely to be due to natural variation in water quality. The interim trigger levels were defined utilising standard guideline value and consequently are not reflective of the local natural conditions. As per the GWMP, these trigger values will be updated when reasonable baseline data is collected.

Review of the individual temporal plots do not indicate consistent increasing or decreasing trends over time, or across multiple locations. Additionally, there is no correlation with groundwater level trends (as groundwater is typically stable). Consequently, the groundwater quality results indicate a 'normal condition' TARP response.



Ground Water Extraction

One extraction point was used in the 2024 reporting period. The two WALs (12651 and 12653) associated with this extraction point and usage are summarised in Table 21.

Table 21 - Water take for 2024 Reporting Period

Water Licence #	Water sharing plan, source and management zone	Entitlement (unit shares)	Passive take / inflows (ML)	Active pumping (ML)	Total (ML)
12651	Water Sharing Plan for the Namoi Alluvial Groundwater Sources Order 2020	52 unit shares (104 ML)			
12653	Upper Namoi Zone 4, Namoi Valley (Keepit Dam to Gin's Leap) Groundwater Source	166 unit shares (332 ML)	0	110.60	110.60
36576	Gunnedah-Oxley Basin MDB Groundwater Source	600 Unit Shares	239.1*	-	239.1*

* modelled inflows from Water Management Plan and will be reported against WL 36576 (Water balance indicated 146ML)

6.2.2 Key Environmental Performance/Management Issues

The interim trigger levels were defined utilising standard guideline value and consequently are not reflective of the local natural conditions. As per the GWMP, these trigger values will be updated when reasonable baseline data is collected.

6.2.3 Proposed Improvements to Environmental Management

The monitoring procedures will be reviewed and updated as required, following future groundwater sampling campaigns.



6.3 AUSRIVAS Assessment

6.3.1 Water Quality

During the autumn 2024 survey, seven of twelve sites were able to be measured for water quality along the Namoi River, Driggle Draggle Creek and Barbers Lagoon due to dry sites along South Creek and Stratford Creek. The physico-chemical variables measured upstream and downstream of VCM did not differ greatly however, the parameters did vary slightly between waterways. The physico-chemical variables measured along the Namoi River were relatively consistent, but they varied from the parameters measured at Driggle Draggle Creek sites (**Table 22**). Driggle Draggle Creek sites had lower pH and EC, and higher turbidity compared to Namoi sites which were higher in pH and EC and lower in turbidity, but similar for DO %. Turbidity was above the recommended ANZG (2018) levels at all sites and pH was above the recommended levels at all but two sites (DDC-US & BL1), although at DDC-US the measurement was just within the acceptable range. EC was within ANZG limits at all but three sites (NR-DS3, DDC-US & BL1). Water temperature was between 13.6 °C at NR-US on the Namoi, and 17.8 °C at site DDC-DS1 on Driggle Draggle Creek (**Table 22**).

Nine sites along the Namoi River, Driggle Draggle Creek, Barbers Lagoon and Stratford Creek contained water and could be sampled in the spring 2024 survey. As per the survey period in autumn, no sites along South Creek contained water and therefore, could not be sampled for water quality. Physico-chemical parameters varied slightly between the autumn and spring 2024 surveys. Overall, it appears that turbidity and DO % mostly decreased across the sites from the autumn to spring survey. Turbidity was lower in the Namoi River and Driggle-Draggle Creek sites in the spring survey than it had been in autumn. However, turbidity at BL1 in Barbers Lagoon was higher in spring (174 NTU) than in autumn (79.4 NTU). At the Namoi River, DO % was lower in spring than it had been in autumn for each site. DO % varied in Driggle Draggle Creek with site DDC-US having a higher DO % in spring (90.1 %) than autumn (84.2 %) and DDC-DS1 having a lower DO % in spring (77.5 %) than in autumn (102.4 %). DO % varied significantly in Stratford Creek, being much lower upstream (33.3 %) than it was downstream (140.5 %), however both values were outside the ANZG recommended range. pH was above the ANZG recommended range in the Namoi in spring and at SC-DS in Stratford Creek. EC was within the recommended range for all sites during the spring 2024 survey. Water temperature ranged from 12.8 °C at site SC-US2 to 22.8 °C at DDC-US in the spring 2024 survey (**Table 22**).





Figure 24: NR-DS3 facing downstream



 Table 22: Physico-chemical measurements at sites sampled around VCM. Red figures are those that exceed water quality guidelines.

		Temperatu re	рН	EC	Turbidity (NTU)	DO	DO	Temperatu re	рН	EC	Turbidit y (NTU)	DO	DO
	Unit of Measure:	°C		µS/cm	NTU	mg/ L	% saturation	°C		μS/c m	NTU	mg/ L	% saturatio n
	ANZG:		6.5- 8.0	125- 2200	6-50		85-110		6.5 - 8.0	125- 2200	6-50		85-110
Waterw ay	Site	Autumn 2024	Ļ					Spring 2024					
Namoi River	NR-US	13.63	8.61	895	164	6.52	91.4	20.77	8.9 9	626	73.1	7.75	87.6
	NR-DS1	16.59	8.68	887	80.6	9.74	98.4	17.53	8.2 5	632	71.9	7.47	77.5
	NR-DS2	15.21	8.79	881	100	10.0 4	102.4	18.2	8.0 9	622	74.3	8.6	96.7
	NR-DS3	12.53	8.56	847	163	8.79	83.3	17.7	8.8 2	642	86.3	9.09	N/A
Driggle Draggle	DDC-US	17.43	7.86	212	458	8.14	84.2	22.8	7.9 5	137	192	7.86	90.1
Creek	DDC-DS1	17.82	8.08	120	361	10.0 4	102.4	19.94	6.8	162	435	7.11	77.5
Stratford	SC-US	Dry						Dry					
Creek	SC-US2	Dry						12.82	7.3 9	366	256	3.6	33.3
	SC-DS	Dry						22.4	9.4 7	298	422	12.2	140.5
South	STHCK-US	Dry						Dry					
Creek	STHCK-DS	Dry						Dry					
Barbers Lagoon	BL1	16.76	7.35	110	79.4	5.37	54.2	14.03	7.1 6	172	174	5.82	56



6.3.2 Macroinvertebrate communities

In autumn 2024, there was no significant difference in taxonomic richness between control and impact sites at VCM (t = -0.04, df, = 3.74, p-value = 0.97). In total there were 32 macroinvertebrate taxa sampled during the autumn 2024 survey. Of the 32 taxa, 13 occurred in both control and impact waterways. Twelve taxa were sampled in impact sites only and the remaining six taxa were found in control sites only. There were between 10 and 13 taxa (average 11.5 ± 2.12) in the control sites, and 7 and 16 (mean= 11.6 ± 3.85) in the impact sites at VCM. Taxonomic richness was lowest in NR-DS2, an impact site along the Namoi River. This was potentially due a variety of factors such as flooding in 2022, decreasing water levels in 2023 and impacts from agricultural production along the river, such as the irrigated cropped occurring on the adjacent farmland. The site with the highest taxonomic richness was NR-DS3, the furthest downstream impact site along the Namoi River, bordered by grazing country and not cropping.

In spring 2024, there was also no significant difference in taxonomic richness between control and impact sites (t = -0.70, df, = 4.95, p = 0.51). In total there were 36 macroinvertebrate taxa sampled during the spring 2024 survey, four more than in autumn. Of the 36 taxa, 17 occurred in both control and impact waterways, 15 taxa were sampled in impact sites only and the remaining four taxa were found in control sites only. There were between 7 and 13 taxa (average 10 ± 4.36) in the five control sites, and 4 and 19 (mean= 12.33 ± 5.28) in the seven impact sites at VCM. Taxonomic richness was lowest in NR-DS2, as it was also for the autumn survey (an impact site along the Namoi River). The site with the highest taxonomic richness in the spring survey was BL1, the furthest downstream impact site along Barbers Lagoon, located between VCM and TCM.

Macroinvertebrate communities did not differ between impact and control sites (ANOSIM R= -0.051, P=0.65, **Table 23**), but there were differences between invertebrate communities in the Namoi River and those of the tributary creeks (ANOSIM R= 0.738, P=0.001). Flow in the Namoi River is more permanent than it is in Driggle Draggle Creek, Stratford Creek and Barbers Lagoon, and the invertebrate community reflected this. The Namoi invertebrate communities frequently had Micronectidae, Atyidae and Chironomindae, and the tributary creeks more often had rapidly colonising taxa Cladocera, Copepoda, and Dytiscidae.

		Control sites			Impact Sites					
Survey Season	Macroinvertebrate Indices	NR- US	DDC- US	SC- US2	NR- DS1	NR- DS2	NR- DS3	DDC- DS1	BL1	SC- DS
Autumn 2024	Taxonomic Richness	13	10	N/A	11	7	16	15	9	N/A
	SIGNAL	3.6	2	N/A	3.6	2.3	3.4	2	2	N/A
	%EPT	23.08	0	N/A	18	0	25	0	0	N/A
Spring 2024	Taxonomic Richness	7	15	8	13	4	9	16	19	13
	SIGNAL	3.2	2.7	1.8	4	2	3.3	2.5	2.3	2.6
	%EPT	28.6	6.7	0	30.8	0	11.1	12.5	5.3	0

Table 23: Macroinvertebrate community indices for sites sampled in autumn and spring 2024



6.3.3 Discussion

Macroinvertebrate communities did not differ significantly between the control and impact sites for Taxa Richness, SIGNAL Score and EPT % during the autumn or spring surveys. This result may be different during wet conditions when all sites, including the remaining three sites, can be sampled. However, under dry conditions, when pools in smaller creeks are dry and isolated, there is no significant difference between sites upstream or downstream of VCM. Taxa Richness, SIGNAL Score and EPT % are similar at each treatment, although the average EPT % is lower at impact sites than at control sites in both autumn and spring. Further, the increase in average EPT % from autumn to spring, is likely due to the increase in water levels and availability of water at more sites.

The likely main factor driving macroinvertebrate community composition was the size of the waterway and the permanence of flow, with the Namoi River having a distinctly different invertebrate community to the ephemeral creeks. Sensitive macroinvertebrate taxa (those with a SIGNAL score greater than 7, and vulnerable to the sudden changes in flow velocity or water quality caused by flooding) were non-existent in all creeks, present only in the Namoi River samples, both upstream and downstream of VCM in autumn 2024. This was the same in spring. However, despite the presence of three sensitive taxa, SIGNAL scores were similarly poor at all sites in both surveys. The more consistent and continuous flow of the Namoi River explains why the invertebrate community appears to be in better ecological health there.

The lack of differentiation in physico-chemical variables at sites upstream and downstream of VCM indicate no strong influence of the mine on water quality. Differences between waterways, regardless of their position relative to the mine, are likely due to the volume of water they contain, and the connectedness and permanence of flow. Since none of the impact sites along Stratford and South creeks had water in them when sampled in autumn and South Creek remained dry in spring, the nearest downstream sites were all in the Namoi River, Driggle Draggle Creek and Barbers Lagoon. As there is no continuous flow between Stratford Creek, South Creek and the Namoi and VCM reported no discharges into local waterways, it is highly unlikely that any sediment from VCM will have washed downstream to the Namoi.

6.3.4 Conclusion

Riparian vegetation, water quality and macroinvertebrate communities appear to be in poor condition likely due to the ephemeral and short-term availability of water in Driggle Draggle Creek and Barbers Lagoon, and from the surrounding, cleared agricultural land allowing sediment run off into the Namoi River. Recent flooding in the Namoi would have also still have a lingering impact on the macroinvertebrate community. The lack of riparian vegetation and poor flow in the creeks negatively impacts the water health. The dominance of ephemeral streams between Vickery Coal Mine and the Namoi River, act as a buffer to the Namoi from any overland flows inadvertently exiting from the mine. There is currently no indication of a direct impact from VCM and it is unlikely that any indirect impacts would occur along Stratford Creek and South Creek.



6.4 Water Balance

The water balance model was run for the calibration period (January 2024 to December 2024) to assess and validate the performance of the model against site observations. The objective of this exercise was to confirm or infer the following:

- Suitability of catchment runoff yield parameters.
- Suitability of evaporation factors.
- Net groundwater/spoil seepage inflow to the Mine Pit.

The outcomes from this assessment, as well as a comparison against the predicted water balance in the Environmental Impact Statement (EIS), are provide in the following sections. The water balance is summarised in Table 24 below.

Table 24 – Vickery Coal Mine

Component	Year 2024 Volume (ML)	Basis	EIS Year 1 Median Volume (ML)
Water Inflows			
Namoi River pumping	0	Measured	~550
Kurrumbede Bore	110.8	Measured	~15
Direct rainfall	128.7	Modelled	400
Catchment runoff	337.5	Modelled	~100
Groundwater/spoil seepage	157.4	Inferred	0
TOTAL INFLOWS	734.4		
Water Outflows			
Water cart demand	324.6	Measured	250
Construction water demand	31.6	Measured	~350
Evaporation	403.4	Modelled	~180
Dam overflows	0	Modelled	0
TOTAL OUTFLOWS	759.6		
Change in storage			
Start of Jan 2024	300.9	Modelled	
End of Dec 2024	275.7	Modelled	
Net change in storage	-25.2		
WATER BALANCE*	-25.2		

For a balanced system, this value should equal the "net change in storage"

A comparison of Year 2024 water balance against the predictions in the EIS (for median Year 1 conditions) is as follows:

- Actual Namoi River pumping inflow (0 ML) was zero, as the infrastructure for this pump/pipeline has not yet been constructed.
- Actual bore water imports (111 ML) were higher than predicted bore imports (15 ML) in the EIS for Year 1. This is expected given the Namoi River pipeline connection is not yet implemented.



- Rainfall and runoff (466 ML) were higher than predicted in the EIS for Year 1 (100 ML). This is likely
 due to the change in AWBM runoff parameters that have occurred since the EIS as part of the model
 calibration process. In addition, the current disturbance area is larger than that modelled as part of the
 Year 1 EIS footprint.
- Estimated in-pit groundwater inflows (157 ML) are higher than those predicted in the EIS for Year 1 (0 ML). This is likely due to mining through previously mined overburden and encountering seepage from the spoil which reports to the mine water system as in-pit flows.
- Dust suppression and construction usage (356 ML) are similar to predicted in the EIS for Year 1 (350 ML).
- Evaporative losses (403 ML) are higher than predicted in the EIS for Year 1 (180 ML).
- Offsite discharge (0 ML) was the same as predicted in the EIS for Year 1.

7. REHABILITATION PERFORMANCE DURING THE REPORTING PERIOD

7.1 Status of Mining and Rehabilitation

Total mine footprint consists of previously disturbed areas, including land under active rehabilitation combined with active disturbance. As VCM progresses, previously disturbed (active rehab) will be disturbed. Table 25 summarises the rehabilitation status at Vickery.

	Previous Reporting Period	This Reporting Period	Next Reporting Period
Mine Area Type ¹	(Actual) (ha)	(Actual) (ha)	(Forecast) (ha)
	2023	2024	2025
Total Mine Footprint	898.62 ²	1010.3 ²	1623.71 ²
Total Active Disturbance	489.02 ³	641.3 ³	1265.41 ³
Land Being Prepared for Rehabilitation	0	0	0
Land Under Active Rehabilitation	409.6 ⁴	369 ⁴	358.3 ⁴
Completed Rehabilitation	0	0	0

Table 25 - Rehabilitation Status

¹Refer to Annual Review Guidelines (p.11) for description of mine area types.
 ²Previously Disturbed ground + Active Disturbance (Rehab, void, etc)

³ Vickery Coal Mine Active Disturbance

⁴ Prior mining land under rehabilitation





Figure 25 – VCM Forward Program Forecast Disturbance for 2025 and Rehabilitation Status



7.2 Post Rehabilitation Land Uses

Two final rehabilitation land uses are to be established at Vickery – land suitable for grazing (780 ha) and native forest/woodland (1,360 ha).

7.3 Key Rehabilitation Performance Indicators

Rehabilitation at VCM consists of existing rehabilitation areas that occurred as part of historic operations. Some of these rehabilitation areas will be cleared as VCM progresses however some will remain and forms the current rehabilitation areas for VCM. The Annual Rehabilitation surveys provide insight into the health and progress of these remaining areas as per Figure 26.

The monitoring was undertaken during October – November 2024 by Principal Ecologist Chris Spain and Ecologists Jeremy Jones, Alison Hewitt and Adriana Mohr of Aspect Ecology. Monthly rainfall totals preceding the 2024 annual monitoring campaign in October were above or similar to the 10 year average, except for March, which received below average rainfall. Winter rainfall was consistently higher than the 10 year average, resulting in favourable conditions for winter growing species.

The survey method was as per the Whitehaven Annual Rehabilitation Monitoring Method (WARMM) (Aspect Ecology, 2024). To calculate benchmarks, mean values were first obtained for each analogue site across all sampling years, then these values were used to obtain overall mean values or 10th – 90th percentiles for each target community. The overall mean value for each vegetation community target, together with the values for the individual analogue sites are provided in the respective graphs as points. Targets derived from these values are provided as horizontal lines, each covering only the applicable rehabilitation phase.

Monitoring Overview (Figure 26)

Monitoring in the Woodland Domain comprised:

- one repeat monitoring woodland rehabilitation site
- one repeat monitoring analogue woodland site

Monitoring in the Pasture Domain comprised:

- five repeat monitoring pasture rehabilitation sites
- one repeat monitoring analogue pasture site





Figure 26 – VCM Rehabilitation Survey Points



Woodland Domain

Woodland - Surface Cover

On average, the rehabilitation has increased in surface cover by 2.6% since the previous monitoring campaign. In 2024, the rehabilitation continued to consistently exceed the desired benchmark value for surface cover, Figure 26.



Woodland - Native Species Richness

On average, the rehabilitation has increased in native species richness by 2.6 species since the previous monitoring campaign. The data reveals that the rehabilitation continues to show variability in native species richness, as observed over the past few years, but overall, has maintained comparatively high species richness, Figure 27.



Figure 28 – Woodland Native Species Richness Trends



Woodland - Weed Presence

On average, the rehabilitation has increased in exotic species richness by 6 species since the previous monitoring campaign, reversing the trend of declining exotic species richness observed in 2023, Figure 28.



Figure 29 – Woodland Exotic Species Richness

Pasture Domain

Pasture – Surface Rock Density

Surface rock density serves as an indicator of the rehabilitation objective for pasture areas to be capable of sustaining grazing. To achieve the completion criterion target for this indicator, surface spoils must be generally rock free. Results are presented for the percentage of rock surface cover at pasture sites, Figure 29.



Figure 30 – Pasture Surface Rock Cover


Pasture – Species Composition

Results are presented for species richness proportions of known palatable pasture species, encompassing all grasses, pasture legumes, and spineless Chenopodiaceae against other species observed. As rehabilitation results are similar to analogue sites with 38.7% of recorded species known to be palatable the objective for this indicator is likely to have been achieved, Figure 30.



Pasture – Weed Presence

Weed presence serves as an indicator of the rehabilitation objective that weeds do not present a risk to the rehabilitation. To achieve the completion criterion target for this indicator, the density of weed species is to be no worse than analogue site values. Results are provided for weed groundcover using the NSW Department of Primary Industries' WeedWise website as the source for pasture weed information, Figure 31.



All Domains

Figure 32 – Pasture Weed Cover Percentage



Erosion

Erosion and sediment control serves as an indicator of the rehabilitation objective that erosion does not present a safety hazard or compromise the post-mining land capability. To achieve the completion criterion target for these indicators, there is to be no evidence of significant erosion. No erosion was recorded at rehabilitation monitoring sites in 2024.

Feral Fauna

Feral animal density serves as an indicator for the rehabilitation objective that feral animals do not present a risk to rehabilitation. To achieve the completion criterion target for this indicator, feral animal pests must be controlled in accordance with legislation and the RMP (RMP tbl 9). No quantitative data is available for feral animal density or control outcomes. Direct and indirect observations of feral animals are recorded during monitoring being rabbit scats, and evidence of pig rooting were observed in at the rehabilitation monitoring sites in 2024.

Recommendations

It is recommended that:

- Weed management is undertaken to reduce perennial exotic grass abundance in the woodland rehabilitation;
- management actions are undertaken to prevent further increases in exotic cover within the 2021 woodland rehabilitation;
- ground plantings are initiated to increase the diversity of the woodland rehabilitation groundcover; and
- feral animals are controlled.



7.4 Renovation or Removal of Buildings

On old "Garage" Was removed during the 2024 reporting period (Figure 33). This Garage was derelict and was demolished by licenced Asbestos Contractors. Approximately 100 tonnes of waste was generated during the asbestos removal works on the 31st May 2024. The waste was transported and disposed of at the Gunnedah Waste Management Facility. The concrete slabs remain and will be removed as the mine progresses towards this area (Figure 34).



Figure 33 – Old "Garage Shed"





Figure 34 – Concrete pads remaining

7.5 Departmental Sign-off of Rehabilitated Areas

Departmental sign-off has not been requested for any rehabilitated areas.

7.6 Variations in Activities against Forward Program

Activities in line with Forward Program.

7.7 Trials, Research Projects and Initiatives

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

7.8 Key Issues to Achieving Successful Rehabilitation

No specific issues in achieving rehabilitation success have been determined to date.



8. TRAFFIC

8.1 Environmental Performance/Management

Traffic impacts associated with the VCM are managed in accordance with Part B, Condition B76 to B89 of the SSD-7480 and the Traffic Management Plan (TMP). Various management measures were implemented during the reporting period to mitigate the traffic impacts of the VCM including:

- A code of conduct for drivers of heavy and light vehicles;
- Notification to contractors and staff regarding the driver code of conduct and to advise of any updated access arrangements;
- Nominated access routes for all vehicles travelling to and from the VCM;
- Monitoring of traffic volumes and road safety inspections;
- Results for coal transport monitoring are available in Appendix A;
- Community feedback via community contact line, website request and email, as well as consultation with the Community Consultative Committee (CCC); and
- Consultation with the relevant authorities to obtain necessary permits prior to the movement of oversized loads on public roads

Figure 35 compares the forecast and surveyed non-haulage vehicle traffic generated by VCM. The forecast generation is that of the operational traffic only, noting that ongoing construction/development activities have likely contributed to additional traffic during the survey period.



Figure 35 – Forecast vs Surveyed VCM Non-Haulage Vehicle Traffic Generation



8.2 Key Environmental Performance/Management Issues

VCM conducts an annual traffic review regarding road coal haulage tonnage and vehicle movement records for operating mines as described in the TMP. There was one complaint regarding traffic generated by the VCM during the reporting period.

8.3 Proposed Improvements to Environmental Management

Annual reviews of restricted roads, traffic monitoring and responses to any community complaints will continue to be implemented during the next reporting period.

9. COMMUNITY

In accordance with Schedule 5, Condition 6 of SSD-5000 and Schedule 2, Condition A23 of SSD-7480, the Community Consultative Committee (CCC) met 3 times in 2024 and Q4 2024 discussed in meeting 1 of 2025. Minutes of the CCC meetings were published on the project website.

VCM received 9 complaints during the 2024 reporting period. A summary table is provided below (Table 26)

Table 26 – VCM 2024 Complaints Register

#	Date and Time of Complaint	Method complaint was made	Complainant Details	Nature of Complaint	Action taken in response to complaint
01	25/01/2024 12:02pm	Text to Env Supt	Private Landowner	Environmental Superintendent that they did not receive the blast notification text	Blast Notification list updated to include landholder and complainant advised.
02	28/6/24 10.30am	Text to Env Supt, Community Mgr and in person at the company office.	Private Landowner	Complainant advised that they had found a large lump of coal on Blue Vale Road.	WHC personnel met with the complainant in person and followed up by telephone. Haulage truck inspections have been increased prior to leaving site and the procedure for loading the trucks has been reviewed. Consultation with the complainant is ongoing as is monitoring of the outcomes of the procedural review.
03	08/08/2024	To DPHI Compliance Branch	Private Landowner	Complainant voiced concern about a blast fired in unfavourable conditions. DPHI requested information regarding the blast event.	Env Supt responded to DPHI and provided monitoring results of the blast which indicate compliance with all blasting criteria in the direction of the complainant's residence. Matter closed with DPHI.
04	16/08/2024	To DPHI Compliance Branch	Private Landowner	Complainant voiced concern about a blast fired in unfavourable conditions. DPHI requested information regarding the blast event.	Env Supt responded to DPHI and provided monitoring results of the blast which indicate compliance with all blasting criteria in the direction of the complainant's residence. Matter closed with DPHI.



05	23/08/2024	To DPHI Compliance Branch	Private Landowner	Complainant voiced concern about a blast fired in unfavourable conditions.	VCM met with DPHI to discuss the complaint and Whitehaven's response to it. Matter closed with DPHI.
06	29/08/2024	To EPA	Private Landowner	Complainant voiced concern about post blast dust.	Provided blast video and weather data to EPA as requested which indicate compliance with all blasting criteria and EPL21283. Matter closed by EPA.
07	12/09/2024	To EPA	Private Landowner	Complainant voiced concern about post blast dust.	Provided blast video and Environmental Hazard Analysis as requested which indicate compliance with all blasting criteria and EPL21283. Matter closed with EPA.
08	22/09/2024	To DPHI	Private Landowner	Complainant voiced concern about bright lights shining their direction.	Vickery inspected lighting locations, and an update was given to the DPHI.
09	11/10/2024	To DPHI	Private Landowner	Complainant voiced concern about dust.	Vickery provided the information requested to the DPE. Complaint closed by DPHI.

Community contributions are managed in accordance with the Whitehaven Coal Donations and Sponsorship Policy. Whitehaven supports a range of not-for-profit organisations and charities, and in 2024, our NSW community investment contributions of over \$1.2m were spread across:

- long-term community partnerships
- donations and sponsorships administered by a community-based committee
- land and environmental trusts
- other discretionary donations and assistance to local and regional organisations



10. INDEPENDENT AUDIT

In accordance with Condition E10 of SSD 7480 an independent review was undertaken during the 2023 reporting period, with the next proposed IEA scheduled in 2026. The audit was undertaken in May 2023 and was undertaken by Environmental Resources Management Australia (ERM). No Non-compliances or actions were noted during the independent audit.

The Independent Environmental Audit report is located on the project website.



11. INCIDENTS AND NON-COMPLIANCES DURING THE REPORTING PERIOD

11.1 Reportable Incidents

There were no reportable incidents recorded during the reporting period.

11.2 Non-compliances

There were no non-compliances with SSD-7480 during the reporting period.

One minor administrative non-compliance with EPL 21283 was reported with the Annual Return in 2024. An administrative error led to TDS (Total Dissolved Solids) being erroneously reported as TSS (Total Suspended Solids). The analysis was background monitoring of surrounding watercourses only, no discharge monitoring was missed. No environmental harm resulted. No regulatory action was taken.

11.3 Regulatory Actions

There were no regulatory actions during the reporting period.



12. ACTIVITIES TO BE COMPLETED IN THE NEXT REPORTING PERIOD

Formal surrender of the development consent SSD-5000 is anticipated to occur during the 2025-reporting period in accordance with condition A18 of SSD-7480.

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

- Continuation of the CCC meetings;
- Continuation of weed and feral animal monitoring on-site to guide management actions,
- Inspection of completion and condition of fencing at Aboriginal cultural heritage sites;
- Environmental management related to exploration, and rehabilitation of previous boreholes;
- Continued environmental monitoring and reporting, as required; and
- Site wide Environmental Management Plan updated to support mining activities.



13. REFERENCES

Annual Review Guideline – Post Approval requirements for State significant mining developments (October 2015), NSW Government, available: https://www.planning.nsw.gov.au/en/Policy-and-Legislation/Mining-and-Resources/~/media/3AA21D35168042FE813DD0FB92E00E58.ashx, accessed on 19/01/2022.



14. Appendix 1: Daily Coal Tonnes

Date	Coal Movement
Date	(Road Tonnes)
15-Apr	245.12
22-Apr	2476
23-Apr	3848.28
24-Apr	2324.26
26-Apr	1095.76
27-Apr	1787.95
29-Apr	3377.3
30-Apr	4044.28
1-May	2840.39
2-May	3245.76
3-May	2198.06
4-May	408.18
6-May	1115.42
13-May	1006.4
14-May	1611.54
15-May	3368.66
16-May	2075.18
21-May	1832.02
22-May	2389.1
23-May	2271.54
24-May	2580.66
25-May	1600.42
27-May	3222.26
28-May	2655.48
29-May	1440.5
30-May	2704.46
31-May	2960.84
1-Jun	1613.3
3-Jun	2902.82
4-Jun	3168
5-Jun	3108.06
6-Jun	2874.04
7-Jun	2743.78
8-Jun	1915.56
11-Jun	3096
12-Jun	3208.98
13-Jun	3468.34
14-Jun	4794.54
15-Jun	2002.62
17-Jun	1492.96
18-Jun	2491.46
19-Jun	3246.48
20-Jun	4115.44
21-Jun	3777.34
22-Jun	1602.22

(Road Tonnes)	
24-Jun 4365.	.92
25-Jun 6375.	.24
26-Jun 3739.	.26
27-Jun 369	5.5
28-Jun 108	6.7
1-Jul 2245.	.84
2-Jul 3706.	.94
3-Jul 3015.	.22
4-Jul 2458	8.6
23-Jul 660.	.68
24-Jul 2160.	.46
25-Jul 3112	.54
26-Jul 3697.	.68
27-Jul 1827.	.66
29-Jul 4649.	.12
30-Jul 5985.	.66
31-Jul 2674.	.38
1-Aug 1172.	.22
2-Aug 195	1.9
3-Aug 1712.	.36
6-Aug 1888.	.98
7-Aug 4905.	.42
8-Aug 4691.	.16
9-Aug 3308.	.66
12-Aug 1950	6.4
13-Aug 3490	6.9
14-Aug 2554.	.54
15-Aug 17	20
16-Aug 1403.	.02
17-Aug 2096.	.42
19-Aug 1036.	.82
20-Aug 3079.	.32
21-Aug 1835.	.76
22-Aug 1598.	.02
23-Aug 3639.	.42
24-Aug 1987.	.02
26-Aug 310	1.5
27-Aug 3449.	.94
	2.7
29-Aug 117.	.18
30-Aug 3750.	.64
1-Sep 2915.	.98
2-Sep 33	315
3-Sep 2763	.66
4-Sep 247	6.4

Date	Coal Movement
Dute	(Road Tonnes)
5-Sep	2968.38
6-Sep	2929.38
9-Sep	1749.46
10-Sep	2825.82
11-Sep	4232.2
12-Sep	4964.76
13-Sep	5084.98
14-Sep	677.58
16-Sep	1410.08
17-Sep	4947.16
18-Sep	3128.66
19-Sep	2650
20-Sep	2459.38
21-Sep	2941.12
23-Sep	2382.26
24-Sep	4850.7
25-Sep	3921.74
26-Sep	6031.22
27-Sep	6197.46
28-Sep	4922.62
30-Sep	4585.54
1-Oct	4356.06
2-Oct	4301.82
3-Oct	4442.68
16-Oct	4064.36
17-Oct	3336.84
18-Oct	2928.36
19-Oct	2197.38
21-Oct	4055.72
22-Oct	4278.1
23-Oct	3686.04
24-Oct	4647.74
25-Oct	4541.06
26-Oct	1672.12
28-Oct	1743.7
29-Oct	6056.58
30-Oct	5292.18
31-Oct	7080.8
1-Nov	4562.16
2-Nov	3949.54
4-Nov	2760.1
5-Nov	4379.02
6-Nov	6404.94
7-Nov	6396.26
8-Nov	6940.56

Date	Coal Movement	
Dale	(Road Tonnes)	
9-Nov	529.04	
11-Nov	3687.32	
12-Nov	6987.66	
13-Nov	6385.42	
14-Nov	5849	
15-Nov	5899.98	
16-Nov	3481.84	
18-Nov	6305.66	
19-Nov	4884.18	
20-Nov	6999.46	
21-Nov	8167.64	
22-Nov	5460.7	
23-Nov	2824.5	
25-Nov	5299.54	
26-Nov	5504.3	
27-Nov	5448.96	
28-Nov	5597.16	
29-Nov	5187.62	
30-Nov	3883.62	
2-Dec	4273.07	
3-Dec	5402.06	
4-Dec	6004.3	
5-Dec	5717 52	
6-Dec	3605.34	
7-Dec	1064 76	
9-Dec	/821.76	
	4021.70	
	3557 68	
11-Dec	4701 70	
12-Dec	4791.70	
13-Dec	4772.90	
14-Dec	2820.84	
16-Dec	4/05.78	
17-Dec	5464.92	
18-Dec	6123.18	
19-Dec	5211.7	
20-Dec	6305.32	
21-Dec		
23-Dec	5131.66	
24-Dec	3892.54	
27-Dec	3707.78	
28-Dec	3671.18	
30-Dec	7136.64	
31-Dec	5564.18	



15. Appendix 2: Gunnedah CHPP Train Movements

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Train Load Times			
2/01/2024	5:32	AM	
3/01/2024	6:21	AM	
3/01/2024	10:04	AM	
3/01/2024	15:11	PM	
4/01/2024	9:23	AM	
4/01/2024	21:02	PM	
5/01/2024	2:00	AM	
5/01/2024	15:05	PM	
5/01/2024	20:55	PM	
9/01/2024	19:20	PM	
10/01/2024	21:48	PM	
11/01/2024	9:07	AM	
12/01/2024	2:22	AM	
12/01/2024	6:44	AM	
13/01/2024	15:42	PM	
15/01/2024	11:00	AM	
15/01/2024	18:57	PM	
25/01/2024	18:18	PM	
25/01/2024	22:37	PM	
27/01/2024	6:48	AM	
27/01/2024	10:43	AM	
9/02/2024	9:39	AM	
9/02/2024	15:40	PM	
10/02/2024	23:55	PM	
11/02/2024	20:18	PM	
13/02/2024	1:50	AM	
13/02/2024	16:59	PM	
14/02/2024	5:38	AM	
14/02/2024	14:08	PM	
15/02/2024	22:41	PM	
16/02/2024	10:19	AM	
16/02/2024	21:29	PM	
17/02/2024	8:07	AM	
18/02/2024	3:03	AM	
19/02/2024	1:50	AM	
19/02/2024	12:35	PM	

19/02/2024	21:43	PM
20/02/2024	15:00	PM
21/02/2024	4:00	AM
22/02/2024	8:07	AM
22/02/2024	14:01	PM
22/02/2024	23:58	PM
23/02/2024	9:33	AM
24/02/2024	17:14	PM
25/02/2024	20:04	PM
26/02/2024	23:02	PM
27/02/2024	23:04	PM
28/02/2024	20:12	PM
2/03/2024	2:40	AM
3/03/2024	17:25	PM
3/03/2024	23:25	PM
4/03/2024	23:52	PM
7/03/2024	4:55	AM
7/03/2024	10:16	AM
20/03/2024	9:55	AM
21/03/2024	23:12	PM
22/03/2024	10:51	AM
22/03/2024	22:36	PM
24/03/2024	0:35	AM
24/03/2024	22:33	PM
25/03/2024	16:27	PM
26/03/2024	6:17	AM
26/03/2024	12:03	PM
27/03/2024	9:38	AM
27/03/2024	18:32	PM
28/03/2024	1:45	AM
28/03/2024	13:45	PM
28/03/2024	19:15	PM
29/03/2024	5:35	AM
30/03/2024	16:28	PM
1/04/2024	17:50	PM
2/04/2024	5:22	AM
7/04/2024	1:43	AM
7/04/2024	16:46	PM

9/04/2024	16:27	PM
10/04/2024	4:40	AM
11/04/2024	9:49	AM
14/04/2024	9:11	AM
14/04/2024	15:47	PM
17/04/2024	11:15	AM
17/04/2024	19:17	PM
19/04/2024	16:58	PM
21/04/2024	19:25	PM
25/04/2024	12:42	PM
29/04/2024	3:10	AM
1/05/2024	8:22	AM
2/05/2024	21:22	PM
3/05/2024	4:42	AM
3/05/2024	14:00	PM
3/05/2024	18:15	PM
4/05/2024	20:02	PM
16/05/2024	19:36	PM
26/05/2024	15:05	PM
27/05/2024	0:45	AM
27/05/2024	22:14	PM
28/05/2024	3:12	AM
28/05/2024	22:12	PM
1/06/2024	12:28	PM
3/06/2024	14:28	PM
4/06/2024	10:13	AM
6/06/2024	19:45	PM
7/06/2024	18:08	PM
9/06/2024	6:05	AM
9/06/2024	10:00	AM
11/06/2024	23:35	PM
12/06/2024	16:38	PM
13/06/2024	2:35	AM
13/06/2024	11:00	AM
14/06/2024	17:47	PM
15/06/2024	1:12	AM
15/06/2024	5:21	AM
15/06/2024	11:08	AM

2024 Gunnedah CHPP Train Movements

Whitehaven Coal Mining Limited ABN 65 086 426 253



1/08/2024	12:45	PM
6/08/2024	15:45	PM
6/08/2024	21:38	PM
7/08/2024	1:56	AM
8/08/2024	1:10	AM
10/08/2024	5:05	AM
11/08/2024	5:05	AM
14/08/2024	19:53	PM
16/08/2024	18:35	PM
22/08/2024	5:25	AM
25/08/2024	5:20	AM
25/08/2024	13:00	PM
28/08/2024	20:46	PM
29/08/2024	9:46	AM
30/08/2024	5:56	AM
30/08/2024	13:25	PM
4/09/2024	19:10	PM
5/09/2024	23:10	PM
6/09/2024	5:20	AM
6/09/2024	13:16	PM
19/09/2024	22:28	PM
20/09/2024	6:58	AM
20/09/2024	11:54	AM
20/09/2024	17:54	PM
22/09/2024	6:50	AM
22/09/2024	21:55	PM
23/09/2024	22:23	PM
26/09/2024	6:40	AM
4/10/2024	15:12	PM
5/10/2024	15:52	PM
7/10/2024	17:22	PM
8/10/2024	4:09	AM
9/10/2024	1:08	AM
10/10/2024	4:43	AM
10/10/2024	10:16	AM
10/10/2024	19:30	PM
11/10/2024	17:25	PM
11/10/2024	21:42	PM
12/10/2024	3:05	AM
12/10/2024	16:30	PM
13/10/2024	21:01	PM
14/10/2024	5:33	AM
15/10/2024	19:24	PM
16/10/2024	1:40	AM

5/11/2024	19:30	PM
8/11/2024	16:27	PM
11/11/2024	20:45	PM
12/11/2024	18:46	PM
13/11/2024	10:20	AM
13/11/2024	16:55	PM
14/11/2024	6:17	AM
14/11/2024	17:04	PM
14/11/2024	23:29	PM
15/11/2024	15:57	PM
16/11/2024	9:18	AM
23/11/2024	16:14	PM
24/11/2024	23:37	PM
26/11/2024	8:08	AM
28/11/2024	23:10	PM
29/11/2024	22:35	PM
1/12/2024	0:10	AM
1/12/2024	19:45	PM
2/12/2024	22:14	PM
4/12/2024	19:55	PM
12/12/2024	9:54	AM
12/12/2024	23:30	PM
13/12/2024	11:24	AM
13/12/2024	15:53	PM
13/12/2024	20:46	PM
14/12/2024	20:20	PM
15/12/2024	1:50	AM
15/12/2024	7:14	AM
17/12/2024	11:14	AM
22/12/2024	4:25	AM
22/12/2024	9:40	AM
22/12/2024	21:04	PM
23/12/2024	2:05	AM
23/12/2024	9:03	AM
27/12/2024	14:28	PM
28/12/2024	16:18	PM
29/12/2024	18:55	PM
	0.55	AM
30/12/2024	3.55	
30/12/2024 30/12/2024	17:20	PM
30/12/2024 30/12/2024 31/12/2024	17:20 18:16	PM PM

WHITEHAVEN COAL

Whitehaven Coal Mining Limited ABN 65 086 426 253

ΡM

AM

AM

22:19

10:50

5:30

26/07/2024

28/07/2024

30/07/2024