Department of Planning, Housing and Infrastructure

NSW Planning ref: DA92/97-PA-103

Mariah Lane
Environmental Advisor
MACH Energy Australia Pty Ltd
Suite 302, Level 3, 251 Wharf Road
Newcastle West NSW 2300
28/10/2024

Sent via the Major Projects Portal only

Subject: Mt Pleasant Coal - 2023 Annual Review

Dear Miss Lane

I refer to the Mt Pleasant Coal Annual Review for the period 1 January 2023 to 31 December 2023, submitted as required by Schedule 5, Condition 3 of DA92/97 as modified (the consent) to the NSW Department of Planning, Housing and Infrastructure (NSW Planning) on 28 March 2024.

NSW Planning has reviewed the 2023 Annual Review and considers it to generally satisfy the reporting requirements of the consent and the NSW Planning Annual Review Guideline (October 2015). Please make publicly available a copy of the 2023 Annual Review on the company's website within 30 days.

However, for future Annual Reviews, under the provisions of Schedule 2, Condition 3 of the consent, please include a status update on all actions arising from Independent Audits of the mine until all actions are completed. Where estimated completion dates are missed, please provide additional detail along with a new estimated completion date where appropriate.

Please note that the NSW Planning's acceptance of this Annual Review is not an endorsement of the compliance status of the project.

Should you wish to discuss the matter further, please contact Jennifer Sage, Senior Compliance Officer on (02) 6575 3420 or email compliance@planning.nsw.gov.au

Yours sincerely

Heidi Watters
Team Leader
Compliance

As nominee of the Planning Secretary

MOUNT PLEASANT OPERATION

2023 ANNUAL REVIEW

Company:	MACH Energy Australia Pty Ltd		
Effective Date:	31 March 2024	**Status:**	Issued for use
Approved By:	Michael Redman	**Revision Number:**	00

MOUNT PLEASANT OPERATION 2023 ANNUAL REVIEW	
Name of Operation	Mount Pleasant Operation
Name of Operator	MACH Energy Australia Pty Ltd
Development Consent	Development Consent DA 92/97
Name of Holder of Development Consent	MACH Energy Australia Pty Ltd
Mining Leases	Mining Lease 1645, Mining Lease 1708, Mining Lease 1709, Mining Lease 1713, Mining Lease 1750, Mining Lease 1808 and Mining Lease 1829.
Name of Holder of Mining Leases	MACH Energy Australia Pty Ltd J.C.D Australia Pty Ltd
Water Licences	Water Access Licences – see Table 3 Bore Licence Certificate 20BL168734
Name of Holder of Water Licences	MACH Energy Australia Pty Ltd
Annual Review Start Date	1 January 2023
Annual Review End Date	31 December 2023

I, Michael Redman, certify that this audit report is a true and accurate record of the compliance status of the Mount Pleasant Operation for the period 1 January to 31 December 2023 and that I am authorised to make this statement on behalf of MACH Energy Australia Pty Ltd.

Note.

a) *The Annual Review is an 'environmental audit' for the purposes of section 122B(2) of the Environmental Planning and Assessment Act 1979. Section 122E provides that a person must not include false or misleading information (or provide information for inclusion in) an audit report produced to the Minister in connection with an environmental audit if the person knows that the information is false or misleading in a material respect. The maximum penalty is, in the case of a corporation, $1 million and for an individual, $250,000.*

b) *The Crimes Act 1900 contains other offences relating to false and misleading information: section 192G (Intention to defraud by false or misleading statement—maximum penalty 5 years imprisonment); sections 307A, 307B and 307C (False or misleading applications/information/documents—maximum penalty 2 years imprisonment or $22,000, or both).*

Name of Authorised Reporting Officer	Michael Redman
Title of Authorised Reporting Officer	General Manager Operations
Signature of Authorised Reporting Officer	
Date	28/03/2024

STATEMENT OF COMPLIANCE

The compliance status of the Mount Pleasant Operation with its relevant approval conditions at the end of the reporting period (31 December 2023) is provided in Table SoC-1.

Table SoC-1
Statement of Compliance

Were all conditions of the relevant approval(s) complied with?	
Development Consent DA 92/97	No
EPBC 2011/5795	Yes
Environment Protection Licence 20850	No
Authorisation 459	Yes
Mining Lease 1645	Yes
Mining Lease 1708	Yes
Mining Lease 1709	Yes
Mining Lease 1713	Yes
Mining Lease 1750	Yes
Mining Lease 1808	Yes
Mining Lease 1829	Yes
Water licences (as per Table 3)	Yes
Bore Licence Certificate 20BL168734	Yes

Non-compliances are characterised as shown in Table SoC-2. Table SoC-3 summarises non-compliances with the approval conditions. During the reporting period, there were four observations that resulted in non-compliances against approval conditions (Table SoC-3).

Table SoC-2
Compliance Status Key for Table SoC-3 – Non-Compliances

Risk Level	Colour Code	Comment
High	Non-compliant	Non-compliance with potential for significant environmental consequences, regardless of the likelihood of occurrence.
Medium	Non-compliant	Non-compliance with: • potential for serious environmental consequences, but is unlikely to occur; or • potential for moderate environmental consequences, but is likely to occur.
Low	Non-compliant	Non-compliance with: • potential for moderate environmental consequences, but is unlikely to occur; or • potential for low environmental consequences, but is likely to occur.
Administrative Non-compliance	Non-compliant	Only to be applied where the non-compliance does not result in any risk of environmental harm (e.g. submitting a report to government later than required under approval conditions).

Table SoC-3
Summary of Non-Compliances

Relevant Approval	Condition Number	Condition Description	Compliance Status	Comment	Report Section
Development Consent DA 92/97	S3 C5	Except for the noise-affected land referred to in Table 1, the Applicant must implement all reasonable and feasible measures to ensure that the operational noise generated by the development combined with the noise generated by other mines in the area does not exceed the criteria in Table 5 at any residence on privately-owned land.	NC (Low risk)	See Table 32	Section 10.2
EPL 20850	O3.6	Shutdown of dust generating activities required by Condition O3.4 must be completed within 1 hour of receiving data that triggers action required by Condition O3.4.	NC (Low risk)	See Table 32	Section 10.2
EPL 20850	M2.2	The licensee must continuously monitor PM10 at Point 1 and 2.	NC (Low risk)	See Table 32	Section 10.2
EPL 20850	M4.1	The licensee must continuously monitor weather parameters at Point 11 and 4.	NC (Low risk)	See Table 32	Section 10.2

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1 INTRODUCTION

The Mount Pleasant Operation (MPO) is located within the Upper Hunter Valley of New South Wales (NSW), approximately 3 kilometres (km) north-west of Muswellbrook and approximately 50 km north-west of Singleton (Figure 1). The villages of Aberdeen and locality of Kayuga are also located approximately 5 km north north-east and 1 km north of the MPO boundary, respectively (Figure 1). MACH Energy Australia Pty Ltd (MACH Energy) purchased the MPO from Coal & Allied Operations Pty Ltd (Coal & Allied) in 2016.

MACH Mount Pleasant Operations Pty Ltd is the manager of the MPO as agent for, and on behalf of, the unincorporated Mount Pleasant Joint Venture between MACH Energy (95 per cent [%] owner) and J.C.D. Australia Pty Ltd (5% owner).

The initial development application for the MPO was made in 1997. This was supported by an Environmental Impact Statement (EIS) prepared by Environmental Resources Management Mitchell McCotter (ERM Mitchell McCotter) (ERM Mitchell McCotter, 1997). On 22 December 1999, the then Minister for Urban Affairs and Planning granted Development Consent DA 92/97 to Coal & Allied. This allowed for the "Construction and operation of an open cut coal mine, coal preparation plant, transport and rail loading facilities and associated facilities" at the MPO. The consent allowed for operation 24 hours per day, seven days per week and the extraction of 197 million tonnes (Mt) of Run-of-Mine (ROM) coal over a 21-year period, at a rate of up to 10.5 Mt of ROM coal per year.

The MPO Modification 1 (MOD 1) was submitted for approval on 19 May 2010. MOD 1 included the provision of an infrastructure envelope for siting the mine infrastructure, the provision of an optional conveyor/service corridor linking the MPO facilities with the Muswellbrook-Ulan Rail Line and modification of the existing Development Consent DA 92/97 boundaries to accommodate the optional conveyor/service corridor and minor administrative changes. MOD 1 was approved on 19 September 2011.

The MPO South Pit Haul Road Modification (MOD 2) was submitted for approval on 30 January 2017 with a supporting Environmental Assessment (EA) prepared by MACH Energy (MACH Energy, 2017a). MOD 2 proposed to realign an indicative internal haul road to enable more efficient access to the South Pit open cut. MOD 2 was approved on 29 March 2017.

The MPO Mine Optimisation Modification (MOD 3) was submitted on 31 May 2017. MOD 3 comprised an extension to the time limit on mining operations (to 22 December 2026) and extensions to the South Pit Eastern Out of Pit Emplacement to facilitate development of an improved final landform. MOD 3 was approved on 24 August 2018.

The MPO Rail Modification (MOD 4) was submitted on 18 December 2017. MOD 4 proposed the following changes:

- duplication of the approved rail spur, rail loop, conveyor and rail load-out facility and associated services;
- duplication of the Hunter River water supply pump station, water pipeline and associated electricity supply that followed the original rail spur alignment; and
- demolition and removal of the redundant approved infrastructure within the extent of the Bengalla Mine, once the new rail, product loading and water supply infrastructure has been commissioned and is fully operational.

MOD 4 was approved on 16 November 2018. Appendix 2 of the modified Development Consent DA 92/97 illustrates the Conceptual Project Layout Plan of the approved MPO at 2021 and 2025, Approved Surface Disturbance Plan and Conceptual Final Landform incorporating the MOD 4 infrastructure relocations (Development Consent DA 92/97 Attachment 1). MOD 4 residual construction works were completed during the reporting period.

Modification 5 (MOD 5) was submitted to rectify an administrative error in Development Consent DA 92/97 and was approved by the NSW Department of Planning and Environment (DPE) (formerly Department of Planning, Industry and Environment [DPIE]) on 29 June 2022.

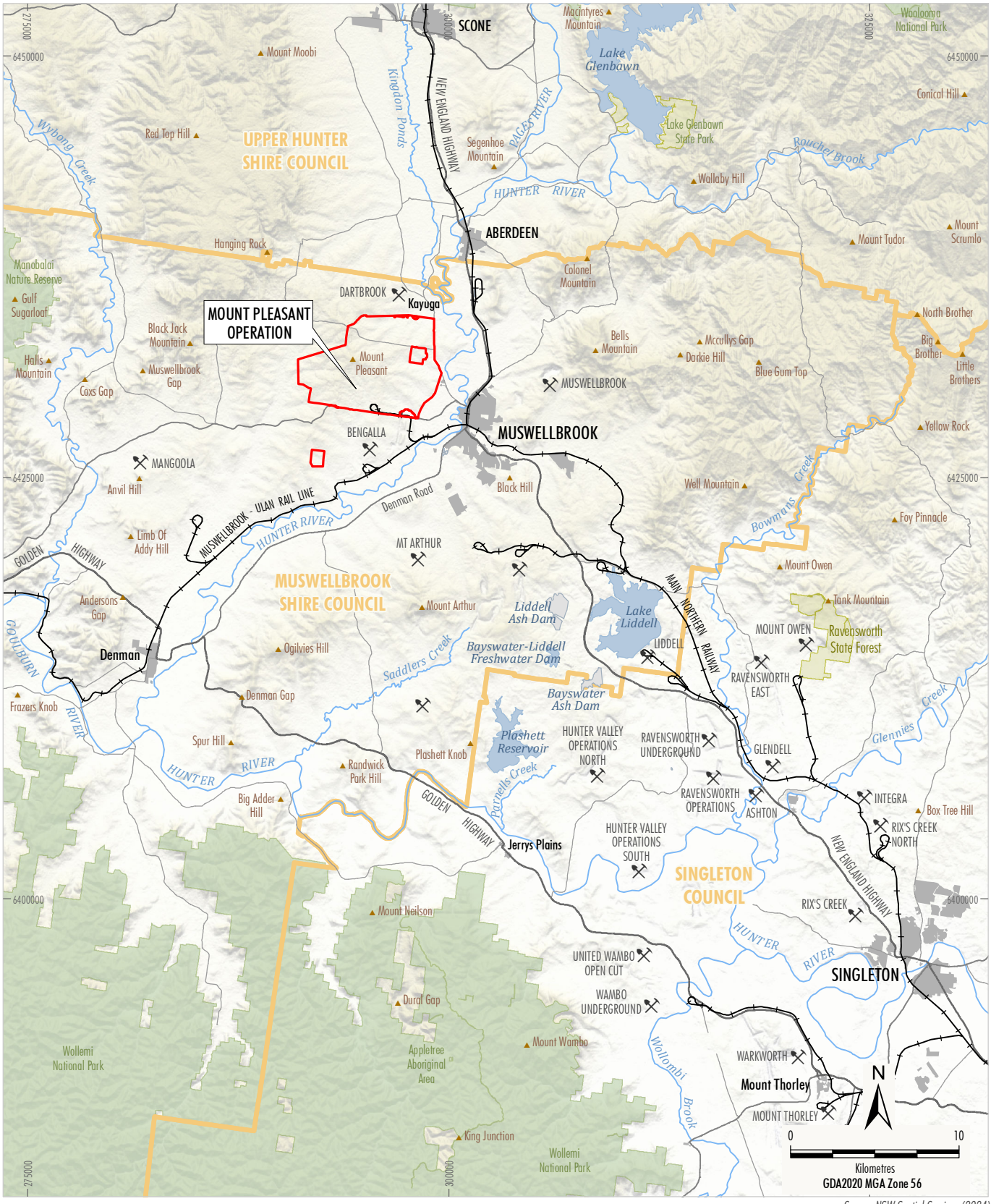
Following the approval of MOD 5, MACH Energy completed a review of its approved Environmental Management Strategy and management plans in accordance with Condition 4(d), Schedule 5 of the Development Consent DA 92/97. The review determined that no updates were required to the management plans.

Modification 6 (MOD 6) was submitted to modify Development Consent DA 92/97 and was approved on 6 November 2023 by DPE (now the NSW Department of Planning, Housing and Infrastructure [DPHI]). MOD 6 will allow for the construction and operation of a re-transmission facility including a tower or mast, shed and associated transmission infrastructure to re-transmit local digital television signals from the Broadcast Australia site at Rossgole Lookout. Appendix 2 of the modified Development Consent DA 92/97 illustrates the Revised Approved Surface Disturbance Plan incorporating the MOD 6 infrastructure.

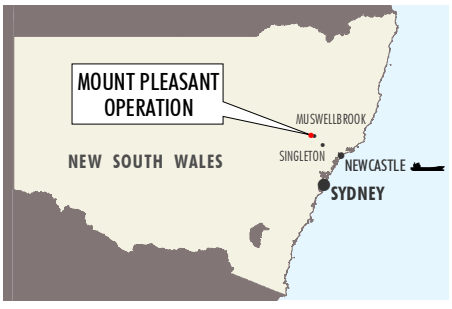
This Annual Review reflects the currently approved MPO under MOD 6 of the Development Consent DA 92/97.

On 6 September 2022, the NSW Independent Planning Commission approved the development application for the Mount Pleasant Optimisation Project (SSD 10418), in accordance with Part 4 of the *NSW Environmental Planning and Assessment Act 1979*. The Mount Pleasant Optimisation Project extends the mine life of the existing MPO until 2048 by mining deeper coal reserves and extending part of the open cut areas. MACH Energy commenced development of Development Consent SSD 10418 on 12 February 2024. This Annual Review does not address the requirements of Development Consent SSD 10418.

Figure 2 shows the general arrangement of the MPO, as well as the extent of disturbance and rehabilitation at the end of 2023 and the forecast additional disturbance and rehabilitation proposed for 2024.



Source: NSW Spatial Services (2024)



LEGEND

- Mining Operation
- Railway
- Local Government Boundary
- State Forest/Reserve
- National Parks and Wildlife Estate
- Mining Lease Boundary (Mount Pleasant Operation)

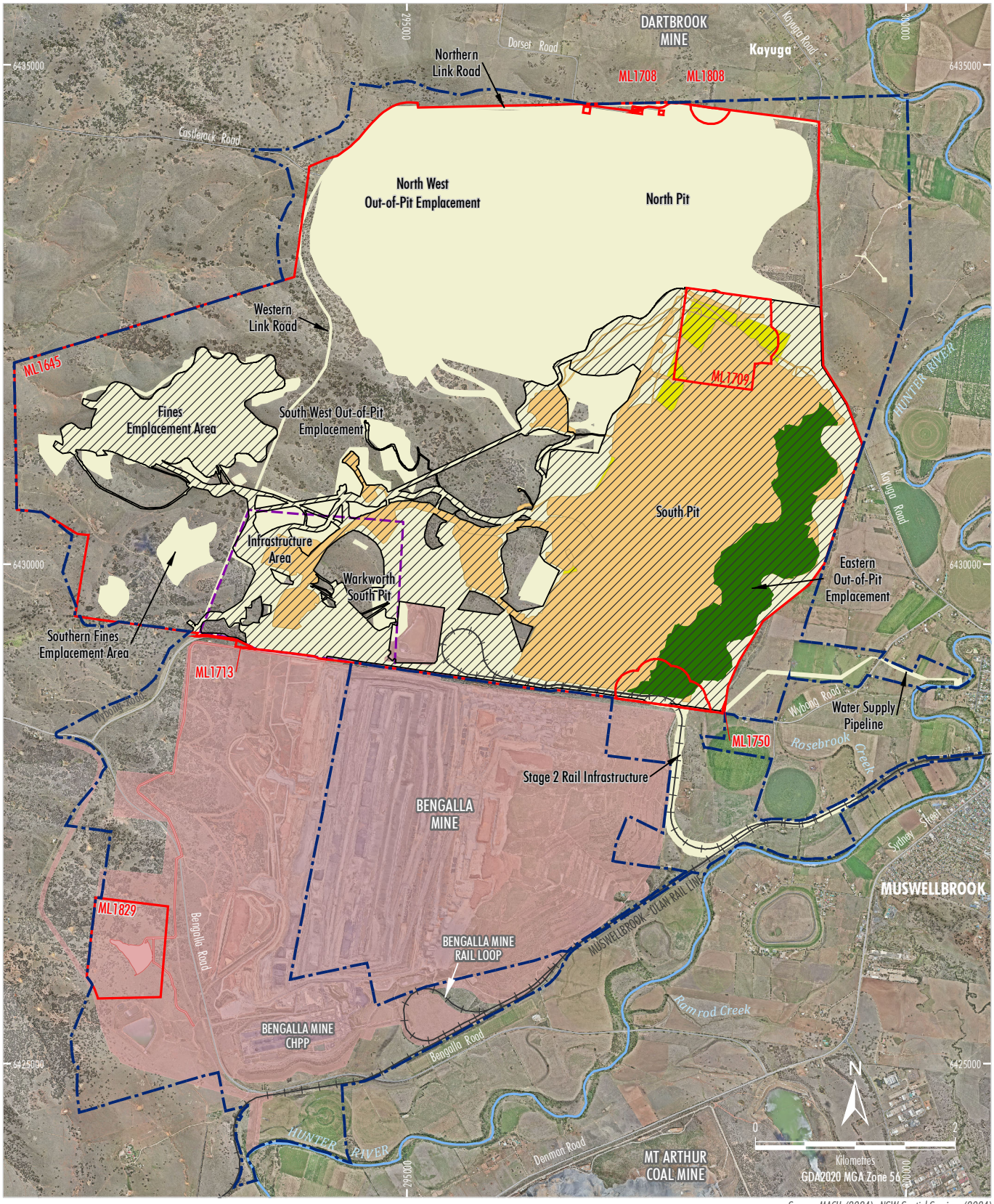
MACHEnergy

MOUNT PLEASANT OPERATION

Regional Location

MAC-18-03A AR2023_201A

Figure 1



MAC-18-03A AR2023_202B

LEGEND

- Development Consent Boundary
- Mining Lease Boundary (Mount Pleasant Operation)
- Approximate Extent of Existing/Approved Surface Development (DA92/97) [1]
- Existing/Approved Mount Pleasant Operation Infrastructure within Bengalla Mine Approved Disturbance Boundary (SSD-5170)
- Infrastructure Area Envelope
- RMP2023 Footprint [2]
- End 2023 Active Disturbance Area
- End 2023 Rehabilitation Area
- 2024 Forecast Additional Disturbance Area
- Bengalla Mine Approved Disturbance Boundary (SSD-5170)

NOTES

[1] Excludes some incidental Project components such as water management infrastructure, road diversions, access tracks, topsoil stockpiles, power supply, temporary offices, signalling, other ancillary works and construction disturbance.

[2] Mount Pleasant Operation Rehabilitation Management Plan (Oct 2023)

Source: MACH (2024); NSW Spatial Services (2024)
Orthophoto: MACH (Dec 2023)

MACHEnergy

MOUNT PLEASANT OPERATION

2023 Mining Activities

Figure 2

1.1 PURPOSE AND SCOPE

This Annual Review details MACH Energy's environmental and community performance for the reporting period 1 January 2023 to 31 December 2023. This Annual Review has been prepared in accordance with the DPE (now DPHI) *Post-approval requirements for State significant mining developments - Annual Review Guideline – October 2015* (DPE, 2015) and MACH Energy's statutory approvals (Section 2), specifically Condition 3, Schedule 5 of Development Consent DA 92/97.

This Annual Review is not intended to be an exhaustive description of MACH Energy's operations, approvals, and activities, rather it is a summary of MACH Energy's compliance status with respect to MACH Energy's statutory approvals.

In March 2017, the Secretary of the DPE (now DPHI) revised the submission timing of the MPO Annual Review to the end of March each year.

This Annual Review is distributed to a range of stakeholders including government authorities, Muswellbrook Shire Council (MSC) and members of the Community Consultative Committee (CCC). A copy of the Annual Review will be made publicly available on the MACH Energy website (https://machenergyaustralia.com.au/mount-pleasant/documentation/).

1.2 KEY PERSONNEL

Contact details for key MACH Energy personnel responsible for the environmental and community management of the MPO are provided in Table 1.

Table 1
Key Personnel

Position	Contact	Phone Number
General Manager - Operations	Michael Redman	1800 931 873
General Manager - Resource Development	Chris Lauritzen	
Environmental Superintendent	Andrew Reid	
External Relations Manager	Ngaire Baker	

2 APPROVALS

The MPO operates under a number of statutory approvals, leases and licences that regulate activities at the MPO (Tables 2 and 3).

Table 2
Consent, Lease and Licence Details

Consent/Lease/Licence	Authority	Grant Date	Expiry Date
Development Consent DA 92/97[1]	DPHI	22/12/1999	22/12/2026
Development Consent SSD 10418[2]	NSW IPC	06/09/2022	22/12/2048
EPBC Approval 2011/5795[3]	DCCEEW^	29/02/2012	28/10/2040
EPL 20850[4]	EPA	24/11/2016	-
Authorisation 459[5]	MEG	07/04/1992	07/04/2025
ML 1645	MEG	17/12/2010	17/12/2031
ML 1708	MEG	02/02/2015	02/02/2036
ML 1709	MEG	02/02/2015	02/02/2036
ML 1713	MEG	02/02/2015	02/02/2036
ML 1750	MEG	03/03/2017	03/03/2038
ML 1808	MEG	29/09/2020	29/09/2041
ML1829	MEG	20/07/2023	10/02/2037
Bore Licence Certificate 20BL168734	DoI - L&W	13/03/2003	Perpetuity

Note:

EPBC = *Environment Protection and Biodiversity Conservation Act 1999*.

DCCEEW = Department of Climate Change, Energy, the Environment and Water.

EPL = Environment Protection Licence.

EPA = NSW Environment Protection Authority.

MEG = Mining, Exploration and Geosciences within the Department of Regional NSW (formerly Division of Resources and Geoscience); and DoI - L&W = NSW Department of Industry – Lands & Water.

NSW IPC = NSW Independent Planning Commission.

^ Commonwealth Department of Agriculture, Water and the Environment (formerly Commonwealth Department of the Environment and Energy) was superseded by DCCEEW on 1 July 2022.

1 Development Consent DA 92/97 has been modified six times since the original approval was granted in 1999. Approval for MOD 1 was granted on 19 September 2011, approval for MOD 2 was granted on 29 March 2017, approval for MOD 3 was granted on 24 August 2018, approval for MOD 4 was granted on 16 November 2018, approval for MOD 5 was granted on 29 June 2022 and approval for MOD 6 was granted 6 November 2023.

2 Development Consent SSD 10418 commenced on 12 February 2024. This Annual Review does not report against the requirements of Development Consent SSD 10418.

3 EPBC Approval 2011/5795, originally granted on 29 February 2012, was extended from 28 October 2035 to 28 October 2040 on 16 November 2020. The approval was further varied on 24 January 2023 to incorporate Biodiversity Management Areas and their security.

4 EPL 20850 has been varied 15 times since original approval was granted in 2016. During the reporting period, the licence was varied on 28 February 2023 to include a new licenced water discharge/monitoring point, remove blast monitoring point 12 and amend the premises boundary due to realignments. The licence fee period was also changed on 13 December 2023 (current licence version).

5 A renewal of this Authorisation was granted on 10 February 2023.

MACH Energy will continue to manage its existing Water Access Licences (WALs) (Table 3) and acquire new licences, as required during the next reporting period.

Table 3
MACH Energy Water Access Licences (*Water Management Act 2000*)

Water Sharing Plan	Water Source	Licence Number	Entitlement (Unit)
Water Sharing Plan for the Hunter Unregulated and Alluvial Water Sources 2009	Hunter Regulated River Alluvial Water Source	18253	74
		18266	68
		18206	24
		18199	5
		18122	33
		18131	60
		21503	21
		18154	5
		18177	5
	Muswellbrook Water Source	23935	41
	Sydney Basin – North Coast Groundwater Source	41437	640
		40298	90
	Krui River Water Source	18336	12
	Hunter Regulated River Water Source	879	243
		880	124
		1113	366
		973	3
		974	210
		975	8
		988	156
		989	8
		1307	37.5
		1229	480
		1230	8
		1259	33.2
		1227	99
		1258	5
		992	75
		7808	36
		702	267
		1260	4.8
		993	265
		1308	15.1
		604	183
		605	8
		677	24
		1338	17.5
		662	9
		663	16
		10775	243
		41438	455
		638	225
		639	134

Table 3 (Continued)
MACH Energy Water Access Licences (*Water Management Act 2000*)

Water Sharing Plan	Water Source	Licence Number	Entitlement (Unit)
Water Sharing Plan for the Hunter Unregulated and Alluvial Water Sources 2009	Hunter Regulated River Water Source	969	39
		1074	5
		8406	168
		8598	3
		8445	12.6
		10531	120
		975	8
		13785	1
	Dart Brook Water Source	44101	20

2.1 MANAGEMENT PLANS

Development Consent DA 92/97 requires MACH Energy to submit management plans and strategies prior to carrying out any development on-site. The currently approved MPO management plans are summarised in Table 4.

Table 4
Approved Management Plans

Plan	Relevant Development Consent DA 92/97 Condition	Approval Date
Rehabilitation Management Plan (RMP) (1 August 2022 – 30 June 2023)[1]	Schedule 3, Condition 56	29 September 2023
Noise Management Plan (NMP)	Schedule 3, Condition 9	21 December 2021
Air Quality and Greenhouse Gas Management Plan (AQGGMP)	Schedule 3, Condition 23	24 May 2019
Aboriginal Heritage Management Plan (AHMP)	Schedule 3, Condition 36	31 October 2019
Water Management Plan (WMP)	Schedule 3, Condition 28	24 October 2022
Blast Management Plan (BMP)	Schedule 3, Condition 17	14 April 2020
Visual Impact Management Plan (VIMP)[2] (previously the Landscape Management Plan)	Schedule 3, Condition 47	15 March 2024
Waste Management Plan (WasteMP)	Schedule 3, Condition 52	14 January 2019
Rehabilitation Strategy[3]	Schedule 3, Condition 54	24 February 2022
Biodiversity Management Plan (BioMP)	Schedule 3, Condition 32	31 October 2019
Environmental Management Strategy	Schedule 5, Condition 1	7 February 2024
Construction Environmental Management Plan (CEMP)[4]	Schedule 3, Condition 44I	10 March 2020
Out of Hours Work Protocol (OHWP)[4]	Schedule 3, Condition 44G	15 March 2021

Note:

1 As of 1 August 2022, MPO operates under a Rehabilitation Management Plan (RMP) along with the supporting Annual Rehabilitation Report and Forward Program which has replaced the MOP (1 July 2021 – 30 June 2023). This Annual Review reports against the RMP and Annual Rehabilitation Report and Forward Program.

2 Following approval of MOD 6 (6 November 2023), in accordance with Schedule 5, Condition 4 of Development Consent DA 92/97, a review and revision of the VIMP was undertaken in consultation with MSC. The VIMP was updated to incorporate the management measures for the design of the re-transmission facility and submitted to DPHI on 22 December 2023. The updated VIMP was approved by DPHI on 15 March 2024 (Version 3)

3 Following approval of MOD 6 (6 November 2023), in accordance with Schedule 5, Condition 4 of Development Consent DA 92/97, a review and revision of the Rehabilitation Strategy was undertaken in consultation with MSC and the NSW Resources Regulator. The Rehabilitation Strategy was updated to incorporate the design and consultation requirements

from the construction of the re-transmission facility. The updated Rehabilitation Strategy is currently awaiting approval and this Annual Review reports against the currently approved Rehabilitation Strategy (24 February 2022).

[4] Following completion of MOD 4 construction activities, the CEMP and OHWP has been redacted.

A summary of updates approved for the listed management plans during the reporting period is provided below:

- The Rehabilitation Management Plan was updated to incorporate the MPO Final Landform and Rehabilitation Plan which was approved by the NSW Resources Regulator on 29 September 2023.
- The VIMP was updated to include additional details regarding visual impact management measures relevant to the MOD 6 re-transmission facility infrastructure. The revised VIMP was lodged on 22 December 2023 and approved by DPE (now DPHI) on 15 March 2024.
- The Rehabilitation Strategy was updated to include additional details regarding rehabilitation, design and consultation required for the construction of the MOD 6 re-transmission facility infrastructure. The revised Rehabilitation Strategy was lodged on 22 December 2023 and currently awaiting approval from DPE (now DPHI).
- An updated version of the Environmental Management Strategy was prepared following the grant of the Mount Pleasant Optimisation Project under Development Consent SSD 10418. The latest version of the plan was approved by DPE (now DPHI) on 7 February 2024 and satisfies the relevant conditions of both Development Consent SSD 10418 and Development Consent DA 92/97 (until its surrender).

In accordance with Condition 4, Schedule 5 of Development Consent DA 92/97, MACH Energy will review, and if necessary, revise, the strategies, plans and programs required under the consent within three months of the submission of this Annual Review, to the satisfaction of the Secretary of the Department.

3 OPERATIONS SUMMARY

3.1 MINING OPERATIONS

MACH Energy commenced construction works at the MPO on 25 November 2016 with mining activities commencing in November 2017. During 2023, MACH Energy completed the following construction activities on site, including:

- completion of the Hunter River Pump Station relocation approved as part of MOD 4 of Development Consent DA 92/97 followed by the decommissioning of the original Hunter River Pumping Station;
- completion of the Fines Emplacement Area (FEA) Stage 2 Lift Project to increase the capacity for fines deposition;
- ongoing progressive rehabilitation of temporary construction areas and mining areas;
- completion of bathhouse facilities expansion at the Infrastructure Area;
- ongoing expansion works to the infrastructure area to increase support offices and meeting areas;
- commissioning of High Wall Dam 2 and decommissioning of High Wall Dam 1;
- completion of offsite water discharge in accordance with amendments made to EPL 20850; and
- commencement of workshop facility upgrades including new maintenance bays to support the mobile equipment fleet; and
- completion of sitewide civil works and earthworks including maintenance and repair at the mine infrastructure area (MIA), Environmental Dam Mine Infrastructure Area (EDMIA), Mine Water Dam (MWD) Clean Water Diversion Drains and Sediment Dam (SD) 1 – 4 access roads.

Mining activities that occurred during the reporting period included:

- continuation of steady-state coal extraction with the development of the open cut footprint progressing to the west;
- significant pumping infrastructure upgrades to enable out of pit pumping following significant rainfall events in 2022;
- continuation of mining coal to the west of the open cut following undertaking all pre-strip and blasting activities;
- ongoing modifications to the Coal Handing and Preparation Plant (CHPP) including upgrade of the ROM dump hopper dust suppression system; and
- ongoing progressive rehabilitation of the Eastern Out of Pit Overburden Emplacement Area (including ‘natural landform’ profiling of areas in accordance with geomorphic design principles [i.e. including macro and micro relief]).

During the reporting period, a total of 10.5 Mt of ROM coal was produced.

The amounts of overburden, ROM coal, coarse reject, fine reject and product coal produced during the previous reporting period, current reporting period and forecast for the next reporting period, are outlined in Table 5.

Table 5
Production Summary

Material	Approved Limit	2022 Reporting Period (Actual)	2023 Reporting Period (Actual)	2024 Reporting Period (Forecast)
Overburden (Mbcm)	N/A	28.80	39.92	36.92
ROM Coal (Mt)	10.5 Mt per calendar year[1]	9.99	10.5	10.5
Coarse Reject (Mt)	N/A	2.30	2.09	1.96
Fine Rejects (Mt)	N/A	1.36	1.03	1.09
Saleable Product (Mt)	N/A	6.68	7.62	7.43

Note:

Mbcm = million bank cubic metres and N/A = not applicable.

[1] Condition 6, Schedule 2 of Development Consent DA 92/97 relevantly states:

The Applicant must not extract more than 10.5 million tonnes of ROM coal from the site in a calendar year.

3.2 OTHER OPERATIONS

Key operational conditions outlined in Schedule 2 of Development Consent DA 92/97 and their corresponding compliance status during the reporting period are outlined in Table 6.

3.3 ACTIVITIES FORECAST FOR THE NEXT REPORTING PERIOD

The following construction activities are forecast to be undertaken during the 2024 reporting period:

- ongoing installation of visual bunding and vegetation screening as required, to provide screening of the MPO from sensitive viewpoints;
- commencement of the FEA Stage 3 Lift Project to increase the capacity for fines deposition;
- installation of larger tailings delivery lines to FEA;
- continuation of CHPP upgrades and raw coal throughput, construction of Fine Coal Annex for each module and increase in Product Stacking rate;
- completion of the new High Wall Dam (HWD2) including associated 22 kilovolt (kV) electrical works due to the open cut expansion to the west;
- decommissioning and removal of the current High Wall Dam (HWD1);
- continuation of the civil and drainage upgrades at the CHPP area including works at the CHPP SD;
- geotechnical investigations for infrastructure required for the Mount Pleasant Optimisation Project; and
- progressive rehabilitation of temporary construction areas and mining areas.

The following mining-related activities are forecast to be undertaken during the 2024 reporting period:

- continuation of steady-state coal extraction within Pits South, Central and North;
- ongoing minor modifications to the CHPP; and
- ongoing progressive rehabilitation of the Eastern Out of Pit Overburden Emplacement Area (including ‘natural landform’ profiling of areas in accordance with geomorphic design principles).

Further information regarding proposed construction and mining activities in 2024 is provided in the Forward Program.

Table 6
Key Operational Conditions Met

Operational Condition from Development Consent DA 92/97		Condition Met?	Comment
Limits on Consent (Condition 5, Schedule 2)	5. *The Applicant may carry out mining operations on the site until 22 December 2026.* *Note: Under this consent, the Applicant is required to rehabilitate the site and carry out additional undertakings to the satisfaction of both the Secretary and DRG. Consequently, this consent will continue to apply in all other respects - other than the right to conduct mining operations - until the rehabilitation of the site and these additional undertakings have been carried out satisfactorily.*	Yes	-
Coal Extraction (Condition 6, Schedule 2)	6. *The Applicant must not extract more than 10.5 million tonnes of ROM coal from the site in a calendar year.*	Yes	ROM coal extraction did not exceed 10.5 Mt during 2023.
Coal Transport (Condition 7, Schedule 2)	7. *Product coal may only be transported from the site by rail.*	Yes	Product coal was transported from the site by rail only.
Train Movement (Condition 8, Schedule 2)	8. *The Applicant must ensure that train movements at the site (i.e. arrival or dispatch) do not exceed:* *(a) a maximum of 18 per day; or* *(b) 6 per day, averaged over each calendar year.* *Note: In this condition, "day" means any 24-hour period.*	Yes	The maximum number of train movements at the site was 7 in one day. The average number of train movements per day, averaged over the calendar year, was approximately 3 per day (Appendix C).
Structural Adequacy (Condition 9, Schedule 2)	9. *All new buildings and structures, and any alterations or additions to existing buildings and structures, that are part of the development, must be constructed in accordance with:* *(a) the relevant requirements of the BCA; and* *(b) any additional requirements of SA NSW where the building or structure is located on land within a declared Mine Subsidence District.* *Notes:* • *Under Part 6 of the EP&A Act, the Applicant is required to obtain construction and occupation certificates for the proposed building works;* • *Part 8 of the EP&A Regulation sets out the requirements for the certification of the development;* • *The development is located in the Muswellbrook Mine Subsidence District. Under Section 21 of the Mine Subsidence Compensation Act 2017, the Applicant is required to obtain the Chief Executive of SA NSW's approval before carrying out certain development in a Mine Subsidence District.*	Yes	All buildings constructed during the reporting period were constructed in accordance with the Building Code of Australia (BCA) and the Subsidence Advisory (SA) NSW.

Table 6 (Continued)
Key Operational Conditions Met

Operational Condition from Development Consent DA 92/97		Condition Met?	Comment
Demolition (Condition 10, Schedule 2)	*10. The Applicant must ensure that all demolition work on site is carried out in accordance with AS 2601-2001: The Demolition of Structures, or its latest version.*	Yes	Demolition work was carried out in accordance with Australian Standard *AS 2601-2001: The Demolition of Structures.*
Protection of Public Infrastructure (Condition 11, Schedule 2)	*11. Unless the Applicant and the applicable authority agree otherwise, the Applicant must:* *(a) repair, or pay the full costs associated with repairing, any public infrastructure that is damaged by the development; and* *(b) relocate, or pay the full costs associated with relocating, any public infrastructure that needs to be relocated as a result of the development,* *Note: This condition does not include matters that are expressly provided for in the conditions of this consent, such as the maintenance of public roads.*	Yes	During 2023, affected properties were vacated, and their electricity was disconnected. This included removal of associated power poles and wires service. MACH Energy incurred the full costs of these removals.
Operation of Plant and Equipment (Condition 12, Schedule 2)	*12. The Applicant must ensure that all plant and equipment used on site, or to transport coal from the site, is:* *(a) maintained in a proper and efficient condition; and* *(b) operated in a proper and efficient manner.*	Yes	All plant and equipment in use at the MPO is maintained in suitable condition.

4 ACTIONS REQUIRED FROM PREVIOUS ANNUAL REVIEW

A reconciliation of the actions required by the DPE (now DPHI), the previous Annual Review and actions taken in response by MACH Energy during the reporting period are outlined in Table 7.

Table 7
Actions Required by the DPE (now DPHI) and 2022 Annual Review

Action	Requested by	Action Taken by Operator	Section Reference
Report on the status of long-term security arrangement for biodiversity offsets required by the development consent for the mine. Please include information on the type(s) of long term security arrangements that have been implemented and/or to be implemented for the mine.	DPE (now DPHI)	The status of long-term security arrangements for biodiversity offsets has been included in the section within the Annual Review.	Section 5.5.2
Report on greenhouse gas emissions for the reporting period and include a comparison of actual greenhouse gas emissions against the predictions in the environmental assessment(s) for the mine. Please ensure that the method used to calculate the environmental assessment prediction(s) and annual emissions are calculated the same.	DPE (now DPHI)	The comparison of actual greenhouse gas emissions during the reporting period against the estimated greenhouse gas emissions from MOD 3 EA.	Section 5.4.3
Report all reasonable and feasible steps undertaken during the reporting period to improve energy efficiency and reduce greenhouse gas emissions generated by the mine.	DPE (now DPHI)	All reasonable and feasible steps undertaken to reduce greenhouse gas emissions have been included in the section within the Annual Review.	Section 5.4.3
Installation of new bore holes to replace WRA3U&L.	2022 Annual Review	Replacement bore holes will be installed in 2024 to replace bores WRA3U&L	Section 6.2.3
Approval of EPBC Approval 2011/5795 Variation.	2022 Annual Review	EPBC Approval 2011/5795 was varied on 24 January 2023.	Section 2
Approval of EPL 20850 Variation and revision of monitoring locations in the WMP and BMP.	2022 Annual Review	EPL 20850 was varied on 28 February 2023 to incorporate the new discharge location and to remove blast monitoring point 12. Updated versions of the WMP and BMP will be submitted to DPHI for approval in 2024.	Section 2
Continued consultation regarding the potential Aboriginal Heritage Conservation Areas.	2022 Annual Review	Consultation regarding the potential Aboriginal Heritage Conservation Areas was continued.	Section 5.6
Continued collaboration with the University of Newcastle on various rehabilitation related research projects.	2022 Annual Review	Collaboration with the University of Newcastle is ongoing and discussed within the Annual Review.	Section 5.9 & Section 7.3
IEA to occur in accordance with Condition 9, Schedule 5 of Development Consent DA 92/97.	2022 Annual Review	The IEA took place in March 2023. The findings of the audit are discussed within the Annual Review.	Section 9

5 ENVIRONMENTAL PERFORMANCE

5.1 METEOROLOGY

Meteorological monitoring was undertaken during the reporting period at the mine meteorological stations along Kayuga Road (M-WS4) and Wybong Road (M-WM2) (Figure 3). Data collected included 10 minute, hourly and 24 hourly wind speed, wind direction, sigma, temperature, humidity, solar radiation and rainfall measurements. Data collected during the reporting period has been summarised for rainfall, temperature and wind in the following subsections. M-WS4 has been utilised for this summary as the original meteorological station at the MPO.

5.1.1 Rainfall

During the reporting period, 432.4 millimetres (mm) of rain was recorded over 71 wet days at the MPO weather station M-WS4. The highest daily rainfall was 38.4 mm on 19 December 2023.

There was a decrease in the cumulative rainfall and the number of wet days for the reporting period in comparison to the 2022 reporting period (918.4 mm and 79 days, respectively). Cumulative rainfall at the MPO has generally been consistent with 2019 levels since the commencement of the MPO, except for 2016, 2020, 2021 and 2022 where significantly more rainfall was received at the site.

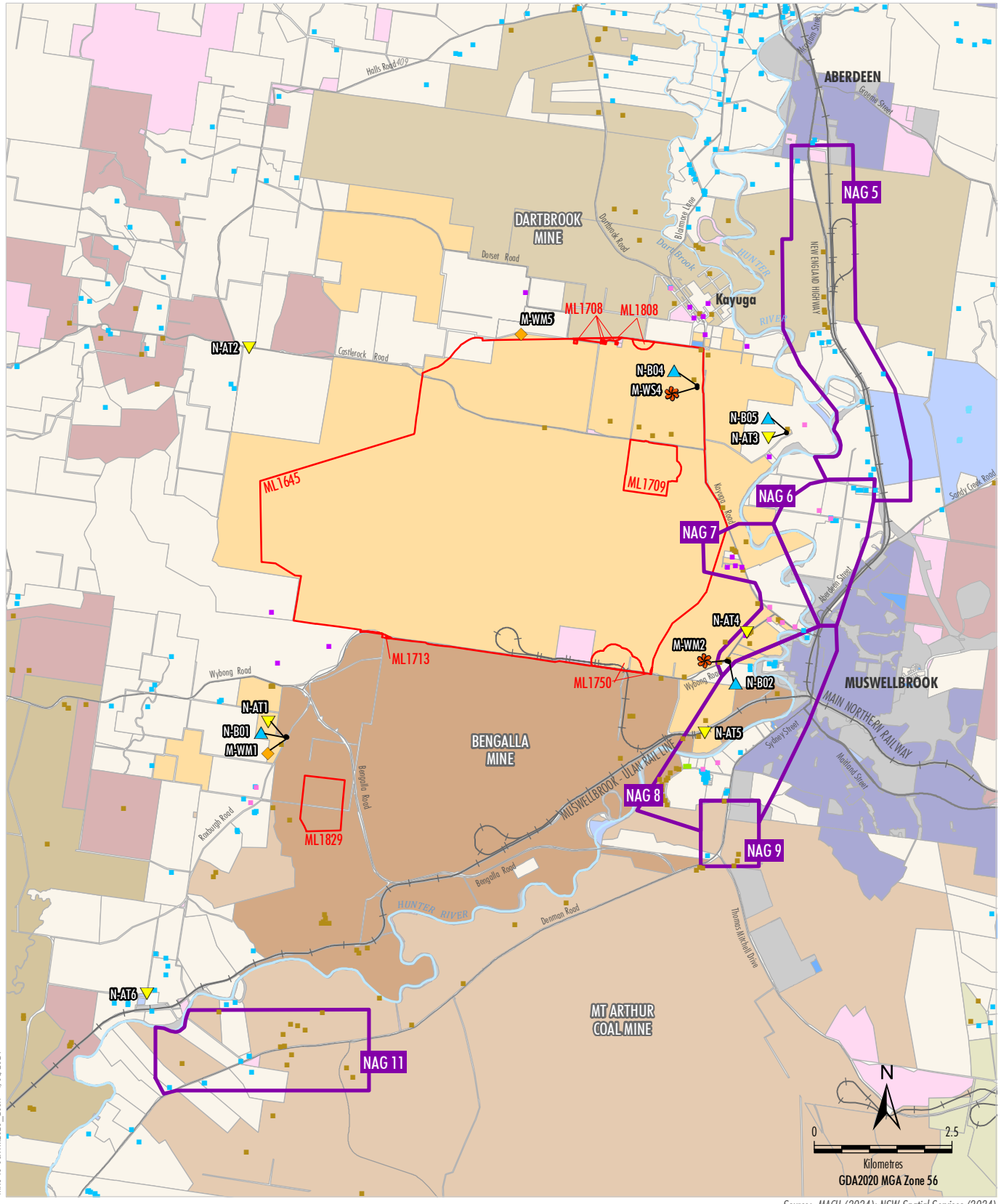
The monthly rainfall distribution, number of wet days and cumulative rainfall is summarised in Table 8. Monthly rainfall records and cumulative rainfall over the reporting period are shown in Chart 1.

5.1.2 Temperature

During the reporting period, the maximum temperature recorded at the MPO weather station M-WS4 was 41.6 degrees Celsius (ºC) (19 March), and the minimum temperature recorded was -1.5 ºC (21 June). Monthly minimum and maximum temperatures derived from hourly temperature measurements are presented in Table 9. Monthly mean temperatures are shown in Chart 2. Monthly temperatures at the MPO during the reporting period are generally consistent with those measured since 2020.

5.1.3 Wind Speed and Direction

During the reporting period, the majority of prevailing winds were from the south-east and west-northwest. Only a very minor percentage of winds were generated from the south-west and almost none were generated from the north-east. This is consistent with trends observed in previous Annual Reviews (Coal & Allied, 2014, 2015 and 2016; MACH Energy, 2017b; MACH Energy, 2018, 2019, 2020, 2021, 2022 and 2023). An annual wind rose is presented in Chart 3.



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LEGEND

- Mining Lease Boundary (Mount Pleasant Operation)
- Mount Pleasant-controlled
- Bengalla-controlled
- Dartbrook-controlled
- Mangoola-controlled
- Muswellbrook Coal-controlled
- Mt Arthur-controlled
- Other Mining/Resource-controlled
- Crown
- The State of NSW
- Muswellbrook Shire Council
- Upper Hunter Shire Council
- Privately-owned Land
- Muswellbrook and Upper Hunter LEP Zones B2, B5, R1, R5
- Muswellbrook and Upper Hunter LEP Zones IN1, SP2, RE1, RE2, W1
- Railway

- DA 92/97 Noise Assessment Group (NAG)

Category of Rural Residence under DA92/97

- Mine-owned
- Privately-owned - Acquisition on Request
- Privately-owned - Mitigation on Request
- Privately-owned - Mitigation/Acquisition on Request*
- Other Privately-owned

Monitoring Sites

- Attended Noise
- Real-time Noise Monitoring Site
- Weather Mast
- Weather Station

Source: MACH (2024); NSW Spatial Services (2024)

* Mitigation on Request - rail noise/Aquisition on Request - air quality. MACH is only required to acquire and/or install air quality mitigation measures at this property if not reasonably achievable under a separate approval for the Bengalla Mine.

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Noise and Meterological Monitoring Sites

Figure 3

Table 8
Rainfall Summary 2023

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Monthly Rainfall (mm)	57.2	49.8	4	36	0.8	8.8	11.4	48	10.2	36.2	71.6	98.4
Cumulative Rainfall (mm)	57.2	107	111	147	147.8	156.6	168	216	226.2	262.4	334	432.4
Wet Days*	9	5	2	9	1	8	4	9	3	3	10	8

Note:

* Wet days are classified as days receiving rainfall greater than 2 mm.

Table 9
Temperature Summary 2023

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Minimum Temperature (°C)	13.6	12.7	14.5	8.0	-0.6	-1.5	1.5	3.7	2.2	6.3	9.5	12.1
Maximum Temperature (°C)	38.6	38.9	41.6	27.0	25.2	25.8	26.2	25.3	33.5	35.3	35.1	38.8

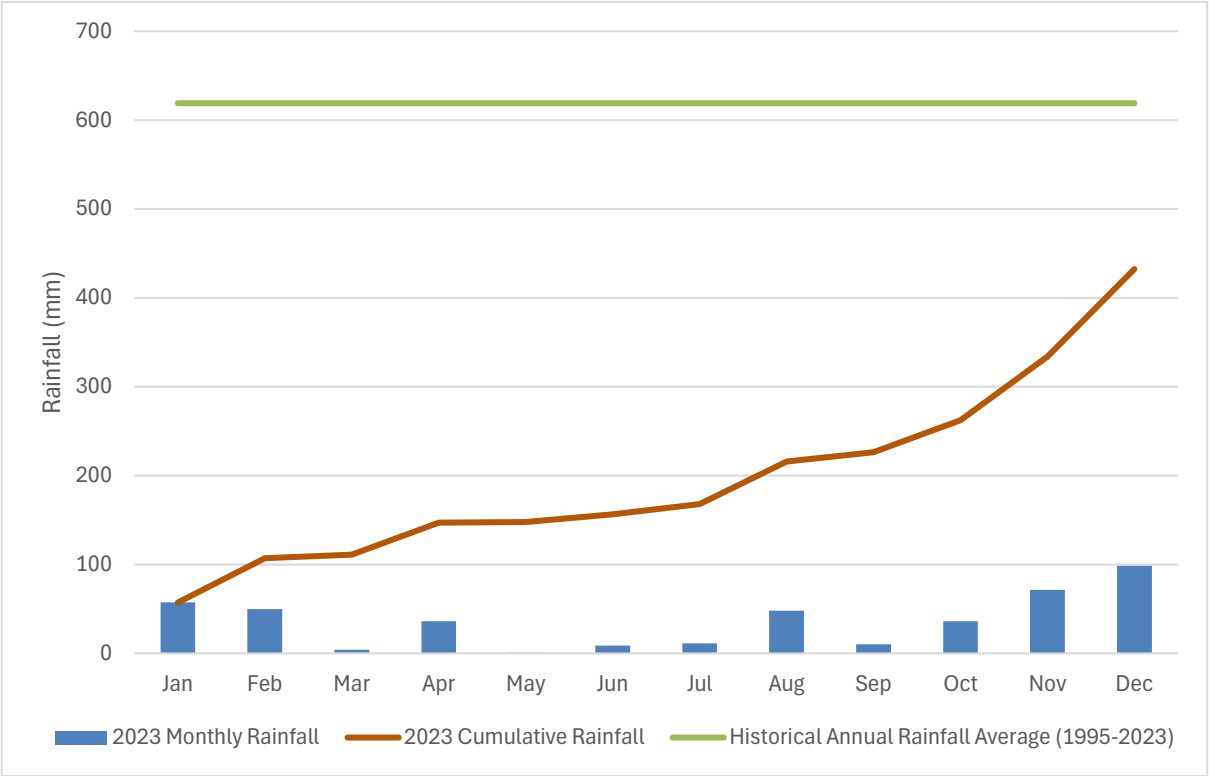


Chart 1: MPO Monthly and Cumulative Rainfall 2023

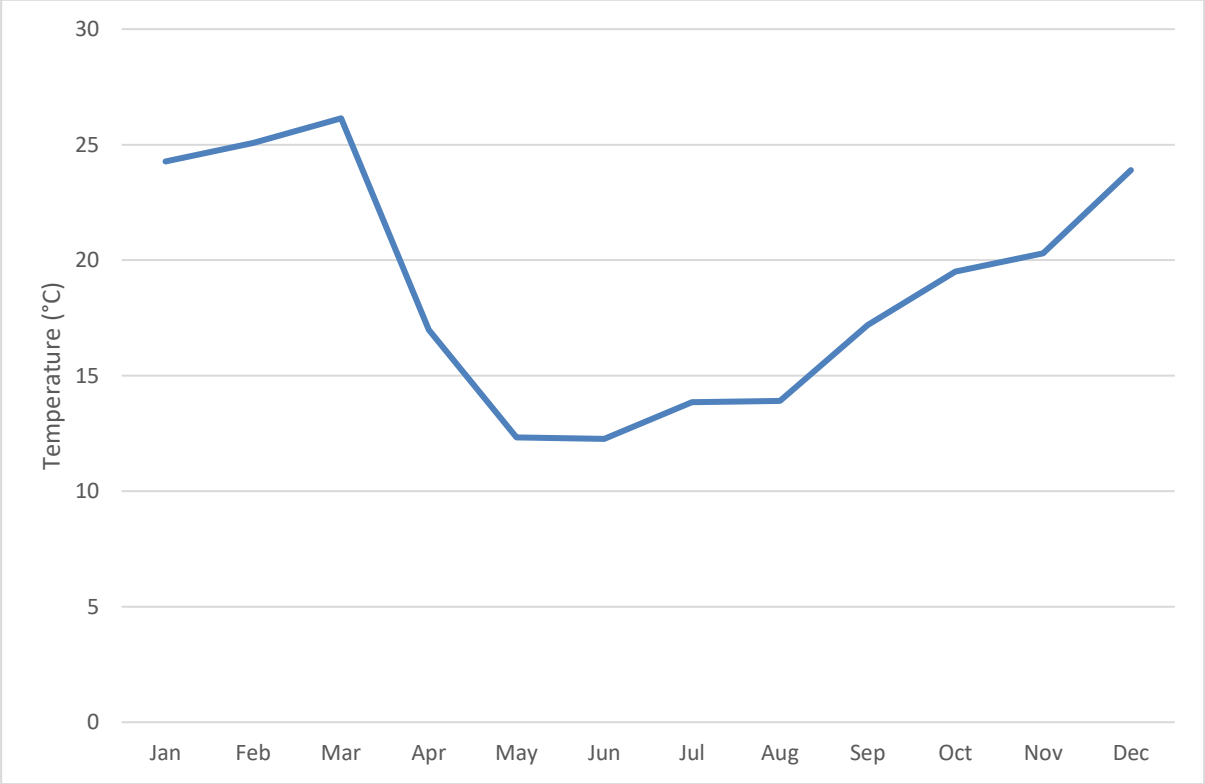


Chart 2: MPO Monthly Mean Temperature 2023

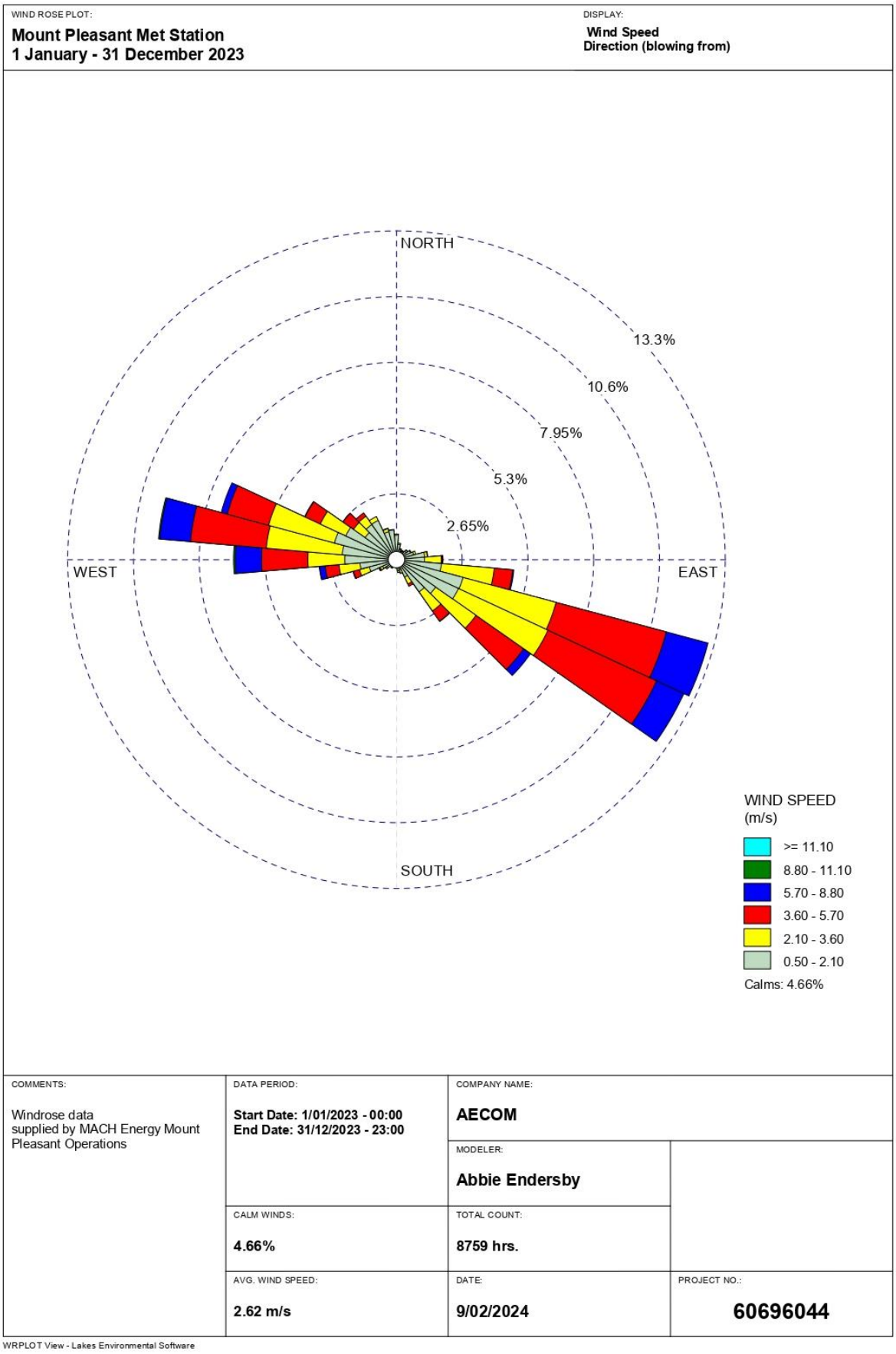


Chart 3: MPO Annual Wind Rose 2023

5.2 NOISE

Key noise criteria for the MPO are defined in Tables 3 and 5 of Development Consent DA 92/97 (Conditions 3 and 5, Schedule 3) and EPL 20850 (Condition P1.3). Additional noise conditions relating to land acquisition, noise mitigation upon request, rail noise, noise monitoring and preparation of the NMP are also detailed in these approval documents.

5.2.1 Approval Criteria and Management Plan Requirements

Development Consent DA 92/97 and EPL 20850

The Noise Impact Assessment Criteria defined in Table 3 of Development Consent DA 92/97 (Condition 3, Schedule 3) is provided in Table 10.

Table 10
Noise Impact Assessment Criteria (dBA)

Location	Day	Evening	Night	
	$L_{Aeq(15min)}$	$L_{Aeq(15min)}$	$L_{Aeq(15min)}$	$L_{A1(1min)}$
68, 74	43	42	42	45
86a	42	42	42	45
35, 35b, 77	42	41	41	45
79, 80a, 140c, 526	41	41	41	45
289	41	40	40	45
84a, 139, 154, 203, 257, 258a	40	40	40	45
83	40	39	39	45
86b, 140a, 202, 259	39	39	39	45
198, 202b	38	38	38	45
260, 261	37	37	37	45
169, 272	36	36	36	45
NAG 5 - All privately-owned land	41	40	39	45
NAG 6 - All privately-owned land	37	37	37	45
NAG 7 - All privately-owned land	40	37	37	45
NAG 8 - All privately-owned land	41	39	39	45
NAG 9 - All privately-owned land	39	38	37	45
NAG 11 - All privately-owned land	37	36	35	45
All other privately-owned land	35	35	35	45

Source: Development Consent DA 92/97 and EPL 20850.

Notes: dBA = A-weighted decibels.

L_{Aeq} = A-weighted equivalent continuous noise level.

$L_{Aeq\ (15\ min)}$ = equivalent continuous noise level over a 15 minute period.

$L_{Aeq\ (1\ min)}$ = equivalent continuous noise level over a 1 minute period.

The cumulative noise criteria defined in Table 5 of Development Consent DA 92/97 (Condition 5, Schedule 3) are provided in Table 11.

Table 11
Cumulative Noise Criteria (dBA)

Location	Day	Evening	Night
	$L_{Aeq(period)}$	$L_{Aeq(period)}$	$L_{Aeq(period)}$
NAG 8, 9	55	45	40
All other privately-owned land	50	45	40

Note: $L_{Aeq(period)}$ = equivalent continuous noise level over a measured period.

The construction noise criteria defined in Table 10A of Development Consent DA 92/97 (Condition 44H, Schedule 3) are provided in Table 12.

Table 12
Construction Noise Criteria (dBA)

Location	Standard Construction Hours
	$L_{Aeq(15min)}$
67, 215, 216, 218,219	47
206, 217, 220, 221, 225, 532, 533	48
222, 223, 531	49
224, 530	50
19, 20, 21, 207, 289	51
527, 528	56
529	54
68	57
23	69
All other privately-owned land	5 dBA above the daytime operational $LA_{eq(15min)}$ noise criteria in Table 10

Source: Development Consent DA 92/97

Noise criteria and other noise related conditions stipulated in EPL 20850 are generally consistent with those prescribed in Development Consent DA 92/97.

Noise Management Plan

A NMP was prepared by MACH Energy in accordance with Condition 9, Schedule 3 of the Development Consent DA 92/97 and approved on 21 December 2021.

The NMP outlines the reasonable and feasible mitigation and management measures adopted at the MPO and describes the following construction and operational noise controls to be implemented to limit construction and operational noise:

- Plant will operate in less exposed areas during the more sensitive evening/night period.
- Vegetation clearance will be limited to daytime hours.
- ‘Quackers’ will be used in place of reverse beepers.
- Noise suppression will be provided on major operational mobile plant.
- Temporary cessation of work within an area, or from a particularly noisy piece of equipment, will be considered when adverse weather conditions are present.
- All plant and machinery used on-site will be maintained regularly to minimise noise generation.

- All plant and machinery used onsite will be operated in a proper and efficient manner (e.g. at correct speed) to minimise noise generation.
- Regular communication and updates will be provided to local residents on the status and nature of site construction and operational activities.
- In the event of a complaint from a local resident, MACH Energy will implement the complaints response process.
- Regular Sound Power Level Testing of the new mobile plant fleet. A summary of the new plant is provided in Section 5.4.3 (Table 17).

The following performance indicators are specified in the NMP to track the performance of the MPO:

- Effective implementation of the Real-time Response Protocol for noise.
- Results of operator attended noise monitoring, conducted and assessed in accordance with the *NSW Industrial Noise Policy* (EPA, 2000) and *Noise Policy for Industry* (NPfI) as relevant, are compliant with the noise criteria in Table 11.
- Complaints are minimised and appropriate management actions are implemented following receipt of a complaint.

5.2.2 Performance During the Reporting Period

Operator Attended Noise Monitoring

Operator attended monitoring was undertaken monthly by EMM Consulting Pty Ltd (January and February) and Spectrum Acoustics (March – December) during the 2023 reporting period, in accordance with the NMP, Development Consent DA 92/97 and EPL 20850. Operator attended monitoring was undertaken at six locations selected to represent privately-owned receivers surrounding the MPO, as shown on Figure 3 and in Table 13.

During the reporting period, MACH Energy complied with all relevant development consent conditions relating to noise, except for at N-AT1 during the night period of 29/30 August 2023. Investigation relating to this cumulative noise criteria exceedance is discussed in Section 5.2.3. A summary of the noise monitoring results recorded during the reporting period are presented in Appendix A.

Monitoring was undertaken in accordance with EPL 20850 and Australian Standard *AS 1055 Acoustics, Description and Measurement of Environmental Noise*.

All applicable measured noise levels attributable to the MPO were generally compliant with the relevant noise criteria from Development Consent DA 92/97 and EPL 20850 during the reporting period. There were no exceedances of the construction noise criteria from Development Consent DA 92/97 (Table 12) during the reporting period.

Table 13
Noise Monitoring Locations

Monitoring Location				Justification
Site ID	Description	Easting	Northing	
N-AT1	South-west of the MPO	291465	6427182	Representative of dwellings to the south-west
N-AT2	North-west of the MPO	290608	6434490	Representative of dwellings to the north-west
N-AT3	East of the MPO	300725	6432946	Representative of dwellings to the north-east and east (e.g. NAG 5)
N-AT4	South-east of the MPO	299947	6429264	Representative of dwellings to the east (i.e. NAGs 6 and 7)
N-AT5	South-east of the MPO	299161	6427503	Representative of dwellings to the south-east (i.e. NAGs 8 and 9)
N-AT6	South-west of the MPO	289092	6423155	Representative of dwellings to the south southwest (e.g. NAG 11)

Results of the operator attended noise monitoring for each monitoring round during the reporting period are available in the monthly reporting on the MACH Energy website (https://machenergyaustralia.com.au/mount-pleasant/documentation/).

Real-time Noise Monitoring

Real-time monitoring systems were installed at three locations (N-B01, N-B02 and N-B04) in November 2016 prior to construction work commencing on-site and at one location (N-B05) in June 2020 (Figure 3). Real-time noise monitoring was undertaken at these locations 24 hours per day, seven days per week for the duration of the reporting period. The real-time noise monitoring was not used to assess compliance with noise criteria, but instead was used for ongoing performance assessment and to inform implementation of real-time response management actions.

During the reporting period, a number of real-time noise monitoring triggers occurred, which prompted the implementation of real-time response management actions where these were related to mining noise from the MPO, consistent with the Real-time Response Protocol outlined in the NMP.

Complaints

A total of 16 noise-related complaints were received by MACH Energy during the reporting period (see Complaints Summary 2023: https://machenergyaustralia.com.au/mount-pleasant/documentation/). The number of noise related complaints received during the reporting period was 57% less than in the previous reporting period. In response to the complaints, the noise monitoring records were reviewed, and the External Relations Manager organised the cessation of noise-intensive works where necessary. In all cases, the External Relations Manager made further contact with the complainant to provide an update to the sites noise management. All operator attended noise monitoring results for the reporting period were compliant.

Out of Hours Work Monthly Reporting

No out of hours work was reported during the reporting period.

5.2.3 Trends and Key Management Implications

The monitoring results are generally consistent with the results recorded during the 2022 reporting period (MACH Energy, 2023). In particular, noise levels were observed to have decreased at N-AT3 and N-AT4 as mining progressed north (i.e. away from the monitors) and with the completion of MOD 4 construction works.

A noise exceedance of the cumulative noise criteria at N-AT1 occurred on 29/30 August 2023, where attended noise monitoring identified an exceedance (measurement at 00:53) of the cumulative noise from mining operations ($L_{Aeq,period}$) criterion at monitoring location N-AT1 (measured noise of 41 dBA) (Appendix A). However, it was determined that the MPO contribution to total mine noise was inaudible and below the applicable intrusive and sleep disturbance noise criterion and therefore that all reasonable and feasible measures had been implemented.

Noise-related complaints decreased in 2023 compared to 2022 (16 in 2023 compared to 28 in 2022) this is likely due to the completion of MOD 4 construction works. No MOD 4 construction works specific complaints were received during the reporting period. MACH Energy continued the development of the Eastern Out of Pit Overburden Emplacement Area during the reporting period, which provides shielding of operations to Muswellbrook and nearby residences.

Comparison to MOD 3 Predictions

MOD 3 predictions for noise were modelled for three scenarios during the mine life (i.e. Year 2018, Year 2021 and Year 2025). The attended monitoring noise levels were below the predicted levels under applicable meteorological conditions.

5.2.4 Implemented or Proposed Management Actions

All noise management measures outlined in the NMP and summarised in Section 5.2.1 were undertaken during the reporting period. In particular, MACH Energy continued to implement real-time noise monitoring at the four real-time noise monitoring locations with the Real-time Response Protocol used where appropriate. Two trailer mounted, solar powered BarnOwl directional noise monitors were also used to verify regional noise levels.

5.3 BLASTING

Airblast overpressure and ground vibration assessment criteria for the MPO are defined in Table 2 of Development Consent DA 92/97 (Condition 10, Schedule 3) and EPL 20850 (Conditions L4.2, L4.3, L4.4 and L4.5). Additional conditions relating to blasting hours and frequency, property inspections and investigations, monitoring locations, measurement methodology, operating conditions, and preparation of the BMP, are also detailed in these approval documents.

MACH Energy prepared a revised BMP which was approved by DPE (now DPHI) on 14 April 2020. The BMP was revised to reflect the relocation of blast monitoring site B-VO2 to accurately reflect the near sensitive receivers. Site B-VO2 was relocated approximately 1350 m to the east.

B-VO2 (Monitoring Point 12) was removed from EPL 20850 during the reporting period on 28 February 2023. Based on EPA recommendation, it was determined that the value of B-VO2 for monitoring of environmental health and amenity may be limited due to its location along the premises boundary and proximity to the neighbouring mine. The monitor remains in place to provide relevant information to MPO.

5.3.1 Approval Criteria and Management Plan Requirements

Development Consent DA 92/97 and EPL 20850

A summary of the assessment criteria for blasting is included in Table 14.

Table 14
Assessment Criteria for Blasting

Location	Airblast Overpressure (dB[Lin Peak])	Ground Vibration (mm/s)	Allowable Exceedance
Residence on privately-owned land	120	10	0%
	115	5	5% of the total number of blasts over a period of 12 months
Historic heritage sites	-	10	0%
All public infrastructure	-	50	0%

Source: Table 7 of Development Consent DA 92/97 (Condition 10, Schedule 3).
Notes: mm/s = millimetres per second and dB = decibels.

Conditions L5.2, L5.3, L5.4 and L5.5 of EPL 20850 contain the same blasting assessment criteria for residences on privately-owned land as specified in Table 15. However, EPL 20850 requires that monitoring does not exceed these criteria at monitoring site B-VOC rather than at all residences on privately-owned land (Figure 4).

Airblast overpressure, ground vibration and fume monitoring were conducted for every blast event at the blast monitoring sites shown on Figure 4.

5.3.2 Performance During the Reporting Period

A total of 72 blasts occurred during the reporting period and are detailed in Appendix B. No elevated blast overpressure readings over 120 dB were recorded during 2023 and only one event recorded over 115 dB, which was less than 5% of the total number of blasts over the period.

There were five blasting related community complaints in 2023. No blast fume events occurred during the reporting period.

Comparison to MOD 3 Predictions

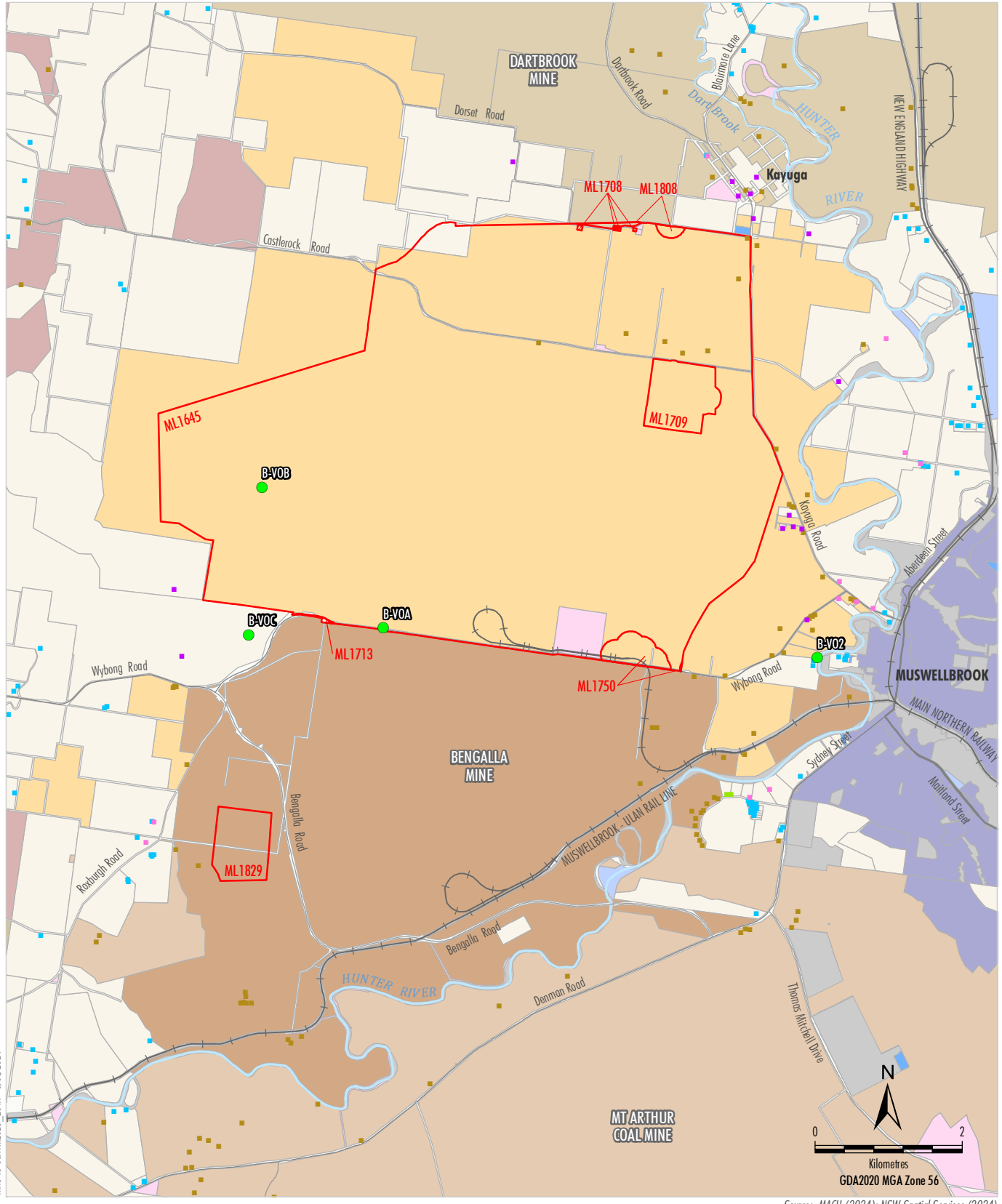
A comparison of MPO's blast performance against the MOD 3 predictions is summarised in Table 15. Monitors B-VOC and B-VO2 are located in close proximity to Receiver 43 and Receiver 67 and comparative discussion is provided below. For other receivers, direct comparison with monitoring results is obscured by the distance between blast locations, receivers and blast monitors.

Table 15
Comparison of MOD 3 Predictions and 2023 Raw Monitoring Data

Closest Receiver ID	MOD 3 Predictions		Closest Blast Monitoring Site to Land Holder	Maximum Recorded Level in 2023	
	Airblast Overpressure (dBL [in Peak])	Ground Vibration (mm/s)		Airblast Overpressure (dBL [in Peak])	Ground Vibration (mm/s)
43	111.2 to 112.8	0.6 to 1.6	B-VOC	117.1	3.07
272	111.1 to 111.3	0.5 to 0.7	B-VOC	117.1	3.07
153	111.3 to 113	0.7 to 1.7	B-VOA	112.0	1.12
147	111.3 to 114.7	0.7 to 2.9	B-VO2	112.4	1.64
136	111.6 to 117.1	0.8 to 5.1	B-VO2	112.4	1.64
121	112.4 to 117.9	1.3 to 6	B-VO2	112.4	1.64
112	112.5 to 117.1	1.4 to 5	B-VO2	112.4	1.64
67	112.5 to 113.8	1.4 to 2.2	B-VO2	112.4	1.64
23	111.7 to 113.6	0.9 to 2.1	B-VO2	112.4	1.64

Source: Table 8-1 of MPO MOD 3 Noise & Blasting Assessment.

Blast predictions are made using a site-specific empirical prediction model to best predict airblast and ground vibration levels. At Receiver 43 and Receiver 272, maximum recorded results are higher than the range of predictions made in MOD 3. As mentioned above, this may be due to the distances between blast locations, receivers and blast monitors and also a difference in site conditions, compared to the empirical data used to establish the predictions. At all other receivers, Table 15 shows that blast monitoring data at the most representative monitoring site are within the ranges predicted. Blast monitoring data will continue to be collected and a site-specific empirical prediction model will continue to be refined to assist blast planning and performance review.



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LEGEND

- Mining Lease Boundary (Mount Pleasant Operation)
- Mount Pleasant-controlled
- Bengalla-controlled
- Dartbrook-controlled
- Mangoola-controlled
- Muswellbrook Coal-controlled
- Mt Arthur-controlled
- Crown
- The State of NSW
- Muswellbrook Shire Council
- Privately-owned Land
- Muswellbrook and Upper Hunter LEP Zones B2, B5, R1, R5
- Muswellbrook and Upper Hunter LEP Zones IN1, SP2, RE1, RE2, W1
- Railway

Category of Rural Residence under DA92/97

- Mine-owned
- Privately-owned - Acquisition on Request
- Privately-owned - Mitigation on Request
- Privately-owned - Mitigation/Acquisition on Request*
- Other Privately-owned

Monitoring Sites

- Blasting (Vibration/Overpressure)

Source: MACH (2024); NSW Spatial Services (2024)

* Mitigation on Request - rail noise/Aquisition on Request - air quality. MACH is only required to acquire and/or install air quality mitigation measures at this property if not reasonably achievable under a separate approval for the Bengalla Mine.

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Blast Monitoring Sites

Figure 4

Complaints

A total of five blasting-related complaints were received by MACH Energy during 2023 (see Complaints Summary 2023: https://machenergyaustralia.com.au/mount-pleasant/documentation/). The number of blasting related complaints received during the reporting period increased by three compared the previous reporting period. In response to the complaints, blasting activities were reviewed for compliance. All blasting results for the reporting period were compliant with relevant blast overpressure and vibration criteria (Section 5.3.1). Following the compliance review, the External Relations Manager made further contact with the complainants to provide an update of the blasting activities.

5.3.3 Trends and Key Management Implications

There were 72 blasts recorded during 2023, compared with 93 in 2022.

Blasting-related complaints increased slightly in 2023 compared to 2022. However, airblast overpressure and ground vibration levels recorded during 2023 generally decreased compared with 2022 as blasting occurred further from Muswellbrook and nearby receivers as mining activities progressed west during the reporting period. All overpressure and vibration measurements during the reporting period complied with the relevant criteria within Development Consent DA 92/97 and EPL 20850.

5.3.4 Implemented or Proposed Management Actions

Notifications of upcoming blasts were provided on MACH Energy's and MSC's websites. In addition, MACH Energy notified private landholders or residents who expressed an interest in being informed of the MPO blasting schedule and were, therefore, on the MPO pre-blast notification register.

Any blasts within 500 m of Wybong, Kayuga, Castlerock and Dorset Roads triggered a road closure and implementation of relevant mitigation measures. In 2023, 20 road closures occurred on Wybong Road due to blasting activities within Pit A. No other roads were closed due to blasting activities.

All appropriate steps to reduce dust generation from blasting and ensure best practice blasting techniques were undertaken in accordance with the MPO BMP. MACH Energy will continue to implement these measures.

5.4 AIR QUALITY

Air quality criteria for the MPO are presented in Tables 8, 9 and 10 of Development Consent DA 92/97 (Condition 20, Schedule 3) and EPL 20850 (Condition O3.4). Additional conditions relating to operating conditions, greenhouse gas emissions, odour, acquisition criteria and preparation of the AQGGMP are also provided in Development Consent DA 92/97 and EPL 20850.

5.4.1 Approval Criteria and Management Plan Requirements

Development Consent DA 92/97

In accordance with Condition 20, Schedule 3 of Development Consent DA 92/97, MACH Energy must ensure that all reasonable and feasible avoidance mitigation measures are employed so that particulate matter emissions generated by the MPO do not exceed the criteria summarised in Table 16 at any residence on privately-owned land (excluding land subject to acquisition upon request for potential air quality impacts).

Table 16
Approval Criteria for Particulate Matter

	Pollutant	Averaging Period	[d]Criterion
Long-term Impact Assessment Criteria	TSP	Annual	[a]90 µg/m^3
	PM_{10}	Annual	[a]25 µg/m^3
	$PM_{2.5}$	Annual	[a]8 µg/m^3
	Deposited Dust[c,d]	Annual	[b]2 g/m^2/month
			[a]4 g/m^2/month
Short-term Impact Assessment Criteria	PM_{10}	24 hour	[b]50 µg/m^3
	$PM_{2.5}$	24 hour	[b]25 µg/m^3

Source: Development Consent DA 92/97 (Condition 20, Schedule 3).

Note: TSP = Total Suspended Particulates;
PM_{10} = particulate matter less than or equal to 10 micrometres in diameter;
$PM_{2.5}$ = particulate matter less than or equal to 2.5 micrometres in diameter;
µg/m^3 = micrograms per cubic metre; and
g/m^2/month = grams per square metre per month.

[a] *Total impact (i.e. incremental increase in concentrations due to the development plus background concentrations due to all other sources).*

[b] *Incremental impact (i.e. incremental increase in concentrations due to the development on its own).*

[c] *Deposited dust is to be assessed as insoluble solids as defined by Standards Australia, AS/NZS 3580.10.1:2003: Methods for Sampling and Analysis of Ambient Air – Determination of Particulate Matter – Deposited Matter - Gravimetric Method.*

[d] *Excludes extraordinary events such as bushfires, prescribed burning, dust storms, sea fog, fire incidents or any other activity agreed by the Secretary.*

Environment Protection Licence 20850

Air quality criteria and other air quality related conditions stipulated in EPL 20850 are generally consistent with those prescribed in Development Consent DA 92/97, with the exception of Conditions O3.4 to O3.9, which state:

O3 Dust

…

O3.4 The Licensee must cease all dust generating activities during adverse conditions being the occurrence of both:

i) the adverse wind conditions set out in Condition O3.5 (b), and

ii) the adverse PM10 concentrations set out in Condition O3.5 (c).

O3.5 For the purpose of Condition O3.4 the following definitions apply:

(a) 'dust generating activities' means drilling, blasting, earthworks, construction activities, all hauling activities on unsealed haul roads, all overburden and coal extraction operations including loading and dumping activities and grader, loader, dozer and dragline operations.

(b) 'adverse wind conditions' means the 1-hour average wind direction between 250 degrees and 340 degrees (inclusive) measured at the Muswellbrook NW Upper Hunter Air Quality Monitoring Network monitor. Australian Standard AS3580.14-2014 is to be used to calculate the 1 hour average wind direction.

(c) 'adverse PM10 concentrations' means a rolling 24-hour average PM10 concentration of equal to or greater than 44 micrograms per cubic metre measured at the Muswellbrook NW Upper Hunter Air Quality Monitoring Network monitoring station.

(d) Operation of watercarts is permitted at all times.

(e) Activities within the Coal Handling and Preparation Plant and Materials Handling Area, including run-of-mine (ROM) coal, product coal handling (including dozer/loader operations) and train

loading operations as identified in blue on plan titled 'Mach Energy Materials Handling Area Dust Exclusion Zone General Arrangement Mount Pleasant Coal Drawing 90500-51-1-SV-Material Handling Area Update-r1' (EPA ref DOC23/37979-1) are not included as dust generating activities provided all automated dust suppression spray systems at the ROM hopper, conveyor transfer points and product stockpiles are in use, at least one water cart is in use on the ROM stockpile and an adjustable hood is lowered onto rail wagons loadings.

O3.6 Shutdown of dust generating activities required by Condition O3.4 must be completed within 1 hour of receiving data that triggers action required by Condition O3.4.

O3.7 The licensee may resume dust generating activities at the premises when:

(a) adverse wind conditions as defined in Condition O3.5(b); or

(b) adverse PM10 concentrations as defined in Condition O3.5(c) are not measured for a minimum time period of 1 hour from the time that cessation of dust generation activities is completed.

O3.8 At any time when there is no access to the meteorological data or PM10 data from the Muswellbrook NW Upper Hunter Air Quality Monitoring Network monitoring station, definitions of 'adverse wind conditions' and 'adverse PM10 concentrations' in condition O3.5 are replaced with:

- *'adverse wind conditions' means a 1-hour average wind direction between 245 and 345 degrees (inclusive) measured at EPA Monitoring Point 11, identified in condition P1.3*
- *'adverse PM10 concentrations' means a rolling 24-hour average PM10 concentration of equal to or greater than 44 micrograms per cubic metre measured at the EPA Monitoring Point 1, identified in condition P1.3*

Note: If at any time, there is no access to the Muswellbrook NW Upper Hunter Air Quality Monitoring Network monitoring station and to either 1-hour average wind direction data from monitoring point 11 or PM 10 data from monitoring point 1 the licensee must cease dust generating activities at the premises.

O3.9 For the purpose of condition O3.5 (e), dust suppression systems must be operated in a manner to ensure that there is no visible dust emissions emitted from the premises.

Air Quality and Greenhouse Gas Management Plan

MACH Energy prepared an AQGGMP which was approved on 24 May 2019. The AQGGMP was revised to reflect the approval of MOD 3 and 4 and update the real-time response triggers to align with the amended dust conditions within EPL 20850 as described above.

The AQGGMP outlines the reasonable and feasible mitigation and management measures adopted at the MPO in accordance with Condition 20, Schedule 3 of Development Consent DA 92/97. The reasonable and feasible mitigation measures include:

- specific management measures for adverse weather conditions (e.g. ceasing all dust generating activities during specific weather conditions as required by Conditions O3.4 to O3.9 of EPL 20850);
- general dust management measures (e.g. use of water carts to minimise wheel generated dust);
- the use of predictive modelling to assist in day-to-day planning;
- real-time response protocols with tiered management actions based on several alert levels;
- odour and fume management measures;
- greenhouse gas emission reduction strategies; and
- cumulative air quality management, including a protocol for communication with representatives of other mining operations.

5.4.2 Performance During the Reporting Period

Dust Deposition

During the reporting period, dust deposition levels were collected at 13 dust deposition gauges situated around the MPO boundary (Figure 5). The gauges were sited in accordance with *AS 3580.1.1:2007* and analysed for mass of total insoluble matter and ash in accordance with *AS 3580.10.1-2003*.

Annual average levels of insoluble solids (i.e. dust deposition) are presented in Chart 4. Chart 5 provides a comparison between annual average dust deposition levels at each of the monitoring sites from 2014 to 2023.

Monthly data that is highly contaminated (e.g. from bird droppings, insects or proximal construction works) has been excluded from annual average dust deposition levels. Notably, the calculated levels for gauge D7 excludes six monthly readings.

Gauge D3 could not be accessed from January to April 2023 as the surrounding access to monitor was under construction. As such, there was insufficient data for calculation of the annual average at this site.

There are no privately-owned receivers in the vicinity of gauges D8 and D14. Whilst these sites do not represent residence(s) on privately-owned land, they will continue to be monitored in accordance with the AQGGMP.

The D7 monitor recorded a level above 4 g/m2/month, however per the AQGGMP (MACH Energy, 2019), D7 is not used to assess compliance against the deposited dust criteria as the monitor is located in close proximity to the northern boundary of a neighbouring mining operation open cut pit, and there are no privately-owned receivers in the vicinity of this monitoring location.

Except for D9, the data indicate that the annual average deposited dust levels measured at the MPO monitors representative of residences on privately-owned land, were below the cumulative criterion of 4 g/m^2/month in 2023.

As determined by Todoroski Air Sciences (TAS) (TAS, 2024) based on the available weather data, the D9 monitor would have been downwind of MPO for approximately 33% of the time during the review period. The analysis from TAS was that MPO's contribution to the 2023 annual average deposited dust level at the D9 monitor would have been less than or equal to 1.0g/m^2/month (TAS, 2024). This estimation conservatively includes potential impacts from other mining activity and localised sources. Therefore it is concluded that the MPO did not contribute more than the 2g/m^2/month criteria per Schedule 3, Condition 20 of Development Consent DA 92/97 to the annual average deposited dust level recorded at D9 in 2023.

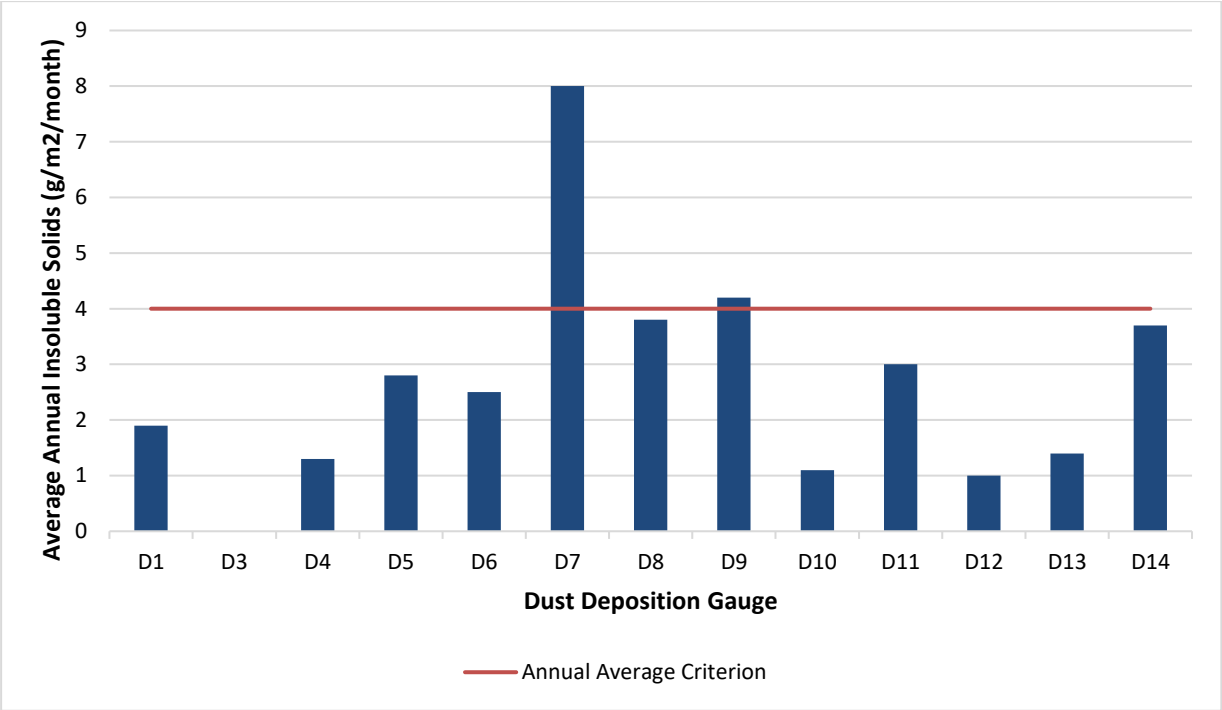


Chart 4: 2023 Annual Average Insoluble Solids

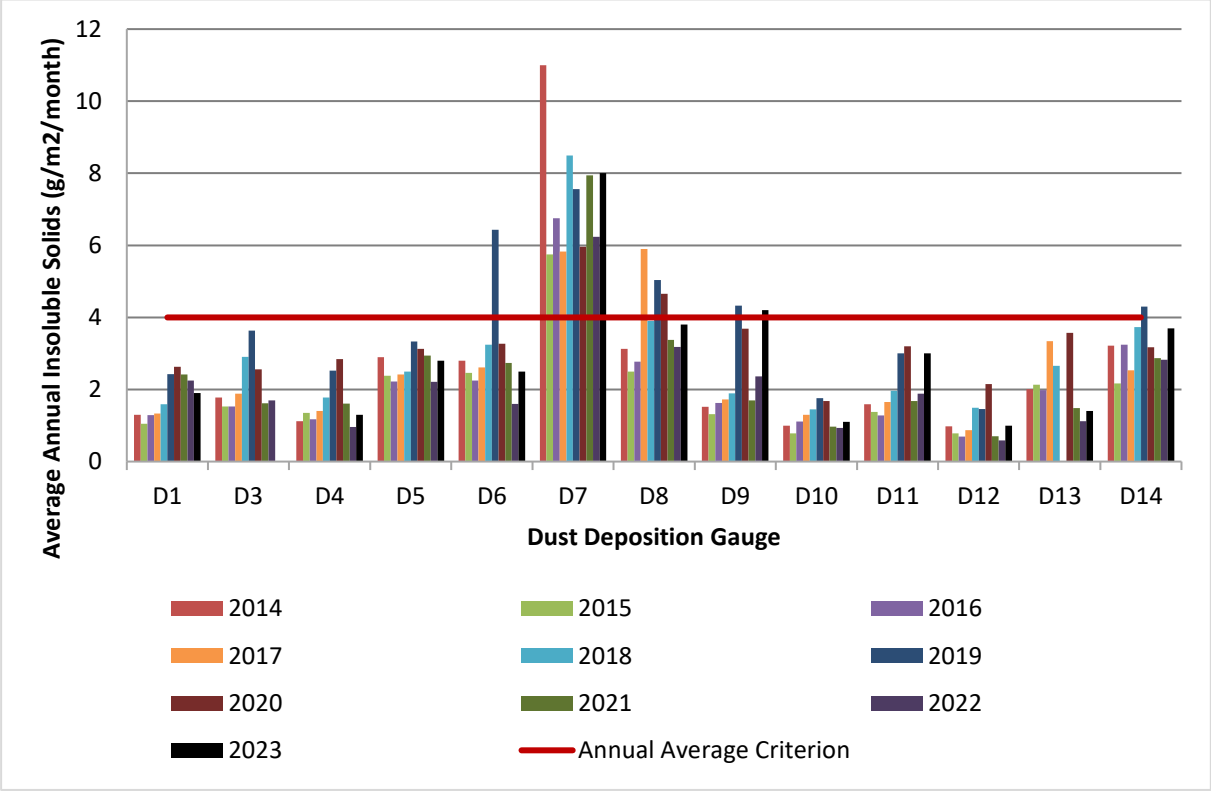
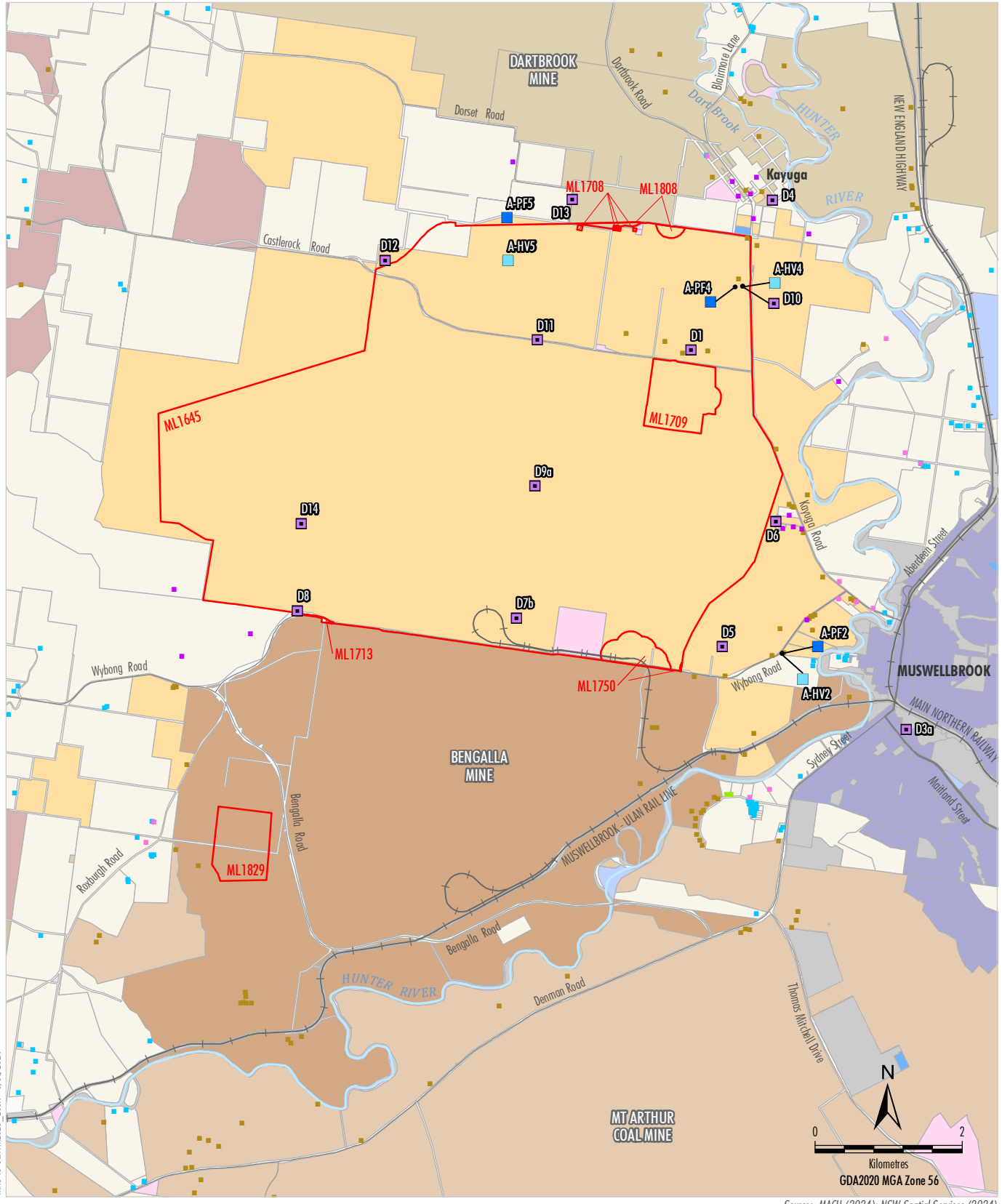


Chart 5: 2014 - 2023 Annual Average Insoluble Solids



MAC-18-03A AR2023_205A 6/03/2024

LEGEND

- Mining Lease Boundary (Mount Pleasant Operation)
- Mount Pleasant-controlled
- Bengalla-controlled
- Dartbrook-controlled
- Mangoola-controlled
- Muswellbrook Coal-controlled
- Mt Arthur-controlled
- Crown
- The State of NSW
- Muswellbrook Shire Council
- Privately-owned Land
- Muswellbrook and Upper Hunter LEP Zones B2, B5, R1, R5
- Muswellbrook and Upper Hunter LEP Zones IN1, SP2, RE1, RE2, W1
- Railway

Category of Rural Residence under DA92/97

- Mine-owned
- Privately-owned - Acquisition on Request
- Privately-owned - Mitigation on Request
- Privately-owned - Mitigation/Acquisition on Request*
- Other Privately-owned

Monitoring Sites

- Air Quality - High Volume Sampler
- Air Quality - Palas Fidas
- Dust Deposition Gauge

Source: MACH (2024); NSW Spatial Services (2024)

* Mitigation on Request - rail noise/Aquisition on Request - air quality. MACH is only required to acquire and/or install air quality mitigation measures at this property if not reasonably achievable under a separate approval for the Bengalla Mine.

MACHEnergy

MOUNT PLEASANT OPERATION

Air Quality Monitoring Sites

Figure 5

PM_{10} and $PM_{2.5}$

Palas Fidas monitoring systems were installed at three locations (Figure 5) in late 2016. The Palas Fidas systems collected PM_{10} and $PM_{2.5}$ data continuously, which was averaged over 24 hours (Chart 6 and Chart 7) and annually (Chart 8 and Chart 9).

Due to monitor damage, there was insufficient data to calculate valid annual average PM_{10} and $PM_{2.5}$ levels at A-PF-5 for 2023. An average of the available data has been presented in Chart 8 and Chart 9 for this monitor.

The data presented excludes 'extraordinary events', consistent with Condition 20, Schedule 3 of Development Consent DA 92/97. There were six days with elevated readings during adverse weather conditions in 2023. There was one 'extraordinary events' which occurred during the reporting period on the 19 December 2023 due to surrounding bushfires.

The data indicates that the 24-hour average PM_{10} levels were generally low throughout 2023. There were 13 PM_{10} events recorded above 50 µg/m³ in 2023. The identified events above 50 µg/m³ at the following locations included:

- nine days at the A-PF-2 (80 µg/m³ on 27 March 2023, 62.2 µg/m³ on 5 April 2023, 125.9 µg/m³ on 6 April 2023, 112.3 µg/m³ on 12 May 2023, 55.9 µg/m³ 16 May 2023, 91.2 µg/m³ on 3 June 2023, 97.5 µg/m³ on 8 June 2023, 61.9 µg/m³ on 27 August 2023 and 55.8 µg/m³ on 19 December 2023);
- two days at the DCCEEW Muswellbrook (50.4 µg/m³ on 2 October 2023 and 59.4 µg/m³ on 22 October 2023); and
- four days at the DCCEEW Muswellbrook NW (53.5 µg/m³ on 12 August 2023, 52.6 µg/m³ on 22 October 2023, 57.5 µg/m³ on 25 October 2023 and 51.8 µg/m³ on 19 December 2023).

For the levels detected on the 19 December 2023 it was determined these were due to bushfires impacting the surrounding areas. For all remaining monitored events it was determined to not be an incremental increase as a result of mining operations at MPO due to the estimated maximum contribution being less than or equal to 0 µg/m³ and 43.2 µg/m³, respectively.

There was a total of one elevated 24-hour average $PM_{2.5}$ event recorded across the MPO monitoring network in 2023 (28.6 µg/m³ at A-PF-2 and 25.2 µg/m³ at Muswellbrook) on 19 December 2023. This was impacted by several nearby bushfires occurring at this time. The estimated contribution from MPO on these occasions was found to be less than 25 µg/m³. For the levels detected on the 19 December 2023 it was determined these were due to bushfires impacting the surrounding area and it was determined to not be an incremental increase as a result of mining operations at MPO due to the estimated maximum contribution being less than or equal to 0 µg/m³ and 0.2 µg/m³, respectively.

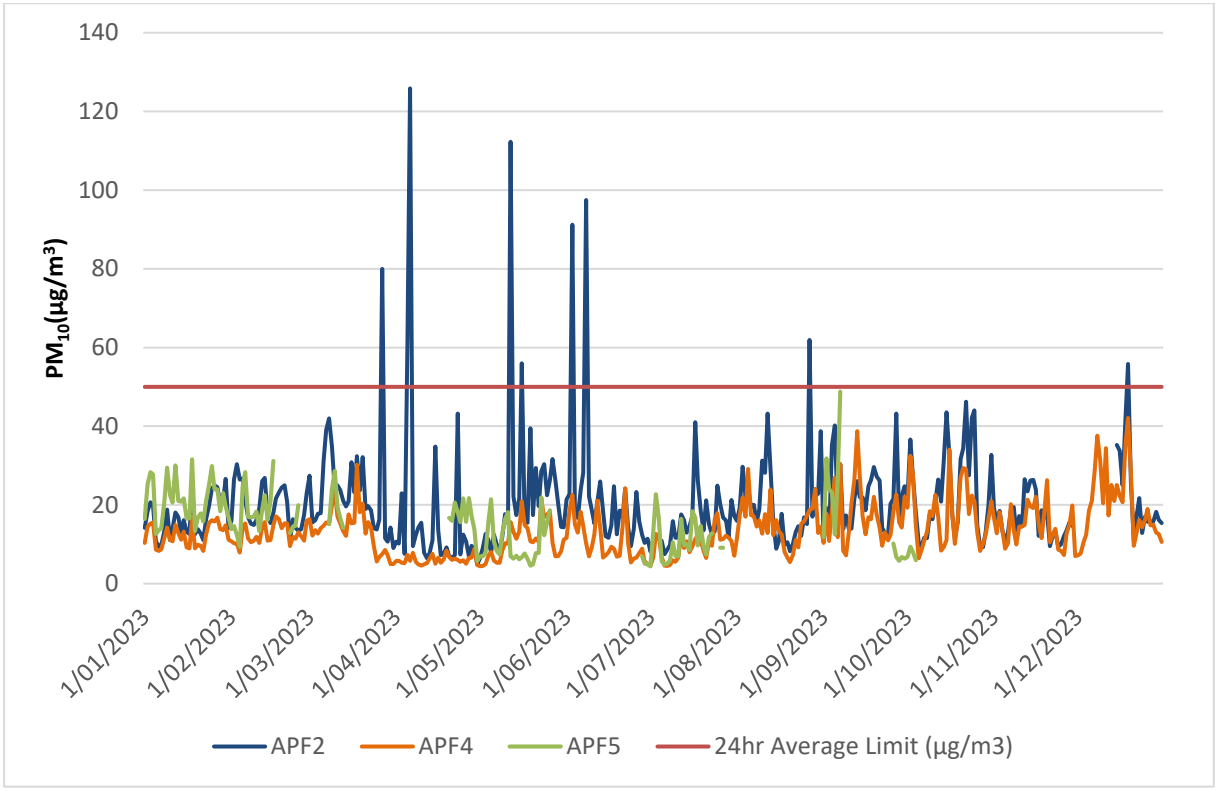


Chart 6: 24-hour Average PM_{10} Levels

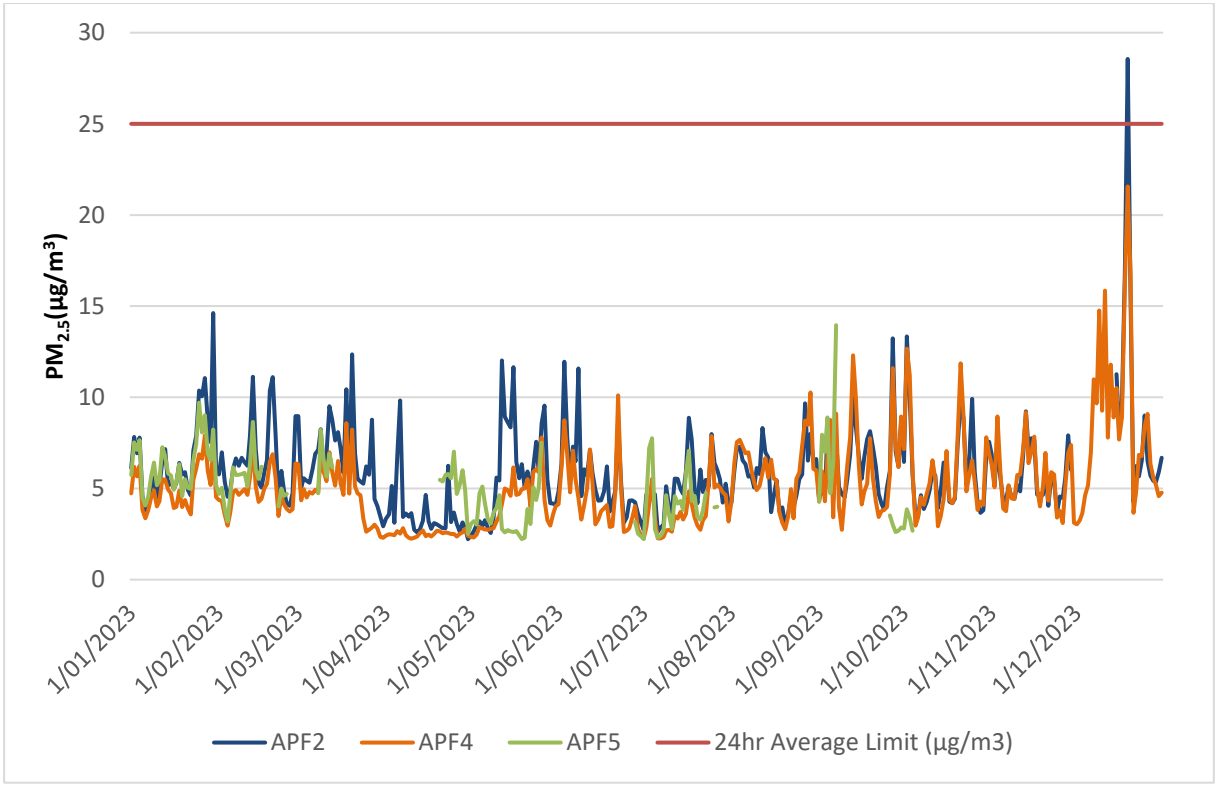


Chart 7: 24-hour Average $PM_{2.5}$ Levels

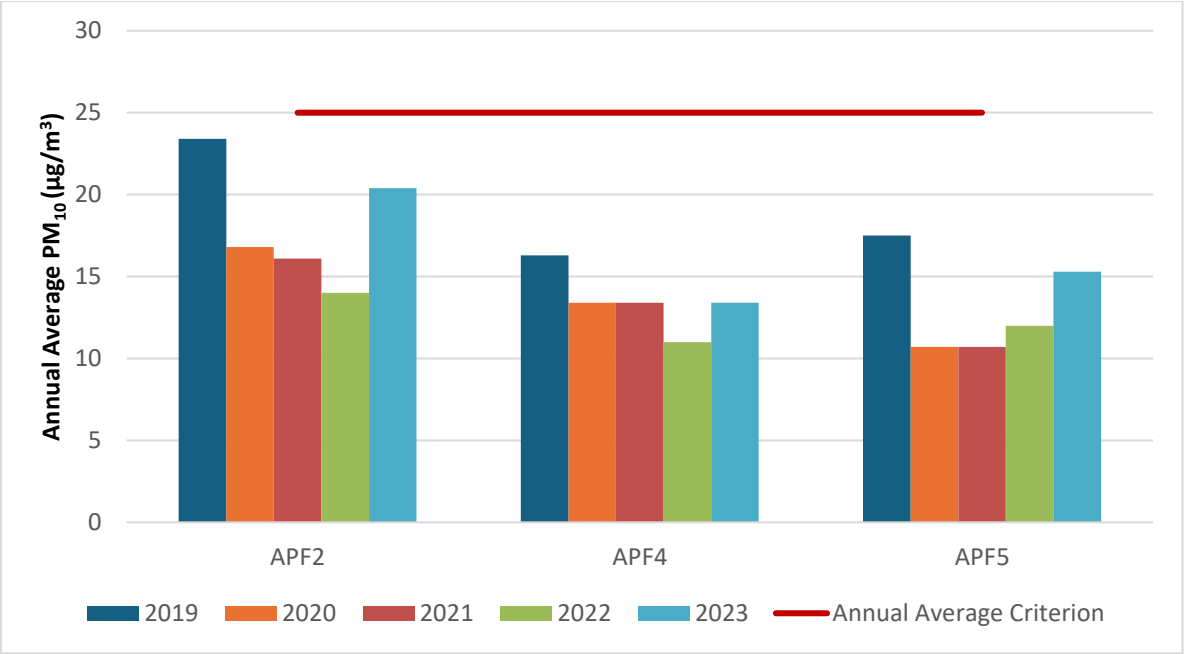


Chart 8: Annual Average PM_{10} Levels

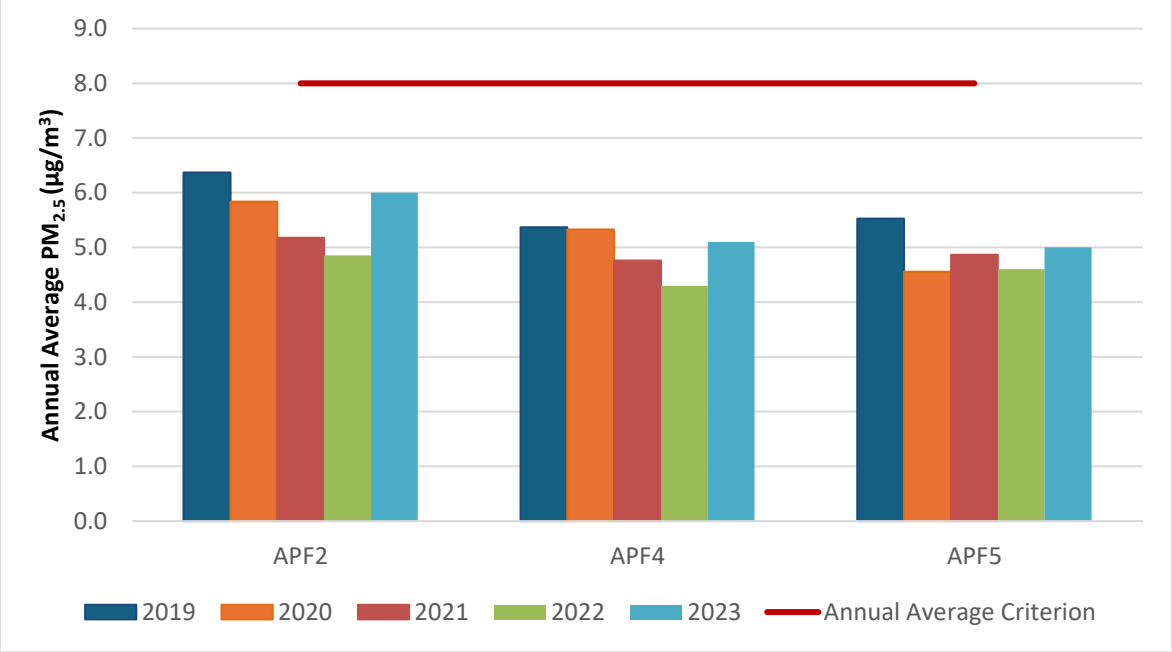


Chart 9: Annual Average $PM_{2.5}$ Levels

Total Suspended Particulate

TSP levels were recorded at the three High Volume Air Sampler (HVAS) systems (A-HV2, A-HV4 and A-HV5) located adjacent to the three Palas Fidas monitors (Figure 5). These HVAS systems were sited in conjunction with the Palas Fidas monitors in late 2016. Annual average TSP levels are presented in Chart 10.

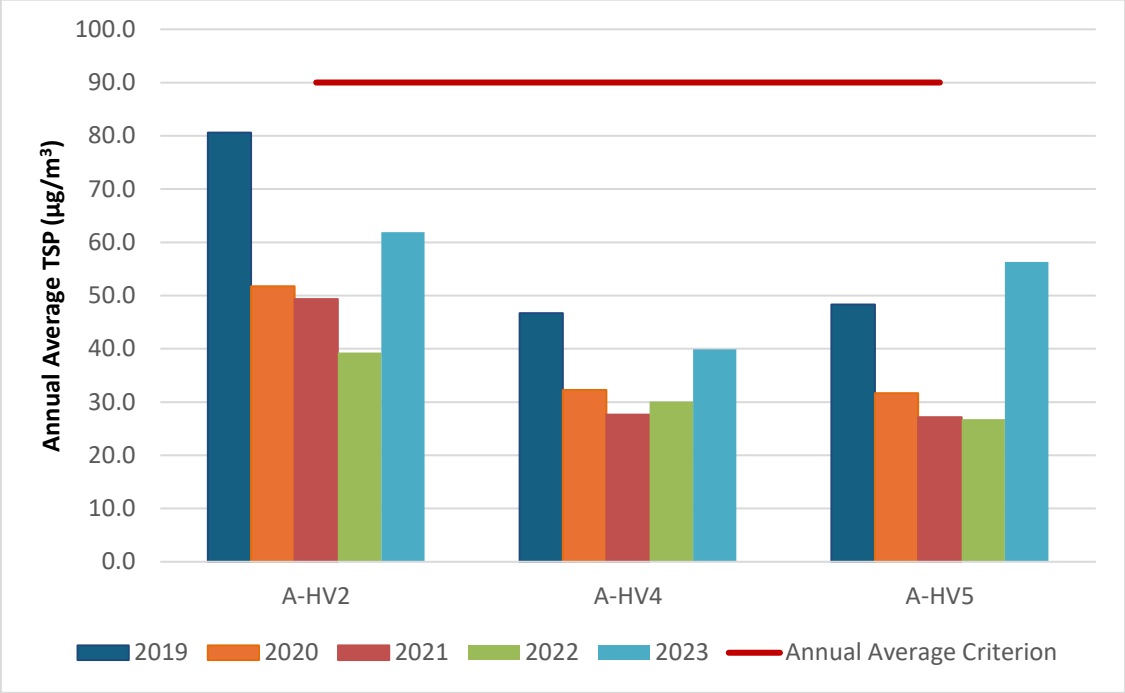


Chart 10: Annual Average TSP Levels

Complaints

Twelve air quality-related complaints were received by MACH Energy during 2023 in comparison to one complaint received in the 2022 reporting period (see Complaints Summary 2023: https://machenergyaustralia.com.au/mount-pleasant/documentation/). In response to the complaints, particulate matter levels at nearby monitoring locations were reviewed. For all complaints, the air quality levels at nearby monitoring stations were below the relevant criteria when the complaint was received.

5.4.3 Trends and Key Management Implications

Dust Deposition

TAS reported in the 2023 Annual Air Quality Review (TAS, 2023) that the annual average deposited dust levels were below the cumulative criterion of 4 g/m^2/month in 2023 at all MPO monitors, apart from D7 and D9.

D7 is located within the MPO boundary between the MPO and a neighbouring mining operation (Figure 5). Due to its proximity to the northern boundary of the main pit of the neighbouring mining operation, D7 is directly influenced by both the MPO and the neighbouring mining operation. Therefore, whilst this site has continued to be monitored, it is not used to assess compliance or to represent residential receivers in the area.

The annual average deposited dust recorded at D9 in 2023 was 4.2 g/m^2/month. Analysis completed by TAS (2024) indicates that MPO's contribution to the annual average at D9 would have been less than or equal to 1.0 g/m^2/month, and that MPO did not contribute more than the 2 g/m^2/month incremental deposited dust criterion to the annual average.

PM_{10} and $PM_{2.5}$

The measured 24-hour average PM_{10} levels were generally low during the reporting period. However, there were nine days at the A-PF-2 monitor with 24-hour average PM_{10} levels above 50 µg/m^3. For each of these elevated recordings, the estimated incremental contribution from MPO was less than 50 µg/m^3.

Chart 6 shows that PM_{10} levels fluctuated at the three monitors throughout the year, with no apparent trends other than A-PF-2 generally recording higher levels than A-PF-4 and A-PF-5. Chart 8 indicates annual average PM_{10} levels increased between 2022 and 2023.

Real-time monitoring of $PM_{2.5}$ was also undertaken during the reporting period at the three monitors (Figure 5). The measured cumulative 24-hour average $PM_{2.5}$ levels were below the relevant criteria during the reporting period, apart from one day at the A-PF-2 monitor which measured above 25 µg/m^3. The estimated incremental contribution from MPO at A-PF-2 on this date was less than 25 µg/m3.

Chart 7 shows that $PM_{2.5}$ levels fluctuated at the three monitors throughout the year, with no apparent trends. Chart 9 indicates annual average $PM_{2.5}$ levels slightly increased between 2022 and 2023.

TAS reported in the 2023 Annual Air Quality Review that the MPO was generally compliant with the relevant criteria for both annual and 24-hour average levels for PM_{10} and $PM_{2.5}$ (Table 16) for the reporting period (TAS, 2023).

Total Suspended Particulate

Chart 10 indicates annual average TSP levels increased between 2022 and 2023. However, the annual average TSP levels based on the measured TSP levels were compliant with the annual average TSP criterion during the reporting period.

TAS reported in the 2023 Annual Air Quality Review that the MPO was generally compliant with the relevant criterion for TSP (Table 16) for this reporting period (TAS, 2023).

Greenhouse Gas Emissions

In accordance with Condition 19, Schedule 3 of Development Consent DA 92/97, MACH Energy has implemented all reasonable and feasible measures to minimise the release of greenhouse gas emissions from the site.

The primary source of GHG emissions at the MPO is the release of carbon dioxide (CO_2) and methane (CH_4) during the combustion of diesel fuel. Fugitive emissions of CO_2 and CH_4 during the use of explosives will be minor in comparison to diesel combustion emissions.

Greenhouse gas emissions at the MPO are minimised through efficient use of diesel fuel by the mobile fleet. A list of the new mobile plant added to the fleet in 2023 is provided in Table 17.

Table 17
New Mobile Plant Fleet Summary

Fleet Description	Quantity
Cat 18	1
Komatsu 930E-5	1
Liebherr R9400	1

Efficient diesel use is promoted by:

- Optimising the design of haul roads to minimise the distance travelled between the pit and the CHPP.
- Minimising the re-handling of material (i.e. coal, overburden and topsoil).
- Maintaining the fleet in good operating order.

A discussion of the comparative ROM production, diesel consumption, use of oil and grease and the greenhouse gas emissions reported under the National Greenhouse and Energy Reporting Scheme (NGERs) for 2023 financial year and MOD 3 predictions is provided below.

A summary of ROM production, diesel consumption, use of oil and grease and the greenhouse gas emissions reported under the NGERs for 2023 financial year are shown in Table 18. The associated estimated GHG emissions presented in MOD 3 EA (*Mount Pleasant Operation Mine Optimisation Modification Air Quality and Greenhouse Gas Assessment* [TAS, 2017]) are also shown in Table 19.

NGERs is based upon financial year reporting, and the TAS (2017) greenhouse gas estimates are based on calendar years. This Annual Review reports on the 2023 financial year data, as reported in NGERs. Table 18 includes references to the fugitive emission factors adopted in the TAS (2017) assessment and those reported in the NGERs, which vary materially.

Comparison to MOD 3 Predictions

MOD 3 predictions for air quality were modelled for three scenarios during the mine life (i.e. Year 2018, Year 2021 and Year 2025). Monitored annual average levels of insoluble solids, TSP, PM_{10} and $PM_{2.5}$ were generally below the MOD 3 Scenario 1 and 2 predictions.

Any inconsistencies observed between the monitoring results and the MOD 3 predictions are likely to be due to the inherent uncertainty associated with predictive modelling (e.g. activities may not occur in the same location, or at the same magnitude, as anticipated when developing predictive models). Further, the sensitive receptors (residences) are generally not located immediately adjacent the nearest monitoring sites (e.g. monitoring sites may be located closer to mining activity).

Greenhouse Gas Emissions

ROM coal production, fugitive emissions, diesel consumption and diesel emissions were higher in 2023 than estimated in TAS (2017) (MOD 3 EA), as shown in Tables 18 and 19. The higher emission values are the result of a number of factors including different quantities of materials, changes in the Global Warming Potential (GWP) of methane and the use of different fugitive emissions factos. The higher production rate can be attributed to fewer wet weather-related delays, increased movement of overburden in advance and implementation of new larger mining equipment.

Oil and grease consumption and emissions were less than predicted in the TAS (2017) assessment.

For an open cut coal mine, the predicted fugitive greenhouse gas emissions are calculated by multiplying the estimated ROM coal production by an emissions factor.

The MOD 3 EA predicted fugitive greenhouse gas emissions using a site-specific average emissions factor of 0.012 tonnes of carbon dioxide equivalent per ROM tonne of coal (tCO_2-e/ROM t) (Rio Tinto Coal Australia Pty Limited [Rio Tinto], 2012).

This emissions factor was derived from data collected from some 13 gas-content boreholes completed by the former owner of the project (two gas holes drilled in 2006, seven in 2010 and four holes in the adjacent Bengalla Mine) (Rio Tinto, 2012). It is noted that this estimate was based on a methane GWP of 21, which was the relevant warming potential adopted at that time. The current methane GWP used from 2020 – 2021 onwards is 28 (Clean Energy Regulator, 2022).

In accordance with *Method 1 National Greenhouse and Energy Reporting (Measurement) Determination 2008*, the fugitive greenhouse gas emissions reported by the MPO via NGERs were estimated using default emission factors from the National Greenhouse Accounts Factors (NGA Factors).

For open cut coal mines in NSW, the default emission factor is 0.061 (tCO_2-e/ROM t) in the NGA Factors 2023. This NGA default factor is significantly higher than the site-specific factor (i.e. 0.012 tCO_2-e/ROM t) calculated by Rio Tinto in 2012, and used by TAS in 2017. In 2022, MACH Energy commissioned CoalBed Energy Consultants to re-evaluate the fugitive emission factor based on the revised GWP of methane. In conducting this work, the revised estimated fugitive emission factor was determined to be approximately 0.020 tCO_2-e/ROM t (CoalBed Energy Consultants, 2022).

The differences in the fugitive emission estimates between TAS (2017) and MACH Energy NGERs reporting arise primarily due to differing methodologies and associated emission factors being employed under the differing regulatory systems (i.e. NGERs reporting under the *Commonwealth National Greenhouse and Energy Reporting Act 2007* using NGA default emission factors, and environmental assessment under the NSW *Environmental Planning and Assessment Act 1979* using site-specific emissions data), plus periodic revisions to the GWP of methane, which is a large component of the fugitive emissions from coal mines.

Table 18
MPO Emissions Summary Financial Year 2023

Financial Year	ROM (t)	Diesel Consumption (kL)	Fuel Oil/Petroleum Based Oils and Greases Consumption (kL)	Fugitive Scope 1 emissions (t CO_2-e)	Diesel Scope 1 emissions (t CO_2-e)	Fuel Oil/Petroleum Based Oils and Greases Scope 1 emissions (t CO_2-e)
2023	11,219,134[2]	49,849	839	684,367[1]	132,400	0

Note:

t = tonnes; kL = kilolitres and tCO_2-e = tonne of Carbon Dioxide equivalent.

[1] Fugitive emission factor was 0.061 (DCCEEW, 2021).

[2] ROM (t) based on the 2023 NGER which is reported for the financial year (not calendar year).

Table 19
MOD 3 Prediction Emissions Summary 2022 and 2023

MOD 3 EA Prediction Year	ROM (t)	Diesel Consumption (kL)	Fuel Oil/Petroleum Based Oils and Greases Consumption (kL)	Fugitive Scope 1 emissions (t CO_2-e)	Diesel Scope 1 emissions (t CO_2-e)	Fuel Oil/Petroleum Based Oils and Greases Scope 1 emissions (t CO_2-e)
2022	10,500,000	27,251	1,208	126,000[1]	74,159	3,541
2023	10,500,000	25,335	1,123	126,000[1]	68,945	3,292

Note:

[1] Fugitive emission factor was 0.012, calculated inclusive of a GWP for methane of 21 (Rio Tinto, 2012).

Air Quality Review

TAS was commissioned by MACH Energy to complete an air quality review at the MPO for 2023. The air quality review is provided in Appendix D.

The review concluded that the MPO was fully compliant with the relevant air quality criteria (Condition 20, Schedule 3 of Development Consent DA 92/97).

5.4.4 Implemented or Proposed Management Actions

In accordance with Conditions O3.4 and O3.5 of EPL 20850, all dust generating activities at the MPO must be ceased when specific adverse conditions are identified at the on-site meteorological station and/or at the Muswellbrook NW Upper Hunter Air Quality Monitoring Network monitor.

Dust generating activities were discontinued on nine occasions during 2023 in accordance with Conditions O3.4 and O3.5 of EPL 20850. The increase in dust shutdown occurrences in 2023 compared to the previous reporting period was due to the below average rainfall received during the reporting period.

All appropriate steps to reduce dust generation were undertaken in accordance with the MPO AQGGMP, consistent with Condition 23, Schedule 3 of Development Consent DA 92/97. MACH Energy will continue to implement these dust mitigation measures.

5.5 BIODIVERSITY

A BioMP was prepared by MACH Energy in accordance with Condition 32, Schedule 3 of Development Consent DA 92/97 and approved on 31 October 2019.

5.5.1 Approval Criteria and Management Plan Requirements

MACH Energy implements biodiversity management actions in accordance with the approved BioMP. In order to ensure appropriate management actions are applied, and to evaluate the vegetation and fauna habitat condition at the MPO, the BioMP implements a Biodiversity Monitoring Program. The program includes the following components to maintain the remnant vegetation across the MPO area:

- tree clearing supervision;
- fauna relocation / spotter catcher;
- weed monitoring;
- vertebrate pest monitoring;
- monitoring of access; and
- rehabilitation monitoring.

5.5.2 Implemented or Proposed Management Actions

In 2023, the following biodiversity related management actions were undertaken:

- Weed control measures carried out on various properties within MPO and adjoining properties. Weeds found on the properties were sprayed or manually removed.
- Pest control measures implemented on various properties within the MPO and adjoining properties. This included a pig control program in May, June and September 2023.

- Pre-clearance surveys undertaken by MACH Energy Environmental Advisor and/or an ecologist consultant including:
  - surveys for the ongoing mining operation;
  - habitat tree pre-clearance survey for the construction works that impacted habitat trees.
- Clearing supervision was undertaken by a MACH Energy Environmental Advisor and/or an ecologist consultant (Umwelt and Atlantech), which included fauna management (i.e. spotter catching) and habitat tree felling supervision.
- Tiger Orchids (*Cymbidium canaliculatum*) previously removed from the mine clearance area in 2021 were translocated into suitable hollows in habitat trees within mine rehabilitation areas in August 2023 (Future Harvest, 2023).
- Connectivity planting between the site rehabilitation and the Hunter River riparian zone vegetation was undertaken.
- Annual, bi-annual and regular monitoring was carried out by MACH Energy.

Biodiversity Offsets

The MPO Development Consent DA 92/97 was granted in December 1999, prior to the implementation of offsetting policies in NSW. While no biodiversity offsets were required for the original development under Development Consent DA 92/97, biodiversity offsets were established for the existing / approved MPO under the Commonwealth approval (EPBC 2011/5795).

EPBC Approval 2011/5795 was varied during the reporting period in regard to the Biodiversity Management Areas (BMA) and their security.

MACH Energy is continuing to work with DCCEEW to finalise a Conservation Agreement (under Part 14 of the EPBC Act) to secure the BMAs.

The BMAs are managed by MACH Energy in accordance with an offset management plan, approved by DCCEEW in 2015 and varied from time to time to reflect management updates from MACH Energy and requests from DCCEEW.

MACH Energy is in the process of seeking Biodiversity Stewardship Agreements for additional offset areas. As at 31 December 2023, this is currently in consultation with the Credit Supply Taskforce and securement of this offset area will be discussed in the next reporting period.

5.6 HERITAGE

MACH Energy manages Aboriginal heritage on-site in accordance with Aboriginal Heritage Impact Permits (AHIPs) (i.e. AHIPs #C0002053, #C0002092 and #C0004783) issued by the Heritage NSW within the NSW Department of Premier and Cabinet (now DCCEEW), and in accordance with the approved AHMP, prepared in accordance with Condition 36, Schedule 3 of Development Consent DA 92/97.

5.6.1 Approval Criteria and Management Plan Requirements

During the reporting period, all Aboriginal heritage management activities were carried out in accordance with the AHMP. The AHMP contains a range of management measures related to recording and surface collection, archaeological excavation, artefact analysis, artefact management, archaeological salvage, archaeological monitoring, and an Aboriginal Heritage Conservation Strategy.

5.6.2 Implemented or Proposed Management Actions

During the reporting period, the following on-ground management measures relevant to heritage (Aboriginal and historic heritage) were undertaken at the MPO:

- Surface salvage collection for Aboriginal artefacts within AHIP #C0002053 area was undertaken in August and November 2023.
- Aboriginal Objects Due Diligence Assessments were undertaken for the following work by Niche Environment:
  - Exploration Drilling North of Castlerock Road
  - Northern Link Road Geotechnical Exploration
  - Relinquishment Fence Line
  - Sandy Creek Boxthorn Removal and Erosion Works Salvage
  - MIA Expansion Salvage
- The annual meeting with Registered Aboriginal Parties (RAPs) was undertaken to provide a general update on the management of Aboriginal heritage in August 2023.
- Annual inspection of cultural heritage sites in December 2023.
- A stop work, investigate and salvage program was initiated by identification of a new site in an operational area by an employee. A site card has been submitted to the Aboriginal Heritage Information Management System.
- Formal replacement of Aboriginal Heritage Conservation Areas B and C with Ascot Farm and the Munmurra River Grinding Groove site, in consultation with Heritage NSW and the RAPs. The AHMP will be updated to reflect the formal replacement of Aboriginal Heritage Conservation Areas B and C in the next reporting period.
- Ongoing conservation management works at the Negoa Homestead.
- Ongoing update of the MPO Aboriginal Site Database and Geographic Information System (GIS) data.
- The security of Aboriginal Heritage Conservation Area A is being progressed in consultation with DPE (now DPHI) and will be reported in the next reporting period.

During the next reporting period, MACH Energy anticipates undertaking the following heritage works:

- Annual inspection of cultural heritage sites.
- Ongoing due diligence surveys and surface salvages as required.
- Continuation of consultation regarding the formal replacement of Aboriginal Heritage Conservation Areas B and C and update of the AHMP.
- Continue to undertake appropriate conservation management works at the Negoa Homestead.
- Completion of preparatory due diligence assessment and salvage works associated with commencement of SSD 10418.

5.7 EXPLORATION

MACH Energy commenced a pre-production drilling program in September 2023 within the proposed three-year mining footprint, with 26 boreholes being drilled in ML 1645 and ML 1709 during the reporting period. Drilling was undertaken using the water injection method, which generates minimal dust and noise emissions. The boreholes were located within the open cut/overburden emplacement area footprint and involved open hole (non-core) and cored drilling. The pre-production drilling program will continue in the next reporting period.

5.8 WASTE

Operational waste data was collected during the reporting period by the waste contractor and is presented in Table 20. Waste tyre in-pit burial campaigns were undertaken in February, March and August 2023 with the majority of the tyres disposed of in Pit B. All waste tyres were disposed in accordance with Condition O6 of EPL 20850.

All waste levels have remained generally consistent between 2022 and 2023, apart from the volume of recycled waste which increased significantly. This is a result of the rollout of a waste audit and awareness project conducted throughout 2023 to increase efficacy of waste management. Training packages were provided to all staff with additional recycling initiatives introduced.

The WasteMP contains management measures on waste storage, segregation, transport and disposal, as well as provisions for waste monitoring. The latest version of the WasteMP was approved by DPE (now DPHI) on 14 January 2019.

The annual FEA Review was undertaken by ACT Williams (2024b) in 2023 as per the approved WasteMP. The review found that under Development Consent DA 92/97 proposed Mod 7 production schedule, the adopted strategy (ex-pit emplacement of thickened tailings) continues to present the lowest cost strategy.

Table 20
MPO Waste Data

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
General Waste (t)	11.87	31.71	23.88	17.40	32.84	17.20	25.72	43.11	19.13	40.10	26.71	37.76	327.43
ACM[1] (t)	0.00	0.00	0.00	0.00	0.00	74.00	1.00	9.00	10.00	0.00	0.00	0.00	94.00
Recycled Waste (t)	103.17	110.99	105.54	99.13	192.02	182.85	173.68	150.07	202.17	320.30	178.97	251.40	2070.29
Liquid Effluent (kL)	80.5	79.5	64.5	84.0	138.5	158.5	113.5	109.53	130.0	170.05	113.24	161.8	1403.62

Note:

[1] Asbestos is managed in accordance with an internal Asbestos Control Plan. All asbestos removal work is handled with appropriate respiratory protective equipment and is supervised by a competent person approved by SafeWork NSW. Asbestos is transported off-site and disposed of at a lawful disposal facility licensed by EPA.

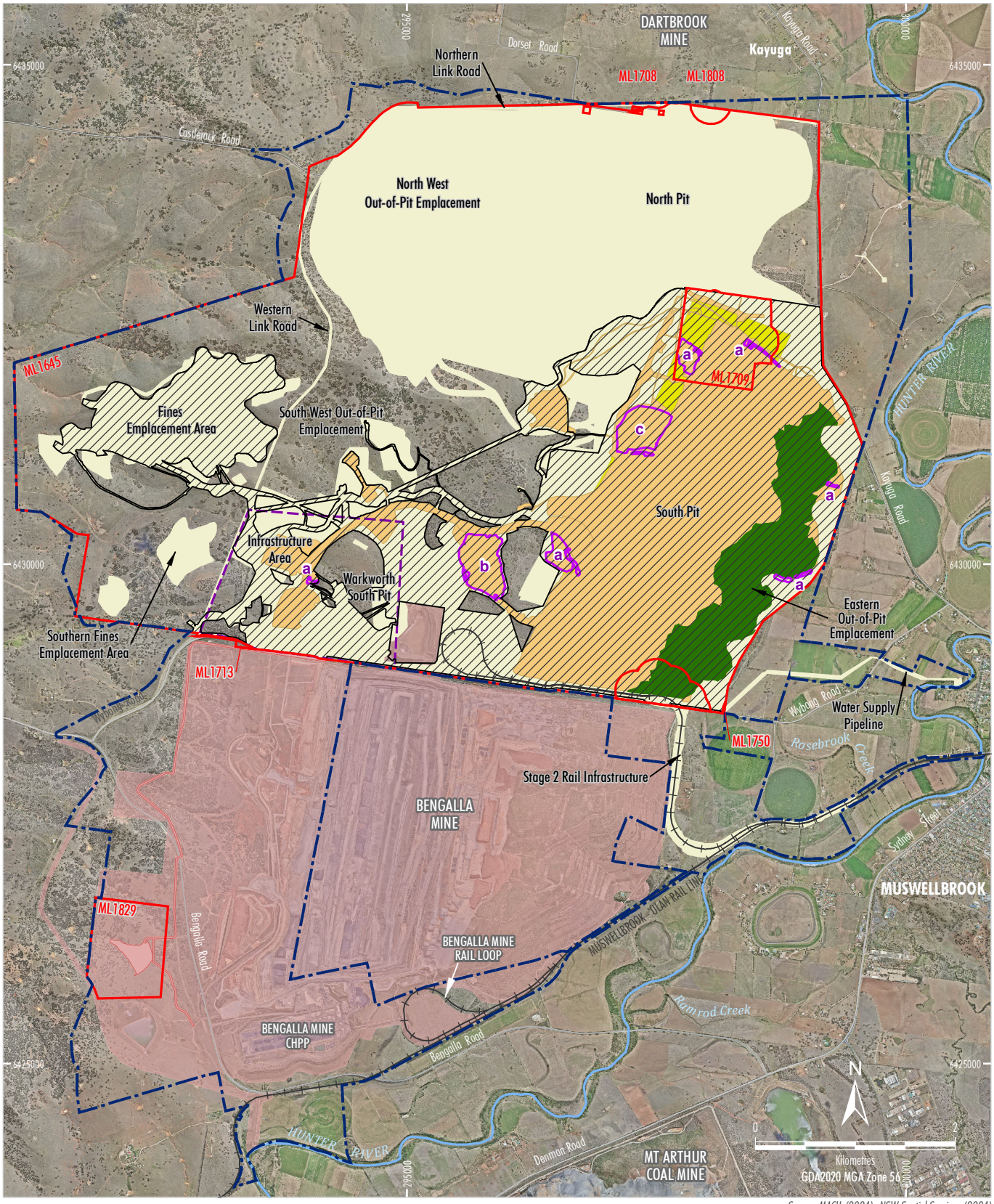
5.9 TOPSOIL MANAGEMENT

MACH Energy currently estimates that approximately 1,672,450 cubic metres (m^3) of topsoil is required for final landform rehabilitation and therefore, MACH Energy is aiming to directly apply or stockpile this amount prior to mine closure. During the reporting period, topsoil stockpiles were located adjacent to active disturbance areas and areas to be rehabilitated, as shown on Figure 6. A total of approximately 1,780,670 m^3 of topsoil was stored in stockpiles at the end of the reporting period. This, in accordance with the RMP, is approximately 638,493 m^3 less than the volumes anticipated at the end of August 2023. However, sufficient soil resources are available for final landform rehabilitation. A topsoil register with individual volumes for each stockpile is kept and maintained on-site.

Topsoil was stripped ahead of disturbance activities and where possible, placed onto rehabilitation areas immediately. Where it was impractical to respread topsoil immediately it was stockpiled, and sign posted. The stockpiles were then shaped, ripped and direct seeded with a species mix containing sterile pasture species, native grass and shrub tree seed to maintain seed reserves and microbial soil associations.

Between 2020 and 2022, MACH Energy engaged the University of Newcastle to design and undertake a topsoil stockpile research trial to assess the effectiveness of the MPO's 'Soil Stockpile Management' practices and the 'Soil Replacement on Rehabilitation Areas' practices as outlined in the RMP. The trial involved comparison of microbes and soil at one 5 m high trial topsoil stockpile and at six other 3 m high control topsoil stockpiles. The study is now complete and the preliminary results indicate no quantifiable difference between the five-metre trial site and the three-metre stockpiles (UoN, 2021). The majority of soil properties (both chemical and physical) have no correlation with stockpile depth across all sample sites. Exchangeable nutrient and micronutrients were found to vary greatly across the site. Total carbon was significantly lower at the 5 m trial stockpile at Pit E. No correlations between total carbon and depth were observed across the site however, this may be more a function of a pre-stripped soil heath than a result of greater stockpile depths. Soil microbial biomass was shown to have a significant linear decrease with increasing stockpile depth at four of the six stockpiles. As vegetation is re-established and the soil ecosystem continues to develop it is expected that soil quality will improve across both control and trial sites. The 5 m high trial topsoil stockpile remains in place.

The Australian Coal Association Research Program (ACARP) Tailings to Topsoil research project described in the RMP was continued during the reporting period in collaboration with the University of Newcastle. The project aims to optimise existing tailings processes and technologies and provide a commercially viable system for tailings utilisation. The results of the project will be reported once complete.



MAC-18-03A AR2023_207C

LEGEND

- Development Consent Boundary
- Mining Lease Boundary (Mount Pleasant Operation)
- Approximate Extent of Existing/Approved Surface Development (DA92/97) [1]
- Existing/Approved Mount Pleasant Operation Infrastructure within Bengalla Mine Approved Disturbance Boundary (SSD-5170)
- Infrastructure Area Envelope
- RMP2023 Footprint [2]
- a — End 2023 Topsoil Stockpile Location (3 m)
- b — End 2023 Topsoil Stockpile Location (3 -5 m)
- c — Historical Topsoil Stockpile Location (5 m)
- End 2023 Active Disturbance Area
- End 2023 Rehabilitation Area
- 2024 Forecast Additional Disturbance Area
- Bengalla Mine Approved Disturbance Boundary (SSD-5170)

NOTE

[1] Excludes some incidental Project components such as water management infrastructure, road diversions, access tracks, topsoil stockpiles, power supply, temporary offices, signalling, other ancillary works and construction disturbance.

[2] Mount Pleasant Operation Rehabilitation Management Plan (Oct 2023)

Source: MACH (2024); NSW Spatial Services (2024)
Orthophoto: MACH (Dec 2023)

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Topsoil Stockpile Locations

Figure 6

5.10 VISUAL AMENITY AND LIGHTING

A VIMP was prepared by MACH Energy in accordance with Condition 47, Schedule 3 of Development Consent DA 92/97 and approved on 31 October 2019. Within this reporting period, a minor amendment was made to the VIMP to include evidence of stakeholder consultation with MSC in relation to the management measures relevant to the MOD 4 rail infrastructure. This version of the VIMP (Version 2) was updated and approved on 31 August 2023.

Following approval of MOD 6 (6 November 2023), in accordance with Schedule 5, Condition 4 of Development Consent DA 92/97, a review and revision of the VIMP was undertaken in consultation with MSC. The VIMP was updated to incorporate the management measures for the design of the re-transmission facility and submitted to DPE (now DPHI) on 22 December 2023. The updated VIMP was approved by DPHI on 15 March 2024 (Version 3).

The VIMP describes MACH Energy's management approach to minimising visual amenity and lighting impacts on surrounding receivers.

Visual landscaping activities were undertaken during the reporting period. This included tree planting of approximately 5,000 tubestock during Autumn 2023 in the following areas:

- tree screen infill planting along key roads with views of the MPO such as Kayuga and Wybong Roads;
- tree planting along the main MPO site entrance, access road, operations office carpark, infrastructure areas and (Rail Loop 2 Train Load-Out);
- tree planting along the eastern portion of ML 1645;
- tree planting along the Hunter River fauna connectivity area;
- implementation of visual bunding/tree screen planting along the CHPP road on the western edge of the ROM coal storage area;
- continued extension of visual barrier fencing along Wybong Road adjacent to the CHPP; and
- general maintenance of the abovementioned areas.

Targets for visual landscaping growth and survival rates were achieved for 2023 (Plate 1). A survival rate of 70% for grown stock and 60% for tubestock was observed. Cardboard tree guards were trialled as an alternative to plastic sleeves. The results of the trial showed a similar survival rate of seedlings between the cardboard and plastic guards.

During the reporting period, contractors were employed to undertake maintenance of visual landscaping including watering, weeding, slashing, and re-tying more mature trees that are exposed to wind to stakes.

Eight visual-related complaints were received by MACH Energy during 2023, in comparison to the one visual-related complaint received in 2022 (see Complaints Summary 2023: https://machenergyaustralia.com.au/mount-pleasant/documentation/). Investigations were triggered in response to the complaints. Following the investigations, the External Relations Manager made further contact with the complainant to provide an update on how the issue was addressed by MACH Energy.

Plate 1: Visual Landscaping Growth Progress Update

5.11 CONTAMINATED LAND

No contaminated land was found during the reporting period.

5.12 SPONTANEOUS COMBUSTION MANAGEMENT

Inspections of coal stockpiles for spontaneous combustion were undertaken regularly.

Two community complaints and an anonymous report were made to the EPA on 1 September and 3 September 2023 in relation to spontaneous combustion and alleged offensive odour at MPO. With no mining activities being undertaken in the nightshift prior to dayshift on 1 September 2023, pockets of heated material requiring treatment were identified on recommencement of mining. Prompt actions were taken to treat the heated material when mining recommenced on 1 September 2023, and these actions continued through to 4 September 2023. MPO personnel undertook all reasonably practicable measures to minimise spontaneous combustion and the generation of odours in accordance with the site Spontaneous Combustion Principal Hazard Management Plan, which has been developed in accordance with current industry best practice. A perimeter odour observation was conducted via the public roads surrounding MPO (namely Wybong, Kayuga and Castlerock Roads) on 4 September 2023 in response to the report received. No odour or visual smoke was detected during the inspection. On 15 September 2023, MACH Energy responded to a request for information from the EPA (received via email on 7 September 2023) regarding the event, action taken, details on how compliance is achieved and techniques used to identify areas of heated material at the MPO. No further correspondence has been received from the EPA in relation to the request for information.

A total of three complaints that mentioned odour in relation to spontaneous combustion were received by MACH Energy during 2023, the same number of complaints as received in 2022 (see Complaints Summary 2023: https://machenergyaustralia.com.au/mount-pleasant/documentation/). In response to each complaint, an investigation was triggered. Following the investigation, the External Relations Manager made further contact with the complainant to provide an update on how MACH Energy has addressed the issue of the complaint.

5.13 GEOCHEMISTRY

During the previous reporting period, KCB was commissioned by MACH Energy to provide support for the ongoing geochemical assessment of the overburden tailings and coal rejects on site. KCB undertook additional Acid Mine Drainage (AMD) test assessments to further increase the understanding of potential AMD risk at MPO and validate the sites ongoing WasteMP. Consistent with the previous geochemical characterisation completed at the MPO (RGS, 2020; KCB, 2021), most samples representing overburden and interburden materials were classified as Non-Acid Forming (NAF) material. However, there are some uncertainties in AMD classification for overburden Potentially Acid Forming (PAF) samples (KCB, 2022).

In 2023, the following management actions were undertaken in relation to waste rock management:

- Covering PAF interburden material with NAF waste material within timeframes determined by the relative reactivity of the material.
- Ensuring that PAF material is not emplaced within 10 m of the outer surface of the final landform by maintaining two separate types of waste emplacement areas (Unrestricted emplacement areas and NAF Only areas).
- Regularly reviewing the designation between the Unrestricted and NAF only emplacement areas within the waste rock emplacement (the “PAF line”).
- Periodically adjusting the “PAF line” based on the latest geomorphic landform designs to maintain a minimum of 10 m of NAF cover over Unrestricted waste disposal areas.

An in-situ testing program focused on the FEA was also undertaken in October 2023 with KCB and Insitu Geotech Services (IGS) to assess the geotechnical and geochemical characteristics of the coal tailings. Six samples were assessed from various locations and depths within the FEA, including the deepest profile in the emplacement area. The assessment found variability in geochemical properties of the sub-samples, including acid-generating potential, indicating potential heterogeneity in the composition of the FEA. The results of this assessment will be used to inform the RMP and to assist in ongoing operational control for tailings placement.

6 WATER MANAGEMENT

A WMP was prepared by MACH Energy in accordance with Condition 28, Schedule 3 of Development Consent DA 92/97 and approved on 31 October 2019. A review of the WMP was undertaken following the completion of the Independent Environmental Audit conducted in June 2020. The revised WMP was lodged with DPE (now DPHI) and approved on 24 October 2022. This Annual Review reports against the currently approved WMP.

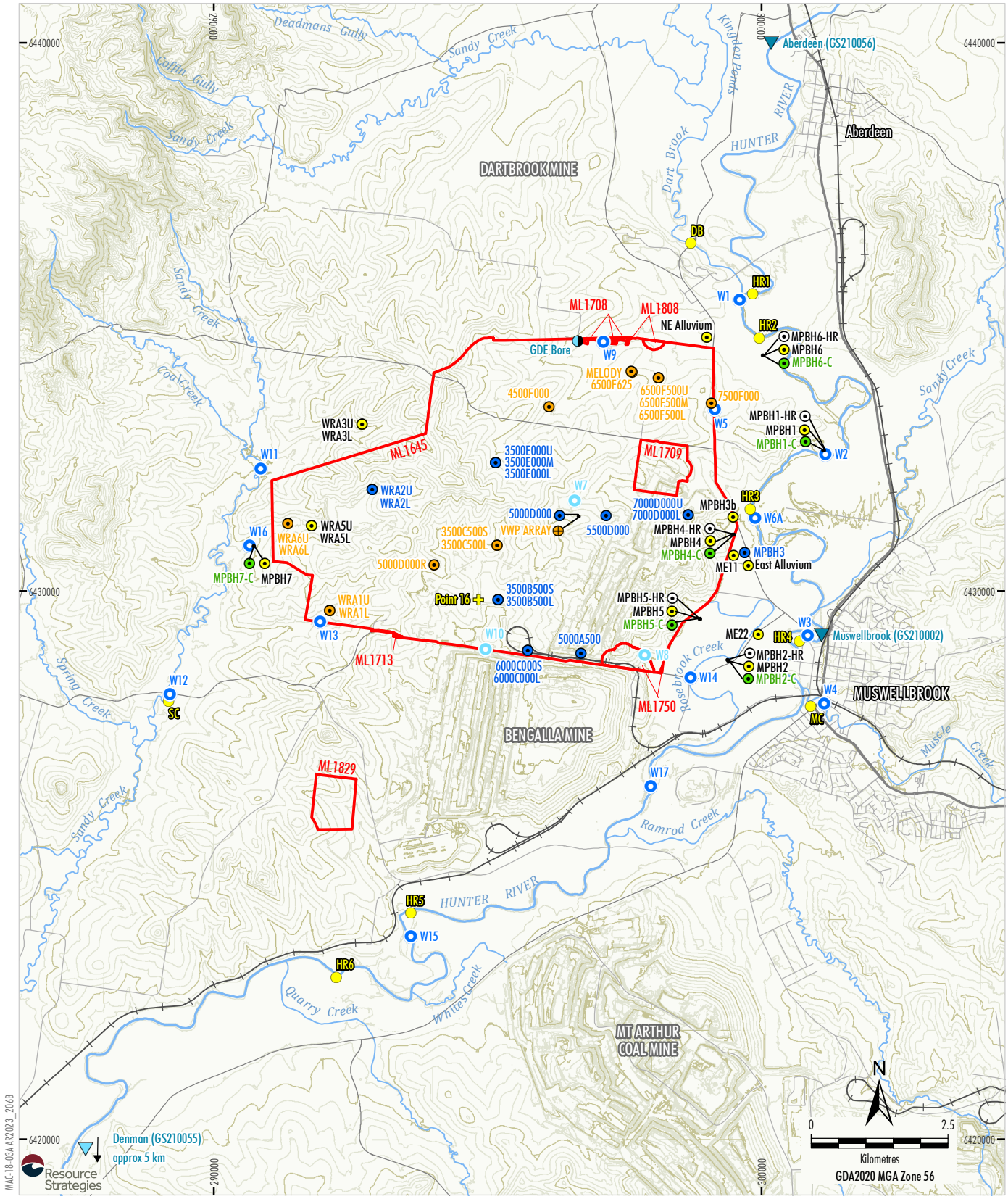
The WMP includes the following monitoring network (Figure 7):

- 14 surface water monitoring locations (W1 – W17);
- nine stream health monitoring locations (HR1 – HR6, DB, MC and SC);
- groundwater monitoring bores covering all major hydrogeological units; and
- Water discharge/ monitoring Point 16 (Hunter River Salinity Trading Scheme [HRSTS]) from EPL 20850.

Mining activities and MOD 4 construction activities in 2023 were undertaken in accordance with the erosion and sediment control provisions of the approved WMP and CEMP (redacted following completion of MOD 4 construction activities).

There were no water discharge events from the MPO in 2023. Any future discharges of mine water will be undertaken in accordance with Development Consent DA 92/97 (Condition 26, Schedule 3), Development Consent SSD-5170 (i.e. Bengalla Mine's Development Consent) and EPL 20850.

On 17 November 2022, MACH Energy lodged an application for the variation of EPL 20850 to include a new licensed water discharge/monitoring location (Point 16) for discharges in accordance with the HRSTS and to amend the premises boundary due to realignments associated with the access/fence to Bengalla Clean Water Dam Infrastructure, and the Interim Water Discharge Pipeline Arrangement. The variation was approved by the EPA on 28 February 2023. The licence fee period of EPL 20850 was also changed on 13 December 2023 (current licence version).



Source: MACH (2024); NSW Spatial Services (2024); NSW Department of Primary Industries - Water (2016)

LEGEND

- Mining Lease Boundary
- Contour (10 m Intervals)
- DPI Water Gauging Station

Surface Water Monitoring

- Stream Health Monitoring Site
- Surface Water Monitoring Site
- Historical Surface Water Monitoring Site

Mount Pleasant Monitoring

- GDE Bore
- Vibrating Wire Piezometer
- Standpipe
- Standpipe - Alluvium
- Standpipe - Interburden
- Standpipe - Coal Seam
- Standpipe - Historical
- Water Discharge/Monitoring Point (EPL 20850)

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Surface Water and Groundwater Monitoring Locations

Figure 7

6.1 SURFACE WATER

6.1.1 Approval Criteria

Surface Water Quality

Surface water monitoring is undertaken monthly and/or event based at 14 locations (Figure 7) for pH, electrical conductivity (EC), total suspended solids (TSS) and total dissolved solids (TDS), with additional monitoring conducted if triggered by a rain event. Water samples are also collected annually at these sites for laboratory analysis.

Monitoring at sites W7 and W8 have been discontinued due to being disturbed by mining activities. Monitoring at site W10 has been discontinued as the site is located on Dry Creek directly downstream of the Bengalla Mine Dry Creek Diversion Project. Monitoring data has not been collected at the Hunter River site W6 since 2011 due to the riverbank being too steep at this location to allow safe access. As such, water monitoring at site W6 has been discontinued and monitoring is undertaken at the new monitoring site W6A.

Establishment of the baseline conditions of key watercourses prior to the commencement of coal extraction was undertaken through surface water monitoring. Monitoring data has been reviewed against site-specific surface water quality triggers. The *Australian and New Zealand Guidelines for Fresh and Marine Water Quality* (Australian and New Zealand Environment and Conservation Council & Agriculture and Resource Management Council of Australia and New Zealand [ANZECC & ARMCANZ], 2000) guidelines have been superseded by the *Australian New Zealand Guidelines* (ANZG 2018). Surface water quality triggers have been developed using the ANZG (2018) / ANZECC & ARMCANZ (2000) guidelines in conjunction with baseline data collected at the site.

Trigger levels have not been established for sites upstream of the MPO (i.e. W1, W4 and W11) because these cannot be affected by the MPO. Site specific trigger levels have been developed for sites W2 and W6 as indicator sites. Site W6 contains sufficient data to develop trigger levels although there was insufficient data to develop TDS trigger levels for this site. Sites W5, W9, W13 and W16 are located on ephemeral drainage lines which are frequently dry and do not have sufficient data to develop site-specific trigger levels. There was insufficient data to develop trigger levels for site W14 due to dry conditions. ANZG (2018) / ANZECC & ARMCANZ (2000) default trigger levels for these sites have been adopted, until such time as sufficient data is available to develop site-specific triggers.

W17 has been assigned preliminary trigger values from the Bengalla Water Management Plan (Bengalla Mining Company [BMC], 2017). MACH Energy has established preliminary triggers at this site as it is the only site downstream of MPO's footprint on the Hunter River that is not also downstream of the Bengalla Mine footprint. MACH Energy therefore considers this site particularly important for assessing potential surface water impacts associated with the MPO (i.e. in the absence of any potential influence from Bengalla Mine).

Mangoola Coal Operations Pty Ltd has established triggers on Sandy Creek, downstream of the MPO. A description of these triggers and how they were derived is contained in the Mangoola Coal Surface Water Monitoring Plan (MCO, 2018).

The updated site-specific trigger levels are listed in Table 21 below.

Table 21
Surface Water Quality Trigger Levels

Site	pH	EC (µS/cm)	TSS (mg/L)
	20th – 80th Percentile Trigger Levels	80th Percentile Trigger Level	80th Percentile Trigger Level
Site Specific Trigger Levels			
W2	6.5 – 8.3**	539	18
W6A*	6.5 – 8.4**	496	19
W12	6.5 – 8.1**	6420	30
W15	6.5 – 8**	460	23
Default Trigger Levels^			
W5	6.5 – 7.5	350	-
W9	6.5 – 7.5	350	-
W13	6.5 – 7.5	350	
W14	6.5 – 7.5	350	
W16	6.5 – 7.5	350	
Bengalla Mine Trigger Levels#			
W17	6.5 – 8.1	650	40

Note: µS/cm = microSiemens per centimetre and mg/L = milligrams per litre.

* Due to safe access no longer being available at site W6, triggers developed for this site will now be used at the new monitoring location W6A, approximately 500 m downstream of W6.

** Where the 20th – 80th percentile trigger values were within the default trigger levels, the default trigger levels were adopted.

^ Default trigger levels are based on the ANZG (2018) / ANZECC & ARMCANZ (2000) guideline values for upland rivers in south-east Australia. ANZG (2018) / ANZECC & ARMCANZ (2000) does not provide guideline values for TSS.

Preliminary trigger values have been sourced from the *Bengalla Water Management Plan* (BMC, 2017), which have been established from baseline data for monitoring sites adjacent to W17 (e.g. Bengalla sites W01, W02 and W03), as well as the ANZG (2018) / ANZECC & ARMCANZ (2000) guideline.

Trigger levels are not regarded as assessment criteria, rather they are used as an indicator of potential impacts and to initiate investigations into the surface water quality as reported by the monitoring program.

An investigation is triggered when both:

- a water quality indicator at a downstream receiving water monitoring location is above (or outside the range of) the trigger levels for three consecutive sampling events; and
- a water quality indicator at a downstream receiving water monitoring location is above (or below in event of a trigger of the lower pH limit) the indicator of the corresponding upstream monitoring location (where such a monitoring location exists) sampled on the same day.

The majority of sites are located on ephemeral drainage lines and therefore do not regularly experience flow for sampling.

Stream Health

Stream health monitoring continued during the reporting period at six sites outlined in the WMP located on the Hunter River (HR1, HR2, HR3, HR4, HR5 and HR6), as well as three additional sites located on Sandy Creek (SC), Dart Brook (DB) and Muscle Creek (MC) (Figure 7).

Stream health is monitored bi-annually during spring and autumn using the Australian River Assessment System (AusRivAS) aquatic invertebrate monitoring protocol. In addition to the aquatic macro invertebrate sampling, monitoring also includes: fish observations, site water quality, stream condition

and presence of aquatic and riparian edge plants. Two rounds of monitoring were undertaken during the reporting period, in May 2023 (autumn) and October 2023 (spring).

Stream health trigger levels and stream health investigation protocol were revised as part of the WMP update in 2022. The updated trigger levels are outlined in Table 22.

Table 22
Stream Health Trigger Levels

Site ID	Baseline Band of Impairment Score	O/E Taxa
HR1	C	0.41
HR2	B*	0.59
HR3	B	0.64
HR4	C	0.51
HR5	B	0.61
HR6	B	0.73
SC	B	0.61
DB	B	0.66
MC	B	0.55

O/E = Observed/Expected.

* Previously recorded as Band A, which is considered unrealistic due to the disturbances that the site is regularly exposed to (e.g. stream bank erosion, water regulation and agricultural activities).

Should a measured band of impairment score at a particular downstream monitoring site degrade below the baseline band level outlined in Table 22, and the band level at a corresponding upstream monitoring site remain the same for two successive monitoring rounds, the stream health investigation protocol (refer to the SGWRP) would be initiated.

6.1.2 Performance During the Reporting Period

Surface Water Monitoring

Surface water monitoring for the reporting period has been split into three groups:

- monitoring in the Hunter River (sites W1, W2, W3, W6A, W15 and W17);
- monitoring in Sandy, Muscle and Rosebrook Creeks (sites W4, W11, W12, W13, W14 and W16); and
- monitoring in other ephemeral creeks and gullies.

When there is no data available (e.g. due to prolonged dry conditions), charts are not presented in the following sub-sections.

Additional event-based monitoring was carried out in February, resulting in multiple monitoring records instead of one (9 February and 23 February).

Hunter River

Monitored pH values for the Hunter River monitoring sites during the reporting period are shown in Chart 11. Additionally, a comparison between 2017, 2018, 2019, 2020, 2021, 2022 and 2023 pH values is provided in Chart 12.

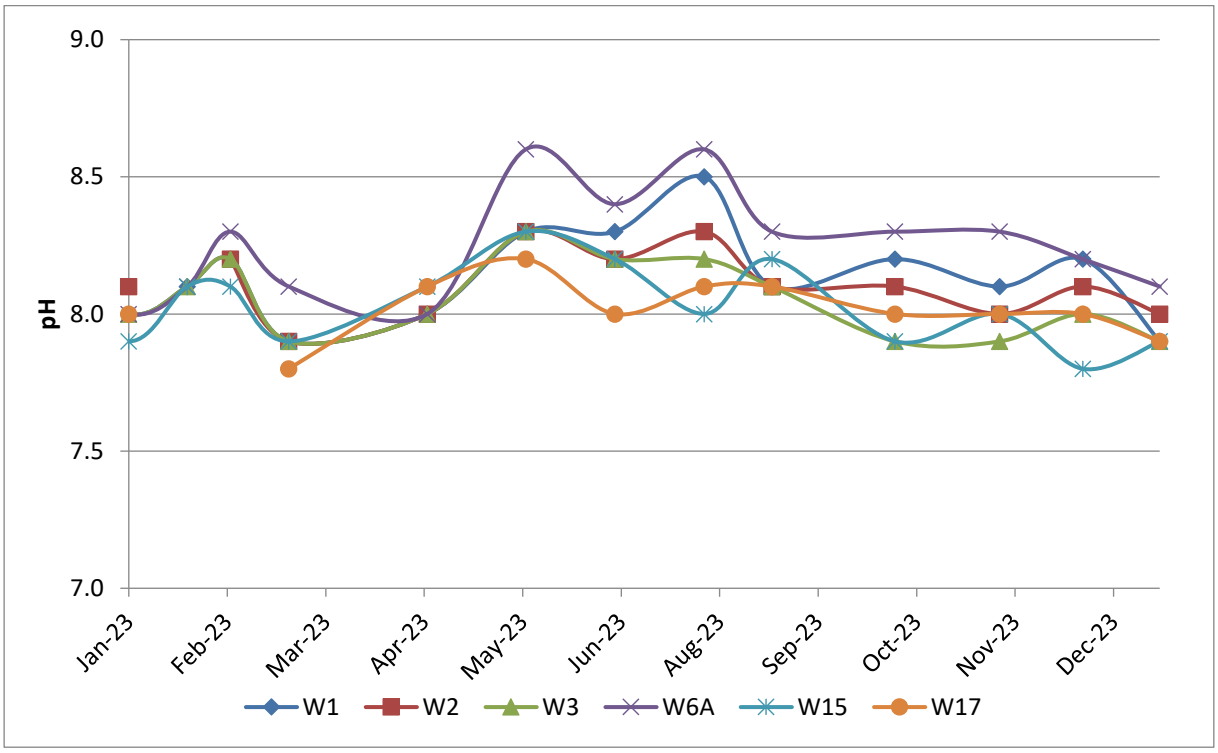

Chart 11: Hunter River pH Levels 2023

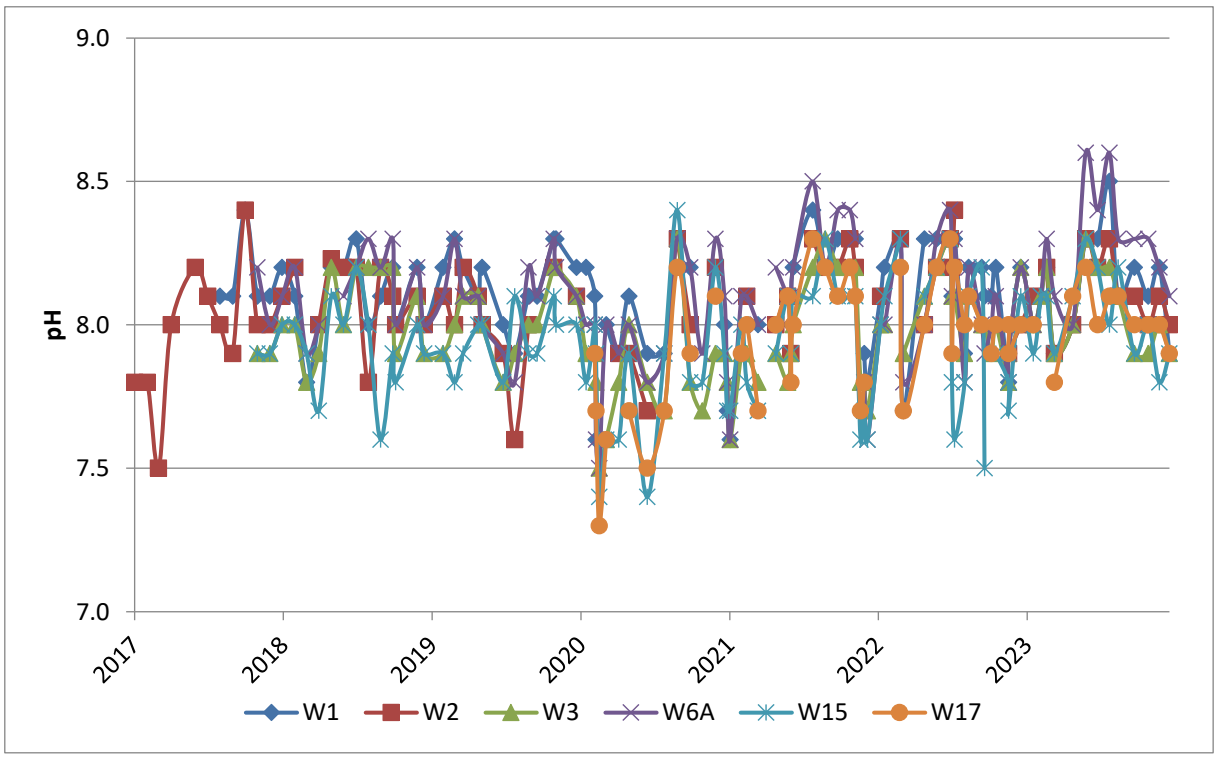

Chart 12: Hunter River pH Levels 2017 – 2023

EC values for the 2023 monitoring period are shown in Chart 13. Additionally, a comparison between 2017, 2018, 2019, 2020, 2021, 2022 and 2023 EC values is provided in Chart 14.

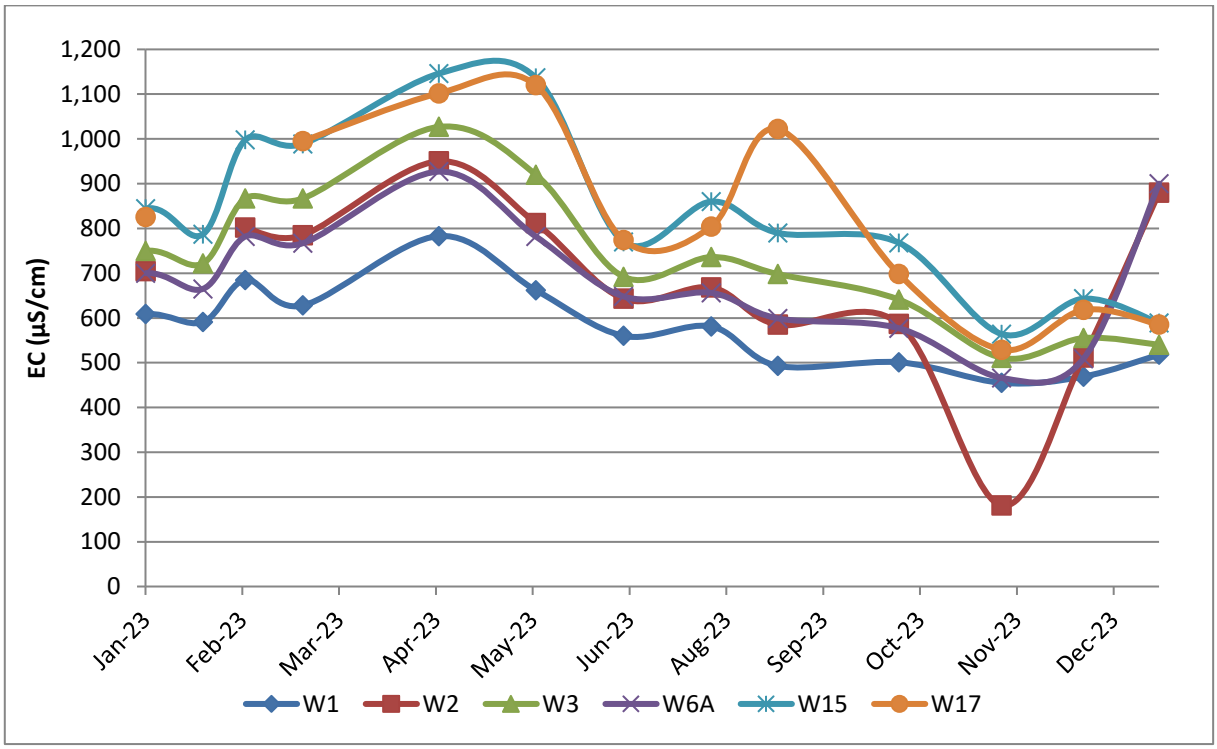

Chart 13: Hunter River EC Levels 2023

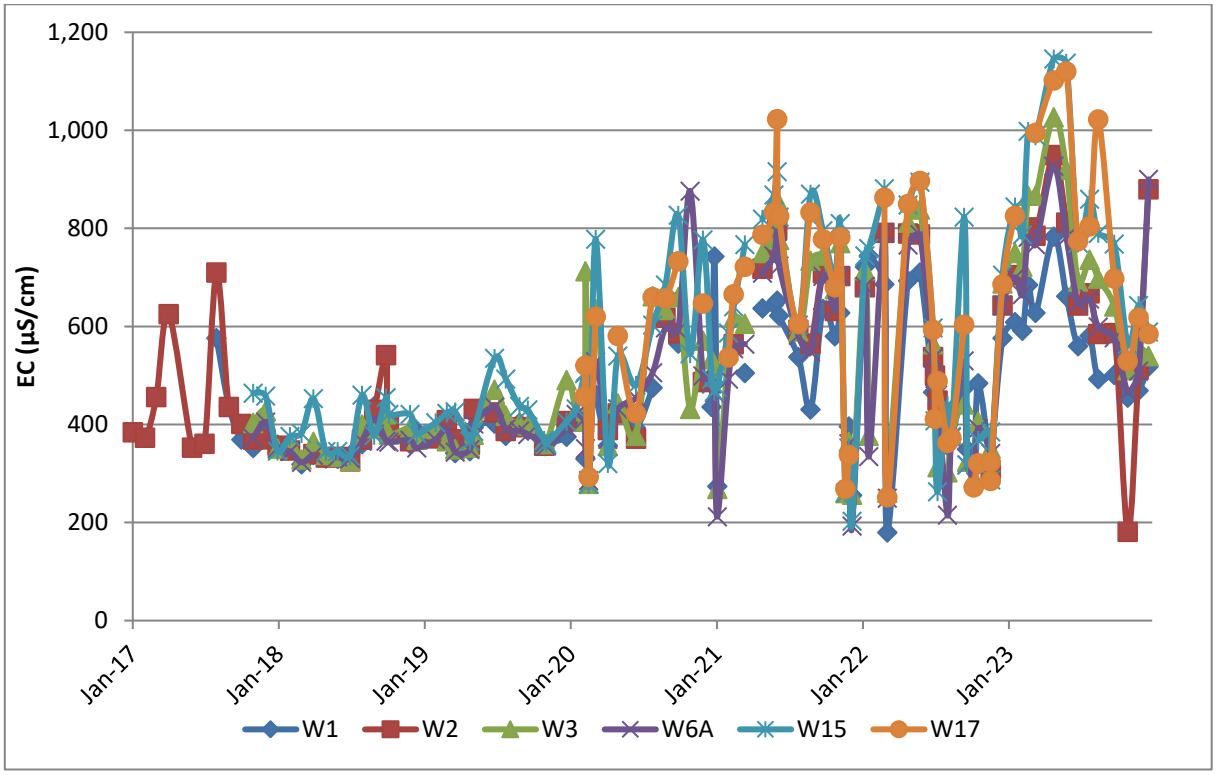

Chart 14: Hunter River EC Levels 2017 – 2023

TSS values for the 2023 monitoring period are shown in Chart 15. Additionally, a comparison between 2017, 2018, 2019, 2020, 2021, 2022 and 2023 TSS values is provided in Chart 16.

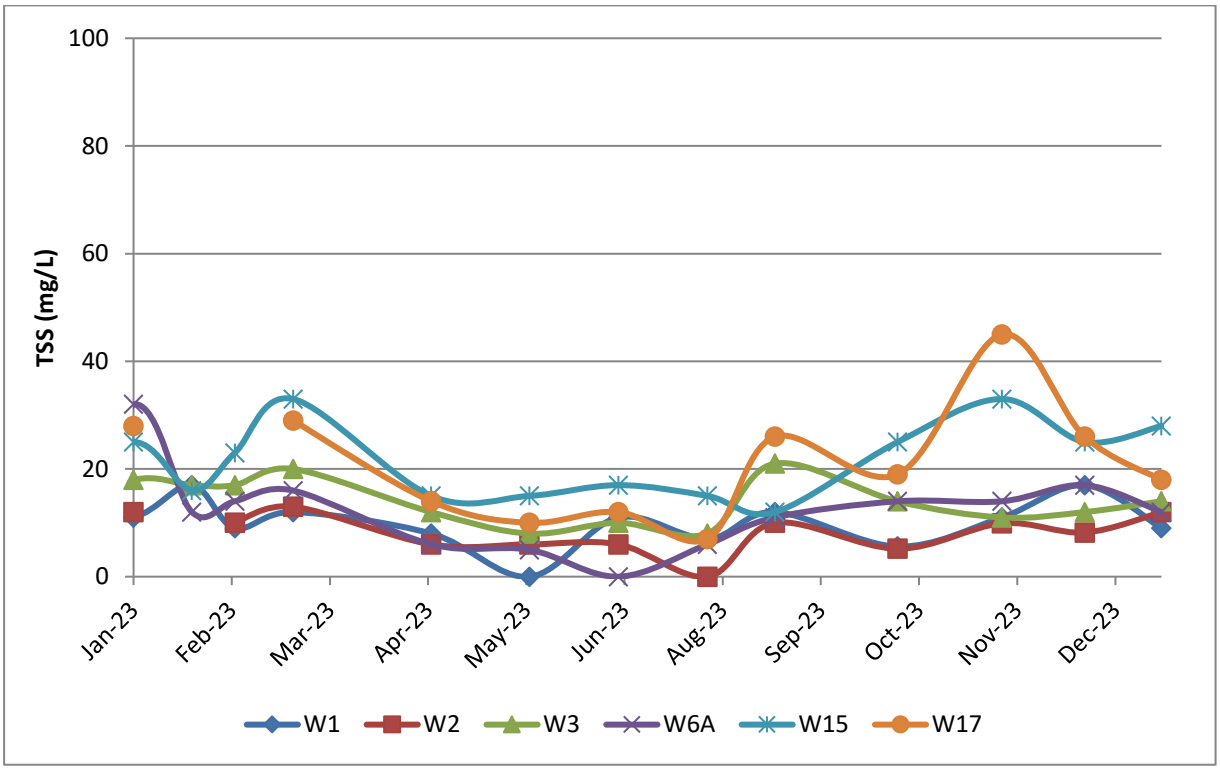

Chart 15: Hunter River TSS Levels 2023

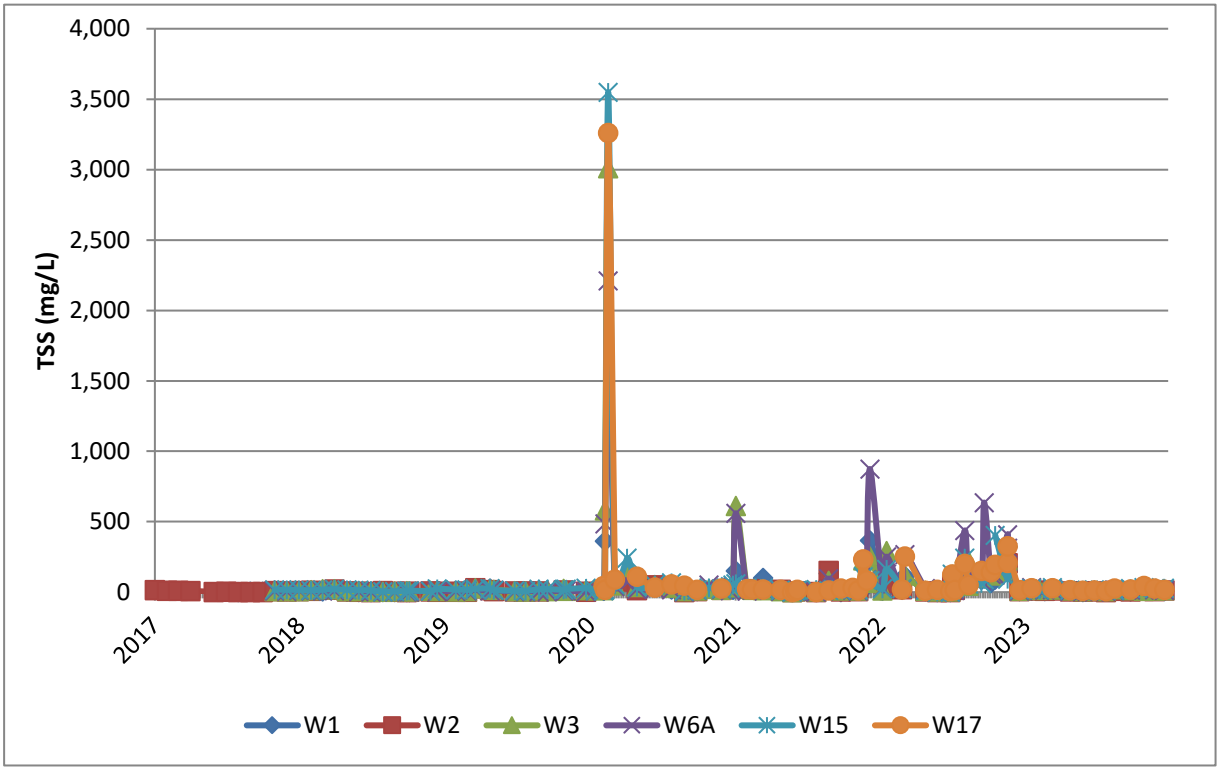

Chart 16: Hunter River TSS Levels 2017 – 2023

TDS values for the 2023 monitoring period are shown in Chart 17. Additionally, a comparison between 2017, 2018, 2019, 2020, 2021, 2022 and 2023 TDS values is provided in Chart 18.

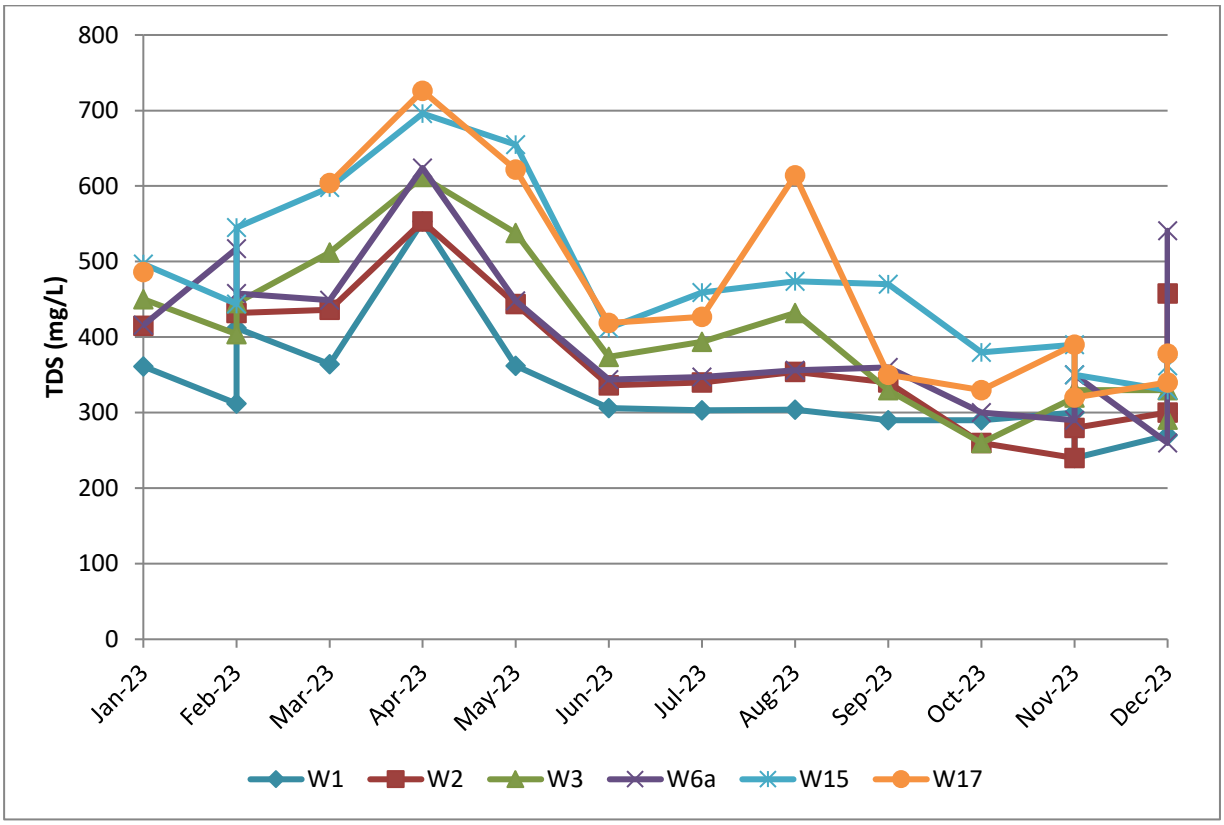

Chart 17: Hunter River TDS Levels 2023

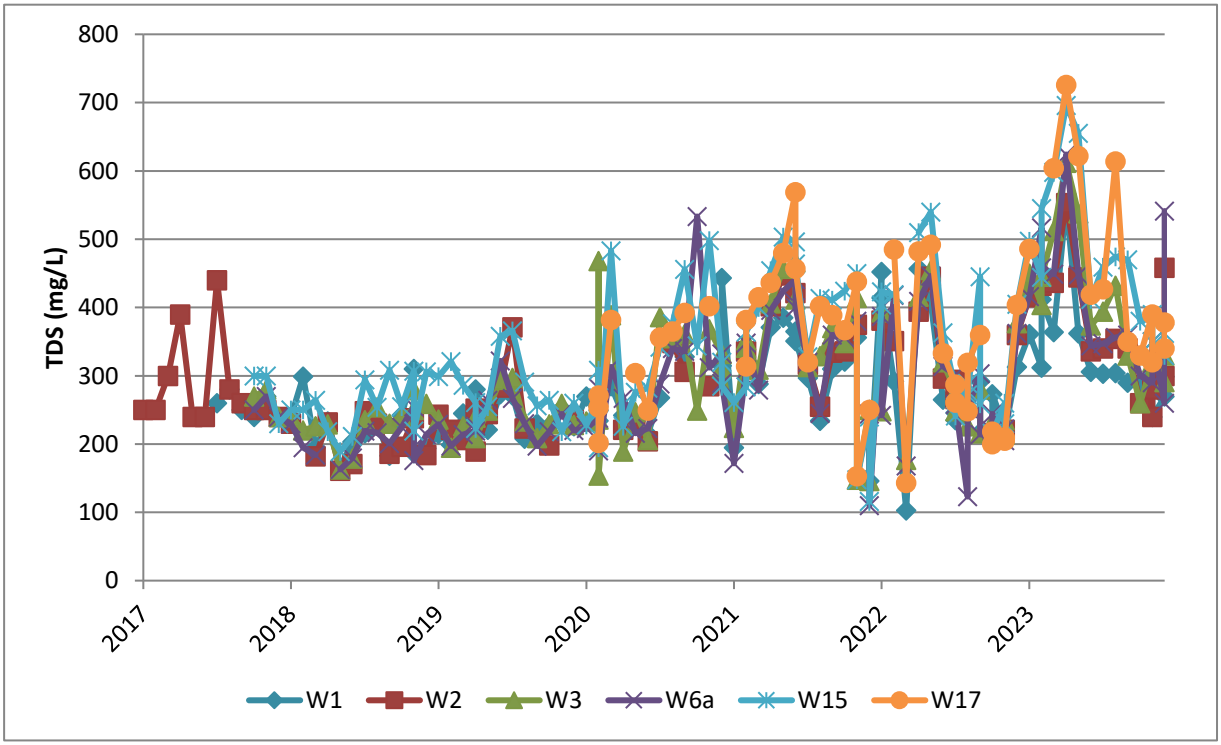

Chart 18: Hunter River TDS Levels 2017 – 2023

Sandy, Muscle and Rosebrook Creeks

Monitored pH values for the Sandy, Muscle and Rosebrook Creek monitoring sites during the reporting period are shown in Chart 19. Additionally, a comparison between 2017, 2018, 2019, 2020, 2021, 2022 and 2023 pH values is provided in Chart 20.

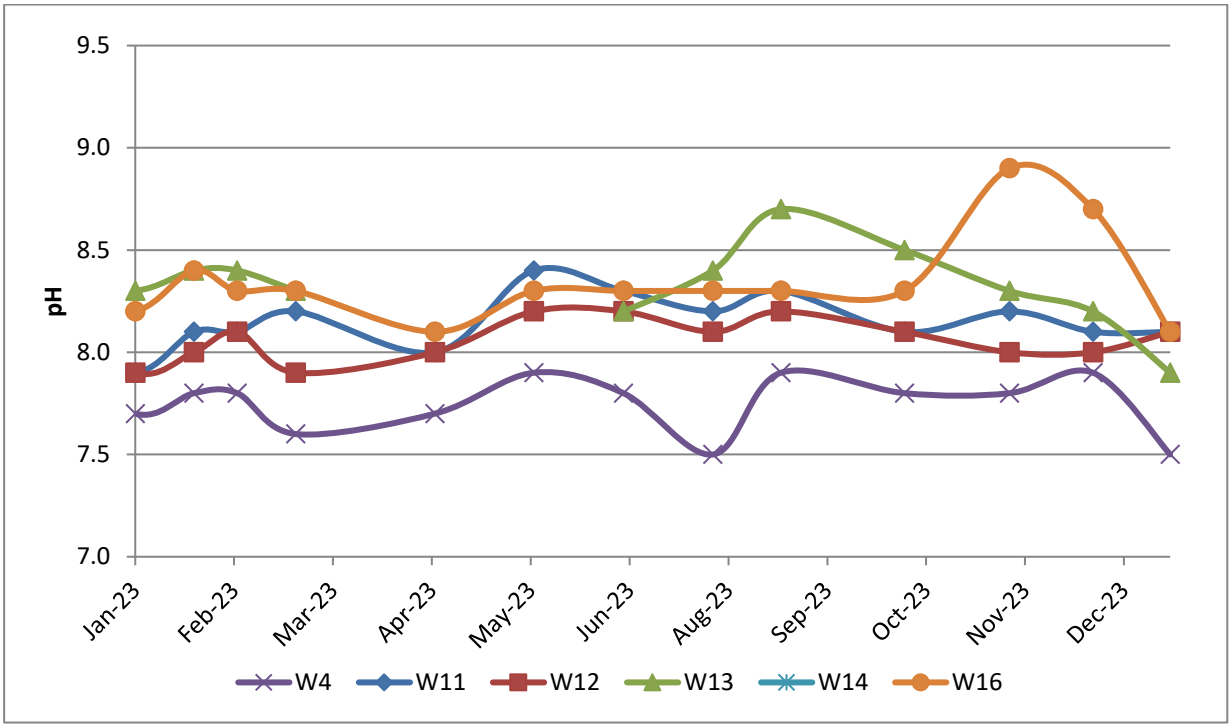

Chart 19: Sandy, Muscle and Rosebrook Creeks pH Levels 2023

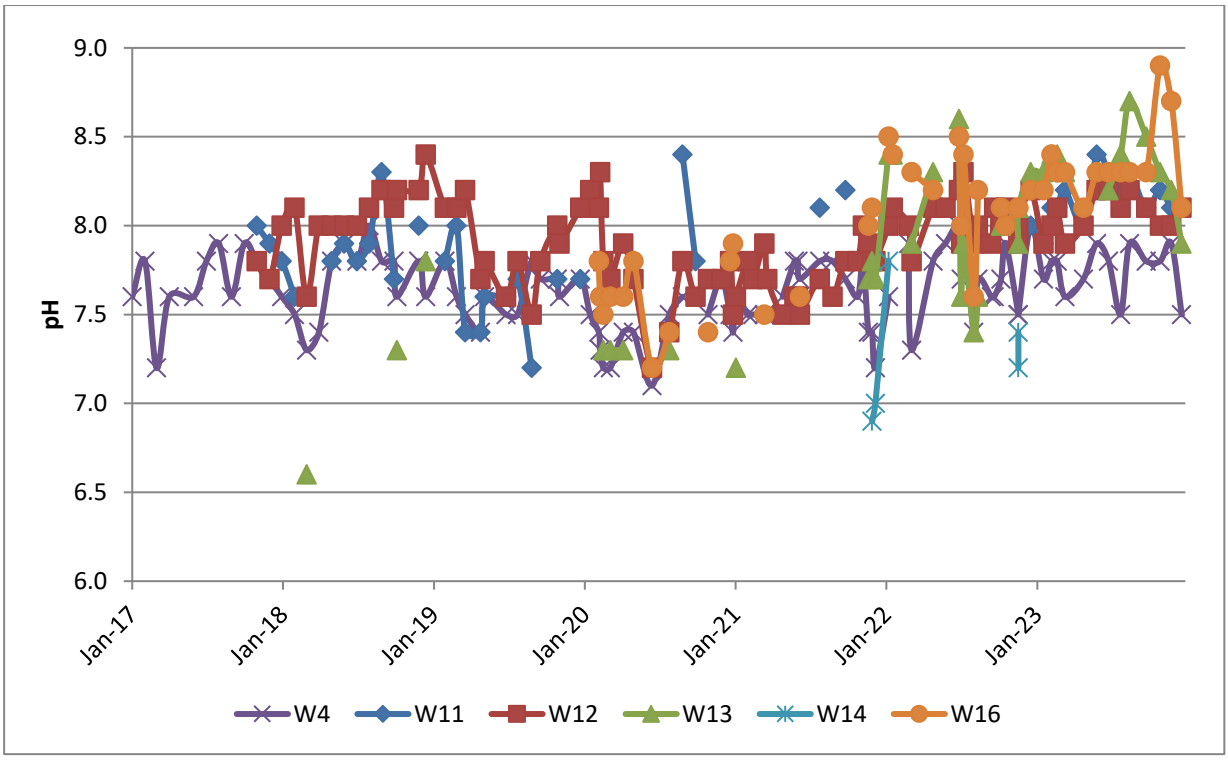

Chart 20: Sandy, Muscle and Rosebrook Creeks pH Levels 2017 – 2023

EC values for the 2023 monitoring period are shown in Chart 21. Additionally, a comparison between 2017, 2018, 2019, 2020, 2021, 2022 and 2023 EC values is provided in Chart 22.

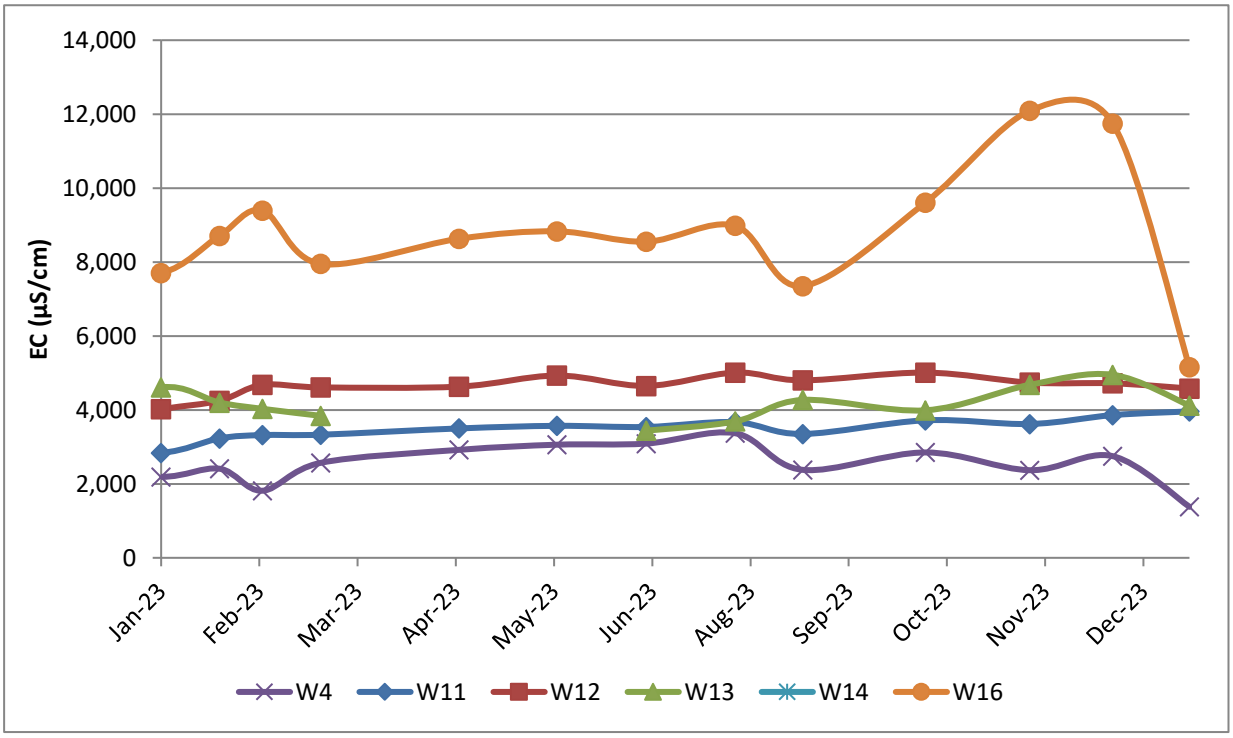

Chart 21: Sandy, Muscle and Rosebrook Creeks EC Levels 2023

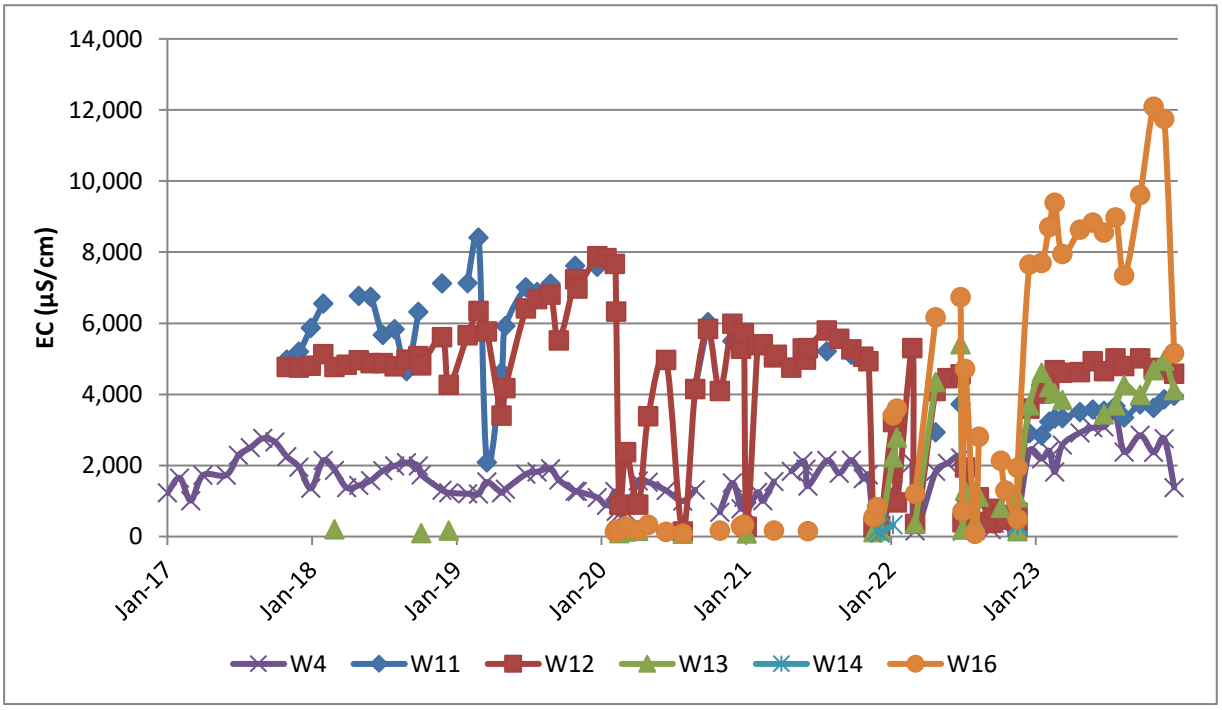

Chart 22: Sandy, Muscle and Rosebrook Creeks EC Levels 2017 – 2023

TSS values for the 2023 monitoring period are shown in Chart 23. Additionally, a comparison between 2017, 2018, 2019, 2020, 2021, 2022 and 2023 TSS values is provided in Chart 24.

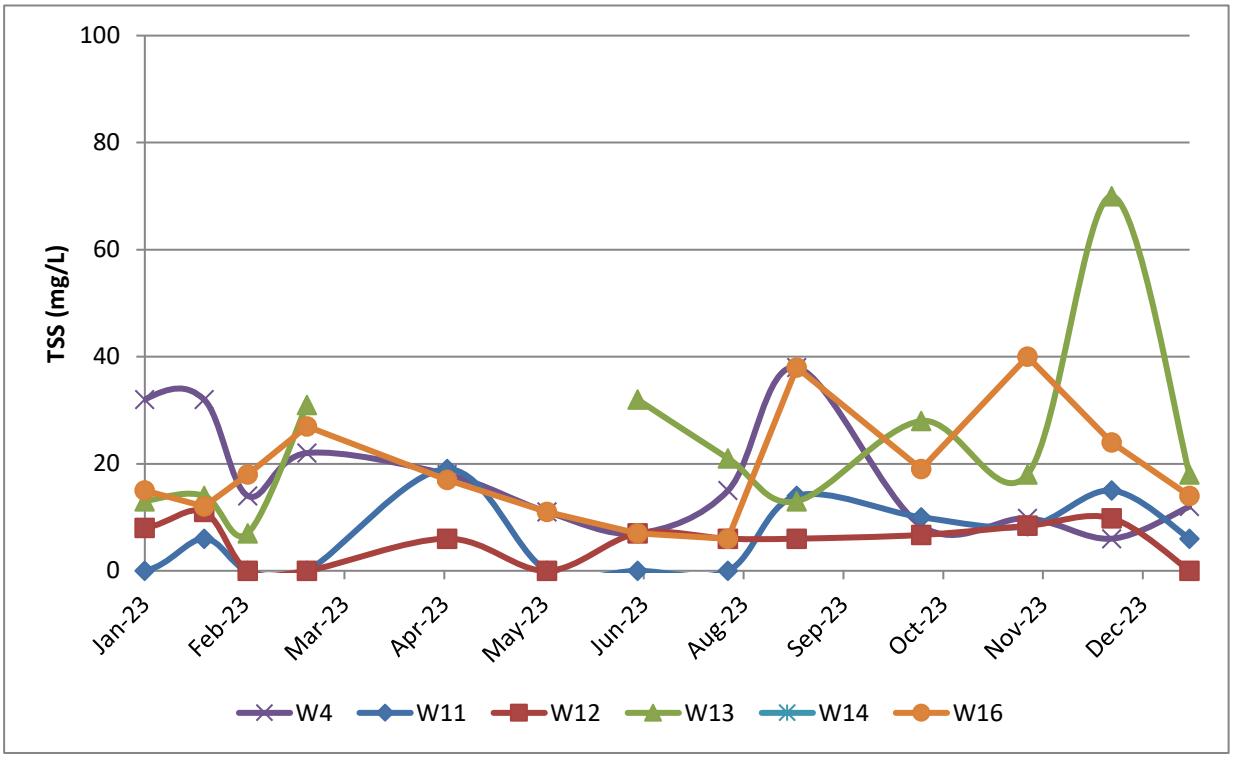

Chart 23: Sandy, Muscle and Rosebrook Creeks TSS Levels 2023

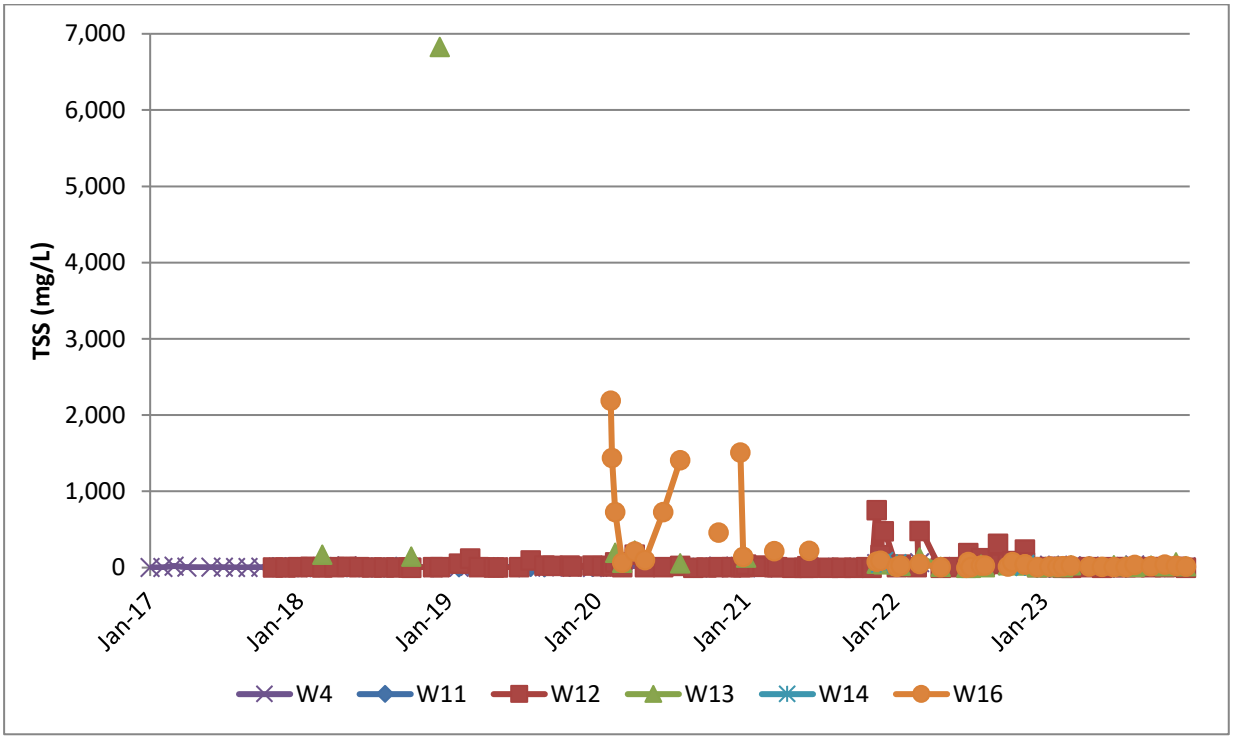

Chart 24: Sandy, Muscle and Rosebrook Creeks TSS Levels 2017 - 2023

Recorded TDS values for the 2023 monitoring period are shown in Chart 25. Additionally, a comparison between 2017, 2018, 2019, 2020, 2021, 2022 and 2023 TDS values is provided in Chart 26.

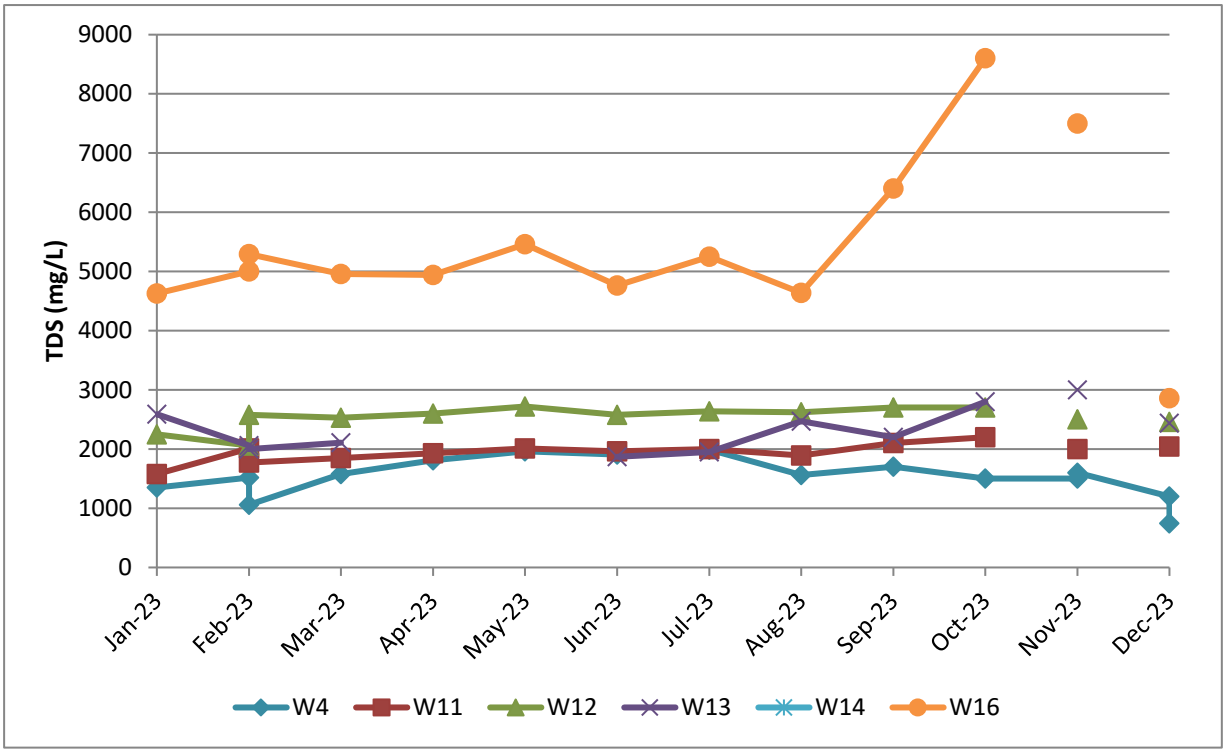

Chart 25: Sandy, Muscle and Rosebrook Creeks TDS Levels 2023

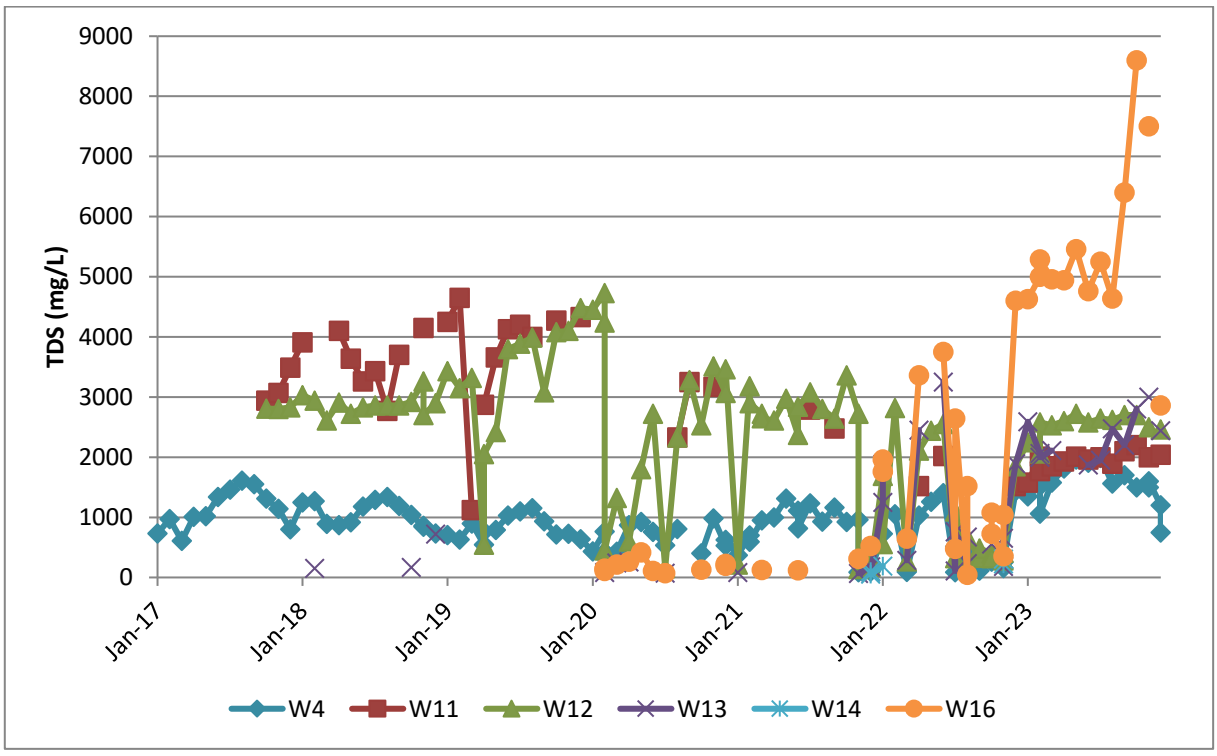

Chart 26: Sandy, Muscle and Rosebrook Creeks TDS Levels 2017–2023

6.1.3 Trends and Key Management Implications

Surface Water Monitoring

Hunter River Sites (W1, W2, W3, W6A, W15 & W17)

During the reporting period, pH levels at the Hunter River sites ranged from 7.8 to 8.6. The Hunter River sites stayed within their relevant pH investigation trigger levels, with the exception of a number of slightly higher readings at sites W6A, W15 and W17. A comparison with 2017, 2018, 2019, 2020, 2021, 2022 and 2023 pH levels show that pH levels have stayed consistently between 7.3 and 8.6 to date.

Monitoring site W3 is located adjacent to DPIE – Water gauging station and is only monitored intermittently for laboratory purposes. EC values generally decreased over the reporting period at all sites except for W2 and W6A which saw a rapid increase in EC in late-2023. Sites W2, W6A, W15 and W17 all recorded a number of EC readings above their relevant EC investigation trigger levels throughout the reporting period. TDS values during this reporting period generally correlated with the trends recorded for EC levels.

In 2020, the Surface Water Quality Response Protocol (SWQRP) was implemented following elevated EC trigger levels at sites W6A for three consecutive sampling rounds. MACH Energy continued monitoring of EC results, as per EPA recommendations at site W6A until June 2021 and provided the investigation findings report to DPE (now DPHI) and EPA. The investigation findings (including a review of EC data logged by Water NSW at Muswellbrook Bridge) indicated a natural variability of water quality in the Hunter River at the Muswellbrook Bridge likely due to the impacts of low-flow, high-flow and first flush processes associated with rainfall and Glenbawn Dam releases, and this is reflected in the EC results from Site W6A.

An investigation into the EC trigger level exceedances at monitoring sites W2, W6A, W15 and W17 was undertaken during the current reporting period in accordance with Section 3.1.1 of the Surface and Groundwater Response Plan (SGRP). The preliminary investigation was submitted to DPE (now DPHI) on 20 October 2023 and found that recorded EC values at the downstream sites are consistently above W1 (upstream site), indicating natural variability of water quality in the Hunter River with flow-on effects downstream. ACT Williams was engaged by MACH Energy in November 2023 to complete a more in-depth investigation into the exceedances. The findings of the investigation (ACT Williams, 2024a) were as follows:

- There is limited evidence to suggest that the EC trigger exceedances were a result of MPO activities.
- The elevated EC values recorded during the review period (January to September 2023) are considered to be catchment-wide, with consistent increases in EC values recorded at all Hunter River monitoring sites including the upstream reference sites located outside of the potential influence of MPO activities.
- The elevated values are considered related to the prevailing climatic conditions, substantial decline in release of relatively low EC water from the Glenbawn Dam and associated increased influence of high EC water from tributary inflow to the Hunter River.

The trigger values have been reassessed, and consideration of trends from upstream monitoring sites unaffected by potential mining-related influences has been included in the trigger action response protocol. This protocol will be integrated into the subsequent review of the WMP as part of the regulatory approval process following commencement of development under Development Consent SSD 10418.

TSS levels for sites W6A, W15 and W17 exceeded the trigger levels on a number of occasions during the reporting period. Historically, TSS values at monitoring site W6A have frequently showed elevated readings. W6A and W17 are upstream of W15 and neither recorded elevated readings above the trigger level for three consecutive sampling events, therefore an investigation was not triggered.

TDS levels for all Hunter River sites generally fluctuated between approximately 103 mg/L and 726 mg/L.

Sandy, Muscle and Rosebrook Creek Sites (W4, W11, W12, W13, W14 & W16)

Monitored pH values during the reporting period at the Sandy, Muscle and Rosebrook Creek sites ranged from 7.5 to 8.9. Monitoring sites W4 and W11 remained generally consistent during the reporting period and monitoring site W14 was dry. Monitoring sites W12, W13, and W16 all had a number of elevated recordings above their relevant pH trigger levels. W13 and W16 are located within the MPO boundary but do not have corresponding upstream monitoring locations as they serve as the upstream monitoring location for W12 along with W11. W12 did not have elevated recordings above the EC trigger level for more than two consecutive sampling events, therefore an investigation was not triggered. Only site W4 has been consistently measured for water quality since 2017. Monitoring since 2017 shows generally consistent values of pH for site W4.

EC monitoring results remained generally consistent during the reporting period at all sites except for W16, which increased at the start of 2023 and remained elevated until December 2023. Monitoring site W12 remained below the relevant EC trigger level during the reporting period. Monitoring sites W13 and W16 had a number of elevated EC recordings over the relevant trigger levels during the reporting period. As discussed above, W13 and W16 serve as the upstream monitoring location for W12 along with W11. W12 did not have elevated recordings above the EC trigger level, therefore an investigation was not triggered. The monitored EC levels for the sites were generally consistent with the levels recorded between 2017 – 2022, apart from monitoring site W16 which experienced elevated EC in 2023.

TSS values were generally consistent in sites W11 and W12 during the reporting period. Monitoring sites W4, W13 and W16 showed slightly elevated TSS readings on multiple occasions throughout the year. No exceedances of the TSS trigger levels were recorded.

TDS values generally stayed consistent throughout the reporting period at the Sandy, Muscle and Rosebrook Creek sites, and generally correlated with the trend recorded for EC levels at the sites. Monitoring site W16 recorded elevated TDS between September and November 2023, with levels returning back down in December.

The 2017 – 2023 trends for pH and TSS for site W4 were generally consistent with observations made in the EIS (ERM Mitchell McCotter, 1997). EC and TDS levels at site W4 have increased since recordings made in the EIS. This site is located on Muscle Creek within Muswellbrook, upstream of the MPO and therefore any increase is not associated with MPO activities. This site has naturally occurring salts in surrounding soils and rocks, and data from previous annual reviews indicates that large fluctuations at this site are not unusual (Coal & Allied, 2016; MACH Energy, 2017b; MACH Energy, 2018; MACH Energy, 2019; MACH Energy, 2020; MACH Energy, 2021; MACH Energy 2022).

Stream Health Monitoring

The Autumn and Spring 2023 Stream Health Monitoring Reports were prepared following the May and October 2023 monitoring rounds. The key findings of the reports were as follows:

- Examination of results from the 2023 autumn and spring surveys found no measurable changes that could be indicative of an impact associated with the MPO.
- Overall, the species composition of assemblages has been comparable with that observed by previous surveys.
- Macroinvertebrate assemblages at the sites sampled have consistently (i.e. before and during

mining activities at the MPO) been dominated by pollution tolerant taxa.

- No threatened species of fish listed under the NSW *Fisheries Management Act, 1994* or the *Environment Protection and Biodiversity Conservation Act, 1999* have been observed.

The stream health trigger levels established within the WMP were exceeded on each sampling occasion since 2017. These consecutive exceedances trigger the stream health investigation protocol in accordance with the Surface and Groundwater Response Protocol (SGWRP). However, as stated in the Stream Health Monitoring Reports prepared by Bio-Analysis Pty Ltd, the investigation is not considered warranted as:

- the trigger levels developed within the SWMP are based on historical data presented in Hose and Turak (2004), which were collected on one sampling occasion at the sites;
- no discharges from MPO in accordance with EPL 20850 have occurred throughout the monitoring period;
- external influences including rural and urban run-off and flow regulations are likely to have impacted aquatic biota within the monitoring sites since the baseline survey was carried out; and
- seasonal variation of the structure of assemblages of macroinvertebrates occurred (Stark and Phillips, 2009).

MACH Energy will continue to monitor stream health during autumn and spring in future monitoring periods. Revised stream health trigger levels and the stream health investigation protocol were revised as part of the WMP update and approved on 24 October 2022 (Section 2.1). This Annual Review reports against the new trigger levels and updated stream health investigation protocol.

6.2 GROUNDWATER

6.2.1 Approval Criteria and Management Plan Requirements

Groundwater monitoring is undertaken at a network of bores which are broadly distributed across the MPO area (Figure 7) and which cover all major hydrogeological units.

Groundwater monitoring includes:

- manually monitoring of water levels on a quarterly basis;
- quarterly sampling of pH and EC;
- annual sampling of a suite of laboratory parameters; and
- regular groundwater inflows as recorded from flow meters or recording of pumping times and rates.

Groundwater trigger levels have been developed for the MPO, based on the NSW Aquifer Interference Policy and the ANZG (2018) / ANZECC & ARMCANZ (2000) guidelines. These trigger levels include standing water level (SWL) triggers for the eastern groundwater sites, and EC and pH for all sites, as presented in the WMP and in Tables 23 and 24.

Beneficial use categories have been assigned to each monitoring bore based on its 80th percentile baseline EC and the EC ranges specified in the WMP. Should a measured EC value exceed the beneficial use quality range EC for a particular bore at three successive monitoring rounds (as defined in the WMP), the groundwater investigation protocol, as detailed in the SGWRP, would be initiated.

Following the trigger of the Groundwater Quality Response Protocol in 2018, EC trigger levels for 6500F500 M&L, 4500F500 and 5500D000 and pH trigger levels for all groundwater monitoring sites were updated in 2019. With the most recent WMP update on 24 October 2022, there have been no changes to the pH and EC trigger levels.

Bore 5000D000-R was implemented into the groundwater monitoring network in April 2022. Triggers for the bore will be developed once sufficient monitoring data is collected.

The pH trigger levels were updated to apply a single trigger range of 6 – 8.5. This decision was made as the proposed 20th to 80th percentile trigger ranges proved to be too narrow and resulted in exceedances of the triggers under neutral pH conditions. The adopted range of 6 – 8.5 pH units is consistent with the pH recommended by ANZG (2018) / ANZECC & ARMCANZ (2000) to prevent corrosion of infrastructure associated with the groundwater, as well as the recommend range for drinking water as outlined in the Australian Drinking Water Quality Guidelines (National Health and Medical Research Council [NHMRC] & National Resource Management Ministerial Council [NRMMC], 2011).

At any bore where a monitored pH value is outside the applicable baseline range at three successive monitoring rounds, the groundwater investigation protocol would be initiated.

Table 23
Groundwater Triggers – Water Level

Bore	Screened Interval (mbgl)	Observed Groundwater Level (mbgl)		Trigger Level (mbgl)
		Minimum	80th percentile	
MPBH1	12.6 – 18.6	8.8	9.7	11.7
MPBH2	11.5 – 17.5	11.6	12.2	14.2
MPBH3b	Well to 14 m	11.6	12.0	Dry (or 14.0 m)

Note: mbgl = metres below ground level.

Table 24
Groundwater Triggers – Water Quality

Site	pH		pH Trigger Range	EC		
	20th %ile	80th %ile		80th %ile (µS/cm)	Beneficial Use Category	Trigger (µS/cm)
3500B500U	7.2	9.6*	6 – 8.5	3,530	Irrigation	7,800
3500B500L	7.1	7.4		5,826	Irrigation	7,800
3500C500U	7.1	7.4		5,664	Irrigation	7,800
3500C500L	7.2	7.4		5,590	Irrigation	7,800
4500F000	6.5	6.9		6,904	Saline	22,000
5000D000	6.7	7.0		703	Potable	800
5000D000-R^	-	-		-	-	-
5500D000	6.4	6.9		1,570	Irrigation	7,800
6000C000U	6.4	7.1		4,984	Irrigation	7,800
6000C000L	7.0	7.2		5,474	Irrigation	7,800
6500F500U	6.8	7.0		5,778	Irrigation	7,800
6500F500M	6.9	7.2		2,804	Irrigation	7,800
6500F500L	6.5	7.0		1,526	Irrigation	7,800
6500F625	6.7	7.0		4,086	Irrigation	7,800
7000D000U	6.6	7.6		6,730	Irrigation	7,800
7000D000L	6.6	6.8		1,370	Marginal Potable	2,350
7500F000	6.7	7.6		5,918	Irrigation	7,800
WRA1U	-	-		-	-	-
WRA1L	7.2	7.7		4,496	Irrigation	7,800
WRA2U	6.7	7.0		4,108	Irrigation	7,800
WRA2L	7.0	7.3		6,086	Irrigation	7,800
WRA3U	7.1	7.5		9,020	Saline	22,000
WRA3L	6.6	6.9		16,734	Saline	22,000
WRA5U	7.1	7.4		4,772	Irrigation	7,800
WRA5L	7.1	7.8		7,034	Irrigation	7,800
WRA6U	6.8	7.0		11,240	Saline	22,000
WRA6L	7.2	7.7		5,970	Irrigation	7,800
MPBH1	6.8	7.1		590	Potable	800
MPBH2	6.8	7.1		930	Marginal Potable	930**
MPBH3	6.6	6.9		1,083	Marginal Potable	1,083**
MPBH3b	7.4	7.7		4,420	Irrigation	7,800
MPBH4 (formerly A1)^	-	-		-	-	-
MPBH5 (formerly B1)^	-	-		-	-	-
Melody Bore^	-	-		-	-	-

Notes:

* pH values for bore 3500B500S exceed the pH trigger range of 6 – 8.5 however, this bore was mined through in August 2018.

** Existing 80th percentile values have been adopted for these bores given the baseline water quality is close to potable and these sites are representative of the Hunter River alluvium.

^ Sufficient data is not yet available to develop baseline trigger ranges for new bores 5000D000-R, MPBH4 and MPBH5, or Melody Bore. This table will be revised with the appropriate values once the data becomes available. For more information on these bores refer to the WMP.

6.2.2 Performance During the Reporting Period

Monitoring bores are split into three categories:

- Groundwater Central Bores: representative of the hard rock aquifer (3500B500L&S, 3500C500L&S, 4500F000, 5500D000, 5000D000 and 5000D000-R, 6000C000L&S, 6500F500L,M&U, 7000D000L&U, 7500F000, 6500F625 and Melody).
- Groundwater Eastern Bores: representative of the alluvial aquifer (MPBH1, MPBH1-C&HR, MPBH2, MPBH2-C&HR, MPBH3b, MPBH4, MPBH4-C&HR, MPBH5, MPBH5-C&HR, MPBH6 and MPBH6-C&HR).
- Groundwater Western Bores: representative of the hard rock aquifer in, or in the vicinity of, the Fine Rejects Dam (WRA1L&U, WRA2L&U, WRA3L&U, WRA5L&U, WRA6L&U, MPBH7 and MPBH7-C).

Bores 3500B500L&S, 6000C000L&S, 7000D000L&U, WRA2L&U, WRA5L&U and WRA3L&U were decommissioned in previous reporting periods. Notwithstanding, the data collected from these bores during previous years has been included to assist with trend analysis.

Two new monitoring bores will be installed in 2024 to replace bores WRA3L&U. The new monitoring bores and updated groundwater monitoring program will be included in the next update of the WMP.

It was previously proposed to include two additional sites to the east of the MPO identified during the bore census (i.e. ME11 and ME22). This is no longer considered to be necessary due to the installation of nested standpipes (sampling the alluvium, interburden and coal seam) at the nearby sites MPBH4, MPBH5 and MPBH2.

The results of monitoring SWL (measured in mbgl), EC and pH from 2015 to 2023 for the groundwater central bores are shown in Charts 27, 28 and 29 respectively.

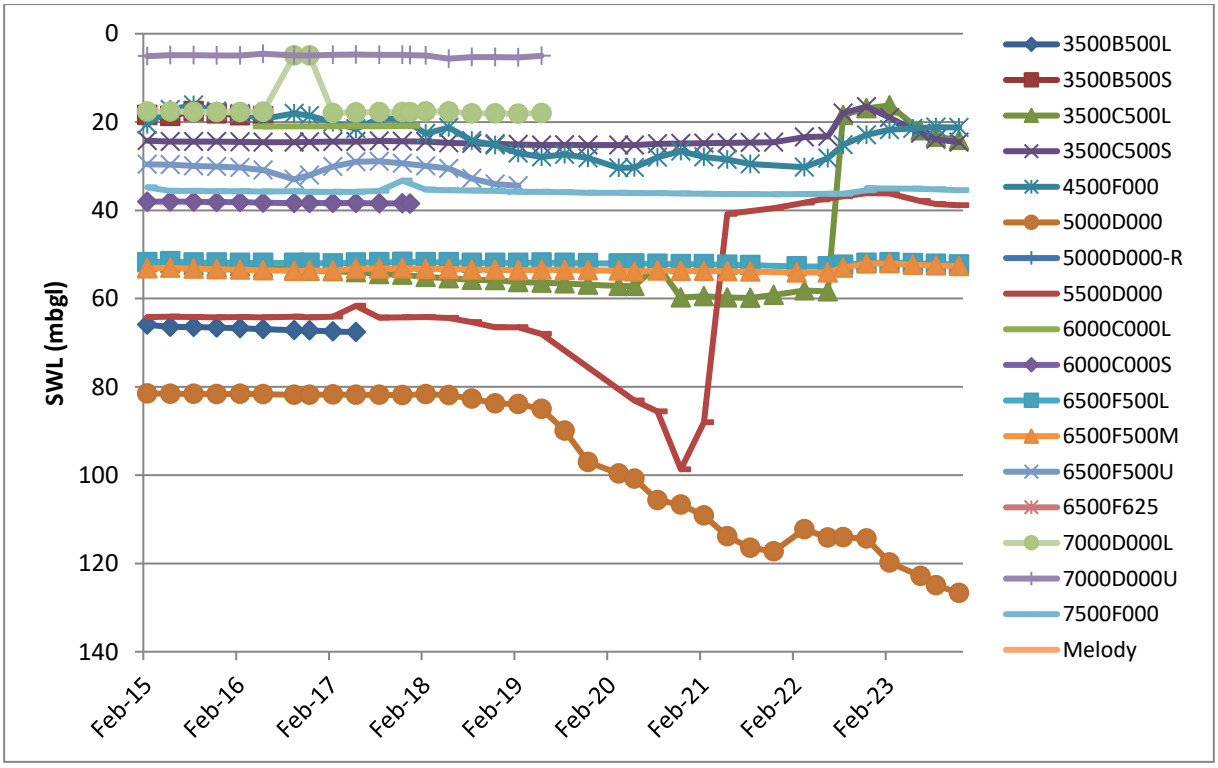

Chart 27: Groundwater Central Bores SWL 2015 – 2023

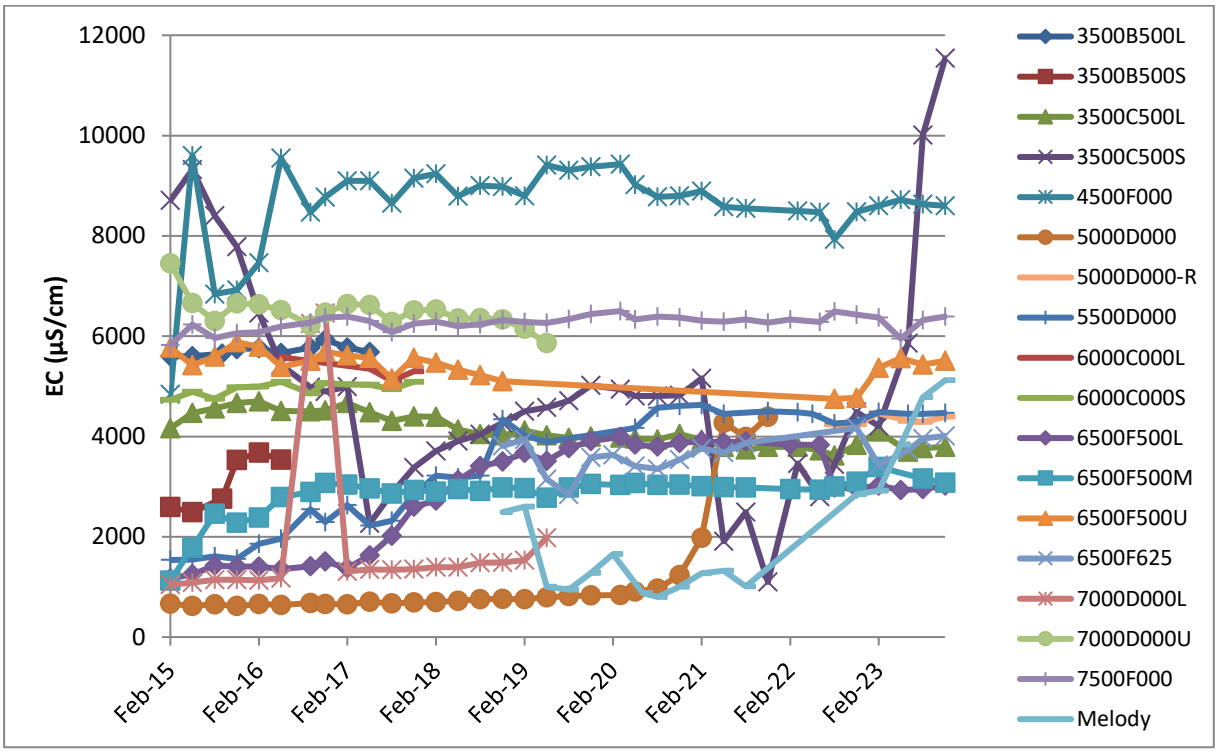

Chart 28: Groundwater Central Bores EC 2015 – 2023

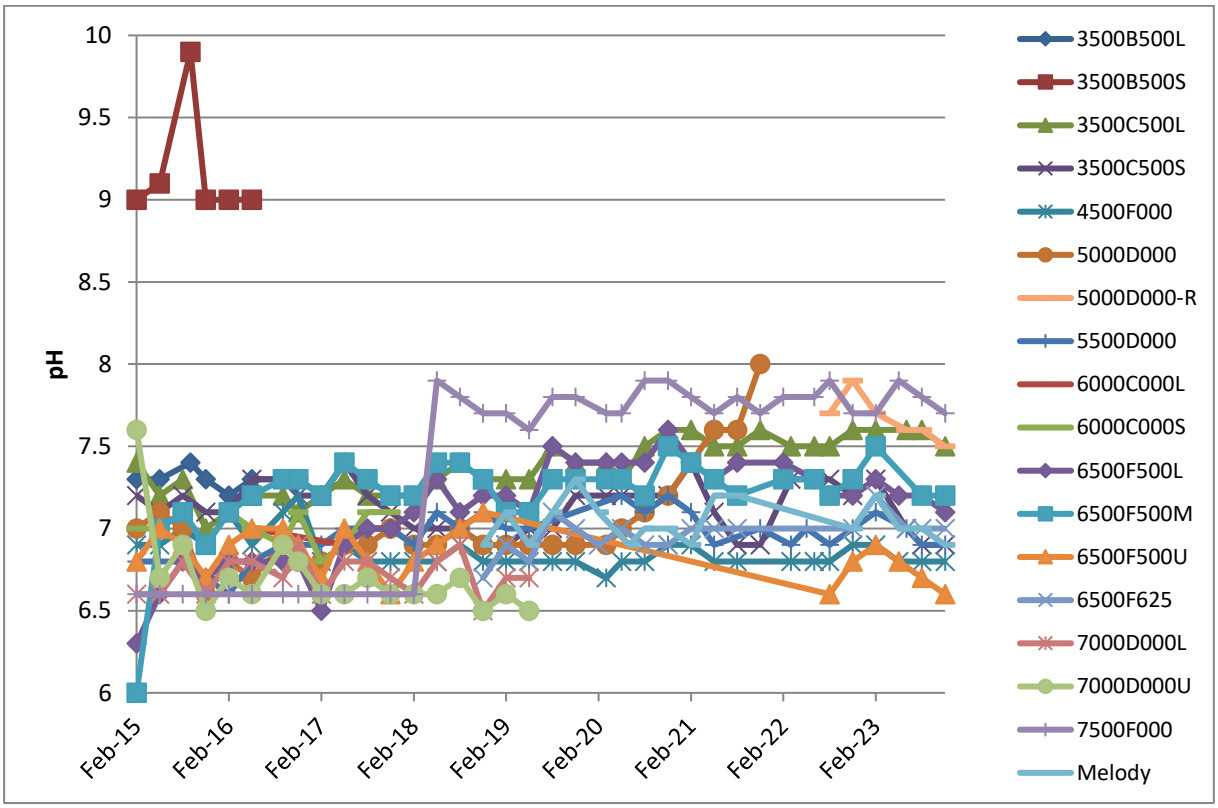

Chart 29: Groundwater Central Bores pH 2015 – 2023

The results of monitoring SWL, EC and pH from 2015 to 2023 for the groundwater eastern bores are shown in Charts 30, 31 and 32 respectively.

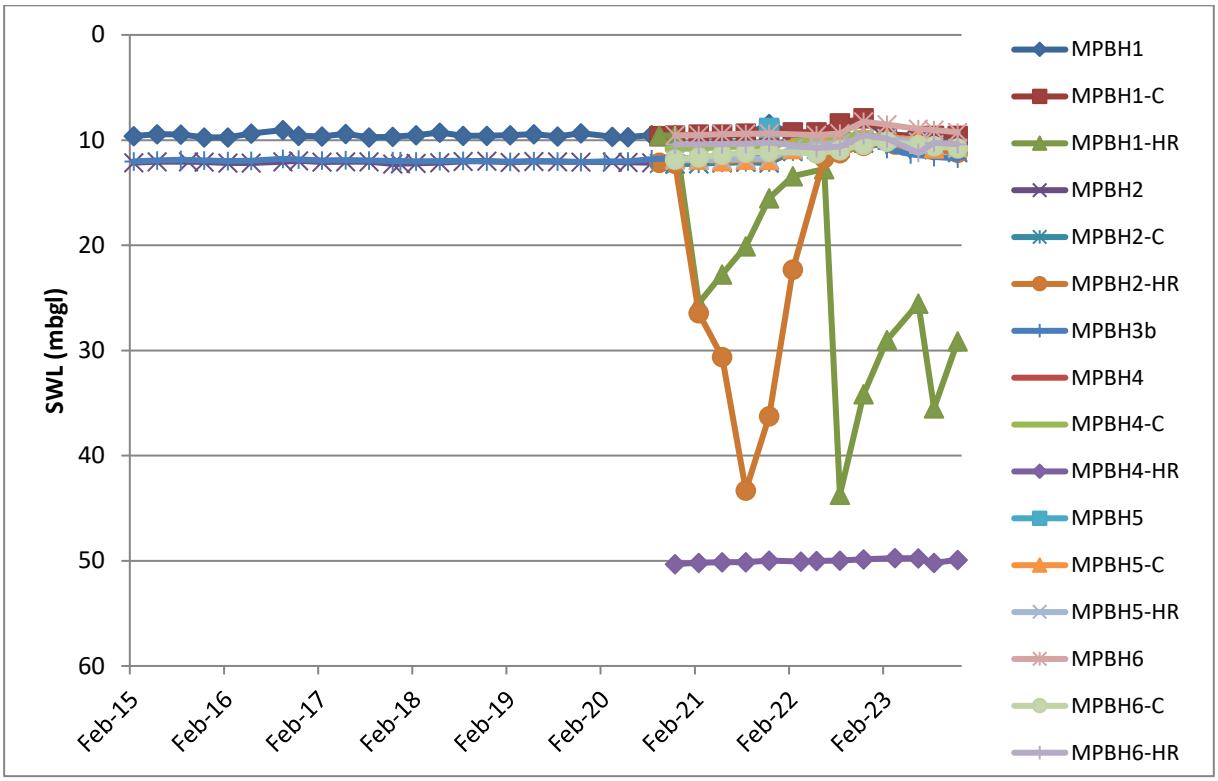

Chart 30: Groundwater Eastern Bores SWL 2015 – 2023

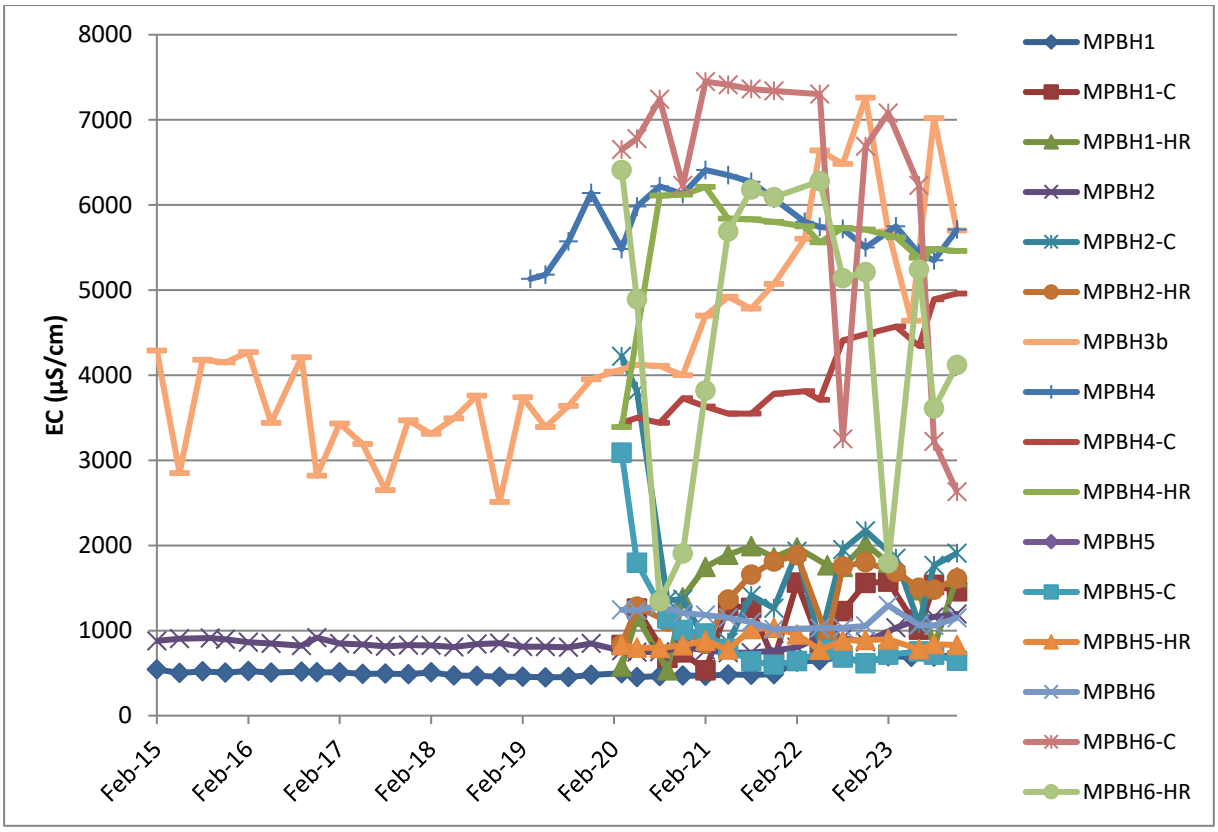

Chart 31: Groundwater Eastern Bores EC 2015 – 2023

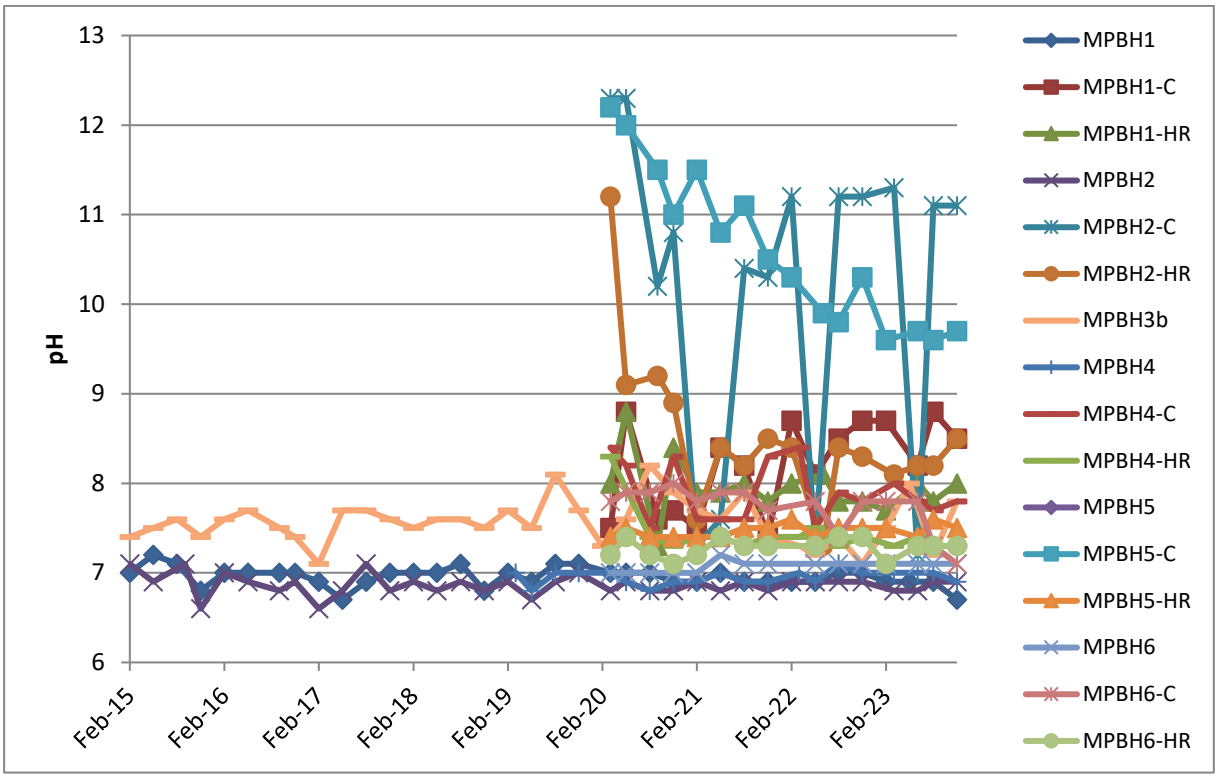

Chart 32: Groundwater Eastern Bores pH 2015 – 2023

The results of monitoring SWL, EC and pH from 2015 to 2023 for the groundwater western bores are shown in Charts 33, 34 and 35 respectively.

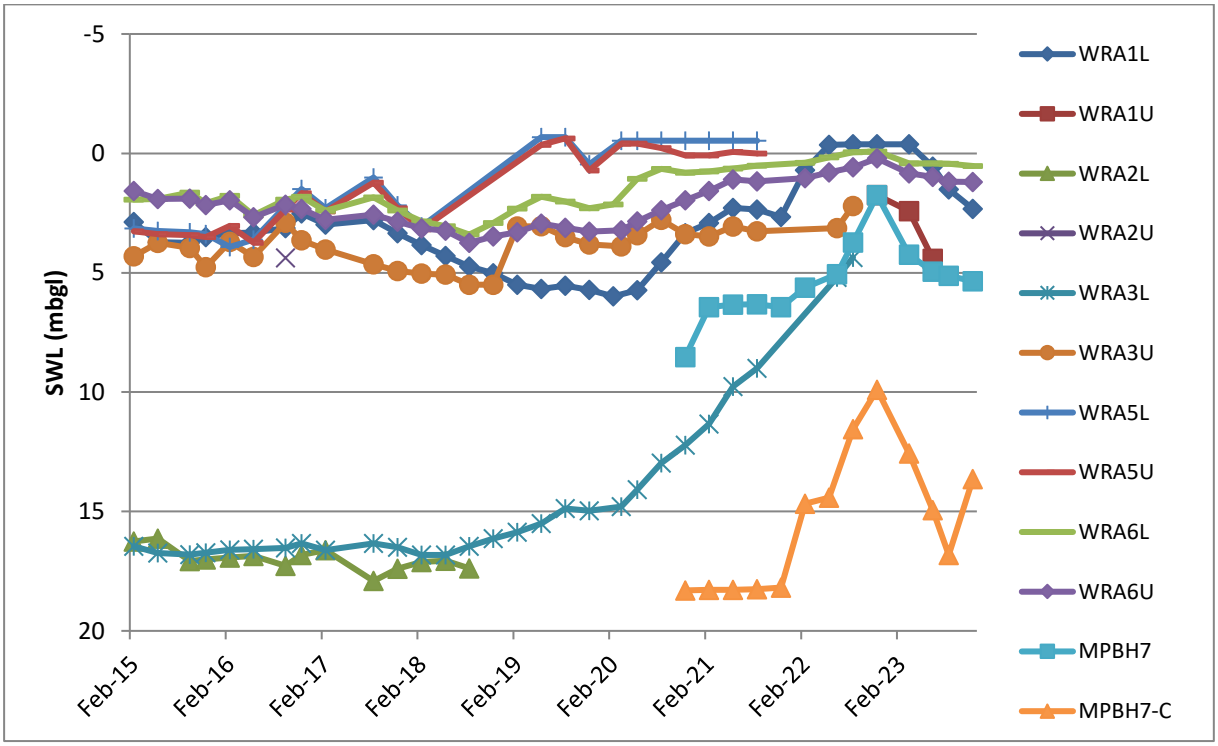

Chart 33: Groundwater Western Bores SWL 2015 – 2023

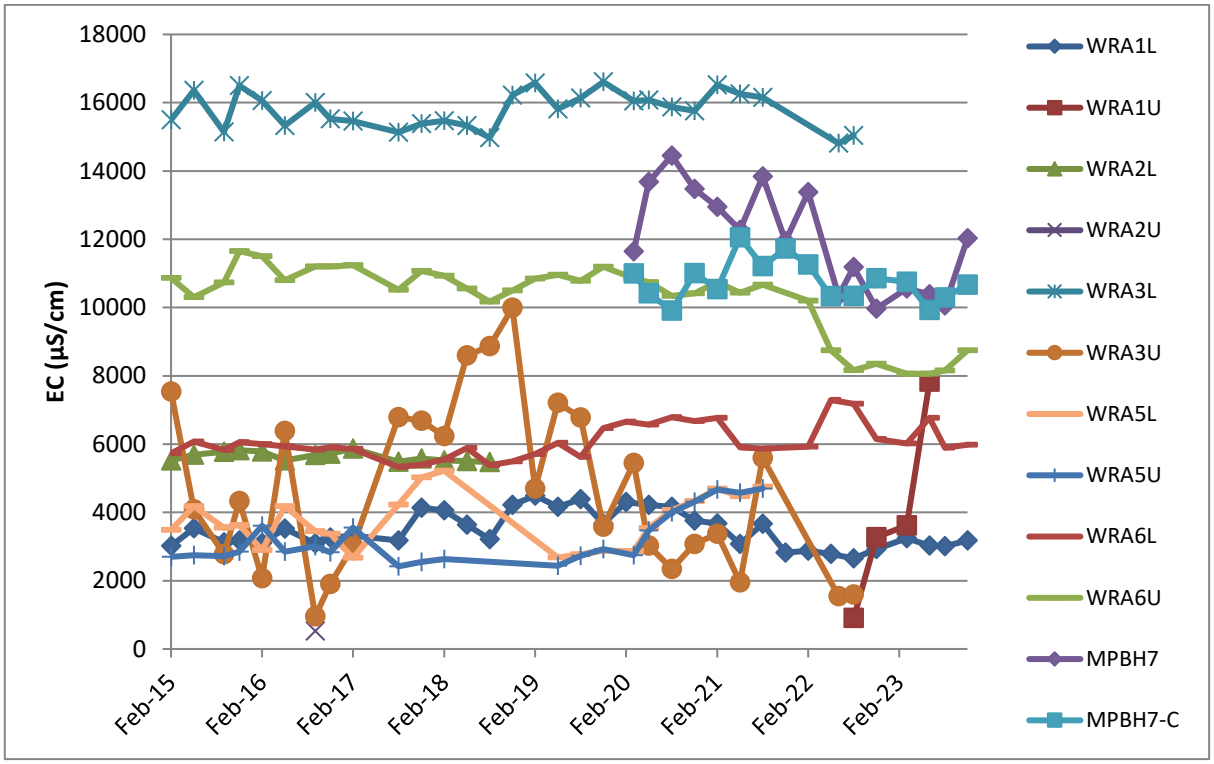

Chart 34: Groundwater Western Bores EC 2015 – 2023

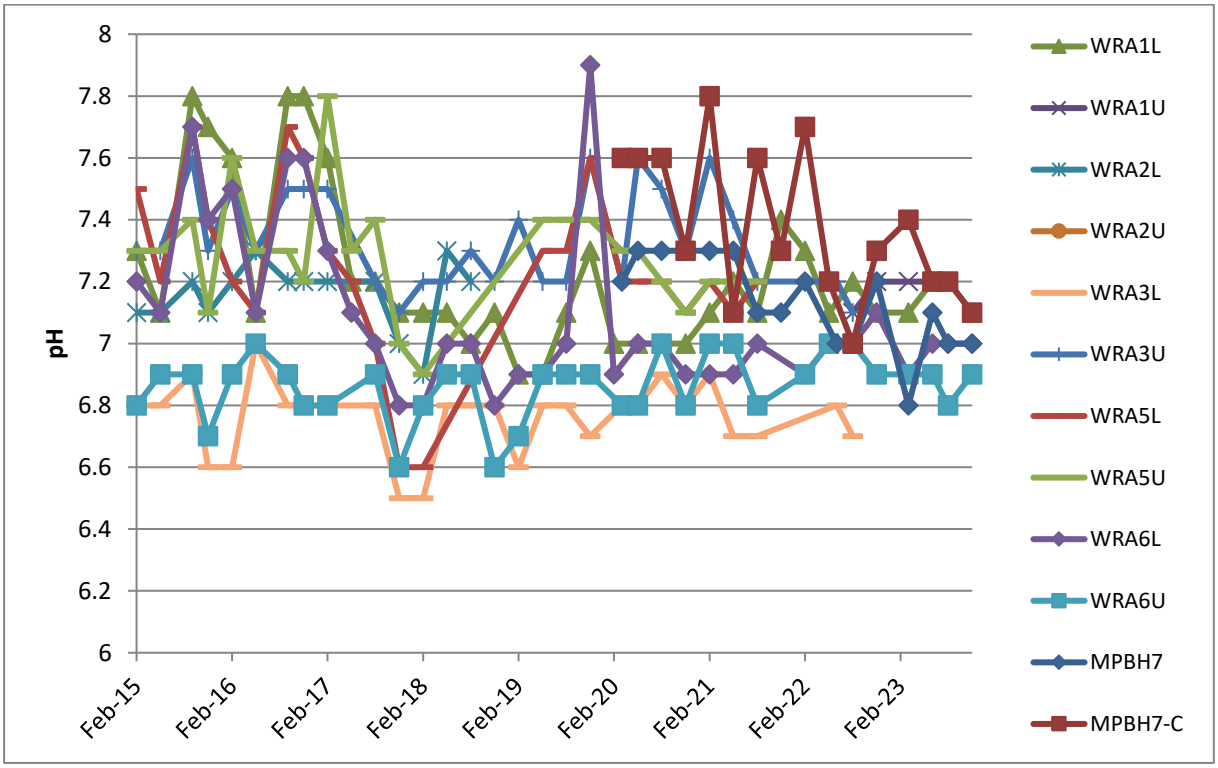

Chart 35: Groundwater Western Bores pH 2015 – 2023

During the reporting period, no samples were taken in site WRA1U in August and November and no samples were taken for MPBH5 due to dry conditions. Monitoring site 6500F500M was blocked during the May 2023 monitoring round.

Sites MPBH1-C&HR, MPBH2-C&HR, MPBH4, MPBH4-C&HR, MPBH5, MPBH5-C&HR, MPBH6, MPBH6-C&HR, MPBH7 and MPBH7-C were added to the east and west of the MPO (Figure 7). Monitoring at the sites commenced in March 2020.

6.2.3 Trends and Key Management Implications

Monitored SWLs have stayed generally consistent from 2015 – 2023. This is with the exception of site 5000D000, where a decrease in water levels has been observed since May 2019, and sites 3500C500L and 3500B500S, where the recorded water levels remained elevated during the reporting period. Site 5000D000 monitors the Wynn and Edderton Seams to the west of the open cut pit, and therefore this decline is to be expected due to depressurisation in these strata.

The majority of EC values for the central bores have remained steady and within historic range (Chart 28). Apart from 3500C500S and the Melody bore which have seen increasing EC values since February 2023.

EC values at eastern bores, which have been consistently measured for water quality since 2015 (MPBH-3B), remained generally within historic ranges during the reporting period (Chart 31). The newly installed bores (i.e. MPBH1-C&HR, MPBH2-C&HR, MPBH4, MPBH4-C&HR, MPBH5, MPBH5-C&HR, MPBH6, MPBH6-C&HR, MPBH7 and MPBH7-C) remained generally steady during the reporting period. This is with the exception of sites MPBH6-C and MPBH6-HR, which have experienced fluctuation in EC since the start of monitoring. EC values at site MPBH4-C slightly increased during the reporting period.

Long term trends indicate that yearly fluctuations in EC are most common at the western bores compared to the eastern and central bores (Coal & Allied, 2016; MACH Energy, 2017b; MACH Energy, 2018; MACH Energy, 2020; MACH Energy, 2021; MACH Energy, 2022; MACH Energy, 2023). All western bores recorded a slight decline in EC during the reporting period, except for MPBH7-C which increased in late-2023.

Consistent with trends observed in the 2015, 2016, 2017, 2018, 2019, 2020, 2021 and 2022 Annual Reviews (Coal & Allied, 2016; MACH Energy, 2017b; MACH Energy, 2018; MACH Energy, 2019; MACH Energy, 2020; MACH Energy 2021; MACH Energy, 2022; MACH Energy, 2023), the pH values for the majority of sites have generally remained within the pH range of 6.5 to 8.0 during the reporting period, with the exception of sites MPBH2-C, MPBH2-HR, MPBH5-C, and MPBH1-C which recorded elevated pH levels during the reporting period. The pH for bore MPBH5-C has exceeded the pH trigger range since the commencement of monitoring, however the bore has maintained a downward trend (approaching neutral) since installation in March 2020. MACH will continue to monitor this trend and will establish trigger levels once the pH of the bore has equilibrated.

As described in Section 6.2.1, trigger levels have been developed as part of the approved WMP for EC and pH for all groundwater bores, with the exception of bores MPBH4, MPBH5, Melody and the newly installed monitoring bores[1]. As defined in Appendix 5 of the WMP (i.e. the Surface and Groundwater Response Protocol), monitored values outside the range of trigger levels for three consecutive monitoring rounds initiate the groundwater investigation protocol.

MPO complied with all SWL and pH criteria presented in the WMP during the reporting period.

[1] Baseline trigger ranges for new bores will be developed once sufficient data (two years of monitoring) becomes available, and will be included in the next update of the WMP.

The groundwater investigation protocol was triggered once during the reporting period due to three successive exceedances of EC at MPBH2. This was the first recorded exceedance of the trigger values at this site. Australasian Groundwater and Environmental Consultants (AGE) was engaged by MACH Energy in November 2023 to complete a more in-depth investigation into the exceedances. The findings of the investigation (AGE, 2024) were as follows:

- Mining is unlikely to be the cause of the elevated EC values.
- The data strongly suggests that the cause of the increase in EC is persistent above-average stage in the adjacent Hunter River, caused by above-average rainfall since 2020, which is causing a rise in groundwater levels in MPBH2 (as well as similar alluvial bores). The rise in groundwater levels is likely mobilising salts that had previously accumulated in the soil during a period of below-average rainfall and low groundwater levels.
- The outcome of the investigation was the recommendation that MACH Energy continue to monitor MPBH2 quarterly and to revisit the investigation and/or revise the trigger value if EC values remain above the trigger value for another three consecutive measurements.

Concurrently, revised water level trigger values have been incorporated into the subsequent review of the WMP as part of the regulatory approval process following the commencement of Development under Development Consent SSD 10418.

The remainder of the MPO groundwater monitoring sites complied with the EC criteria presented in the WMP during the reporting period.

In 2021, bore 5000D000 was determined to be compromised following exceedances of the EC trigger levels due to an obstruction at depth that prevents best practice for water monitoring (Australasian Groundwater and Environmental Consultants Pty Ltd [AGE], 2021). Additional groundwater monitoring was undertaken at bore 5000D000 during the February, May, August and September 2021 monitoring rounds, which showed persistent elevated readings at the bore (Table 25). A suitably qualified hydrogeologist was engaged and provided the following advice (AGE, 2021):

- There is no risk of environmental harm as a result of the elevated EC in the bore.
- The bore is compromised due to an obstruction at depth that prevents best practice water monitoring.
- The bore will be mined out due to the progressing pit.
- Bore 5000D000 is to be excluded from compliance monitoring.

Following this advice, a replacement monitoring bore was installed (5000D000-R) in 2022 and data collected will be used for interpretative purposes only (not to be used for compliance as the new bore will also be within the expected mining drawdown extent). The bore will be included in the WMP in the next update.

Table 25
5000D000 Groundwater Monitoring Results Summary

Sampling Event	Maximum beneficial use trigger value (EC) (µS/cm)	Electrical Conductivity (EC) (µS/cm)	Electrical Conductivity (EC) (µS/cm) (Laboratory QA/QC Sample)	Depth to Water (DTW) metres below ground (mBG)
August 2019	800	**820**	-	90.85
November 2019		**834**	-	97.89
March 2020		**840**	-	100.52
May 2020		**906**	**897**	100.82
August 2020		**966**	**957**	105.67
November 2020		**1231**	**1270**	106.65
February 2021		**1983**	-	109.15
May 2021		**4270**	-	113.85
August 2021		**3990**	-	116.47
November 2021		**4390**	-	117.24

Note: Results shown in **bold** Indicate that the bore has exceeded the adopted assessment criterion.

6.3 HUNTER RIVER SALINITY TRADING SCHEME DISCHARGES

MACH Energy has a total of 51 credits under the HRSTS, however no discharges to the Hunter River occurred during the reporting period.

6.4 WATER TAKE

A total of 602 megalitres (ML) of water was taken from Hunter Regulated River Water Source for use at the MPO during the water reporting period (1 July 2022 – 30 June 2023) (Table 26). This was 602 ML more than the previous water reporting period. The water take from the Hunter Regulated River Water Source was 3,156 ML less than the MPO total entitlement (3,758 ML) (Table 26).

Table 26
MPO Water Take

Water Sharing Plan	Water Licence Number*	Entitlement	Total Pumping (ML)
Hunter Regulated River Water Source	1230	8	602.04
	1259	33	
	1227	99	
	1258	5	
	992	75	
	7808	36	
	702	267	
	1260	5	
	993	265	
	1308	15	
	604	183	
	605	8	
	677	24	
	1338	17.5	
	662	9	
	663	16	
	10775	243	
	41438	455	
	638	225	
	639	134	
	879	243	
	880	124	
	1113	366	
	973	3	
	974	210	
	975	8	
	988	156	
	989	8	
	1307	37.5	
	1229	480	

Note:

* several temporary licences were also used during the reporting period.

6.5 SITE WATER BALANCE

The Site Water Balance for the reporting period (i.e. 1 January 2023 to 31 December 2023) is provided in Table 27 in comparison to the 2022 site water balance.

The CHPP water demand decreased from the previous reporting year due to a significantly higher volume of bypassed product which did not require washing (0.6 Mt in 2022 compared to 1.3 Mt in 2023). Surface water runoff also decreased compared to the 2022 reporting period, due to the decreased rainfall during the period.

The initial five-year mine plan site water balance for the MPO was undertaken in 2019 and was updated in 2021 to be representative of current mine plan, catchment areas, new dam and water infrastructure, dam storages. In 2023 the MPO Water Balance model was reviewed and calibrated with recorded data from 2019 to 2022. This resulted in a more accurate model and amended reporting format.

Table 27
MPO Annual Water Balance

	2022	2023
Water Sources	**Volume (ML/yr)**	**Volume (ML/yr)**
Precipitation and Runoff	4256[1]	1632[1]
Hunter River Pumping (via WALs)	0	1028
Groundwater Interception	3[1]	1[1]
Entrainment	1954[3]	1035[2]
Water Usage	**Volume (ML/yr)**	**Volume (ML/yr)**
CHPP Demand	3233	2808
Dust Suppression (Haul Road and Stockpiles)	995	1041
Vehicle Wash Demand	84	88
Water Loss	**Volume (ML/yr)**	**Volume (ML/yr)**
Discharge to Hunter River (via HRSTS)	0	0
Evaporation	1527[1]	1612[1]
Non Sediment Dam Spillage	0	0
Sediment Dam Spillage	<12	0

Note: ML/yr = Megalitres per year.

1 This volume is calculated based on the current mine plan site water balance and adjusted accordingly with calculated rainfall over the reporting period(s); and MPO dam & open cut storage data.
2 Water sources from ROM feed moisture content.
3 Previously reported as reclaimed tailings water inclusive of fines reject bleed and dam catchment rainfall surface runoff.

7 REHABILITATION

Proposed rehabilitation activities for the MPO are defined in the RMP and associated Annual Rehabilitation Report and Forward Program, which has been developed to meet the requirements for an RMP (Condition 56, Schedule 3 of Development Consent DA 92/97).

On 1 August 2022, an RMP along with the supporting Annual Rehabilitation Report and Forward Program was prepared and submitted in accordance with the NSW Resource Regulator Form and Way – *Rehabilitation Management Plan for Large Mines* (July 2021), under amendment to the *Mining Regulation 2016* under the *Mining Act 1992*. The RMP and associated Annual Rehabilitation Report and Forward Program replaced the MOP (1 July 2021 – 30 June 2023). This Annual Review reports against the RMP and Annual Rehabilitation Report and Forward Program.

Table 28 summarises the approximate disturbance and rehabilitation areas from the 2022 and 2023 reporting periods and provides an estimate of the forecast areas for the 2024 reporting period. The Forward Program 2023 rehabilitation target was achieved during the reporting period.

Table 28
Rehabilitation Status

Mine Area Type	Previous Reporting Period (ha Actual)	This Reporting Period (ha Actual)	Next Reporting Period (ha Forecast)
	2022	2023	2024
Total Mine Footprint[1,6]	1,197	1,286	1,320
Total Active Disturbance[2,6]	1,066	1,131	1,147
Land being prepared for Rehabilitation[3]	32	18.5	22.2
Land under active rehabilitation[4]	131	155	173
Completed rehabilitation[5]	0	0	0

1 Total mine footprint includes all areas within a mining lease that either have posed at some point in time, or continue to pose, a rehabilitation liability due to mining and associated activities. As such, it is the sum of total active disturbance, decommissioning, landform establishment, growth medium development, ecosystem establishment, ecosystem development and relinquished lands (as defined in the NSW Resources Regulator Form and Way – *Rehabilitation Management Plan for Large Mines [July 2021]* Guidelines).

2 Total active disturbance includes all areas ultimately requiring rehabilitation, such as: on-lease exploration areas, stripped areas ahead of mining, infrastructure areas, water management infrastructure, sewage treatment facilities, topsoil stockpile areas, access tracks and haul roads, active mining areas, overburden emplacements (active/unshaped/in or out-of-pit), and the FEA (active/unshaped/uncapped).

3 Land being prepared for rehabilitation includes the sum of mine disturbed land that is under the following rehabilitation phases – decommissioning, landform establishment and growth medium development (as defined in DRG MOP Guidelines).

4 Land under active rehabilitation includes areas under rehabilitation and being managed to achieve relinquishment - includes the following rehabilitation phases as described in the DRG MOP Guidelines – 'ecosystem and land use establishment" (area seeded OR surface developed in accordance with final land use) and "ecosystem and land use sustainability' (revegetation assessed as showing signs of trending towards relinquishment OR infrastructure development).

5 Completed rehabilitation – requires formal sign-off by the DRG that the area has successfully met the rehabilitation land use objectives and completion criteria.

6 Includes topsoil stockpiles.

Rehabilitation of the Eastern Out of Pit Emplacement continued in 2023. An additional 32.4 ha was rehabilitated (Plate 2), which included:

- bulk and detailed re-shaping of overburden material to final landform;
- installation of habitat features such as habitat/stag trees, log piles and rock piles across the rehabilitation area;
- topsoil spreading to a minimum depth of 100 mm;
- gypsum application at a rate of 10 tonnes per hectare (t/ha);
- deep ripping/tining along the contour of the final landform to a depth of 500 mm;
- planting of tubestock including ground, middle and upper stratum species of relevant target PCTs;
- direct/hand seeding of endangered ecological community tree/shrub/grass indicative species plus an additional grass cover crop; and
- planting of approximately 100 native trees per ha.

Rehabilitation areas were subject to ongoing weed and pest control measures throughout the reporting period to facilitate and promote successful vegetation establishment.

Plate 2: Eastern Out of Pit Emplacement Rehabilitation

Figure 2 shows the extent of active disturbance and rehabilitated areas at the end of the reporting period, as well as the forecast disturbance areas proposed in 2024.

The final land use goals for the MPO (as outlined within the current RMP and Forward Program) are as follows:

- successful design and rehabilitation of landforms to ensure structural stability, revegetation success and containment of wastes; and
- post-mining land use compatible with surrounding land uses.

The conceptual final landform across the MPO is an undulating, free draining and a less 'engineered' landform with an optimum post-mining land capability that supports low and high intensity agricultural land uses as well as grassland and woodland vegetation communities, as per the approved MOD 6 and current RMP. The MSC, the community and other stakeholders have indicated their preference for a landform that further integrates with the surrounding landscape. The MSC also indicated a preference for intensive agricultural/industrial post-mining land uses that provide employment for the local community.

The overarching objective for rehabilitation of the FEA is to establish a safe, stable and non-polluting landform with a sustainable surface cover that minimises erosion (to prevent exposure of the underlying fines material) and sustains grassland vegetation in the long-term. During the reporting period, MACH Energy operated the FEA using sub-aerial deposition which involves an extended period of air drying that maximises in-situ tailings densities, and in turn, maximises the storage efficiency of the facility as well as providing a more competent fines surface for future rehabilitation purposes.

During the reporting period, several former residential dwellings were demolished, and associated hazardous materials were removed and disposed off-site in accordance with the WasteMP.

7.1 EROSION AND SEDIMENT MANAGEMENT

General erosion and sediment management measures were undertaken during the reporting period in accordance with the erosion and sediment control provisions of the approved WMP and CEMP (redacted following completion of MOD 4 construction activities), and included:

- installation and management of sediment fencing around disturbance areas of soil stockpiles and sediment dams;
- implementation and management of progressive erosion and sediment control measures during the completion of civil construction works, including:
  - use of sediment fences and filters to intercept and filter small volumes of non-concentrated construction runoff;
  - construction of rock check dams across swales and diversion channels to reduce the velocity of flow;
  - use of sediment basins to capture sediment and associated pollutants in construction runoff; and
  - use of scour protections where feasible;
- construction of diversion drains and bunds;
- regular inspections of the completed dams and erosion and sediment control structures; and
- sowing of all verges and drains.

Additionally, MACH Energy engaged SLR Consulting to undertake a periodic third-party erosion and sediment control audit on 26 October 2023. The inspection covered various dams, crossings, CHPP, main access road, MIA carpark, and a topsoil stockpile area.

7.2 BUSHFIRE MANAGEMENT

The main objectives of bushfire management at the MPO are to minimise the risk of bushfires and to rapidly control any outbreaks that might occur. Control measures are in place to:

- minimise potential spreading of bushfires in and around the MPO;
- protect people, property and assets;
- protect areas of heritage value; and
- protect threatened fauna and/or flora.

The control measures implemented to prevent and manage bushfires focus on minimising the amount of fuel available at the MPO and its surrounding land. These measures include:

- slashing of vegetation along roads and internal tracks that are used as fire trails and assist in dividing the site into control zones;
- the use of livestock to reduce pasture-based fuel loads on land suitable for grazing; and
- maintaining a network of water supply points to assist the NSW Rural Fire Service with logistical support.

During the reporting period, a range of activities were undertaken in respect to fire preparation in accordance with the Bushfire Management Plan, including:

- community consultation with neighbouring landholders and lessees;
- maintenance of property, boundary and roadside firebreaks and fire access trails;
- updating signage along the fire trail;
- monthly inspections of the firebreaks and firefighting equipment at MPO during the fire season;
- Site visit with the NSW Rural Fire Service to drive the fire trail with the local fire truck; and
- the use of livestock to reduce pasture-based fuel loads on land suitable for grazing.

A roadside grass fire occurred at MPO during the reporting period. The outbreak was attended rapidly by the NSW Rural Fire Service and MACH Energy. It was contained to the verge of Castlerock Road. Less than 2.5 hectares was affected and no damage to infrastructure or livestock occurred as a result. The fire was not of a result of MPO operations.

7.3 REHABILITATION MONITORING

Various ecological works were undertaken at the MPO during the reporting period, including as part of the GDP process, and as part of flora and fauna surveys and assessments in support of a proposed State Significant Development (SSD) application. These works included mapping vegetation communities, searching for threatened flora species, communities and populations, and detailed floristic data collection at numerous survey plots.

The 2023 rehabilitation monitoring program was undertaken between 16 and 31 May 2023 and included monitoring of analogue and the MPO rehabilitation sites (Umwelt, 2024). The 2023 rehabilitation monitoring program was undertaken generally in accordance with the MPO Rehabilitation Monitoring Manual (Ausecology, 2021). The MPO adopts a systems-based approach to rehabilitation monitoring (e.g. use of Ecosystem Function Analysis [Tongway and Ludwig, 2011] and floristic and biometric surveys) to determine progress towards a self-sustaining ecosystem, including comparison to the analogue sites.

The rehabilitation research program at the MPO aims to incorporate management practices that have resulted from industry research into the establishment of woodland and grassland communities across mined landscapes, in particular in the Hunter Valley region.

MACH Energy is collaborating with the University of Newcastle on several rehabilitation related research projects including:

- Tailings to Topsoil – a research project that aims to convert fines material into suitable topsoil material; and
- Rehabilitated Landform Erosion Monitoring – a research project that aims to improve geomorphic landform design modelling through analysis of rehabilitation monitoring data.

During the reporting period, the aforementioned projects were ongoing. The tailings to topsoil research project is discussed further in Section 5.9.

Further information regarding MPO rehabilitation monitoring methodologies is provided in the RMP and associated Annual Rehabilitation Report and Forward Program.

7.4 LAND MANAGEMENT

Landscape management included removal, erection and general maintenance of fence lines in the MPO.

During the reporting period, extensive tree planting was undertaken along the visual tree screen and other areas in accordance with the VIMP, to assist in shielding the site as outline in Section 5.10. General maintenance of these areas was also carried out throughout the reporting period.

Weed and pest control measures undertaken during the reporting period are outlined in Section 5.5.2. Topsoil management is discussed in Section 5.9.

8 COMMUNITY

MACH Energy's approach to community relations is focused on extending and strengthening the relationships that MACH Energy representatives have already formed with the local community.

MACH Energy released a community newsletter in March, June, September, and December 2023 outlining the community activities undertaken during the reporting period. MACH Energy plans to continue to release regular community newsletters in the next reporting period to inform stakeholders/interested parties of activities at the MPO.

During the reporting period, MACH Energy undertook community relations in four key areas: communication, consultation and engagement, community development, and relationships with the local Aboriginal community. These activities are outlined in detail in the following sections.

8.1 COMMUNICATION

Several points of communication have been established with the community. Members of the local community are encouraged to engage MACH Energy in the way that proves most convenient for them.

MACH Energy maintains a website (https://machenergyaustralia.com.au/) which is used to provide information to stakeholders and interested parties about the operation and environmental performance of the MPO. Information provided on the website includes key environmental management documentation, monthly environmental monitoring reports, environmental complaints register (which is updated monthly), previous community newsletters, a new Projects Tab, and the CCC meeting minutes.

MACH Energy maintains a Community Hotline (1800 886 889), which is dedicated to the receipt of community complaints. The Community Hotline is publicly advertised in a variety of MACH Energy's public communication tools and is available during operating hours (i.e., 24/7), to receive any complaints. Communication received from the hotline is recorded in a Community and Stakeholder Engagement Database. This database records all necessary information regarding the nature of the communication, and if necessary, any action taken by MACH Energy because of the communication. A separate General Enquiries Hotline (1800 931 872) and Blasting Hotline (1800 931 873) have been in operation since 2018 and provide callers with general information about MACH Energy and blasting times and location.

A total of 44 community complaints were received during the reporting period (see Complaints Summary 2023: https://machenergyaustralia.com.au/mount-pleasant/documentation/) compared with 35 complaints received during the last reporting period 2022 and 119 complaints received during the 2021 reporting period. The community complaints for the reporting period related to:

- dust (12).
- noise (16).
- blasting (5).
- visual (8); and
- others (3) (related to odour).

Most complaints were received via the Community Hotline; however, some complaints were made directly to the External Relations Manager, the Environmental Superintendent, the DPE (now DPHI), and the EPA. The total number of complaints has increased during the reporting period compared to 2022, likely due to the expansion of the MPO to the northwest and visible to residents in the Village of Kayuga. Most complaints were recorded from one complainant in Kayuga Village.

Chart 36 shows the total number of complaints since 2017. Chart 37 shows the total number of complaints by location and type during the reporting period.

The highest number of complaints received in 2023 were related to noise.

Complaints regarding blasting also increased in 2023 in comparison to 2022. This can be attributed to the advancement of mining operations west in the higher areas of the operation, away from the community of Muswellbrook.

Thorough investigations were undertaken in response to all complaints. For noise, air quality and blasting related complaints, real-time monitors were reviewed, and alarms were examined. Following the investigation, the External Relations Manager contacted the complainant in a timely manner to describe the MPO activities that may have been causing the issue and the response/s from MACH Energy. Activities were modified or ceased where necessary.

8.2 CONSULTATION AND ENGAGEMENT

A CCC is administered by MACH Energy, with a membership comprised of an independent chair, and appropriate representation from MACH Energy and the general community. The CCC is operated in general accordance with the *Community Consultative Committee Guideline* (DPE, June 2023).

In 2023 the CCC met four times in March, June, October, and December, all meetings were held on site at MPO and included a site tour (Plate 3). These meetings provided regular updates about the MPO, as well as an avenue to discuss aspects of the MPO that concerned community stakeholders. General discussions from these meetings related to:

- general overview of MPO progress;
- current status of approvals, management plans, modifications and supporting environmental documents;
- environmental monitoring and management;
- progress of land management activities at the MPO; and
- updates on community sponsorships, events, interactions, and initiatives.

During the site visits undertaken during the reporting period, the CCC members visited the train load out facility, rehabilitation progress, the fines emplacement facility, and the mining operation (Plate 3).

MACH Energy invites a range of its team members to present updates to the committee as direct contact enhances the two-way communication between both parties.

Full meeting minutes for the 2023 CCC meetings are provided on the MACH Energy website (https://machenergyaustralia.com.au/mount-pleasant/documentation/).

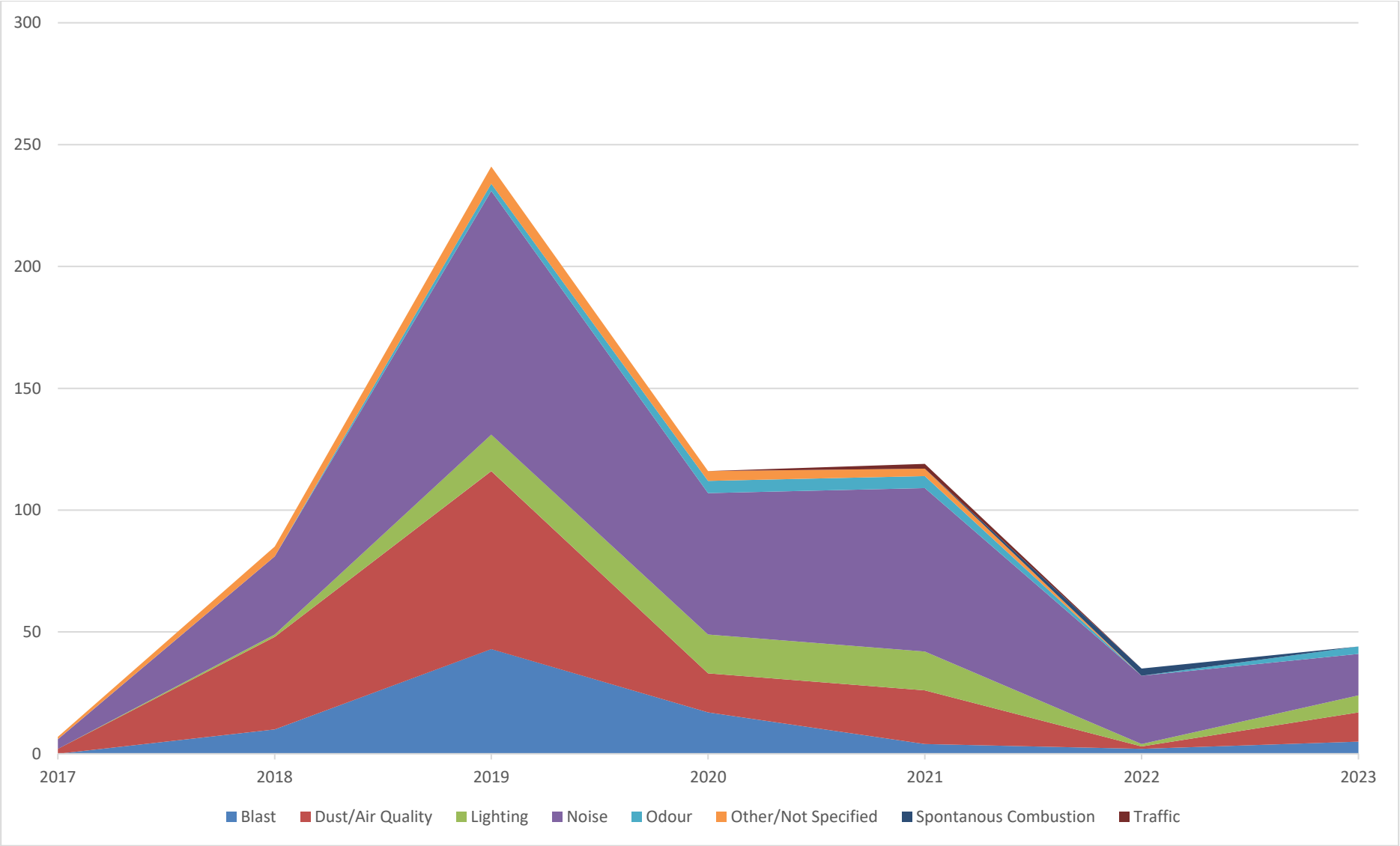

Chart 36: Complaints Analysis 2017-2023

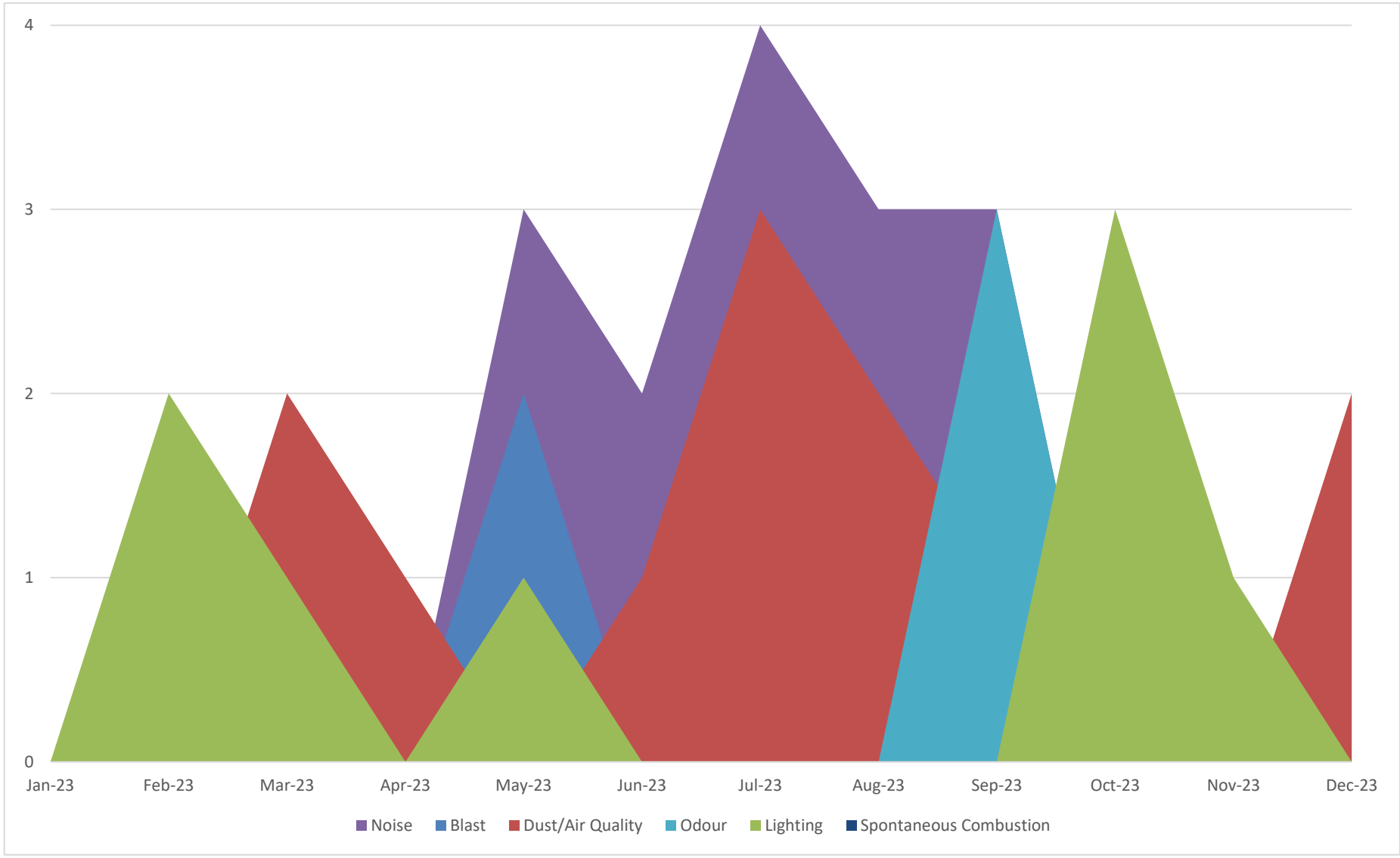

Chart 37: Complaints by Type 2023

Plate 3: The CCC visit the Mine Rehabilitation Area.

8.3 COMMUNITY DEVELOPMENT

As part of acquisition of the MPO, MACH Energy has maintained the Aboriginal Community Development Fund (ACDF) developed by Coal & Allied. The fund was a community benefit specified in the Native Title Agreement made with the Wonnarua People in 2005. Since its commencement in 2006, the ACDF has contributed more than $5 million into projects that benefit the Upper Hunter Valley Aboriginal community.

Since the acquisition, the MPO representatives have joined the existing ACDF community members to administer funds, manage its current projects and to seek-out new partnerships. An example of some of the key partnerships that were maintained during the reporting period as part of the ACDF are presented in Table 29.

Table 29
Aboriginal Community Development Fund Partnerships

Partner	Description
The Gundi Program	The Gundi Program was launched in 2011. The construction of a Cultural Space and Yarning Circle was completed in 2022. The facilities will be used for all inmates to come together. Gundi aims to help Aboriginal inmates gain trades skills in custody and secure jobs once released. The Gundi Program builds hosing for remote communities, offices, and abolition blocks for many local companies. The Gundi Program provides building qualifications and work experience for inmates whilst in custody. Approximately 80 inmates have participated in the Gundi Program to date.
Aboriginal Youth Empowerment Program	The Aboriginal Youth Empowerment Program sees the continuation of the employment of an Aboriginal Youth Program Mentor. Now in its third year, the Mentor works with Singleton and Muswellbrook Policy Citizen Youth Clubs (PCYC) local schools and organisations to assist the youth in the Upper Hunter region. Among many tasks, the mentor weekly activity programs, in consultation with local stakeholders and Aboriginal community members, identifies and addresses key issues for the youth. This includes personal safety, belonging and cultural sensitivity.

Table 29 (Continued)
Aboriginal Community Development Fund Partnerships

Partner	Description
"Ka-wul" – Aboriginal Educational & Cultural Resource Centre Program - Singleton High School	Ka-wul Aboriginal Education & Cultural Resource Centre program (or Ka-wul); located on the grounds of Singleton High School (SHS); is an Aboriginal & Torres Strait Islander program dedicated to supporting SHS Aboriginal students & their families, non-Aboriginal students, staff and the wider communities- Singleton Local Government Area (LGA) and Upper Hunter Valley Aboriginal Community (UHVAC). Ka-wul is one of three programs making up SHS Aboriginal Education, it is the overarching and the oldest established First Nations People program offered at SHS alongside Kayu Kumpa and Clontarf. While Kayu Kumpa and Clontarf are offered, both are gendered specific programs with limited enrolments governed by staffing ratios. While Ka-wul supports all students focusing on culture, identity, education, and leadership skills.

Plate 4: Members of the Gundi Program perform at the Mount Pleasant NAIDOC Recognition.

Plate 5: The ACDF Committee attended a Strategy Planning Day in the MACH Energy Corporate Office (Newcastle) in 2023.

8.4 RELATIONSHIPS WITH LOCAL ABORIGINAL COMMUNITY

MACH Energy works closely with the local Aboriginal community, including undertaking regular consultation with the RAPs. MACH Energy maintains a contact register, containing up to date contact details for the 88 RAPs, and is committed to maintaining ongoing consultation with these RAPs throughout the life of the MPO.

As outlined in Section 5.6.2, during 2022 archaeological salvages were carried out under AHIP #C0002092, AHIP #C0002053 and AHIP #C0004783 in accordance with the AHMP. RAPs had a strong presence in these salvage activities.

8.5 OTHER CONTRIBUTIONS TO COMMUNITY

- Community sponsorships have increased throughout 2023 and include Westpac Rescue Helicopter – Annual Charity Golf Day, Annual Rescue Ball, NAIDOC Week and Community Activities, NAIDOC Small Schools Events, Muswellbrook and Kayuga Rural Fire Service Firies and Muswellbrook Fire & Rescue Santa Run.
- Sport sponsorships include Merriwa Polocrosse, Merriwa Campdraft, Muswellbrook Cats AFL Men's and Women's, Scone Rugby Union, Upper Hunter District Cricket Association, Belltrees Cricket Club, Singleton 0'35's Soccer, Aberdeen Rugby League Club, Denman Senior & Junior Cricket Association, Denman Rugby League, Muswellbrook Junior and Senior Rugby League and Muswellbrook Netball.
- School sponsorships including St James' Primary School End of Year Presentation, Muswellbrook High School End of Year Presentation, Muswellbrook Primary School End of Year Presentation, Aberdeen Primary School End of Year Presentation, Denman Primary School End of Year Presentation.
- International Women's Day, International Men's Day, R U OK? Day.
- Assisted with the facilitation of four Upper Hunter Mining Dialogue school mine tours for local primary and high school students.

Plate 6: The MACH Energy Mount Pleasant team contribute to the annual Blackroo community food and toy appeal.

9 INDEPENDENT ENVIRONMENTAL AUDIT

An IEA was completed during the reporting period in accordance with Condition 9, Schedule 5 of Development Consent DA 92/97.

The IEA considered compliance from 27 February 2020 (day after the previous 2020 IEA) to 8 March 2023. MACH Energy commissioned EMM Consulting Pty Ltd (EMM) to complete the IEA, which was undertaken on-site from 7 – 8 March 2023.

The audit included a review of:

- conditions contained within Development Consent DA 92/97, including the Statement of Commitments;
- EPL 20850;
- ML 1645, ML 1708, ML 1709, ML 1713, ML 1750 and ML 1808;
- water licences;
- Annual Review for 2020, 2021 and 2022;
- implementation of the management plans prepared under Development Consent DA 92/97 (Table 4); and
- non-compliances of the 2020 IEA.

The number of non-compliances with the statutory conditions and implementation of the management plans recorded for the IEA period (i.e. 27 February 2020 – 8 March 2023) is summarised in Table 30.

Table 30
Summary of Audit Findings

Compliance Requirements	Non-compliances	Recommendations
204	20	22

The IEA Report (Appendix E) was submitted to the DPE (now DPHI) (including an action response table addressing the audit findings) on 5 May 2023. A summary of the IEA recommendations and MACH Energy responses are summarised in Table 31 below.

Table 31
Summary of 2023 Independent Environmental Audit Recommendations and MACH Energy Responses

Item No.	Audit Recommendation	MACH Energy Response	Forecast Completion
Development Consent DA 92/97			
S3 C3	**REC 1:** A Class 1 calibrator must be used with a Class 1 sound level meter for noise monitoring. Ensure all calibration certificates are included in consultants reports.	MACH Energy acknowledges the recommendation and notes that calibration of monitoring equipment is undertaken in accordance with relevant operating manuals and applicable Australian Standards. MPO will ensure all calibration certificates are included in consultants reports.	Complete
S3 C18	**REC 2:** Complaints registers and Annual Reviews should be consistent in stating odour complaints (e.g. 2022 Annual Review mentions 3 odour complaints but these are not listed as 'odour' in the 2022 complaints register but rather, refer to spontaneous combustion and the 'nature of complaint' is 'other').	This recommendation will be addressed in future complaints register reports by aligning complaints to categories used in Annual Reviews.	Complete
S3 C18	**REC 3:** MACH Energy should ensure that odour and fume management conditions per Section 9.5 of the AQGHGMP are reviewed for effectiveness, updated where necessary and are being implemented effectively following staff education and training.	This recommendation will be addressed in future revisions of the AQGGMP.	Draft AQGGMP with DPHI for consultation
S3 C24	**REC 4:** MACH Energy should ensure that temperature lapse data is collected, stored and presented for audit purposes.	MACH Energy acknowledges this recommendation and will alter recording processes for temperature lapse data to ensure its appropriately collected, stored and presented.	Temperature lapse rate data has been provided.
S3 C26	**REC 5:** Ensure corrective actions as per the investigations of incident events are implemented.	The MPO Site Water Balance Model is currently being updated and calibrated based on real-team weather observations and recorded water storage volumes. The updated model will provide great accuracy in water management requirements across the site. The updated model will be completed in May 2023. Works to Sediment Dams 6 and 7 within the new rail corridor have been completed to increase storage and pumping capacity. Improvement have also been completed along Wybong Road corridor to ensure the clean water is diverted away from mining operations and avoid overwhelming sediment dams on site. MACH Energy have begun construction for a temporary discharge line to discharge water from site to the Hunter River as part of the HRSTS. This project is set for completion in May 2023.	Complete Complete Complete

Table 31 (continued)
Summary of 2023 Independent Environmental Audit Recommendations and MACH Energy Responses

Item No.	Audit Recommendation	MACH Energy Response	Forecast Completion
Development Consent DA 92/97			
S3 C32	**REC 6:** It was noted during the site visit that weed management activities had fallen behind over the past 12 months due to difficulties in engaging contractors. This is a known issue. Thiess have appointed a full-time contractor and are hoping to undertake additional work to get weed management back on track.	MACH Energy have engaged a full time weed management resource through the mining service provider Thiess. This includes a full-time contractor and vehicle equipped with spray unit to address weeds within the operations and rehabilitation areas.	Complete
S3 C44H	**REC 7:** Adopt appropriate noise criteria for any out-of-hours construction work. Appropriate criteria are generally identical to usual MPO noise criteria unless alternative criteria are agreed with EPA/DPHI.	All construction works associated with MOD 4 have now been completed. Any requirements to complete out-of-hours-work will be reviewed as required in accordance with the OHWP.	Complete
S3 C52	**REC 8:** Ensure all chemicals/hydrocarbons are appropriately stored in bunded areas.	MACH Energy have commissioned a capital expenditure project to upgrade the MIA infrastructure. The new design will address issues with chemical and hydrocarbon storage by increasing bunded storage areas.	Mid-2024
S3 C54	**REC 9:** Update Table 2-1 of the RMP to include Schedule 3, Condition 54 of DA 92/97.	This recommendation will be addressed in future revisions of the RMP. Updates will be made to table 2.1 to include reference to Schedule 3, Condition 54 of Development Consent DA 92/97.	Q2 2024
S3 C54	**REC 10:** Update RMP to make reference to the Annual Rehabilitation and Forward Work Program to address the requirement of the RMP to an include indicative schedule.	This recommendation will be addressed in future revisions of the RMP.	Q2 2024
S3 C54	**REC 11:** Address erosion issues within the rehabilitation areas which were observed during the site visit.	MACH Energy have awarded a contract to complete a sitewide civil and earthworks project to address areas of erosion. This scope is scheduled for completion in 2023.	TARP developed trials to commence Q1 2024
Environmental Protection Licence EPL 20850			
P1.2	**REC 12:** Show EPL Point 14 and 15 on a figure in Water Management Plan.	EPL Points 14 and 15 will be included in a figure during next revision of the WMP to indicate monitoring locations.	Addressed in the SSD review of the WMP in 2024

Table 31 (continued)
Summary of 2023 Independent Environmental Audit Recommendations and MACH Energy Responses

Item No.	Audit Recommendation	MACH Energy Response	Forecast Completion
Environmental Protection Licence EPL 20850			
L3.1	**REC 13:** Implement diligent noise management practises to avoid exceedances of the noise criteria.	MACH Energy will implement additional mobile noise monitors to further assess noise levels throughout MPO's Noise Assessment Groups. A real time noise assessment tool is implemented at MPO. Weekly review of all noise alarms by a specialist noise consultant is undertaken to identify noise emanating from MPO. MPO implements three additional attended noise monitoring events following an exceedance of noise criteria. MPO utilises this information to further interrogate noise sources and avoid exceedances of the noise criteria.	Complete
L4.3	**REC 14:** Ensure the blast monitoring locations are regularly reviewed and represent closest privately owned receivers.	A variation of EPL Licence 20850 was received on the 28 February 2023. This variation included the removal of Monitoring Point 12 (B-VOA) as no residences are located near this monitor.	Complete
L4.6	**REC 15:** Review measures in the Blast Management Plan and the AQGHGMP for effectiveness and ensure these are being implemented on site.	This recommendation will be addressed in future revisions of the BMP and AQGGMP.	Addressed in the SSD review of the AQGGMP in 2024
L5.1	**REC 2:** Complaints registers and annual reports should be consistent in stating odour complaints (e.g. 2022 Annual Report mentions 3 odour complaints but these are not listed as 'odour' in the 2022 complaints register but rather, refer to spontaneous combustion and the 'nature of complaint' is 'other').	This recommendation will be addressed in future complaints register reports by aligning complaints to categories used in Annual Reviews.	Complete
L5.1	**REC 16:** Use 'Consultation Manager' internal system to track all complaints and manage follow up.	'Consultation Manager' is currently under review to increase efficiency in tracking complaints and follow up measures.	Complete
O1.1	**REC 8:** Ensure all chemicals/hydrocarbons are appropriately stored in bunded areas.	MACH Energy have commissioned a capital expenditure project to upgrade the MIA infrastructure. The new design will address issues with chemical and hydrocarbon storage by increasing bunded storage areas.	Mid-2024

Table 31 (continued)
Summary of 2023 Independent Environmental Audit Recommendations and MACH Energy Responses

Item No.	Audit Recommendation	MACH Energy Response	Forecast Completion
Environmental Protection Licence EPL 20850			
O3.1 – 3.3, 3.9	**REC 17:** Site personnel to ensure that water sprays on materials/when loading or unloading materials are being applied per the AQGHGMP to minimise dust during tipping as far as possible. The measures in the AQGHGMP relating to this should be reviewed for effectiveness.	At the time of the observation, wheel generated dust emissions were not considered excessive. However, the observed emissions were in the 'Dust emissions are increasing, and operators should consider if further action to reduce dust is required' category, as per EPA's *Dust Assessment Handbook* (EPA, 2019). It is noted that the *Dust Assessment Handbook* includes a number of factors to consider when assessing if operational changes to haul roads are required, namely; weather conditions, location, proximity to site boundary, proximity to sensitive receptors, duration of emissions and occupational safety. The operations were within the pit and a significant distance from the site boundary and sensitive receptors. Light winds were present, generally from the south-west (i.e. not towards key closest receptors). As such, in-pit dust emissions would be considered unlikely to lead to off-site impacts. Further, no real time dust alarms were triggered at the time of the observations. Notwithstanding, the operational team instructed water carts to carry out dust suppression throughout the pit. The daily dust risk forecast is provided to the Open Cut Examiner via email each morning to assist with operational planning and to inform the operations team of the dust risk for the day. Supervisors, OCEs, and the environment team also conduct regular checks on dust levels throughout MPO, and operators are proactive in responding to and communicating elevating dust levels. The MPO has multiple cameras within site, including those that cover the mining and coal handling prep plant area. MACH Energy have commissioned modifications to the ROM Bin opening to improve dust capture and suppression. Modifications include extending the opening structure to deploy additional spray bars. The structure will also suspend rubber belting from the roof to reduce the gap from a loaded truck. This structure has been erected with final completion scheduled for August 2023.	Complete

Table 31 (continued)
Summary of 2023 Independent Environmental Audit Recommendations and MACH Energy Responses

Item No.	Audit Recommendation	MACH Energy Response	Forecast Completion
Environmental Protection Licence EPL 20850			
O5	**REC 18:** MPO to test PIRMP at least once prior to January 2024 and annually thereafter.	The PIRMP is scheduled to be tested in December 2023 and annually thereafter.	PIRMP tested annually
O6.1	**REC 19:** Include the waste management requirements of EPL 20850 Condition O6.1 in the Thiess Mount Pleasant Handling and Disposal of Waste Procedure.	This recommendation will be addressed with the next revision of the Thiess Mount Pleasant Handling and Disposal of Waste Procedure.	2024
M2.3	**REC 20:** Complete quarterly faecal and pH monitoring in line with the obligations of the EPL Condition M2.3.	Quarterly faecal and pH monitoring is scheduled to occur every January, March, July and October. Samples are collected from CHPP STP (Monitoring Point 14) and MIA STP (Monitoring Point 15). In Q4 2021 the CHPP STP experienced issues with the membrane filter and as a result all effluent was removed from site. As a result, this Q4 sample was not able to be retrieved.	Complete
R5.2	**REC 22:** Noise Compliance Assessment Reports are to be prepared by an appropriately qualified acoustic consultant.	MACH Energy acknowledges the recommendation and can confirm that the monthly noise compliance assessment reports are submitted through the EPA's eConnect portal during annual return submission. Reports are completed by an appropriately qualified acoustic consultant for each month in accordance with Condition L3.2, L3.4, M10.2 and R5.2 of EPL 20850.	Complete
M8.1	**REC 21:** The 2021 met data spreadsheet should be amended if there is not actually a TEOM on-site. The monitoring equipment should be clear in all spreadsheets going forward.	MACH Energy acknowledges the recommendation and note this in an internal spreadsheet for management purposes. MPO will update the met data spreadsheet to remove reference to TEOM.	Complete

10 INCIDENTS AND NON-COMPLIANCES DURING THE REPORTING PERIOD

10.1 ENVIRONMENTAL INCIDENTS

There were no reportable incidents during the reporting period.

MACH Energy responded to a request for further information from the EPA in September 2023 related to a community complaint about odour related to spontaneous combustion (Section 5.12).

In addition, there were exceedances of surface water and groundwater trigger levels in the vicinity of the Hunter River. Investigation findings are presented in Section 6.2.3 and show that the trigger value exceedances are unrelated to the operations at the MPO.

10.2 NON-COMPLIANCES

A summary of non-compliances and potential non-compliances during the reporting period (i.e. 1 January – 31 December 2023), and, if applicable, the actions taken in response to the non-compliances, is outlined in Table 32.

Table 32
Compliance Summary

Approval Document Reference	Observation	Action/Comment
Development Consent DA 92/97 Schedule 3, Condition 5	A noise exceedance of the cumulative noise criteria at N-AT1 occurred on 29/30 August 2023, where attended noise monitoring identified an exceedance (measurement at 00:53) of the cumulative noise from mining operations ($L_{Aeq,period}$) criterion at monitoring location N-AT1 (measured noise of 41 dBA).	It was determined that the MPO contribution to total mine noise was inaudible and below the applicable intrusive and sleep disturbance noise criterion and therefore that all reasonable and feasible measures had been implemented.
EPL 20850 O3.6	MPO initiated an adverse weather condition dust shutdown at 12:42 on 25 October 2025 in accordance with Condition O3.5 of EPL20850. It was identified that one dozer was operational for a total of 17 minutes, while the remainder of the operations were shutdown.	The breach was promptly identified and the dozer operator was instructed to immediately cease operations. No environmental harm occurred, and no elevated dust results were recorded due to the brief period the plant was operating. Following the incident, MACH Energy notified the EPA of the shutdown exceedance on 1 November 2023. No further action was required.
EPL 20850 M2.2	PM10 was not continuously monitored at Monitoring Point 1 and Monitoring Point 2. Monitoring Point 1 did not capture continuous sampling due to routine maintenance, scheduled downtime and damage to unit caused by humidity. Monitoring Point 2 experience significant instrument damage and malfunction and is undergoing major repairs.	To prevent recurrence of non-compliance and increase valid data capture, MACH Energy has a specialist consultant contracted to perform daily system checks on the PM10 air quality monitoring units. Regular maintenance and calibration are also carried out in accordance with the manufacturer's guidelines. In addition, MACH Energy is investigating alternative unit types to replace Palas Fidas instrument at Monitoring Point 2 to ensure capture of PM10 data.
EPL 20850 M4.1	Weather parameters were not continuously monitored every 10 minutes at Monitoring Point 4 due to instrument sensor faults.	To prevent recurrence of non-compliance and increase valid data capture, MACH Energy has a specialist consultant contracted to perform daily system checks on the meteorological monitoring units. Regular maintenance and calibration are also carried out in accordance with the manufacturer's guidelines.

11 ACTIVITIES TO BE COMPLETED IN THE NEXT REPORTING PERIOD

Key activities to be completed during the next reporting period include:

- commence development under Development Consent SSD 10418. Operations will be required to comply with the requirements of both Development Consent SSD 10418 and Development Consent DA 92/97 (until its surrender);
- ongoing revision of all environmental management Strategies, Plans, and Programs, in consultation with relevant stakeholders, required for DPHI approval under the new consent;
- approval of EPL 20850 variation and revision of monitoring locations;
- continued civil works associated with water management and infrastructure maintenance;
- installation of new boreholes to supplement the existing groundwater monitoring program;
- continued consultation regarding the Aboriginal Heritage Conservation Areas;
- continued collaboration with the University of Newcastle on various rehabilitation related research projects as described in Section 7.3;
- upgrade of the nursery facility to supply local tubestock; and
- Independent Environmental Audit to occur within one year of commencement of development in accordance with Part D, Condition D13 of Development Consent SSD 10418.

12 REFERENCES

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APPENDIX A

NOISE MONITORING SUMMARY 2023

Table A1
$L_{Aeq,15minute}$ Attended Noise Monitoring Summary 2023

Monitoring Location/Period		Jan[1]	Feb[2]	Mar[3]	Apr[4]	May[5]	Jun[6]	Jul[7]	Aug[8]	Sep[9]	Oct[10]	Nov[11]	Dec[12]
N-AT1	Night	<25 dBA	IA	IA	21 dBA	<20 dBA	32 dBA	35 dBA	IA	32 dBA	IA	IA	IA
N-AT2	Night	<25 dBA	26 dBA	IA	<20 dBA	<20 dBA	<20 dBA	23 dBA	IA	IA	IA	IA	22 dBA
N-AT3	Night	IA	IA	IA	<20 dBA	27 dBA	36 dBA	IA	IA	IA	38 dBA	IA	IA
N-AT4	Night	IA	IA	IA	21 dBA	22 dBA	40 dBA	28 dBA	IA	IA	38 dBA	IA	IA
N-AT5	Night	IA	IA	NM	<20 dBA	27 dBA	38 dBA	37 dBA	IA	IA	38 dBA	IA	IA
N-AT6	Night	IA	IA	IA	<20 dBA	<20 dBA	28 dBA	IA	IA	IA	IA	IA	IA

Note:

dBA = A-weighted decibels.

IA = Inaudible.

NM = Not measurable.

Indicates criteria were not applicable due to meteorological conditions at the time of measurement.

Bold values indicate exceedance of criterion.

Measurements undertaken on the following dates:

[1]: 25 and 26 January. [2]: 6 and 7 February. [3]: 25 and 26 March. [4]: 28 and 29 April. [5]: 30 and 31 May. [6]: 9 and 10 June. [7]: 25 and 26 July. [8]: 29 and 30 August. [9]: 29 and 30 September. [10]: 24 and 25 October. [11]: 27 and 28 November.[12]: 7 and 8 December.

* A second measurement was taken for November at N-AT4 and N-AT5 due to an exceedance of the $L_{Aeq,15minute}$ criterion.

Table A2
$L_{A1,1minute}$ Attended Noise Monitoring Summary 2023

Monitoring Location/Period		Jan[1]	Feb[2]	Mar[3]	Apr[4]	May[5]	Jun[6]	Jul[7]	Aug[8]	Sep[9]	Oct[10]	Nov[11]	Dec[12]
N-AT1	Night	IA	IA	<20 dBA	26 dBA	<20 dBA	40 dBA	38 dBA	IA	36 dBA	IA	IA	IA
N-AT2	Night	32 dBA	32 dBA	<20 dBA	<20 dBA	<20 dBA	<20 dBA	28 dBA	IA	IA	IA	IA	26 dBA
N-AT3	Night	IA	IA	<20 dBA	<20 dBA	34 dBA	40 dBA	IA	IA	IA	44 dBA	IA	IA
N-AT4	Night	**IA**	IA	<20 dBA	25 dBA	26 dBA	44 dBA	31 dBA	IA	IA	45 dBA	IA	IA
N-AT5	Night	**IA**	IA	NM	<20 dBA	32 dBA	44 dBA	39 dBA	IA	IA	45 dBA	IA	IA
N-AT6	Night	**IA**	IA	<20 dBA	<20 dBA	<20 dBA	31 dBA	IA	IA	IA	IA	IA	IA

Note:

dBA = A-weighted decibels.

IA = Inaudible.

NM = Not measurable.

Indicates criteria were not applicable due to meteorological conditions at the time of measurement.

Bold values indicate exceedance of criterion.

Measurements undertaken on the following dates:

[1]: 24 and 25 January . [2]: 6 and 7 February. [3]: 25 and 26 March. [4]: 28 and 29 April. [5]: 30 and 31 May. [6]: 9 and 10 June. [7]: 25 and 26 July. [8]: 29 and 30 August. [9]: 29 and 30 September. [10]: 24 and 25 October. [11]: 27 and 28 November.[12]: 7 and 8 December.

* A second measurement was taken for November at N-AT4 and N-AT5 due to an exceedance of the $L_{A1,1minute}$ criterion.

Table A3
Cumulative Mining Noise Monitoring Summary 2023

Monitoring Location/Period		Jan[1]	Feb[2]	Mar[3]	Apr[4]	May[5]	Jun[6]	Jul[7]	Aug[8]	Sep[9]	Oct[10]	Nov[11]	Dec[12]
N-AT1	Night	32	Nil	29 dBA	21 dBA	<20 dBA	32 dBA	41 dBA	**41 dBA**	37 dBA	IA	37 dBA	IA
N-AT2	Night	Nil	Nil	<20 dBA	<20 dBA	<20 dBA	<20 dBA	23 dBA	IA	IA	IA	21 dBA	22 dBA
N-AT3	Night	Nil	Nil	<20 dBA	<20 dBA	27 dBA	36 dBA	IA	IA	IA	38 dBA	IA	IA
N-AT4	Night	Nil	Nil	<20 dBA	21 dBA	22 dBA	40 dBA	28 dBA	IA	32 dBA	38 dBA	IA	IA
N-AT5	Night	Nil	Nil	NM	24 dBA	27 dBA	38 dBA	37 dBA	IA	26 dBA	38 dBA	27 dBA	IA
N-AT6	Night	Nil	Nil	<20 dBA	<20 dBA	<20 dBA	28 dBA	38 dBA	29 dBA	28 dBA	IA	27 dBA	IA

Note:

dBA = A-weighted decibels.

IA = Inaudible.

NM = Not measurable.

Nil = Only one source of noise present, or MPO did not contribute to total mining noise levels.

Indicates criteria were not applicable due to meteorological conditions at the time of measurement.

Bold values indicate exceedance of criterion.

Measurements undertaken on the following dates:

[1]: 24 and 25 January . [2]: 6 and 7 February. [3]: 25 and 26 March. [4]: 28 and 29 April. [5]: 30 and 31 May. [6]: 9 and 10 June. [7]: 25 and 26 July. [8]: 29 and 30 August. [9]: 29 and 30 September. [10]: 24 and 25 October. [11]: 27 and 28 November.[12]: 7 and 8 December.

* A second measurement was taken for November at N-AT4 and N-AT5 due to low-frequency modifying factors being applicable at the time.

APPENDIX B

BLASTING SUMMARY 2023

MPO Blast Monitoring Summary – 2023

Date Fired	Time Fired	Vibration (mm/s) BVOA	Overpressure (dBL) BVOA	Vibration (mm/s) BVOC	Overpressure (dBL) BVOC	Vibration (mm/s) BVO2	Overpressure (dBL) BVO2	Blast Fume Compliant
Tuesday 3/01/2023	13:12	0.160	95.2	0.180	97.9	0.190	94.7	Y
Friday 6/01/2023	16:45	0.730	112	0.530	103	0.550	96.9	Y
Wednesday 11/01/2023	13:42	0.910	99.8	0.560	106	0.310	98.5	Y
Thursday 12/01/2023	16:55	0.750	108	0.390	108	0.600	11.1	Y
Friday 13/01/2023	13:42	0.020	98.1	0.010	96.2	0.000	90.3	Y
Thursday 19/01/2023	13:34	0.640	96.8	0.610	98	0.610	112	Y
Wednesday 25/01/2023	15:06	1.120	101	0.540	99.6	0.550	111	Y
Thursday 2/02/2023	15:53	0.620	101.7	0.540	99.5	0.680	104	Y
Thursday 9/02/2023	13:41	0.820	101.3	0.690	95.1	0.440	99.6	Y
Tuesday 14/02/2023	14:02	0.910	105	0.440	117.1	0.580	109.8	Y
Friday 17/02/2023	12:01	1.120	104.6	0.650	97.6	1.640	97.1	Y
Monday 24/02/2023	16:04	0.540	98.4	0.310	98.8	0.450	94.5	Y
Monday 24/02/2023	12:37	0.600	97.5	0.400	109.5	0.460	90.1	Y
Thursday 2/03/2023	13:05	-	-	1.120	99	0.480	97.5	Y
Friday 2/03/2023	15:00	-	-	1.190	99.4	0.260	87.4	Y
Friday 2/03/2023	14:55	-	-	1.100	97.5	0.540	102.1	Y
Thursday 2/03/2023	13:28	-	-	0.940	92.3	0.560	99.2	Y
Wednesday 2/03/2023	13:26	-	-	0.720	106.2	0.440	112.4	Y
Friday 2/03/2023	10:42	-	-	0.010	95.9	0.000	92	Y
Thursday 6/04/2023	14:53	-	-	0.930	93	0.420	106.2	Y
Thursday 13/04/2023	13.22	-	-	0.230	93.7	0.220	93.6	Y
Thursday 20/04/2023	15:05	-	-	1.150	102.1	0.830	108.4	Y
Thursday 7/04/2023	11:33	-	-	1.250	97.6	0.900	101.8	Y
Thursday 04/05/2023	13:34	-	-	1.020	96.3	1.330	97.4	Y
Thursday 11/05/2023	15:53	-	-	0.470	92.7	0.490	95.5	Y
Thursday 18/05/2023	15:08	-	-	0.850	93	0.660	100.6	Y
Thursday 25/05/2023	16:10	-	-	0.370	93.8	0.340	103.6	Y
Friday 26/05/2023	11:53	-	-	1.380	95.9	0.850	106.4	Y
Wednesday 31/05/2023	13:08	-	-	0.120	101.6	0.170	104.9	Y
Thursday 1/06/2023	15:02	-	-	0.670	99	0.460	98.9	Y
Thursday 8/06/2023	11:39	-	-	3.070	102	0.990	106.4	Y
Thursday 15/06/2023	12:59	-	-	0.170	105.1	0.250	102.6	Y
Thursday 22/06/2023	13:11	-	-	0.010	94.4	0.000	73.7	Y
Tuesday 27/06/2023	13:05	-	-	0.180	96	0.440	104.5	Y
Thursday 29/06/2023	15:04	-	-	0.820	97.4	0.680	101.2	Y

Wednesday 5/07/2023	13:11	-	-	0.880	92.9	0.660	103.9	Y
Thursday 6/07/2023	16:09	-	-	0.290	92.3	0.330	97	Y
Tuesday 11/07/2023	13:10	-	-	0.370	92.4	0.490	99.9	Y
Tuesday 18/07/2023	13:07	-	-	0.390	88	0.540	92.1	Y
Wednesday 19/07/2023	13:04	-	-	0.810	97.6	0.400	101.5	Y
Friday 21/07/2023	12:13	-	-	0.670	84.3	0.790	102.5	Y
Wednesday 26/07/2023	14:06	-	-	0.390	96.2	0.450	101.1	Y
Wednesday 27/07/2023	13:13	-	-	0.170	92.7	0.210	98.2	Y
Wednesday 2/08/2023	13:01	-	-	0.300	104.2	0.380	93.3	Y
Tuesday 8/08/2023	13:00	-	-	0.010	90.7	0.010	85.1	Y
Wednesday 9/08/2023	15:03	-	-	0.950	98.6	0.530	101	Y
Thursday 17/08/2023	11:19	-	-	0.270	94.5	0.300	98.5	Y
Tuesday 22/08/2023	13:14	-	-	0.180	104.5	0.210	101.2	Y
Thursday 24/08/2023	11:12	-	-	0.480	100.4	0.270	97.1	Y
Friday 25/08/2023	10:00	-	-	0.620	91.8	0.410	97.4	Y
Wednesday 30/08/2023	15:05	-	-	0.690	95.8	0.950	99	Y
Friday 1/09/2023	10:43	-	-	0.620	99.1	0.440	96.7	Y
Thursday 7/09/2023	10:07	-	-	0.240	99.3	0.300	101.6	Y
Wednesday 13/09/2023	13:40	-	-	0.520	91.1	0.290	98.9	Y
Thursday 19/09/2023	13:10	-	-	1.370	105.6	0.870	109.5	Y
Wednesday 27/09/2023	11:19	-	-	0.180	89.4	0.110	94.1	Y
Thursday 12/10/2023	10:43	-	-	0.250	98.3	0.200	99.1	Y
Friday 13/10/2023	10:07	-	-	0.270	102.5	0.180	98.2	Y
Wednesday 18/10/2023	13:40	-	-	0.870	101.5	0.400	98.3	Y
Thursday 26/10/2023	13:10	-	-	0.540	99.3	0.559	106.4	Y
Thursday 2/11/2023	13:10	-	-	0.930	92.2	1.070	96.3	Y
Tuesday 7/11/2023	13:00	-	-	1.130	90.8	0.710	94.6	Y
Thursday 9/11/2023	10:14	-	-	0.430	95.9	0.740	96.3	Y
Thursday 16/11/2023	12:05	-	-	0.700	98.1	0.370	96.7	Y
Thursday 22/11/2023	13:05	-	-	0.260	103	0.380	90.6	Y
Thursday 28/11/2023	15:07	-	-	0.570	102.5	0.240	101.8	Y
Thursday 29/11/2023	11:06	-	-	0.430	94.2	0.380	95.3	Y
Friday 1/12/2023	11:46	-	-	1.1	102	0.24	98.7	Y
Wednesday 6/12/2023	13:33	-	-	0.86	106	0.36	106	Y
Wednesday 13/12/2023	12:58	-	-	0.37	88.5	0.44	95.1	Y
Friday 15/12/2023	10:16	-	-	0.45	96	0.37	100	Y
Thursday 21/12/2023	12:08	-	-	0.72	94.6	0.53	94.4	Y

APPENDIX C

RAIL MOVEMENT SUMMARY 2023

MPO Rail Movement Summary – 2023

Q1		Q2		Q3		Q4	
Train Movement In	Train Movement Out	Train Movement In	Train Movement Out	Train Movement In	Train Movement Out	Train Movement In	Train Movement Out
Sun 1 Jan 07:25	Sun 1 Jan 09:44	Sat 1 Apr 06:26	Sat 1 Apr 13:22	Sat 1 Jul 00:15	Sat 1 Jul 02:31	Sun 1 Oct 04:07	Sun 1 Oct 09:24
Mon 2 Jan 02:46	Mon 2 Jan 04:51	Sat 1 Apr 17:25	Sat 1 Apr 22:30	Sat 1 Jul 01:25	Sat 1 Jul 07:57	Sun 1 Oct 14:25	Sun 1 Oct 17:58
Mon 2 Jan 13:57	Mon 2 Jan 16:04	Sun 2 Apr 04:25	Sun 2 Apr 07:57	Sat 1 Jul 07:25	Sat 1 Jul 13:07	Mon 2 Oct 11:45	Mon 2 Oct 15:15
Tue 3 Jan 04:25	Tue 3 Jan 06:55	Sun 2 Apr 11:45	Sun 2 Apr 16:04	Sat 1 Jul 12:36	Sat 1 Jul 14:36	Mon 2 Oct 23:45	Tue 3 Oct 06:26
Tue 3 Jan 16:56	Tue 3 Jan 19:55	Sun 2 Apr 15:15	Sun 2 Apr 21:10	Sat 1 Jul 15:46	Sat 1 Jul 19:48	Tue 3 Oct 17:35	Tue 3 Oct 22:16
Wed 4 Jan 11:06	Wed 4 Jan 13:50	Mon 3 Apr 07:16	Mon 3 Apr 11:16	Sat 1 Jul 20:05	Sun 2 Jul 00:34	Fri 6 Oct 19:40	Sat 7 Oct 02:10
Thu 5 Jan 00:15	Thu 5 Jan 02:46	Mon 3 Apr 14:25	Mon 3 Apr 19:24	Sun 2 Jul 04:05	Sun 2 Jul 07:14	Sat 7 Oct 08:15	Sat 7 Oct 11:56
Thu 5 Jan 07:15	Thu 5 Jan 14:05	Mon 3 Apr 18:55	Fri 7 Apr 00:53	Sun 2 Jul 06:35	Sun 2 Jul 10:18	Sat 7 Oct 14:25	Sat 7 Oct 18:15
Thu 5 Jan 16:15	Thu 5 Jan 18:26	Thu 6 Apr 22:35	Fri 7 Apr 07:14	Sun 2 Jul 11:06	Sun 2 Jul 16:04	Sat 7 Oct 17:25	Sat 7 Oct 22:16
Fri 6 Jan 04:35	Fri 6 Jan 08:54	Fri 7 Apr 15:46	Fri 7 Apr 19:24	Sun 2 Jul 16:46	Sun 2 Jul 21:10	Sat 7 Oct 22:25	Sun 8 Oct 03:30
Fri 6 Jan 08:15	Fri 6 Jan 11:54	Sat 8 Apr 09:35	Sat 8 Apr 13:22	Mon 3 Jul 03:25	Mon 3 Jul 08:03	Sun 8 Oct 08:06	Sun 8 Oct 11:40
Fri 6 Jan 20:45	Fri 6 Jan 23:30	Sat 8 Apr 12:25	Sat 8 Apr 18:15	Mon 3 Jul 08:15	Mon 3 Jul 11:16	Sun 8 Oct 13:56	Sun 8 Oct 17:39
Sat 7 Jan 04:15	Sat 7 Jan 12:44	Sat 8 Apr 22:25	Sun 9 Apr 00:54	Mon 3 Jul 16:15	Mon 3 Jul 20:04	Sun 8 Oct 20:15	Sun 8 Oct 23:48
Sat 7 Jan 08:25	Sat 7 Jan 15:33	Sun 9 Apr 00:05	Sun 9 Apr 04:15	Mon 3 Jul 22:45	Tue 4 Jul 01:10	Sun 8 Oct 23:45	Mon 9 Oct 04:15
Sat 7 Jan 23:25	Sun 8 Jan 06:18	Sun 9 Apr 07:30	Sun 9 Apr 14:49	Tue 4 Jul 15:35	Tue 4 Jul 17:56	Mon 9 Oct 11:36	Mon 9 Oct 15:06
Sun 8 Jan 11:06	Sun 8 Jan 13:22	Sun 9 Apr 11:45	Sun 9 Apr 15:05	Tue 4 Jul 19:15	Tue 4 Jul 23:30	Mon 9 Oct 14:56	Mon 9 Oct 19:48
Sun 8 Jan 17:35	Sun 8 Jan 21:40	Sun 9 Apr 16:15	Sun 9 Apr 19:48	Wed 5 Jul 05:55	Wed 5 Jul 09:10	Tue 10 Oct 00:17	Tue 10 Oct 04:15
Mon 9 Jan 01:25	Mon 9 Jan 03:44	Mon 10 Apr 00:45	Mon 10 Apr 04:15	Thu 6 Jul 02:27	Thu 6 Jul 06:26	Tue 10 Oct 07:15	Tue 10 Oct 11:17
Mon 9 Jan 07:27	Mon 9 Jan 11:22	Mon 10 Apr 04:25	Mon 10 Apr 06:55	Thu 6 Jul 14:15	Thu 6 Jul 17:24	Tue 10 Oct 20:45	Wed 11 Oct 00:16
Mon 9 Jan 14:15	Mon 9 Jan 17:24	Mon 10 Apr 08:15	Mon 10 Apr 13:22	Fri 7 Jul 01:56	Fri 7 Jul 04:15	Wed 11 Oct 01:25	Wed 11 Oct 05:08
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Wed 11 Jan 09:35	Wed 11 Jan 14:48	Tue 11 Apr 14:25	Tue 11 Apr 18:26	Sat 8 Jul 18:26	Sat 8 Jul 21:27	Thu 12 Oct 22:45	Fri 13 Oct 02:38

Month	Total Tonnage Transported from MPO (t)
January	617,980
February	690,067
March	862,332
April	748,369
May	736,664
June	509,077
July	581,182
August	622,332
September	634,716
October	644,638
November	596,171
December	485,898

Thu 12 Jan 00:15	Thu 12 Jan 02:46	Tue 11 Apr 15:00	Tue 11 Apr 22:30	Sun 9 Jul 02:07	Sun 9 Jul 07:00	Fri 13 Oct 01:35	Fri 13 Oct 06:26
Thu 12 Jan 20:15	Fri 13 Jan 02:38	Tue 11 Apr 23:56	Wed 12 Apr 03:30	Sun 9 Jul 08:26	Sun 9 Jul 11:16	Fri 13 Oct 14:25	Fri 13 Oct 18:26
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Fri 13 Jan 14:35	Fri 13 Jan 19:51	Wed 12 Apr 10:09	Wed 12 Apr 13:50	Sun 9 Jul 19:49	Mon 10 Jul 00:19	Sat 14 Oct 08:15	Sat 14 Oct 13:36
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Sun 15 Jan 15:46	Sun 15 Jan 19:48	Fri 14 Apr 15:46	Fri 14 Apr 21:11	Wed 12 Jul 00:25	Wed 12 Jul 03:30	Tue 17 Oct 01:37	Tue 17 Oct 05:12
Sun 15 Jan 20:05	Mon 16 Jan 00:34	Fri 14 Apr 21:55	Sat 15 Apr 00:30	Wed 12 Jul 01:06	Wed 12 Jul 07:50	Tue 17 Oct 08:26	Tue 17 Oct 13:15
Mon 16 Jan 03:05	Mon 16 Jan 09:10	Sat 15 Apr 01:55	Sat 15 Apr 07:57	Wed 12 Jul 08:56	Wed 12 Jul 13:22	Tue 17 Oct 17:46	Tue 17 Oct 21:26
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Tue 17 Jan 03:05	Tue 17 Jan 06:55	Sat 15 Apr 21:55	Sun 16 Apr 02:41	Wed 12 Jul 23:15	Thu 13 Jul 03:37	Thu 19 Oct 19:15	Thu 19 Oct 23:35
Tue 17 Jan 08:15	Tue 17 Jan 13:22	Sun 16 Apr 06:27	Sun 16 Apr 09:44	Thu 13 Jul 02:16	Thu 13 Jul 14:05	Fri 20 Oct 06:05	Fri 20 Oct 13:22
Tue 17 Jan 20:15	Tue 17 Jan 23:30	Sun 16 Apr 09:55	Sun 16 Apr 13:22	Thu 13 Jul 06:55	Thu 13 Jul 16:59	Fri 20 Oct 11:06	Fri 20 Oct 18:13
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Wed 1 Feb 09:45	Wed 1 Feb 13:36	Wed 26 Apr 07:35	Wed 26 Apr 11:16	Sun 30 Jul 06:55	Sun 30 Jul 11:56	Sat 4 Nov 04:35	Sat 4 Nov 08:26
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Wed 1 Feb 23:45	Thu 2 Feb 02:07	Thu 27 Apr 14:15	Fri 28 Apr 00:54	Tue 1 Aug 00:45	Tue 1 Aug 06:26	Sun 5 Nov 00:45	Sun 5 Nov 04:15
Thu 2 Feb 07:35	Thu 2 Feb 23:02	Thu 27 Apr 23:45	Fri 28 Apr 03:01	Tue 1 Aug 05:55	Tue 1 Aug 08:58	Sun 5 Nov 12:25	Sun 5 Nov 16:04
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Sat 4 Feb 08:35	Sat 4 Feb 13:22	Sat 29 Apr 14:25	Sat 29 Apr 18:15	Thu 3 Aug 01:25	Thu 3 Aug 06:55	Wed 8 Nov 22:45	Thu 9 Nov 04:37
Sat 4 Feb 12:25	Sat 4 Feb 16:50	Sat 29 Apr 17:35	Sat 29 Apr 23:50	Thu 3 Aug 11:56	Thu 3 Aug 17:24	Thu 9 Nov 14:25	Thu 9 Nov 18:26
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Mon 6 Feb 11:06	Mon 6 Feb 14:50	Tue 2 May 01:25	Tue 2 May 05:08	Tue 8 Aug 20:15	Tue 8 Aug 22:31	Mon 13 Nov 01:25	Mon 13 Nov 08:03
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Sun 12 Feb 00:25	Sun 12 Feb 05:05	Fri 5 May 05:45	Fri 5 May 10:49	Sun 13 Aug 09:11	Sun 13 Aug 11:16	Thu 16 Nov 21:25	Fri 17 Nov 01:14

Sun 12 Feb 11:06	Sun 12 Feb 14:45	Fri 5 May 08:15	Fri 5 May 13:22	Sun 13 Aug 11:45	Sun 13 Aug 16:04	Fri 17 Nov 10:37	Fri 17 Nov 15:25
Sun 12 Feb 15:15	Sun 12 Feb 18:50	Sat 6 May 04:35	Sat 6 May 07:14	Sun 13 Aug 20:35	Mon 14 Aug 02:25	Fri 17 Nov 19:15	Sat 18 Nov 00:02
Sun 12 Feb 23:55	Mon 13 Feb 02:25	Sat 6 May 07:25	Sat 6 May 11:56	Sun 13 Aug 23:59	Mon 14 Aug 04:15	Sat 18 Nov 00:26	Sat 18 Nov 04:15
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Mon 13 Feb 17:05	Mon 13 Feb 22:09	Sun 7 May 12:55	Sun 7 May 16:04	Wed 16 Aug 11:35	Wed 16 Aug 15:45	Sun 19 Nov 14:15	Sun 19 Nov 18:12
Mon 13 Feb 22:45	Tue 14 Feb 02:42	Sun 7 May 15:26	Mon 8 May 03:44	Wed 16 Aug 14:56	Wed 16 Aug 17:56	Mon 20 Nov 00:30	Mon 20 Nov 04:15
Tue 14 Feb 03:15	Tue 14 Feb 05:25	Sun 7 May 20:35	Mon 8 May 06:26	Wed 16 Aug 20:55	Thu 17 Aug 00:30	Mon 20 Nov 06:05	Mon 20 Nov 10:42
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Tue 14 Feb 12:05	Tue 14 Feb 16:04	Tue 9 May 08:15	Tue 9 May 11:19	Thu 17 Aug 07:35	Thu 17 Aug 10:43	Mon 20 Nov 17:15	Mon 20 Nov 23:30
Tue 14 Feb 17:15	Tue 14 Feb 19:24	Tue 9 May 09:15	Tue 9 May 13:50	Thu 17 Aug 08:45	Thu 17 Aug 16:04	Fri 24 Nov 17:15	Fri 24 Nov 21:42
Tue 14 Feb 21:25	Wed 15 Feb 01:10	Tue 9 May 12:25	Tue 9 May 16:38	Thu 17 Aug 14:25	Thu 17 Aug 18:26	Fri 24 Nov 22:45	Sat 25 Nov 02:31
Wed 15 Feb 04:25	Wed 15 Feb 07:24	Wed 10 May 05:55	Wed 10 May 11:16	Fri 18 Aug 04:15	Fri 18 Aug 13:08	Sat 25 Nov 02:20	Sat 25 Nov 05:58
Wed 15 Feb 08:45	Wed 15 Feb 13:08	Wed 10 May 09:35	Wed 10 May 13:22	Fri 18 Aug 09:25	Fri 18 Aug 15:25	Sat 25 Nov 06:12	Sat 25 Nov 08:26
Wed 15 Feb 11:45	Wed 15 Feb 16:04	Wed 10 May 15:46	Wed 10 May 23:30	Fri 18 Aug 15:46	Fri 18 Aug 19:24	Sat 25 Nov 23:15	Sun 26 Nov 04:15
Wed 15 Feb 18:55	Wed 15 Feb 21:11	Thu 11 May 00:15	Thu 11 May 02:46	Sat 19 Aug 07:25	Sat 19 Aug 11:56	Sun 26 Nov 06:55	Sun 26 Nov 10:36
Thu 16 Feb 14:35	Thu 16 Feb 18:26	Thu 11 May 03:15	Thu 11 May 08:04	Sat 19 Aug 11:45	Sat 19 Aug 14:05	Sun 26 Nov 11:06	Sun 26 Nov 13:22
Thu 16 Feb 20:35	Fri 17 Feb 07:14	Thu 11 May 05:45	Thu 11 May 11:16	Sat 19 Aug 21:55	Sun 20 Aug 00:34	Sun 26 Nov 18:15	Sun 26 Nov 22:31
Fri 17 Feb 03:25	Fri 17 Feb 13:08	Thu 11 May 08:55	Thu 11 May 15:00	Sat 19 Aug 23:15	Sun 20 Aug 04:15	Mon 27 Nov 00:56	Mon 27 Nov 03:14
Fri 17 Feb 11:06	Fri 17 Feb 16:04	Thu 11 May 11:45	Thu 11 May 17:24	Sun 20 Aug 06:35	Sun 20 Aug 11:16	Mon 27 Nov 01:25	Mon 27 Nov 08:32
Fri 17 Feb 16:15	Fri 17 Feb 19:24	Thu 11 May 19:05	Thu 11 May 22:30	Sun 20 Aug 06:45	Sun 20 Aug 13:22	Mon 27 Nov 12:46	Mon 27 Nov 18:26
Fri 17 Feb 20:15	Sat 18 Feb 05:29	Fri 12 May 01:36	Fri 12 May 04:15	Sun 20 Aug 14:25	Sun 20 Aug 18:40	Tue 28 Nov 00:15	Tue 28 Nov 02:42
Sat 18 Feb 03:36	Sat 18 Feb 07:42	Fri 12 May 04:25	Fri 12 May 08:54	Sun 20 Aug 15:15	Sun 20 Aug 21:10	Tue 28 Nov 01:25	Tue 28 Nov 08:04
Sat 18 Feb 06:35	Sat 18 Feb 10:28	Fri 12 May 09:05	Fri 12 May 13:08	Sun 20 Aug 18:55	Mon 21 Aug 00:19	Tue 28 Nov 07:15	Tue 28 Nov 11:19
Sat 18 Feb 14:35	Sat 18 Feb 18:15	Fri 12 May 14:25	Fri 12 May 19:31	Mon 21 Aug 00:45	Mon 21 Aug 04:51	Tue 28 Nov 13:06	Tue 28 Nov 17:42
Sat 18 Feb 20:35	Sun 19 Feb 05:05	Fri 12 May 23:15	Sat 13 May 02:10	Mon 21 Aug 04:05	Mon 21 Aug 14:50	Tue 28 Nov 20:15	Wed 29 Nov 04:16
Sun 19 Feb 00:05	Sun 19 Feb 05:52	Sat 13 May 01:25	Sat 13 May 05:02	Mon 21 Aug 11:45	Mon 21 Aug 15:25	Wed 29 Nov 01:47	Wed 29 Nov 06:55

Sun 19 Feb 06:35	Sun 19 Feb 11:16	Sat 13 May 06:55	Sat 13 May 09:11	Mon 21 Aug 15:56	Mon 21 Aug 18:13	Wed 29 Nov 18:31	Wed 29 Nov 23:30
Sun 19 Feb 08:45	Sun 19 Feb 14:05	Sat 13 May 08:15	Sat 13 May 13:22	Mon 21 Aug 20:15	Tue 22 Aug 00:54	Thu 30 Nov 01:55	Thu 30 Nov 07:25
Sun 19 Feb 14:15	Sun 19 Feb 17:54	Sat 13 May 12:25	Sat 13 May 16:20	Tue 22 Aug 02:56	Tue 22 Aug 05:08	Thu 30 Nov 08:15	Thu 30 Nov 11:54
Sun 19 Feb 19:49	Mon 20 Feb 04:15	Sat 13 May 17:25	Sat 13 May 23:03	Tue 22 Aug 12:46	Tue 22 Aug 17:56	Thu 30 Nov 22:45	Fri 1 Dec 02:43
Mon 20 Feb 01:25	Mon 20 Feb 05:25	Sat 13 May 20:55	Sun 14 May 00:34	Tue 22 Aug 22:45	Wed 23 Aug 02:41	Fri 1 Dec 12:15	Fri 1 Dec 16:28
Mon 20 Feb 04:25	Mon 20 Feb 08:03	Sun 14 May 02:55	Sun 14 May 07:57	Wed 23 Aug 12:25	Wed 23 Aug 16:04	Fri 1 Dec 16:15	Fri 1 Dec 18:26
Mon 20 Feb 06:47	Mon 20 Feb 13:08	Sun 14 May 08:45	Sun 14 May 11:56	Wed 23 Aug 15:46	Wed 23 Aug 19:55	Fri 1 Dec 20:55	Sat 2 Dec 01:14
Mon 20 Feb 20:15	Tue 21 Feb 01:54	Sun 14 May 10:55	Sun 14 May 15:05	Wed 23 Aug 20:35	Thu 24 Aug 01:35	Sat 2 Dec 15:15	Sat 2 Dec 19:34
Tue 21 Feb 02:16	Tue 21 Feb 06:26	Sun 14 May 12:55	Sun 14 May 18:28	Thu 24 Aug 01:45	Thu 24 Aug 11:54	Sat 2 Dec 20:55	Sun 3 Dec 00:34
Tue 21 Feb 03:15	Tue 21 Feb 10:18	Sun 14 May 19:15	Sun 14 May 22:16	Thu 24 Aug 04:45	Thu 24 Aug 16:43	Sun 3 Dec 07:25	Sun 3 Dec 11:40
Tue 21 Feb 12:15	Tue 21 Feb 15:05	Sun 14 May 22:45	Mon 15 May 02:25	Thu 24 Aug 20:35	Fri 25 Aug 00:54	Sun 3 Dec 13:56	Sun 3 Dec 17:54
Tue 21 Feb 14:35	Tue 21 Feb 18:26	Sun 14 May 23:45	Mon 15 May 06:26	Fri 25 Aug 01:36	Fri 25 Aug 05:25	Sun 3 Dec 17:35	Sun 3 Dec 21:40
Tue 21 Feb 20:35	Wed 22 Feb 00:16	Mon 15 May 03:25	Mon 15 May 09:10	Fri 25 Aug 17:06	Fri 25 Aug 19:24	Sun 3 Dec 22:36	Mon 4 Dec 02:07
Wed 22 Feb 02:06	Wed 22 Feb 05:08	Mon 15 May 12:55	Mon 15 May 16:59	Fri 25 Aug 20:15	Sat 26 Aug 02:31	Sun 3 Dec 23:45	Mon 4 Dec 05:25
Wed 22 Feb 06:37	Wed 22 Feb 11:16	Mon 15 May 19:05	Mon 15 May 23:30	Sat 26 Aug 01:15	Sat 26 Aug 05:02	Mon 4 Dec 11:45	Mon 4 Dec 16:04
Wed 22 Feb 09:25	Wed 22 Feb 13:50	Tue 16 May 02:05	Tue 16 May 07:25	Sat 26 Aug 07:05	Sat 26 Aug 11:22	Mon 4 Dec 19:26	Mon 4 Dec 21:28
Wed 22 Feb 20:45	Wed 22 Feb 23:00	Tue 16 May 07:45	Tue 16 May 11:17	Sat 26 Aug 12:05	Sat 26 Aug 15:05	Mon 4 Dec 20:45	Tue 5 Dec 01:10
Wed 22 Feb 21:25	Thu 23 Feb 02:46	Tue 16 May 11:25	Tue 16 May 13:50	Sat 26 Aug 15:46	Sat 26 Aug 18:15	Tue 5 Dec 06:05	Tue 5 Dec 10:49
Thu 23 Feb 17:25	Thu 23 Feb 23:30	Tue 16 May 20:35	Wed 17 May 00:16	Sat 26 Aug 21:25	Sun 27 Aug 01:47	Tue 5 Dec 12:05	Tue 5 Dec 16:04
Fri 24 Feb 00:25	Fri 24 Feb 02:38	Wed 17 May 00:25	Wed 17 May 02:41	Sun 27 Aug 02:07	Sun 27 Aug 04:15	Tue 5 Dec 16:15	Tue 5 Dec 19:55
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Tue 28 Feb 05:25	Tue 28 Feb 08:58	Sun 21 May 11:26	Sun 21 May 15:05	Wed 30 Aug 19:25	Thu 31 Aug 01:53	Fri 8 Dec 23:25	Sat 9 Dec 03:48
Tue 28 Feb 08:15	Tue 28 Feb 15:30	Sun 21 May 14:25	Sun 21 May 18:28	Fri 1 Sep 06:36	Fri 1 Sep 08:54	Sat 9 Dec 04:35	Sat 9 Dec 09:44
Wed 1 Mar 04:45	Wed 1 Mar 11:16	Sun 21 May 16:46	Sun 21 May 22:30	Fri 1 Sep 14:46	Fri 1 Sep 16:59	Sat 9 Dec 07:05	Sat 9 Dec 11:22
Wed 1 Mar 09:35	Wed 1 Mar 11:54	Sun 21 May 21:25	Mon 22 May 02:07	Fri 1 Sep 23:06	Sat 2 Sep 01:22	Sat 9 Dec 12:25	Sat 9 Dec 21:40
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Fri 3 Mar 15:15	Fri 3 Mar 19:51	Sun 28 May 08:25	Sun 28 May 11:16	Mon 4 Sep 06:46	Mon 4 Sep 09:10	Wed 13 Dec 00:25	Wed 13 Dec 06:26
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Sat 4 Mar 19:15	Sat 4 Mar 23:33	Mon 29 May 14:25	Mon 29 May 19:36	Tue 5 Sep 11:55	Tue 5 Sep 16:04	Wed 13 Dec 21:55	Thu 14 Dec 00:44
Sun 5 Mar 00:05	Sun 5 Mar 02:24	Mon 29 May 20:45	Tue 30 May 00:16	Tue 5 Sep 21:36	Wed 6 Sep 00:02	Thu 14 Dec 22:45	Fri 15 Dec 01:14
Sun 5 Mar 07:25	Sun 5 Mar 11:16	Tue 30 May 07:05	Tue 30 May 10:49	Wed 6 Sep 01:36	Wed 6 Sep 10:27	Fri 15 Dec 01:25	Fri 15 Dec 07:50
Sun 5 Mar 13:55	Sun 5 Mar 16:04	Tue 30 May 14:25	Tue 30 May 17:40	Wed 6 Sep 11:26	Wed 6 Sep 13:50	Fri 15 Dec 04:25	Fri 15 Dec 11:16
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Mon 6 Mar 02:16	Mon 6 Mar 06:26	Wed 31 May 02:06	Wed 31 May 04:16	Wed 6 Sep 17:15	Wed 6 Sep 23:30	Fri 15 Dec 17:35	Fri 15 Dec 21:42
Mon 6 Mar 04:05	Mon 6 Mar 07:50	Thu 1 Jun 01:45	Thu 1 Jun 11:42	Thu 7 Sep 00:55	Thu 7 Sep 03:01	Fri 15 Dec 21:55	Sat 16 Dec 01:35
Mon 6 Mar 12:25	Mon 6 Mar 17:24	Thu 1 Jun 19:05	Thu 1 Jun 21:11	Thu 7 Sep 07:15	Thu 7 Sep 14:50	Sat 16 Dec 00:15	Sat 16 Dec 04:49
Mon 6 Mar 18:25	Mon 6 Mar 21:11	Thu 1 Jun 20:45	Fri 2 Jun 01:10	Thu 7 Sep 14:25	Thu 7 Sep 17:24	Sat 16 Dec 07:05	Sat 16 Dec 11:56
Tue 7 Mar 06:45	Tue 7 Mar 10:49	Fri 2 Jun 06:36	Fri 2 Jun 08:54	Fri 8 Sep 02:06	Fri 8 Sep 07:14	Sat 16 Dec 08:15	Sat 16 Dec 14:50
Tue 7 Mar 12:25	Tue 7 Mar 15:05	Fri 2 Jun 09:45	Fri 2 Jun 14:50	Fri 8 Sep 17:26	Fri 8 Sep 19:51	Sat 16 Dec 20:05	Sat 16 Dec 23:33

Tue 7 Mar 17:35	Tue 7 Mar 21:11	Fri 2 Jun 20:35	Sat 3 Jun 00:30	Sat 9 Sep 00:15	Sat 9 Sep 02:31	Sun 17 Dec 03:05	Sun 17 Dec 08:13
Wed 8 Mar 00:25	Wed 8 Mar 04:26	Sat 3 Jun 05:06	Sat 3 Jun 07:14	Sat 9 Sep 03:56	Sat 9 Sep 05:58	Sun 17 Dec 13:55	Sun 17 Dec 18:37
Wed 8 Mar 02:28	Wed 8 Mar 10:13	Sat 3 Jun 09:55	Sat 3 Jun 15:05	Sat 9 Sep 08:15	Sat 9 Sep 11:56	Sun 17 Dec 16:45	Sun 17 Dec 21:10
Wed 8 Mar 08:26	Wed 8 Mar 11:16	Sat 3 Jun 12:36	Sat 3 Jun 18:34	Sat 9 Sep 13:57	Sat 9 Sep 18:15	Mon 18 Dec 08:15	Mon 18 Dec 11:16
Wed 8 Mar 16:15	Wed 8 Mar 19:55	Sat 3 Jun 22:05	Sun 4 Jun 01:47	Sun 10 Sep 01:15	Sun 10 Sep 05:05	Tue 19 Dec 02:05	Tue 19 Dec 04:15
Wed 8 Mar 19:05	Wed 8 Mar 23:30	Sun 4 Jun 02:07	Sun 4 Jun 04:15	Sun 10 Sep 07:35	Sun 10 Sep 09:44	Tue 19 Dec 15:26	Tue 19 Dec 17:41
Thu 9 Mar 02:16	Thu 9 Mar 06:55	Sun 4 Jun 15:46	Sun 4 Jun 19:20	Sun 10 Sep 09:26	Sun 10 Sep 13:22	Wed 20 Dec 06:26	Wed 20 Dec 13:36
Thu 9 Mar 08:45	Thu 9 Mar 14:05	Sun 4 Jun 23:45	Mon 5 Jun 04:15	Sun 10 Sep 16:15	Sun 10 Sep 21:10	Fri 29 Dec 02:55	Fri 29 Dec 08:54
Thu 9 Mar 12:25	Thu 9 Mar 15:05	Mon 5 Jun 01:25	Mon 5 Jun 06:26	Sun 10 Sep 21:25	Mon 11 Sep 01:03	Fri 29 Dec 14:25	Fri 29 Dec 16:28
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Fri 10 Mar 00:25	Fri 10 Mar 02:38	Mon 5 Jun 23:56	Tue 6 Jun 04:40	Mon 11 Sep 14:57	Mon 11 Sep 17:24		
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Sat 11 Mar 18:55	Sat 11 Mar 23:33	Wed 7 Jun 22:45	Thu 8 Jun 02:46	Wed 13 Sep 20:00	Wed 13 Sep 23:00		
Sun 12 Mar 00:25	Sun 12 Mar 04:15	Thu 8 Jun 20:35	Thu 8 Jun 23:30	Thu 14 Sep 00:15	Thu 14 Sep 03:58		
Sun 12 Mar 06:55	Sun 12 Mar 10:36	Thu 8 Jun 22:45	Fri 9 Jun 03:30	Thu 14 Sep 15:46	Thu 14 Sep 17:56		
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Sun 12 Mar 14:25	Sun 12 Mar 18:28	Fri 9 Jun 17:35	Fri 9 Jun 21:11	Fri 15 Sep 02:55	Fri 15 Sep 05:08		
Sun 12 Mar 21:25	Sun 12 Mar 23:34	Sat 10 Jun 02:20	Sat 10 Jun 06:00	Fri 15 Sep 04:25	Fri 15 Sep 07:17		
Sun 12 Mar 21:55	Mon 13 Mar 04:15	Sat 10 Jun 04:35	Sat 10 Jun 09:44	Fri 15 Sep 08:25	Fri 15 Sep 12:53		
Mon 13 Mar 04:05	Mon 13 Mar 06:26	Sat 10 Jun 12:25	Sat 10 Jun 16:20	Fri 15 Sep 11:15	Fri 15 Sep 15:11		
Mon 13 Mar 05:55	Mon 13 Mar 10:28	Sat 10 Jun 17:25	Sat 10 Jun 21:10	Fri 15 Sep 14:25	Fri 15 Sep 18:13		
Mon 13 Mar 12:55	Mon 13 Mar 16:59	Sun 11 Jun 22:45	Mon 12 Jun 03:14	Sat 16 Sep 01:55	Sat 16 Sep 07:42		
Mon 13 Mar 16:36	Mon 13 Mar 19:48	Mon 12 Jun 00:26	Mon 12 Jun 06:26	Sat 16 Sep 11:45	Sat 16 Sep 14:50		
Mon 13 Mar 22:45	Tue 14 Mar 02:42	Mon 12 Jun 05:15	Mon 12 Jun 10:28	Sat 16 Sep 19:15	Sat 16 Sep 23:33		

Tue 14 Mar 02:05	Tue 14 Mar 06:26	Mon 12 Jun 07:15	Mon 12 Jun 12:48	Sun 17 Sep 01:46	Sun 17 Sep 05:36		
Tue 14 Mar 07:35	Tue 14 Mar 10:49	Mon 12 Jun 16:35	Mon 12 Jun 19:24	Sun 17 Sep 10:06	Sun 17 Sep 14:05		
Tue 14 Mar 09:15	Tue 14 Mar 13:22	Tue 13 Jun 04:15	Tue 13 Jun 08:04	Sun 17 Sep 19:49	Sun 17 Sep 23:56		
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Tue 14 Mar 21:55	Wed 15 Mar 05:08	Tue 13 Jun 09:06	Tue 13 Jun 13:22	Mon 18 Sep 03:36	Mon 18 Sep 09:10		
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Wed 15 Mar 19:05	Wed 15 Mar 23:30	Wed 14 Jun 09:06	Wed 14 Jun 11:16	Mon 18 Sep 21:26	Mon 18 Sep 23:30		
Wed 15 Mar 21:25	Thu 16 Mar 02:46	Wed 14 Jun 14:15	Wed 14 Jun 17:56	Tue 19 Sep 02:56	Tue 19 Sep 05:01		
Thu 16 Mar 20:45	Thu 16 Mar 23:30	Thu 15 Jun 02:16	Thu 15 Jun 07:25	Tue 19 Sep 19:05	Tue 19 Sep 21:32		
Thu 16 Mar 23:45	Fri 17 Mar 03:30	Thu 15 Jun 08:45	Thu 15 Jun 15:05	Tue 19 Sep 22:45	Wed 20 Sep 02:41		
Fri 17 Mar 04:35	Fri 17 Mar 08:32	Thu 15 Jun 16:45	Thu 15 Jun 22:11	Wed 20 Sep 06:16	Wed 20 Sep 10:32		
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Fri 17 Mar 19:05	Sat 18 Mar 05:17	Fri 16 Jun 03:16	Fri 16 Jun 07:14	Wed 20 Sep 21:25	Thu 21 Sep 00:44		
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APPENDIX D

MOUNT PLEASANT OPERATION – 2023 ANNUAL AIR QUALITY REVIEW

TODOROSKI AIR SCIENCES
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9 February 2024

Mariah Lane
Environmental Advisor
MACH Energy Australia
Via email: Mariah.Lane@machenergy.com.au

RE: Mount Pleasant Operation – 2023 Annual Air Quality Review

Dear Mariah,
Todoroski Air Sciences have conducted a review and analysis of the annual average deposited dust, TSP, PM_{10} and $PM_{2.5}$ levels recorded at Mount Pleasant Operation (MPO) in 2023.

Annual air quality criteria

As per consent DA 92/97 Schedule 3 Condition 20 "*Except for the air-affected land referred to in Table 1, the Applicant must ensure that all reasonable and feasible avoidance and mitigation measures are employed so that particulate matter emissions generated by the development do not exceed the criteria listed in Tables 8, 9 or 10 at any residence on privately-owned land.*" The criteria from Tables 8 to 10 are set out below:

Table 8: Long term criteria for particulate matter

Pollutant	Averaging period	[d]Criterion
Total suspended particulate (TSP) matter	Annual	[a]90 µg/m³
Particulate matter < 10 µm (PM_{10})	Annual	[a]25 µg/m³
Particulate matter < 2.5 µm ($PM_{2.5}$)	Annual	[a]8 µg/m³

Table 9: Short term criteria for particulate matter

Pollutant	Averaging period	[d]Criterion
Particulate matter < 10 µm (PM_{10})	24 hour	[b]50 µg/m³
Particulate matter < 2.5 µm ($PM_{2.5}$)	24 hour	[b]25 µg/m³

Table 10: Long term criteria for deposited dust

Pollutant	Averaging period	Maximum increase in deposited dust level	Maximum total deposited dust level
[c] Deposited dust	Annual	[b]2 g/m²/month	[a]4 g/m²/month

Notes to Tables 8-10:
[a] *Total impact (i.e. incremental increase in concentrations due to the development plus background concentrations due to all other sources)*
[a] *Total impact (i.e. incremental increase in concentrations due to the development plus background concentrations due to other sources)*
[b] *Incremental impact (i.e. incremental increase in concentrations due to the development on its own)*
[c] *Deposited dust is to be assessed as insoluble solids as defined by Standards Australia, AS/NZS 3580.10.1:2003: Methods for Sampling and Analysis of Ambient Air - Determination of Particulate Matter - Deposited Matter - Gravimetric Method*
[d] *Excludes extraordinary events such as bushfires, prescribed burning, dust storms, sea fog, fire incidents or any other activity agreed to by the Secretary.*

When the measured cumulative annual average deposited dust level at compliance monitors is below the criterion of 4g/m^2/month in Table 10, it is inferred that compliance is achieved. If this criterion is exceeded, the applicant must demonstrate compliance with the maximum increase in the deposited dust level of 2g/m^2/month.

Dust Deposition

This review has analysed dust deposition data recorded at the MPO monitors for the 2023 year. The MPO dust deposition monitoring data for 2023 are presented in **Table 1**.

Table 1: Deposited dust monthly average compliance monitoring data for 2023 (g/m²/month)

Date	D1	D3	D4	D5	D6	D7	D8	D9	D10	D11	D12	D13	D14
Jan	2.0	-	1.8	1.6	1.4	9.3	3.0	3.7	1.5	2.3	0.9	1.7	4.7
Feb	1.6	-	1.9	2.2	3.1	4.3	3.4	5.8	1.5	1.8	1.9	2.3	5.1
Mar	3.4	-	1.1	3.6	2.2	8.0	4.5	4.8	0.9	4.4	1.0	2.3	5.5
Apr	1.2	-	0.8	1.6	1.9	7.4	3.1	3.4	0.8	2.0	0.9	1.1	3.7
May	1.4	2.1	0.5	2.6	1.4	12.8c	3.0	3.5	0.7	2.2	1.2	0.8	2.8
Jun	2.1	2.1	1.3	5.2	2.8	17.7c	3.6	5.3	0.6	4.4	0.8	0.7	3.5
Jul	1.3	1.8	0.4	3.7	2.1	13.0c	2.9	3.4	0.8	1.7	0.6	0.8	2.6
Aug	2.5	2.1	0.6	3.0	2.4	23.7c	5.4	4.7	1.4	2.6	0.7	1.0	3.3
Sep	2.0	2.0	2.5	2.2	3.7	36.4c	5.9	4.8	1.1	2.8	1.0	1.5	3.0
Oct	1.8	2.1	1.3	3.6	3.8	7.1	5.0	2.4	1.4	2.6	0.7	1.1	2.9
Nov	1.5	1.6	1.7	3.2	2.6	11.8	4.5	6.1	1.0	7.3	1.6	1.6	6.1
Dec	1.4	2.1	1.4	1.6	2.1	17.2c	1.7	2.1	1.7	2.2	0.8	1.3	1.6
Annual average	1.9	*	1.3	2.8	2.5	**8.0**	3.8	**4.2**	1.1	3.0	1.0	1.4	3.7
Compliance monitor?	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes

– no access, construction site * Insufficient data for annual average calculation c – contaminated

Figure 1 presents a plan of the dust gauge monitoring locations for both compliance and non-compliance monitors in the area around MPO and the annual average deposited dust levels. The figure includes annual windrose plots of the meteorological data collected at the M-WM1, M-WM2, M-WS4 and M-WM5 stations during 2023. In general, winds were predominately from the southeast and northwest quadrants.

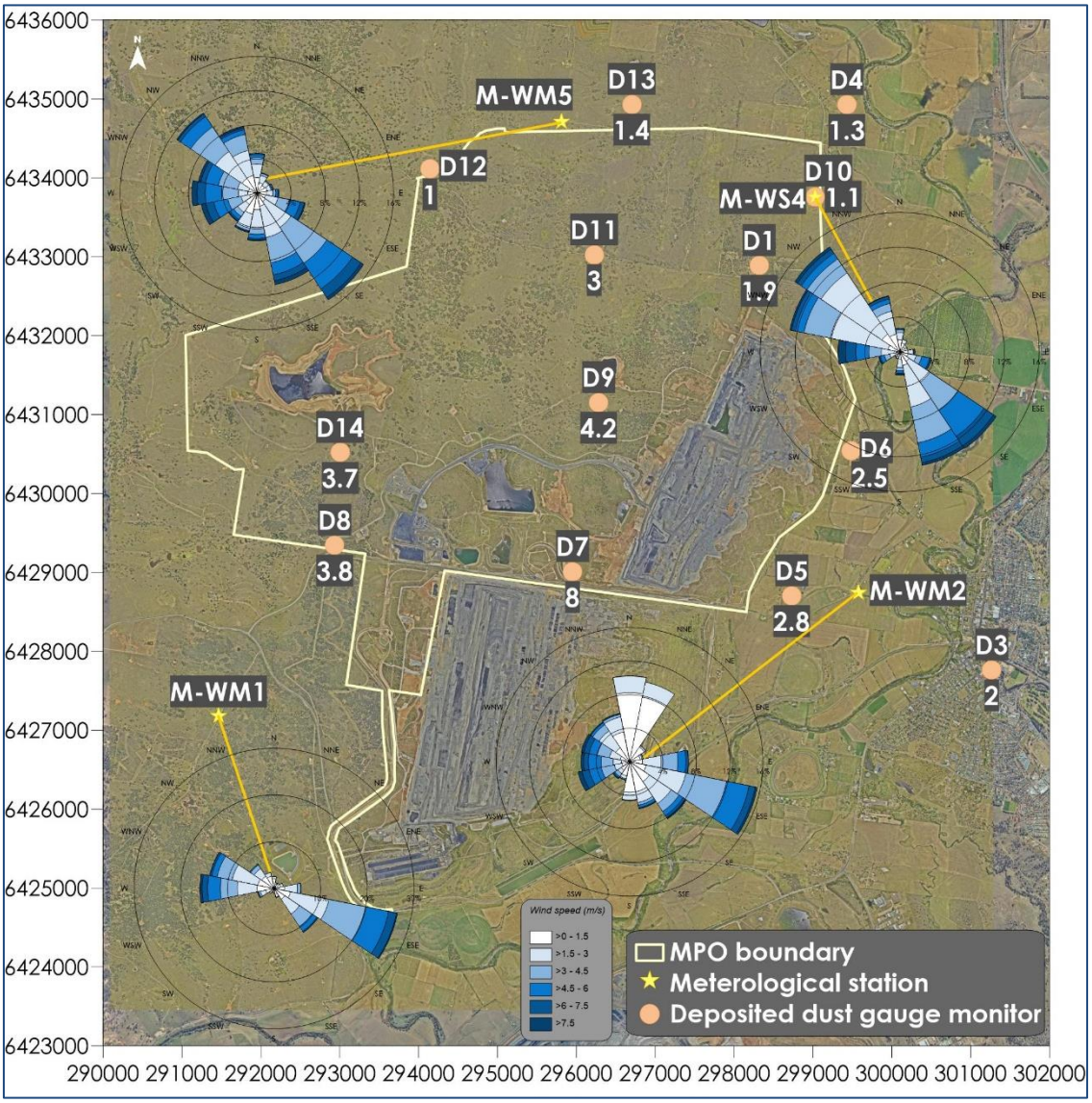

Figure 1: Annual average deposited dust results for 2023

The D7 monitor recorded a level above 4g/m^2/month, however per the MPO Air Quality and Greenhouse Gas Management Plan (**MACH Energy, 2019**), D7 is not used to assess compliance against the deposited dust criteria as the monitor is located in close proximity to the northern boundary of a neighbouring mining operation open cut pit, and there are no privately-owned receivers in the vicinity of this monitoring location.

With the exception of D9, the data indicate that the annual average deposited dust levels measured at the MPO monitors representative of residences on privately-owned land, were below the cumulative criterion of 4g/m^2/month in 2023.

Based on the available weather data, the D9 monitor would have been downwind of MPO for approximately 33% of the time during the review period.

The potential contribution to the annual average dust level recorded at D9 due to activities at MPO is presented in **Table 2**. MPO's contribution to the annual average deposited dust level recorded at D9 was approximated

as the monthly level recorded at D9 minus the underlying monthly background level (taken to be the average of the levels recorded by the D4 and D13 monitors, which are considered to be the least potentially impacted by MPO based on the windrose plots in **Figure 1**) multiplied by the fraction of time in each month that the monitor was downwind of the mine. It is noted that this is only an approximate calculation as the downwind angle includes other mining sources to the south of the D9 monitor and assumes uniform dust in all directions.

The analysis indicates that MPO's contribution to the 2023 annual average deposited dust level at the D9 monitor would have been less than or equal to 1.0g/m^2/month. This estimation conservatively includes potential impacts from other mining activity and localised sources.

On the basis of this review, we conclude that MPO did not contribute more than the 2g/m^2/month incremental deposited dust criterion per DA 92/97 Schedule 3 Condition 20 to the annual average deposited dust level recorded at D9 in 2023.

Table 2: Estimated maximum potential contribution of MPO to D9 (2023)

Month	Measured monthly average deposited dust level (g/m^2/month)	Percentage of time downwind	Estimated monthly average background deposited dust level (g/m^2/month)	Estimated maximum potential contribution to the monthly average deposited dust (MPO and local sources)
January	3.7	21%	1.8	0.4
February	5.8	25%	2.1	0.9
March	4.8	54%	1.7	1.7
April	3.4	48%	1.0	1.2
May	3.5	37%	0.7	1.1
June	5.3	19%	1.0	0.8
July	3.4	14%	0.6	0.4
August	4.7	26%	0.8	1.0
September	4.8	40%	2.0	1.1
October	2.4	23%	1.2	0.3
November	6.1	52%	1.7	2.3
December	2.1	33%	1.4	0.3
Annual	**4.2**	**33%**	**1.3**	**1.0**

Annual Average TSP

This review has analysed the TSP monitoring data recorded at the MPO High Volume Air Sampler (HVAS) monitors in 2023. **Table 3** presents a summary of the annual average TSP monitoring data for the area around MPO in 2023.

Table 3: Annual average TSP monitoring data for 2023

Location	Annual average TSP level - all days (µg/m^3)
HVAS APF-2	61.9
HVAS APF-4	39.9
HVAS APF-5	56.3

Figure 2 presents the 24-hour average TSP levels for 2023.

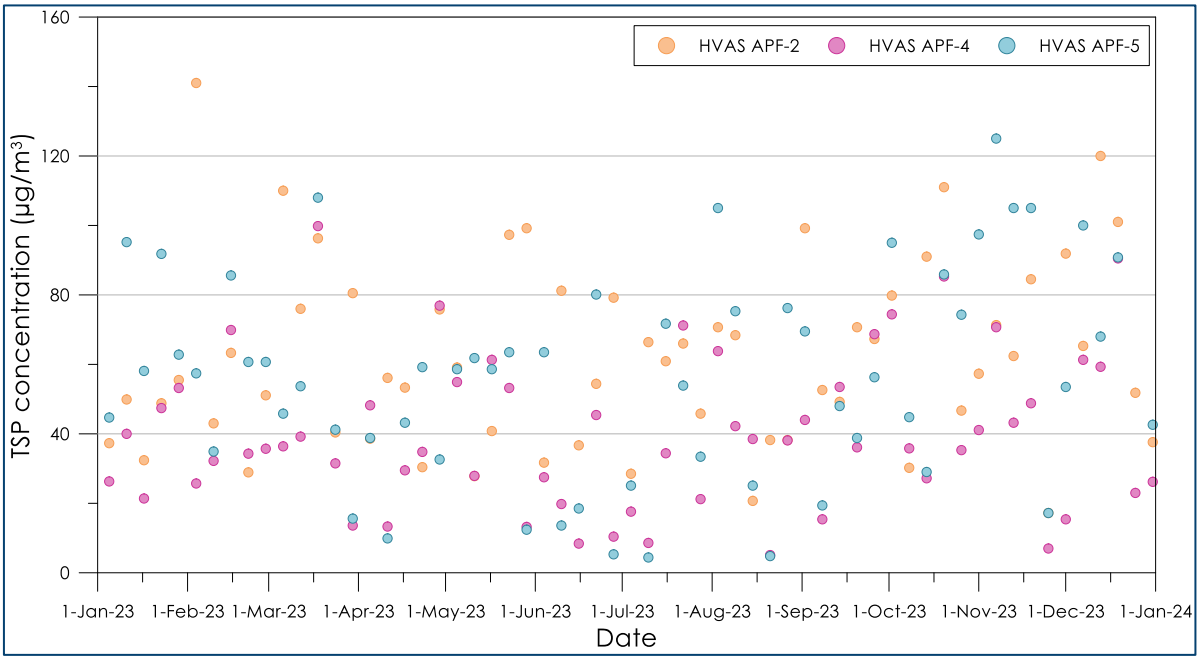

Figure 2: 24-hour average TSP HVAS records for 2023

Figure 3 presents a plan of the HVAS monitoring locations in the area around MPO and the annual average TSP levels. The figure includes annual windrose plots of the meteorological data collected at the M-WM1, M-WM2, M-WS4 and M-WM5 stations during 2023.

The data show that the annual average TSP levels for all the MPO HVAS monitors are below the relevant criterion of 90µg/m³. As such, it is considered that compliance with the relevant criterion in Table 8 of DA 92/97 Schedule 3 Condition 20 is achieved.

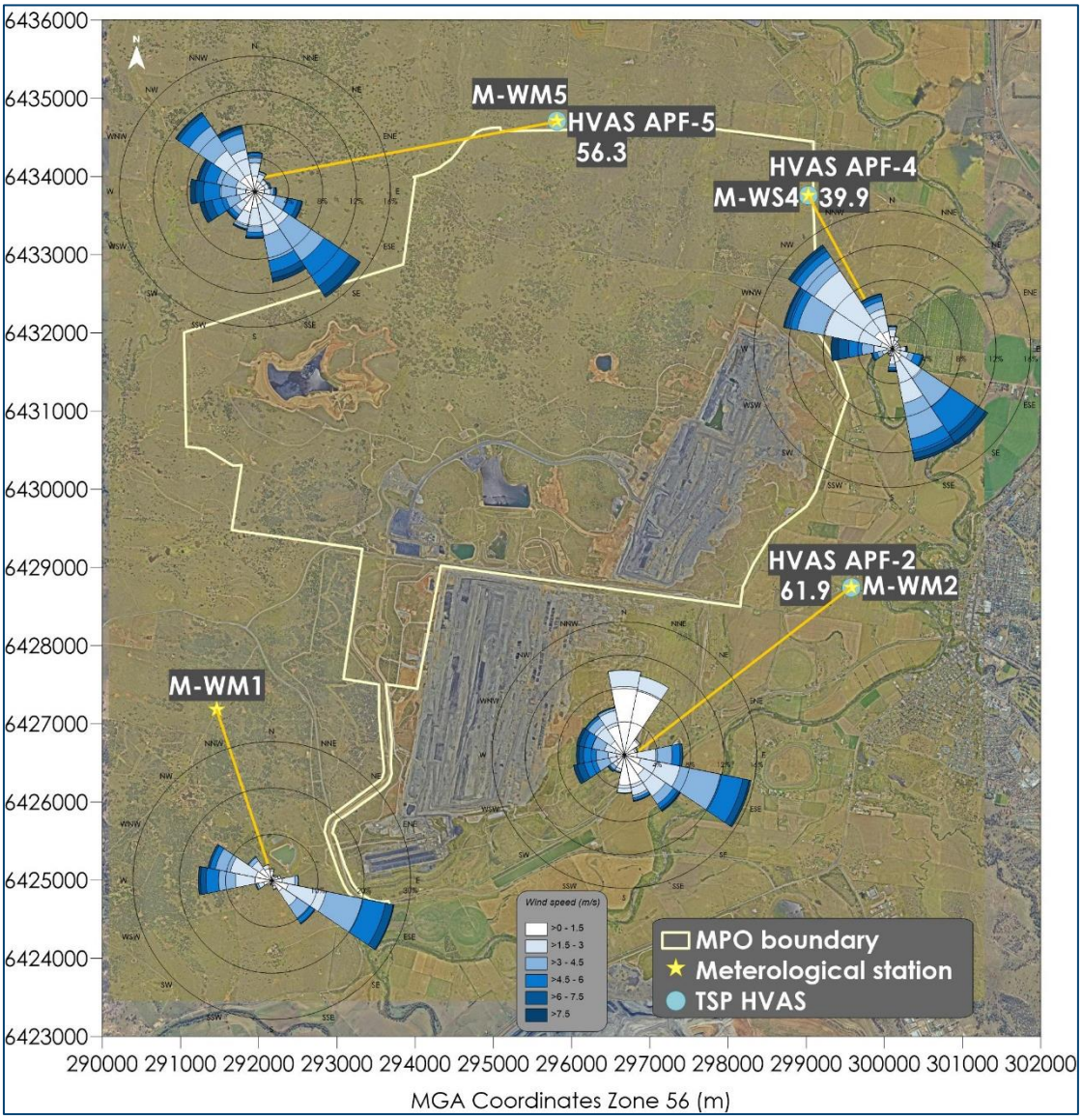

Figure 3: Annual average TSP results for 2023

Annual Average PM_{10}

This review has analysed the annual average PM_{10} monitoring data recorded at the MPO Palas Fidas monitors in 2023.

It is noted that there was insufficient data (less than 75%) to calculate a valid annual average PM_{10} level at the APF-5 monitor in 2023 due to damage issues with the monitor however for the purpose of this review an average of the available data has been presented.

Table 4 includes a summary of the annual average PM_{10} monitoring data for the area around MPO in 2023.

Table 4: Annual average PM_{10} monitoring data for 2023

Location	Annual average PM_{10} (µg/m³)
APF-2	20.4
APF-4	13.4
APF-5	15.3*

Location	Annual average PM_{10} (µg/m³)
Muswellbrook	21.9
Muswellbrook NW	19.8

*Insufficient data (38% data availability) for an annual average calculation

Figure 4 presents a plan of the monitoring locations in the area around MPO and the measured annual average PM_{10} levels.

The annual average PM_{10} levels at the MPO Palas Fidas and DCCEEW monitors were below the relevant criterion of 25µg/m³ in 2023 and as such, it is considered that compliance with the relevant criterion in Table 8 of DA 92/97 Schedule 3 Condition 20 has been achieved.

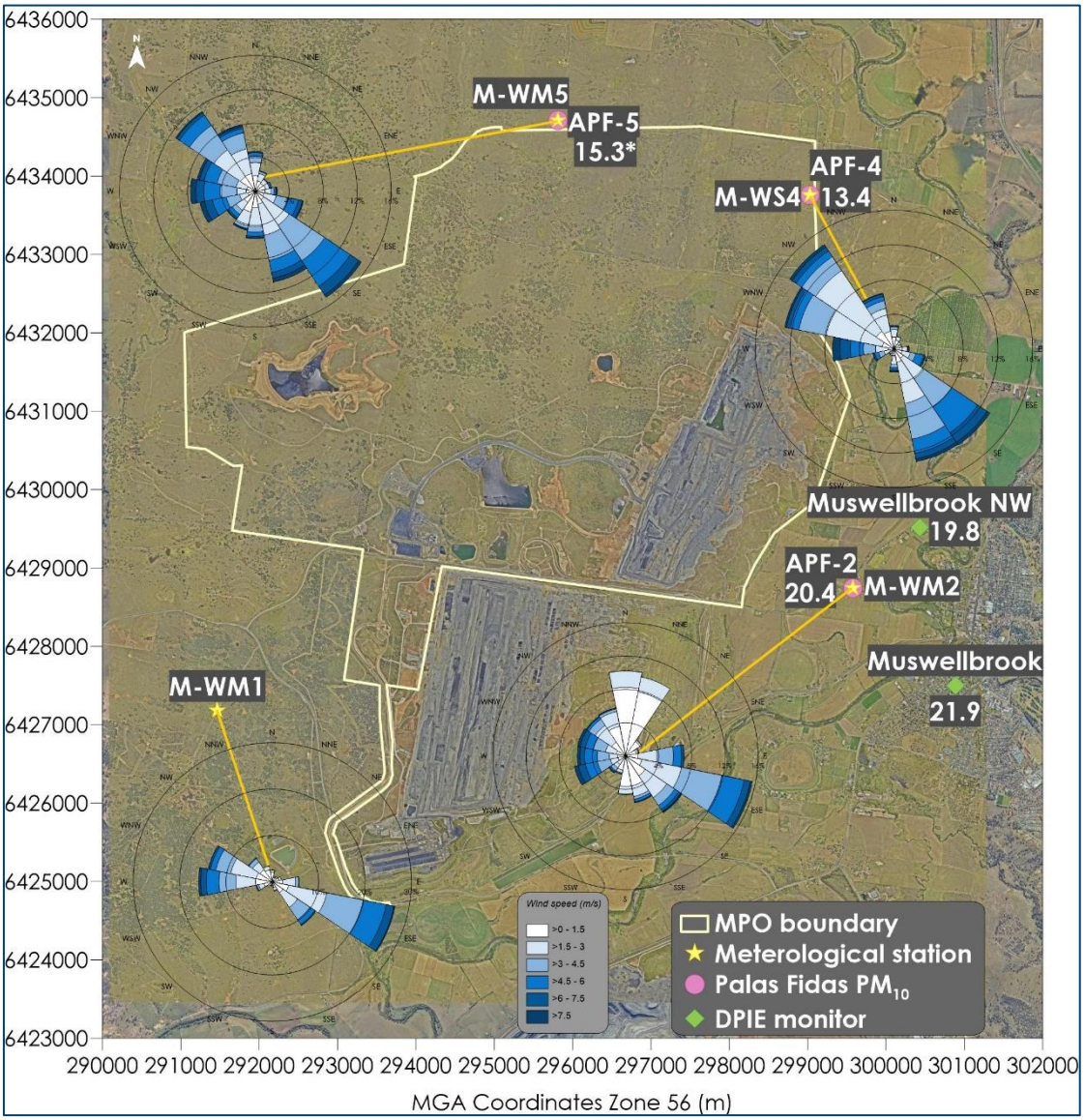

Figure 4: Annual average PM_{10} results for 2023

24-hour Average PM_{10}

This review has analysed the 24-hour average PM_{10} monitoring data recorded at the MPO Palas Fidas monitors in 2023.

Figure 5 presents the 24-hour average PM_{10} levels around MPO for 2023. As noted above, there is a gap in the available APF-5 data in 2023 due to damage issues.

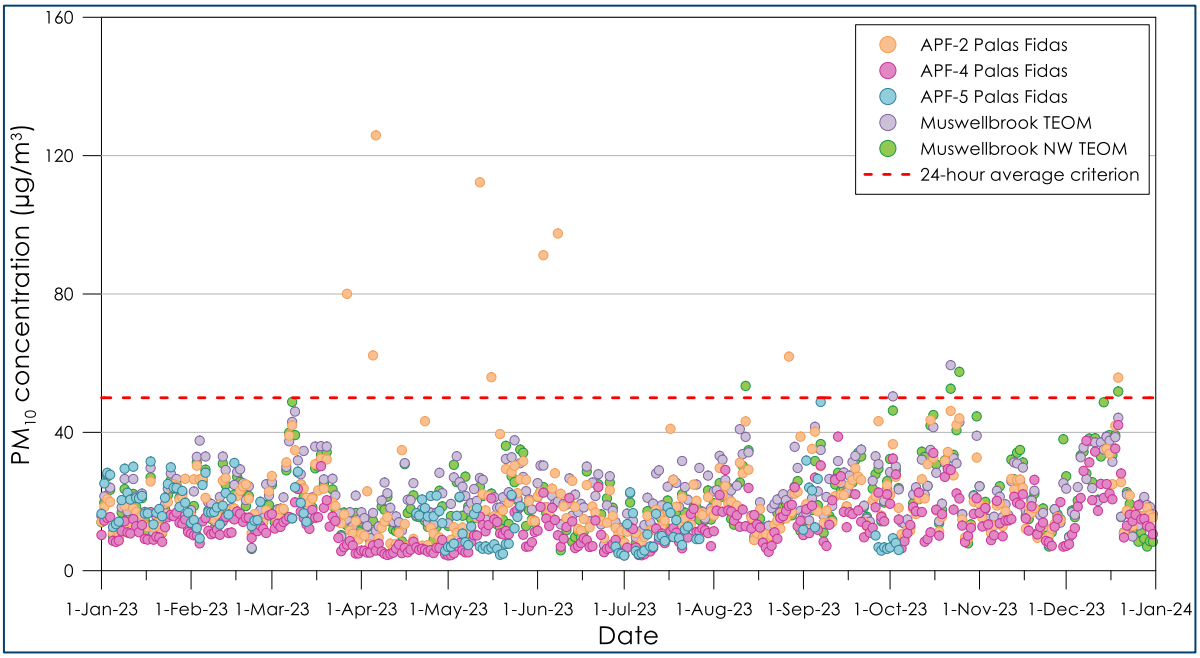

Figure 5: 24-hour average PM_{10} records for 2023

Table 5 includes a summary of the 24-hour average PM_{10} monitoring data for the area around MPO in 2023.

The data indicate that the 24-hour average PM_{10} levels were generally low throughout 2023. There were nine days at the APF-2, two days at the DCCEEW Muswellbrook and four days at the DCCEEW Muswellbrook NW monitors with 24-hour average PM_{10} levels above 50µg/m^3 in 2023.

Table 5: 24-hour average PM_{10} monitoring data for 2023

Location	Maximum 24-hour PM_{10} (µg/m^3)	Number of 24-hour PM_{10} levels above criterion (50µg/m^3)
APF-2	125.9	9
APF-4	42.1	0
APF-5	48.8	0
Muswellbrook	59.4	2
Muswellbrook NW	57.5	4

Table 6 presents a summary of MPO's estimated maximum contributions to the 24-hour averages recorded at the monitors during 2023. The contribution from MPO to the monitors was determined to be the total level recorded at the monitor at the times in which the monitor would have been downwind of the mine minus the background concentration (i.e. contribution = downwind level – upwind level).

Table 6: Estimated maximum potential contribution of MPO to the elevated PM_{10} levels

Date	Monitor	Recorded 24-hour average PM_{10} level ($\mu g/m^3$)	Percentage of time downwind	Estimated maximum contribution to 24-hour average PM_{10} level ($\mu g/m^3$)
27/03/2023	APF-2	80.0	58%	43.2
05/04/2023	APF-2	62.2	21%	23.6
06/04/2023	APF-2	125.9	8%	10.9
12/05/2023	APF-2	112.3	8%	11.0
16/05/2023	APF-2	55.9	21%	26.3
03/06/2023	APF-2	91.2	13%	4.5
08/06/2023	APF-2	97.5	54%	16.4
12/08/2023	Muswellbrook NW	53.4	38%	23.9
27/08/2023	APF-2	61.9	0%	0.0
02/10/2023	Muswellbrook	50.4	0%	0.0
22/10/2023	Muswellbrook	59.4	29%	14.2
	Muswellbrook NW	52.6	67%	21.1
25/10/2023	Muswellbrook NW	57.5	42%	15.8
19 December 2023*	APF-2	55.8	25%	0.2
	Muswellbrook NW	51.8	17%	0.0

*There were several bushfires impacting the area on 19 December 2023

For each of the elevated 24-hour average PM_{10} levels in the MPO monitoring network in 2023, the estimated incremental contribution from MPO was less than $50g/m^3$. MPO is therefore considered compliant with DA 92/97 Schedule 3 Condition 20 Table 9.

Annual Average $PM_{2.5}$

This review has analysed the annual average $PM_{2.5}$ monitoring data recorded at the MPO Palas Fidas monitors in 2023.

It is noted that there was insufficient data (less than 75%) to calculate a valid annual average $PM_{2.5}$ level at the APF-5 monitor in 2023 due to damage issues however for the purpose of this review an average of the available data has been presented.

Table 7 includes a summary of the annual average $PM_{2.5}$ monitoring data for the area around MPO in 2023.

Table 7: Annual average $PM_{2.5}$ monitoring data for 2023

Location	Annual average $PM_{2.5}$ ($\mu g/m^3$)
APF-2	6.0
APF-4	5.1
APF-5	5.0*
Muswellbrook	7.5

*Insufficient data (38% data availability) for an annual average calculation

Figure 6 presents a plan of the monitoring locations in the area around MPO and the measured annual average $PM_{2.5}$ levels.

The annual average $PM_{2.5}$ levels at the MPO Palas Fidas and DCCEEW monitors were below the relevant criterion of $8\mu g/m^3$ in 2023 and as such it is considered that compliance with the relevant criterion in Table 8 of DA 92/97 Schedule 3 Condition 20 has been achieved.

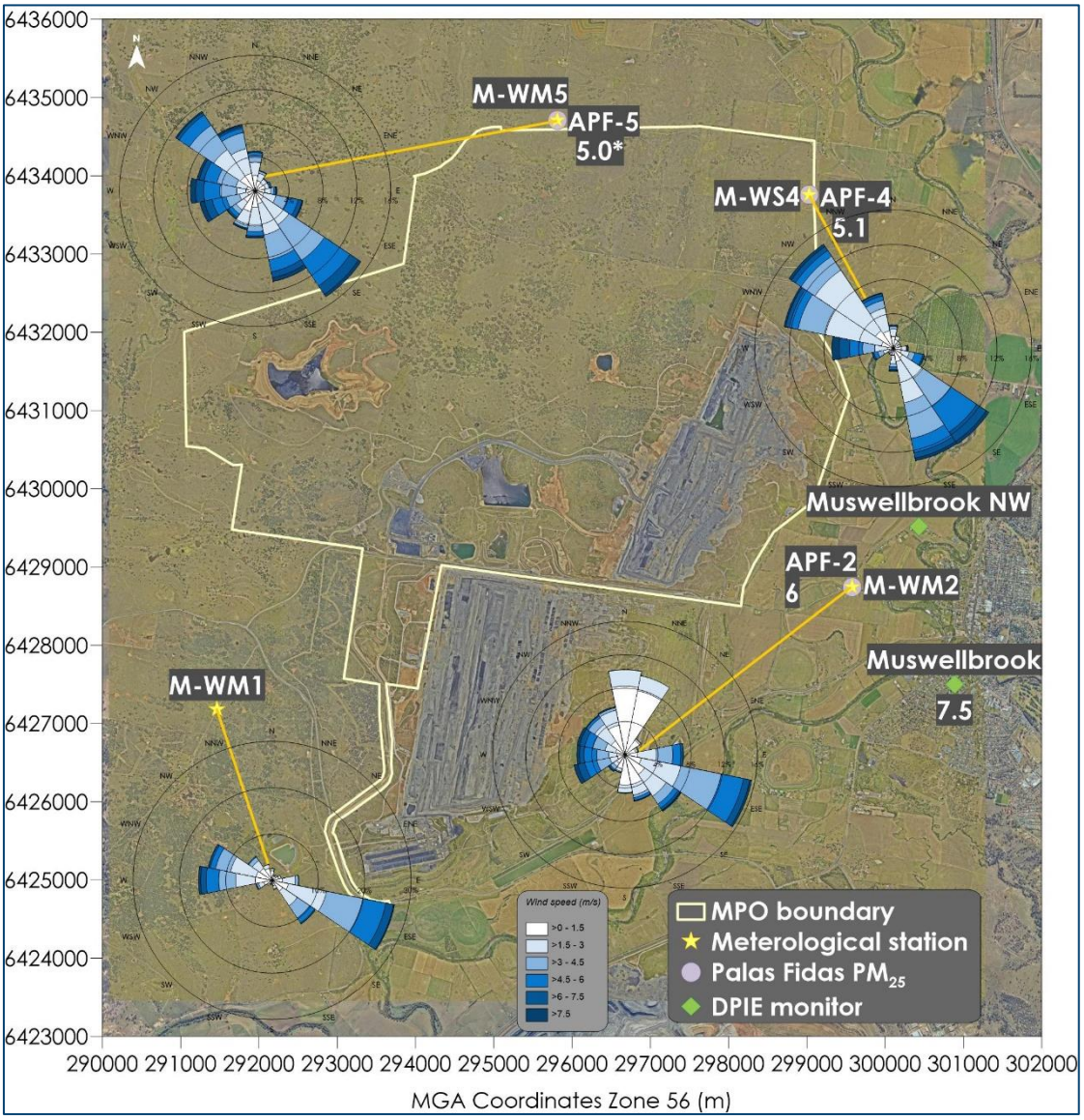

Figure 6: Annual average $PM_{2.5}$ results for 2023

24-hour Average $PM_{2.5}$

This review has analysed the 24-hour average $PM_{2.5}$ monitoring data recorded at the MPO Palas Fidas monitors in 2023.

Figure 7 presents the 24-hour average $PM_{2.5}$ levels around MPO for 2023. As noted above, there is a gap in the available APF-5 data in 2023 due to damage issues.

The DCCEEW Muswellbrook monitor recorded significantly higher levels than the Palas Fidas monitors in winter, likely due to domestic wood heater smoke near the monitor.

Table 8 includes a summary of the 24-hour average $PM_{2.5}$ monitoring data for the area around MPO in 2023. The data indicate that the 24-hour average $PM_{2.5}$ levels were generally low throughout 2023. There was one day at the APF-2 and one day at the DCCEEW Muswellbrook monitors with 24-hour average $PM_{2.5}$ levels above 25µg/m^3 in 2023.

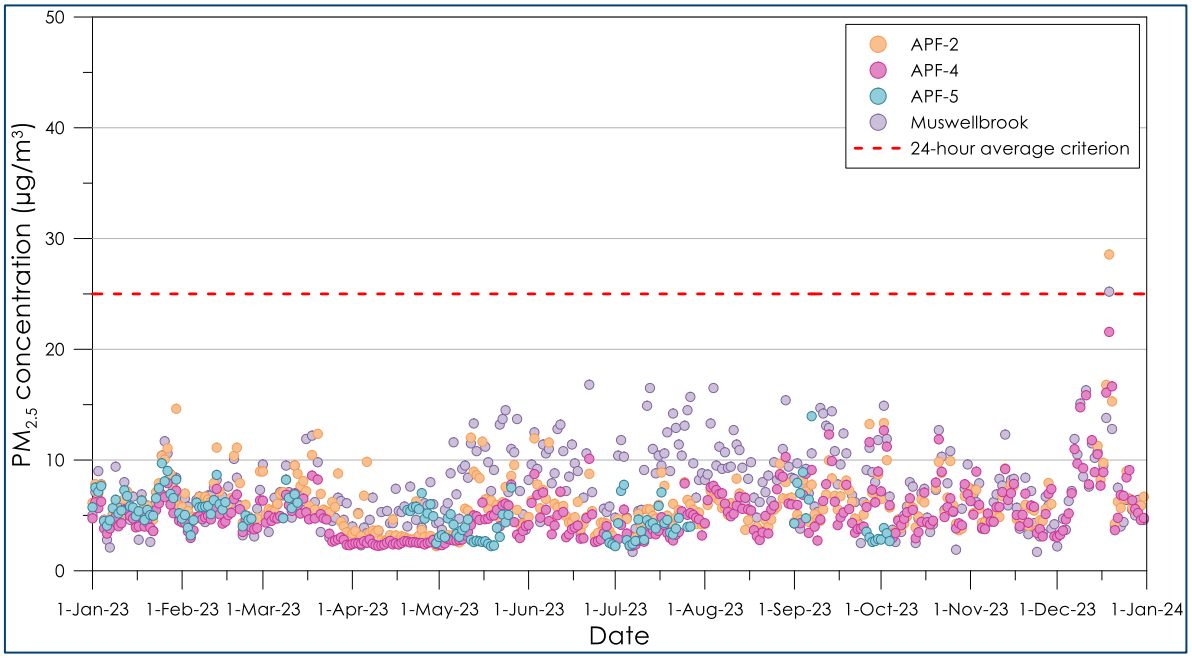

Figure 7: 24-hour average $PM_{2.5}$ records for 2023

Table 8: 24-hour average $PM_{2.5}$ monitoring data for 2023

Location	Maximum 24-hour $PM_{2.5}$ (µg/m³)	Number of 24-hour $PM_{2.5}$ levels above criterion (25µg/m³)
APF-2	28.6	1
APF-4	21.6	0
APF-5	14.0	0
Muswellbrook	25.2	1

Table 9 presents a summary of MPO's estimated maximum contributions to the 24-hour averages recorded at the monitors during 2023. The contribution from MPO to the monitors was determined to be the total level recorded at the monitor at the times in which the monitor would have been downwind of the mine minus the background concentration (i.e. contribution = downwind level – upwind level).

Table 9: Estimated maximum potential contribution of MPO to the elevated $PM_{2.5}$ levels

Date	Monitor	Recorded 24-hour average $PM_{2.5}$ level (µg/m³)	Percentage of time downwind	Estimated maximum contribution to 24-hour average $PM_{2.5}$ level (µg/m³)
19 December 2023*	APF-2	28.6	25%	0.0
	Muswellbrook	25.2	21%	0.2

*There were several bushfires impacting the area on 19 December 2023

For each of the elevated 24-hour average $PM_{2.5}$ levels in the MPO monitoring network in 2023, the estimated incremental contribution from MPO was less than 25g/m³. MPO is therefore considered compliant with DA 92/97 Schedule 3 Condition 20 Table 9.

Conclusions

The elevated annual average dust levels recorded in 2023 around MPO have been investigated. The data indicate that compliance with the relevant annual criteria for TSP, PM_{10} and $PM_{2.5}$ was achieved as per Table 8 in DA 92/97 Schedule 3 Condition 20 in 2023.

The data indicate that compliance with the relevant annual average criteria for deposited dust was achieved in 2023 at the MPO monitors representative of residences on privately-owned land per Table 10 in DA 92/97 Schedule 3 Condition 20.

There was a total of 13 elevated 24-hour average PM_{10} levels recorded across the MPO monitoring network in 2023. The estimated contribution from MPO on these occasions was found to be less than 50µg/m^3. There was a total of one elevated 24-hour average $PM_{2.5}$ level recorded across the MPO monitoring network in 2023. The estimated contribution from MPO on these occasions was found to be less than 25µg/m^3. Therefore, compliance with the 24-hour average criterion for PM_{10} and $PM_{2.5}$ was achieved as per Table 9 in DA 92/97 Schedule 3 Condition 20 in 2023.

MPO is therefore considered compliant with the air quality criteria per DA 92/97 Schedule 3 Condition 20 in 2023.

Please feel free to contact us in relation to any aspect of this analysis.

Yours faithfully,
Todoroski Air Sciences

Emilie Aragnou

References

MACH Energy (2019)

"Mount Pleasant Operation Air Quality and Greenhouse Gas Management Plan", MACH Energy Australia Pty Ltd, May 2019.

APPENDIX E

MOUNT PLEASANT OPERATION – 2023 INDEPENDENT ENVIRONMENTAL AUDIT REPORT

Department of Planning and Environment

Miss Mariah Lane
Environmental Advisor
MACH Energy Australia Pty Ltd
Awabakal Country
Suite 302, Level 3
251 Wharf Road
NEWCASTLE WEST NSW 2300

Sent via Major Projects Portal only

27/07/2023

Dear Miss Lane

Mt Pleasant Coal Mine (DA92/97)
2023 Independent Environmental Audit

Reference is made to the 2023 Independent Environmental Audit (IEA) report and Response to Audit Recommendations (RAR) for Mt Pleasant Coal Mine, submitted as required by Schedule 5 condition 9 of development consent DA92/97, as modified (the consent) to the Department of Planning and Environment (the department) on 5 May 2023.

The department considers the IEA report to generally satisfy the reporting requirements of the approval. Please note that acceptance of this report is not an endorsement of the compliance status of the project.

Non-compliances identified in the IEA have been assessed in accordance with the department's Compliance Policy with the department on this occasion, determining to record the breaches with no further enforcement action. However, please note that recording the breach does not preclude the department from taking alternative enforcement action, should it become apparent that an alternative response is more appropriate.

Please include a status update for all actions provided in the RAR in the next Annual Review until all actions are completed.

Should you wish to discuss the matter further, please contact Jennifer Sage, Senior Compliance Officer, on 0400 245 170 or email to compliance@planning.nsw.gov.au

Yours sincerely

HWatters

Heidi Watters
Team Leader Northern
Compliance

As nominee of the Planning Secretary

Mount Pleasant Operations

Independent Environmental Audit 2023

Prepared for Mach Energy Pty Ltd

May 2023

Mount Pleasant Operations

Independent Environmental Audit 2023

Mach Energy Pty Ltd

E220173 RP1

May 2023

Version	Date	Prepared by	Approved by	Comments
v1	5 May 2023	Samantha Hayes	Thomas Frankham	Final

Approved by

Thomas Frankham
Associate Environmental Scientist (Lead Auditor Certification No. 207528)
5 May 2023

Level 3 175 Scott Street
Newcastle NSW 2300

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Appendices

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Figures

Photographs

1 Introduction

1.1 Background

The Mount Pleasant Operation (MPO) is located in the Upper Hunter Valley of New South Wales (NSW), approximately 3 kilometres (km) north-west of Muswellbrook and approximately 50 km north-west of Singleton (Figure 1.1). The villages of Aberdeen and locality of Kayuga are also located approximately 5 km north-northeast and 1 km north of the MPO boundary.

MACH Energy Australia Pty Ltd (MACH Energy) purchased the MPO from Coal & Allied Operations Pty Ltd (Coal & Allied) in 2016. MACH Mount Pleasant Operations Pty Ltd is the manager of the MPO on behalf of the unincorporated Mount Pleasant Joint Venture between MACH Energy (95% owner) and J.C.D. Australia Pty Ltd (5% owner).

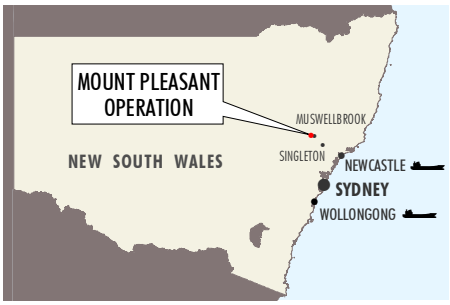
On 22 December 1999, development consent DA 92/97 was approved by the then Minister for Urban Affairs and Planning for the construction and operation of an open cut coal mine, coal preparation plant, transport and rail loading facilities and associated facilities by Coal & Allied. The consent allowed for 24 hours per day, seven days per week operation and the extraction of 197 million tonnes (Mt) of run-of-mine (ROM) coal over a 21 year period, at a rate of up to 10.5 Mt of ROM coal per year.

There have been five modifications to development consent DA 92/97 including:

- Modification 1 (MOD 1) – approved on 19 September 2011. MOD 1 included the provision of an infrastructure envelope for siting the mine infrastructure, the provision of an optional conveyor/service corridor linking the MPO facilities with the Muswellbrook-Ulan Rail Line and modification of the existing consent boundaries to accommodate the optional conveyor/service corridor and minor administrative changes.
- Modification 2 (MOD 2) – approved on 29 March 2017. MOD 2 proposed to realign an indicative internal haul road to enable more efficient access to the South Pit open cut.
- Modification 3 (MOD 3) – approved on 24 August 2018. MOD 3 comprised an extension to the time limit on mining operations (to 22 December 2026) and extensions to the South Pit Eastern Out of Pit Emplacement to facilitate development of an improved final landform.
- Modification 4 (MOD 4) – approved on 16 November 2018. MOD 4 included:
  - duplication of the approved rail spur, rail loop, conveyor and rail load-out facility and associated services
  - duplication of the Hunter River water supply pump station, water pipeline and associated electricity supply that followed the original rail spur alignment
  - demolition and removal of the redundant approved infrastructure within the extent of the Bengalla Mine, once the new rail, product loading and water supply infrastructure has been commissioned and is fully operational.
- Modification 5 (MOD 5) – approved 29 June 2022. MOD 5 included the amendment of an administrative error to the schedule of lands to allow the construction of the DW1 controlled release dam and associated pipeline.

The layout of MPO is illustrated on Figure 1.2.

Source: NSW Spatial Services (2022)



LEGEND

- Mining Operation
- Proposed Mining Operations (Application Lodged)
- Railway
- Local Government Boundary
- State Forest/Reserve
- National Parks and Wildlife Estate
- Coal I- Current Titles

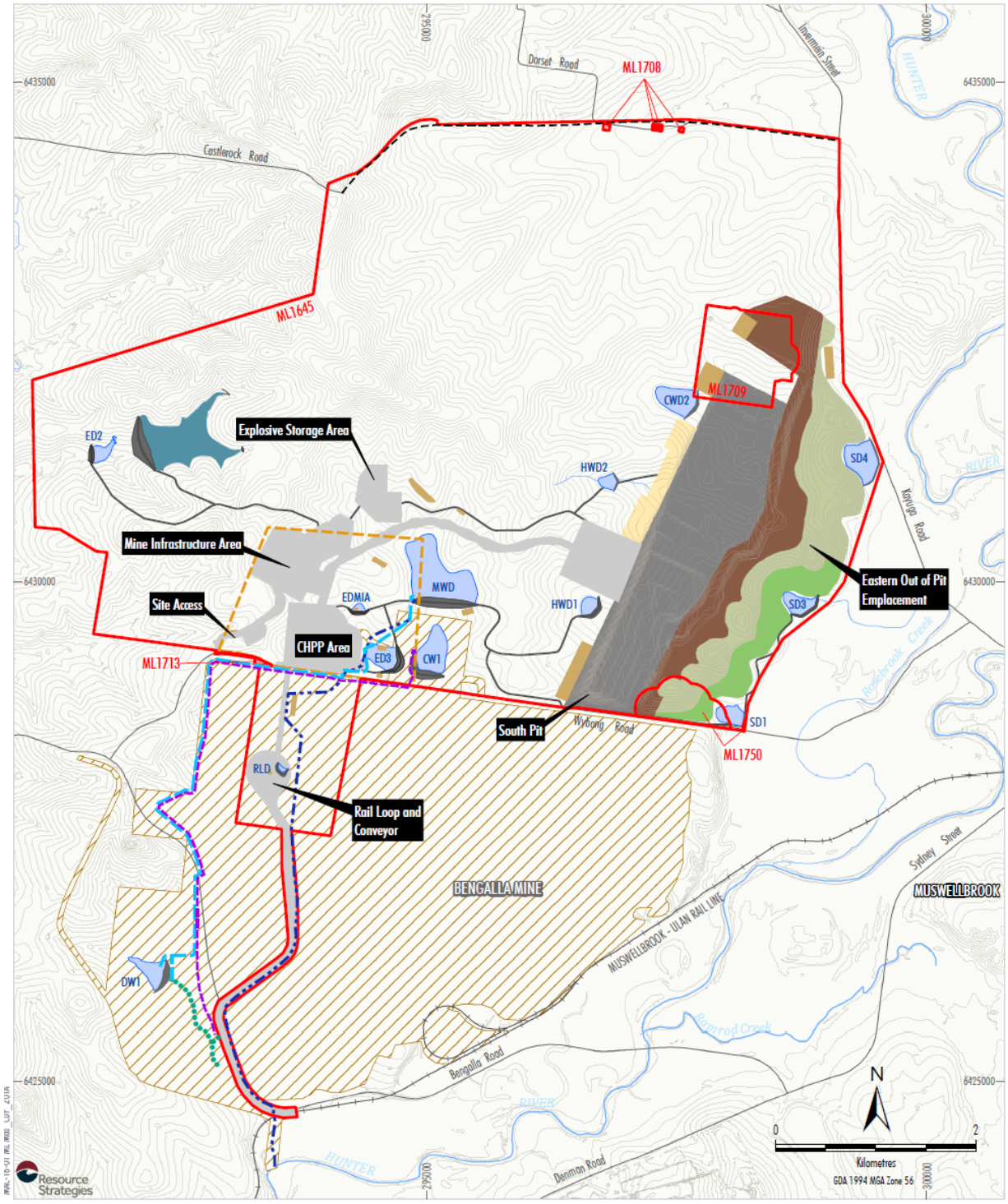
Date prepared: 29-07-2022

MACHEnergy

MOUNT PLEASANT COAL MINE
REHABILITATION MANAGEMENT PLAN 2022

MAC-18-03_RMP2022_Figures_2018

Figure 1.1: Regional location



LEGEND

- Mining Lease Boundary
- Bengalla Mine Approved Disturbance Boundary (SSD-5170)
- Infrastructure Area Envelope
- Active Stripping Area
- Active Mining Area
- Active Overburden Emplacement Area
- Topsoil Stockpile
- Initial Rehabilitation
- Established Rehabilitation
- Infrastructure and Borrow/Stockpile Area
- Access Road
- Northern Link Road

Indicative Water Pipeline Alignment

- MPO Hunter River Supply Pipeline
- MPO DW1 Pipeline (Bi-directional)
- Bengalla Mine CW1 Pipeline
- Approximate Extent of Scour Protection
- Water Dam
- Fines Emplacement Area

Source: NSW Land & Property Information (2017); NSW Division of Resources & Energy (2017); MACH Energy (2017)

MACHEnergy
MOUNT PLEASANT OPERATION

Figure 1.2: Site layout

1.2 Audit team

The Independent Environmental Audit (IEA) team includes the team detailed in Table 1.1.

Table 1.1 IEA team

Name	Role	Company	Qualifications	Experience
Thomas Frankham	Lead auditor (Lead Auditor Certification No. 207528)	EMM	BEnvSc, Certified Lead Environmental Auditor (Exemplar Global - Certification No. 207528)	Associate Consultant 11 years' experience
Samantha Hayes	Assistant auditor	EMM	BDevStu (Environmental Sustainability), MEnvMgnt	Senior Consultant 8 years' experience
Bret Jenkins	Strategic advisor	EMM	Mine surveyor, Member of EIANZ)	Associate Director 35 years' experience
Francine Manansala	Air quality and greenhouse gas emissions technical expert	EMM	BArts (Resource and Environmental Management), CASANZ Certified Air Quality Professional	Associate Consultant 14 years' experience
Scott Fishwick	Air quality and greenhouse gas emissions technical expert	EMM	BSc (Atmospheric Science)	National Technical Leader for Air Quality 17 years' experience
Nathan Garvey	Biodiversity management and offsetting technical expert	EMM	BSc, GDip (Biological Science), BAM Accredited Assessor	Associate Director 20 years' experience
Mark Bridges	Noise, blast and vibration technical expert	Bridges Acoustics	BMechEng MAAS	Principal Consultant 27 years' experience

1.3 Audit objectives

The objective of the IEA is to determine the operational compliance of MPO against the regulatory approvals (refer to Section 3.1) applicable to the site. The Audit findings are detailed in Chapter 3.

1.4 Audit scope

The IEA has been completed in accordance with Schedule 5, Condition 9 of development consent DA 92/97 which states:

1. By the end of March 2014, and every 3 years thereafter, unless the Secretary directs otherwise, the Applicant must commission, commence and pay the full cost of an Independent Environmental Audit of the development. This audit must:

    a) be conducted by a suitably qualified, experienced and independent team of experts whose appointment has been endorsed by the Secretary;

    b) include consultation with the relevant agencies and the CCC;

    c) assess the environmental performance of the development and whether it is complying with the requirements in this consent and any relevant EPL or Mining Lease or necessary water licences (including any assessment, plan or program required under these approvals);

d) review the adequacy of strategies, plans or programs required under the abovementioned approvals (including whether the development has met or is trended towards the progressive performance and completion criteria detailed in these strategies, plans or programs);

e) if necessary, recommend appropriate measures or actions to improve the environmental performance of the development, and/or any strategy, plan or program required under the abovementioned approvals; and

f) be conducted and reported to the satisfaction of the Secretary.

Notes:

This audit team must be led by a suitably qualified auditor and include experts in any fields specified by the Secretary.

2. Within 12 weeks of commencing any audit, or as otherwise agreed by the Secretary, the Applicant must submit a copy of the audit report to the Secretary and any other NSW Government agency that requests it, together with its response to any recommendations contained in the audit report and a timetable for the implementation of these recommendations, as required. The Applicant must implement the audit report recommendations, to the satisfaction of the Secretary.

The IEA has also been in accordance with Section 3.3. of the DPE's (May 2020) *Independent Audit – Post Approval Requirements.*

1.5 Audit period

The audit period for this IEA covers the period between 27 February 2020 to 8 March 2023. This represents the day after the 2020 IEA site inspection was completed, through to the final day of the 2023 IEA site inspection.

2 Audit methodology

2.1 Selection and endorsement of audit team

EMM consulting contacted DPE seeking endorsement of the proposed audit team as well as advice on technical experts specified by the Secretary. On 19 December 2022, DPE responded stating that the Secretary requires the audit team includes experts in the following fields:

- noise, blast and vibration
- air quality and greenhouse gas emissions
- biodiversity management and offsetting.

On 20 January 2023, the DPE formally endorsed the audit team detailed in Table 1.1. A copy of the Planning Secretary audit team endorsement is attached as Appendix B.

2.2 Audit scope development

The IEA scope was developed in accordance with the DPE's (May 2020) *Independent Audit – Post Approval Requirements*.

On 20 February 2023, EMM requested from DPE confirmation of any parties or agencies that are required to be consulted with as part of the IEA, or if there were any areas of compliance or environmental management that the DPE would like EMM to focus on within the scope of the IEA.

DPE Responded on 21 February 2023, with the list of agencies to consult with and aspects to focus on. These are discussed further in Section 3.8.

2.3 Compliance evaluation

Compliance of the operations of MPO were assessed against the approvals and documents listed in Section 3.1.

The process of compliance evaluation involved the following steps:

- review of all approvals applicable to MPO operations
- development of spreadsheet of all relevant conditions
- site visit including:
    - opening meeting with applicable site personnel
    - site inspections (Section 2.5)
    - interviews of relevant site personnel (Section 2.4)
    - closing meeting
- requesting additional information from site, where required
- review of all information provided by site, site photos taken during the site inspection (Appendix F) and any notes taken during the site inspection
- further discussions with site personnel, as required.

2.4 Site interviews

MPO site personnel interviewed as part of the IEA are included in Table 2.1.

Table 2.1 MPO site personnel interviews

Name	Role
Andrew Reid	Environment superintendent
Mariah Lane	Environment advisor
Scott Grunsell	Environment advisor
Craig Hawkins	Project lead
Peter York	Environment and community superintendent

2.5 Site inspections

The site inspection of MPO was completed over two days on 7 and 8 March 2023. EMM consulting observed the following locations during the site inspection:

- mine infrastructure area (MIA)
- coal handling and preparation plant (CHPP) and associated infrastructure
- stage 1 rail infrastructure area
- stage 2 rail infrastructure
- active mining areas including South Pit, Central Pit and North Pit
- eastern out of pit emplacement area
- fines emplacement area
- sediment dams (SD) 1, 3, 8, 4 and 5
- water storages – ED2 and Mine Water Dam.

The site inspection was also attended by EMM's biodiversity management and offsetting technical specialist, Nathan Garvey, who completed his site inspection on 7 March 2023.

2.6 Consultation

Consultation was completed with various government agencies and the community consultative committee (CCC), including:

- Department of Planning and Environment (DPE)
- Biodiversity Conservation Division (BCD)
- DPE Water
- Environment Protection Authority (EPA)
- Department of Regional NSW – Mining, Exploration and Geoscience (MEG)
- Muswellbrook Shire Council (MSC)
- Department of Regional NSW – Resources Regulator
- all members of the CCC.

A summary of the consultation is included in Section 3.8, with evidence of consultation attached as Appendix C.

2.7 Compliance status descriptors

The compliance status of each compliance requirement in the audit table (Appendix A) has been determined using the relevant descriptors in Table 2.2.

Table 2.2 Compliance status descriptors

Status	Description
Compliant	The auditor has collected sufficient verifiable evidence to demonstrate that all elements of the requirement have been complied with within the scope of the audit.
Non-compliant	The auditor has determined that one or more specific elements of the conditions or requirements have not been complied with within the scope of the audit.
Not triggered	A requirement has an activation or timing trigger that has not been met during the temporal scope of the audit being undertaken (may be a retrospective or future requirement), therefore an assessment of compliance is not relevant.

3 Audit findings

3.1 Approval and document list

The approvals and documents audited as part of this IEA include:

- Development Consent DA 92/97 and the statement of commitments
- Environment Protection Licence (EPL) 20850
- mining leases (ML) 1645, 1708, 1709, 1713, 1750 and 1808
- water licences
- Annual Reviews for 2020, 2021 and 2022
- environmental management plans (required under DA 92/97)
- non-compliances of the 2020 IEA.

3.2 Compliance performance

Table 3.1 list the total number of compliance requirements assessed as part of this IEA including the total number of compliant, non-compliant and not triggered conditions. Figure 3.1 shows the project performance in relation to compliance requirements assessed.

Table 3.1 Compliance performance

Aspect	Number
Compliance requirements	204
Compliant	159
Non-compliant	20
Not triggered	25

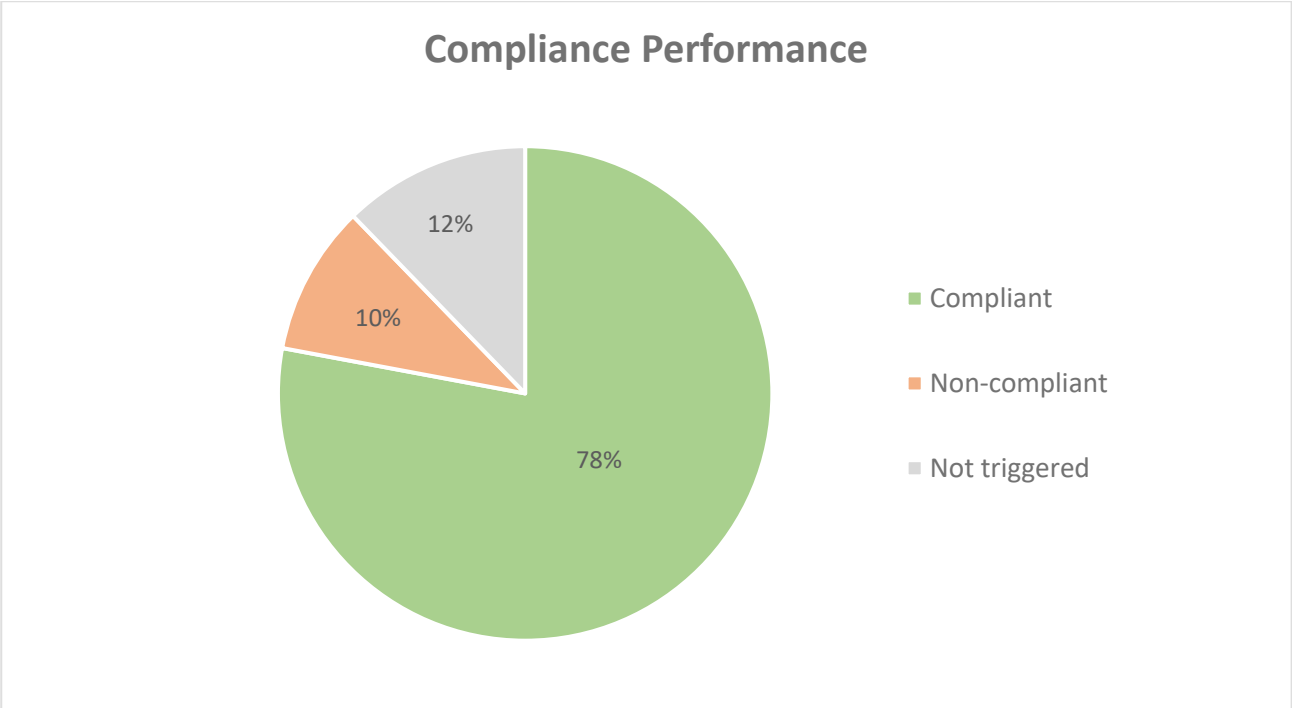


Figure 3.1 Compliance performance

3.3 Summary of agency notices, orders, penalty notices or prosecutions

Table 3.2 details the agency notices, orders, penalty notices or prosecutions received during the audit period.

Table 3.2 Agency notices, orders, penalty notices or prosecutions

Date	Agency	Offence	Details	MPO response
22 January 2021	EPA	Breach of EPL 20850, Condition L3.1	Release of blast fume outside of the EPL licensed premises that caused harm to the comfort of a person.	Following the incident, MPO completed an investigation and reported the incident to the DPE and EPA. As a result of the investigation, the mining contractor amended key pre-blast procedures to reduce the potential for a similar event to occur in the future.
6 August 2021	Resources Regulator	Landform Targeted Assessment Program (TAP)	Identified MPO to have a leading practice in the construction quality assurance system for mine site rehabilitation. Information release – https://www.resourcesregulator.nsw.gov.au/news-0/geomorphic-landform-establishment-at-mount-pleasant-operations	This information release did not require any follow up actions.

Table 3.2 Agency notices, orders, penalty notices or prosecutions

Date	Agency	Offence	Details	MPO response
27 August 2021	DPE	Breach of DA 92/97, Schedule 3, Condition 3	Sustained exceedance (measurements at 00:18 and 00:54) of the LA1(1 minute) criterion at monitoring location N-AT4.	MPO followed the NMP procedure and modified operations upon notification of the exceedance. MPO also notified (in writing) the affected landowners and tenants of the potential exceedance and completed additional monitoring during September – November 2021 closer to the affected landowners and tenants. The outcomes of the additional monitoring were communicated to DPE, affected landowners and tenants in December 2021.
17 February 2022	Dam Safety NSW	Declared Dams Audit – Tailings Storage Facility	MPO Tailings Storage Facility Stage 2 embankment raise project.	There were no regulatory non-compliances identified as part of the audit. Therefore, no follow up actions were required.
29 June 2022	Resources Regulator	Direction pursuant to section 240 (2A) of *Mining Act 1992*	Undertake a review of the water monitoring undertaken on the tailings storage facility and develop a plan to action the monitoring data to ensure safety of personnel.	MPO completed a review of the water monitoring at the tailings storage facility and a Stage 2 lift Health and Safety Management Plan.

3.4 Non-compliances

A summary of the non-compliances determined as part of the 2023 IEA are provided in Table 3.3.

Table 3.3 Non-compliances

Section	Requirement	Evidence	Findings/recommendations	Unique non-compliance identification number
DA 92/97				
Schedule 3, Condition 3	**Noise criteria** Except for the noise-affected land referred to in Table 1, the Applicant must ensure that the operational noise generated by the development does not exceed the criteria in Table 3 at any residence on privately-owned land. Notes: • To identify the locations referred to in Table 3, see the figures in Appendix 5. • Noise generated by the development is to be measured in accordance with the relevant procedures and exemptions (including certain meteorological conditions) of the NSW Industrial Noise Policy, with the exception of the application of modifying factors under Fact Sheet C of the Noise Policy for Industry. However, these criteria do not apply if the Applicant has a written agreement with the relevant landowner to exceed the criteria, and the Applicant has advised the Department in writing of the terms of this agreement.	19/11/21 - DPE warning letter – Sustained exceedance (measurements at 00:18 and 00:54) of the LA1(1 minute) criterion at monitoring location N-AT4. Consultants monitoring reports. Monthly monitoring reports. Annual Reviews for 2020, 2021 and 2022.	Review of consultant's noise monitoring reports indicates: (**non-compliances in bold**, other comments not bold) • **April 2020 – Exceedance of the LA1,1 min criterion at N-AT4.** • **July 2020 – Exceedance of the LAeq,15min and LA1,1min criteria at N-AT3.** • July 2021 – Exceedance of the LA1,1min criterion at N-AT3, although the follow-up measurement showed compliance. • **August 2021 – Exceedance of the LA1,1min criterion at N-AT4.** • **November 2022 – Exceedance of the LA1,1 min criterion at N-AT4.** Exceedance of the LA1,1min criterion at N-AT5, although the follow-up measurement showed compliance. Review of the monthly monitoring reports prepared by MACH Energy indicates: • December 2020 – Incorrect results were reported in Table 9-2 for the LAeq,15min levels at N-AT4 and N-AT5. • July 2021 – The LA1,1min exceedance was not reported. The report only includes the follow-up measurement result. • September 2021 – Incorrect results were reported in Tables 9-1 and 9-2 for the LAeq,15min and LA1,1min levels at N-AT4, N-AT5 and N-AT6. • January 2022 – Incorrect results are reported in Table 9-2 for all LAeq,15min levels. A review of the 2020 Annual Review indicates: Results are correctly reported. Exceedances of the LA1,1min criterion at N-AT3 in July 2020 are acknowledged, however the Annual Review states noise levels would have been acceptable at more remote sensitive receptors. N-AT3 was later relocated closer to residences, which is appropriate.	NC1

Table 3.3 Non-compliances

Section	Requirement	Evidence	Findings/recommendations	Unique non-compliance identification number
			A review of the 2021 Annual Review indicates: • Section 5.2.2 does not mention the exceedance of LA1,1min criterion in July consistent with the monthly monitoring report, although this event is correctly recorded in Appendix A. • Section 5.2.3 states the August 2021 LA1,1min exceedance did not impact any residence, although this statement is not justified as N-AT4 is close to residences. A review of the 2022 Annual Review indicates: • Section 5.2.2 correctly reports results for the period. • Section 5.2.3 states the November 2022 LA1,1min exceedances did not impact any residence, although this statement is not justified as N-AT4 is close to residences. **Other issues or recommendations (REC 1):** 1. All noise monitoring reports during the audit period indicate at least one Class 2 acoustic calibrator was used for a field-check of a Class 1 sound level meter, contrary to relevant standards and policies including IEC 61672-1 and Approved Methods for the Measurement and Analysis of Environmental Noise in NSW (EPA, 2022). A Class 1 calibrator must be used with a Class 1 sound level meter. 2. One sound level meter calibration certificate in the January 2021 consultant's report was invalid, as it was dated after the noise survey. 3. The April 2022 consultant's report did not include calibration certificates for any instruments.	

Table 3.3 Non-compliances

Section	Requirement	Evidence	Findings/recommendations	Unique non-compliance identification number
Schedule 3, Condition 18	**Odour** The Applicant must ensure that no offensive odours are emitted from the site, as defined under the POEO Act, unless otherwise authorised by an EPL.	Annual Reviews for 2020, 2021 and 2022. 2020, 2021 and 2020 complaints registers.	12 odour complaints received in the audit period (no complaints regarding odour in 2023): • 21/05/2020 – MACH Energy investigated and could not identify odour. • 05/08/2020 – MACH Energy investigated and found that smoke was coming from the Pit E RL185 dump and therefore a capping task was completed. • 27/04/2021 – MACH Energy investigated and could not identify odour or heated material. • 14/05/2021 – Meteorological data recorded and notes that a prescribed burn had taken place on the same day. Inconclusive. • 04/07/2021 – MACH Energy investigated and found a small amount of heated material present in Pit D. • 11/07/2021 – MACH Energy investigated and found a small amount of heated material on the pit dump in areas of Pit A, D, & E. Capping was undertaken. • 15/08/2021 – MACH Energy investigated and found no areas of concern. • 15/08/2021 – MACH Energy investigated and found no heated materials in Pit C, D, R, F dumps. • 15/08/2021 – MACH Energy investigated and found no heated materials in Pit C, D, R, F dumps. • 15/07/2022 – MACH Energy investigated and found a small amount of smoke in the Northern Pit which did not reoccur the following day. Inspections were carried out on 15 and 16 July and odour was not detected. • 2022 Annual Review states that 3 odour complaints were made in 2022 and details the one above however, these are not identified as odour-related complaints in the 2022 complaints register (most likely spontaneous combustion).	NC2

Table 3.3 Non-compliances

Section	Requirement	Evidence	Findings/recommendations	Unique non-compliance identification number
			Recommendations: • **REC 2** – Complaints registers and Annual Reviews should be consistent in stating odour complaints (e.g. 2022 Annual Review mentions 3 odour complaints but these are not listed as 'odour' in the 2022 complaints register but rather, refer to spontaneous combustion and the 'nature of complaint' is 'other'). • **REC 3** – MACH Energy should ensure that odour and fume management conditions per Section 9.5 of the AQGHGMP are reviewed for effectiveness, updated where necessary and are being implemented effectively following staff education and training.	
Schedule 3, Condition 26	**Water discharges** The Applicant must ensure that any surface water discharges from the site comply with the: a) discharge limits (both volume and quality) set for the development in any EPL, or b) relevant provisions of the POEO Act or Protection of the Environment Operations (Hunter River Salinity Trading Scheme) Regulation 2002.	Annual Reviews for 2020, 2021 and 2022. Letters to/from agencies reporting the events. Water management plan	Seven water discharge events occurred during the audit period following periods of heavy rain (1:5 year and 1:10 year rainfall events). These occurred on: • 8 March 2021 – failure of erosion and sediment controls resulted in run off leaving site. • 8 June 2021 – two separate discharges of sediment-laden water from MOD 4 construction area and into Wybong Road swale drains, where it ceased. • 12 November 2021 – discharge of sediment-laden water from the Rail 2 Project Area and into Wybong Road swale drains. • 8 December 2021 – discharge from four sediment basins (SD4, SD6, SD7 and ED2) offsite. • 9 December 2021 – discharge from four sediment basins (SD4, SD6, SD7 and ED2) offsite. • 8 March 2022 – discharge from five sediment basins (SD1, SD4, SD6, SD7 and TSB2) offsite. • 21 October 2022 – spillway discharge was observed from SD4.	NC3

Table 3.3 Non-compliances

Section	Requirement	Evidence	Findings/recommendations	Unique non-compliance identification number
			MPO confirmed during the site interviews that the sediment dams are designed, constructed and managed in accordance with *Managing Urban Stormwater: Soils and Construction – Volume 2E, Mines and Quarries* "the Blue Book" (Landcom 2004). The water releases exceeded capacities for which the sediment dams were designed and managed. Following the rainfall events, MPO completed investigations into the cause and reported the incidents to DPE and EPA. As required by the water management plan, water quality sampling was undertaken during the events, with water quality showing negligible changes in release water in pH, EC and TSS. Regular inspections of were implemented and undertaken prior to and during forecasted heavy rainfall events, in addition to regular third party inspections by a CPESC. MPO reviewed and updated the water management plan in accordance with Schedule 5, Condition 4. **Recommendation (REC 5):** Ensure corrective actions as per the investigations of incident events are implemented.	

Table 3.3 Non-compliances

Section	Requirement	Evidence	Findings/recommendations	Unique non-compliance identification number
Schedule 3, Condition 44F	**Construction of rail and water supply infrastructure** All MOD 4 construction works outside of the Mining Lease Boundary must be carried out during Standard Construction Hours (7:00 am to 6:00 pm, Monday to Friday; and 8:00 am to 1:00 pm on Saturdays), unless the works are: a) required by: – NSW Police, or – a public authority for the delivery of vehicles, plant or materials, or b) required in an emergency to avoid the loss of life, damage to property or to prevent material harm to the environment, or c) approved under an Out of Hours Work Protocol. *Note: The Mining Lease Boundary is shown in Figure 2 of Appendix 2.*	2021 Annual Review. CEMP for MOD 4.	2021 Annual Review notes non-compliance on 31/3/21. Non-compliance reported. All construction works associated with MOD 4 has now been completed. Section 5.1.3 of the CEMP address the noted requirements. Noted an Out of Hours Works Protocol (OHWP), approved by the DPE Secretary 15/3/21. Available: https://machenergyaustralia.com.au/wp-content/uploads/Mount-Pleasant-Operation-Out-of-Hours-Work-Protocol-Final-March-2021.pdf	NC4

Table 3.3 Non-compliances

Section	Requirement	Evidence	Findings/recommendations	Unique non-compliance identification number
Schedule 3, Condition 44H	**Construction of rail and water supply infrastructure** The Applicant must ensure that the combined operational noise of the development and noise generated by the MOD 4 construction works outside of the Mining Lease Boundary does not exceed the criteria in Table 10A at any residence on privately-owned land. *Notes:* • *To identify the locations referred to in Table 10A, see the figures in Appendix 5.* • *The Mining Lease Boundary is shown in Figure 2 of Appendix 2.* • *Noise generated by the development is to be measured in accordance with the relevant procedures and exemptions (including certain meteorological conditions) of the NSW Industrial Noise Policy, with the exception of the application of modifying factors under Fact Sheet C of the Noise Policy for Industry.* However, these criteria do not apply if the Applicant has a written agreement with the relevant landowner to exceed the criteria, and the Applicant has advised the Department in writing of the terms of this agreement.	Review of monthly monitoring reports and annual reviews. Construction equipment noise testing reports. Two construction noise monitoring reports, for 25–27 May 2021 and 10 August 2021.	Section 5.2.2 of the 2020 Annual Review states there were no exceedances of the construction noise criteria during the reporting period. Section 4.1 of the Construction Environmental Management Plan includes noise criteria for construction activities, for standard (daytime) construction hours. Section 6.2.1 of the Construction Environmental Management Plan states monitoring would occur according to the Noise Management Plan, which only requires noise monitoring at night. Review of construction equipment noise test reports indicates equipment produces acceptable sound power levels for heavy diesel powered machines. The construction noise survey report for 25-27 May 2021 indicated compliance with the construction noise criteria during the day. However, the day criteria were also incorrectly applied to the night period, with monitoring results indicating night noise levels reaching the range 40 to 50 L_{Aeq} at the monitoring locations representative of nearest receivers. The construction noise survey report for 10 August 2021 Indicated compliance with the construction noise criteria during the day. No noise monitoring occurred during the night. **Recommendation (REC 7):** Adopt appropriate noise criteria for any out-of-hours construction work. Appropriate criteria are generally identical to usual MPO noise criteria unless alternative criteria are agreed with EPA/DPE.	NC5

Table 3.3 Non-compliances

Section	Requirement	Evidence	Findings/recommendations	Unique non-compliance identification number
Schedule 3, Condition 52	**Waste Management Plan** The Applicant must prepare a Waste Management Plan for the development to the satisfaction of the Secretary. This plan must: a) be prepared in consultation with DPE Water and the Resources Regulator, and submitted to the Secretary for approval prior to carrying any development on site b) describe the measures that would be implemented to avoid, minimise, reuse and recycle all waste streams generated by the development c) include a fines emplacement plan d) a program to evaluate the fines emplacement plan and methods, with a view to emplacing fines within active mining areas. The Applicant must implement the management plan as approved by the Secretary.	a) Current version of Waste Management Plan approved by DPIE on 14 January 2019. Evidence of consultation provided in site version of the management plan. b) Chapter 5. c) Appendix 1. d) Section 7.2. MIA and CHPP area: a) Small hydrocarbon spills identified around workshop and refuelling bay. b) There were 1,000 L pods located around the CHPP and MIA laydown areas (some full, some mostly empty) with oil and other chemicals.	Non-compliant for hydrocarbon and chemical storage. Hydrocarbon spills to be managed in accordance with Waste Management Plan and spills procedure. 1,000 L pods to be stored within appropriately bunded areas. **Recommendation (REC 8)**: Ensure all chemicals/hydrocarbons are appropriately stored in bunded areas.	NC6

Table 3.3 Non-compliances

Section	Requirement	Evidence	Findings/recommendations	Unique non-compliance identification number
EPL 20850				
L3.1	**Noise limits** Noise generated at the premises must not exceed the noise limits presented in the table below. *Note:* *The noise limits in the table below do not apply if the licensee has a written agreement with the relevant landowner to exceed the noise limit and the licensee has advised the EPA in writing of the terms of the agreement.* *The noise limits in the table below do not apply to residences owned by the licensee or those residences that are subject to acquisition as listed in Table 1 of Schedule 3 of Development Consent DA 92/97 (MOD 4), dated 16 November 2018.* *Residences referenced in this table are from Table 3 of Schedule 3 of Development Consent DA92/97 (MOD 4), dated 16 November 2018 (EPA reference DOC19/1010437).*	19/11/21 – DPE warning letter – Sustained exceedance (measurements at 00:18 and 00:54) of the LA1(1 minute) criterion at monitoring location N-AT4. Consultants monitoring reports. Monthly monitoring reports. Annual Reviews for 2020, 2021 and 2022.	Review of consultant's noise monitoring reports indicates: (**non-compliant in bold**, other comments non-bold) • **April 2020 – Exceedance of the LA1,1min criterion at N-AT4.** • **July 2020 – Exceedance of the lAeq,15min and LA1,1min criteria at N-AT3.** • July 2021– Exceedance of the LA1,1min criterion at N-AT3, although the follow-up measurement showed compliance. • **August 2021 – Exceedance of the LA1,1min criterion at N-AT4.** • **November 2022 – Exceedance of the LA1,1min criterion at N-AT4.** Exceedance of the LA1,1min criterion at N-AT5, although the follow-up measurement showed compliance. Non-compliance as per 2022 Annual Return –- Exceedance of EPA Point 8 (ID 8) LA (1 minute) and EPA Point 9 (ID 9) LA1 (1 minute) noise limit of 45dB during operator attended noise monitoring. **Recommendation (REC 13):** Diligent noise management practises to avoid exceedances of the noise criteria.	NC7
L4.3	**Blasting** The airblast overpressure level from blasting operations in or on the premises must not exceed 120 dB (Lin Peak) at any time at any blast monitoring location specified in this licence.	Blast data. Annual Returns for 2020, 2021 and 2022.	A detailed review of blasting data indicates overpressure levels at all residential locations comply with this condition. Non-compliance as per 2022 Annual Return – A production blast resulted in an overpressure reading in excess of 120dBL registering at monitor B-VOA (EPA ID 12). Table 31 in the Annual Review notes no residences are located near this monitor and subsequent revision of the EPL has removed the requirement for a monitor at this location. **Recommendation (REC 14):** Ensure the blast monitoring locations are regularly reviewed and represent closest privately owned receivers.	NC8

Table 3.3 Non-compliances

Section	Requirement	Evidence	Findings/recommendations	Unique non-compliance identification number
L4.6	**Blasting** Offensive blast fume must not be emitted from the premises. *Definition:* *Offensive blast fume means post-blast gases from the detonation of explosives at the premises that by reason of their nature, duration, character or quality, or the time at which they are emitted, or any other circumstances:* *4. are harmful to (or likely to be harmful to) a person that is outside the premises from which it is emitted; or* 5. *interferes unreasonably with (or is likely to interfere unreasonably with) the comfort or repose of a person who is outside the premises from which it is emitted.*	Annual Reviews for 2020, 2021 and 2022. 2020, 2021 and 2020 complaints logs.	2020: • A blast fume complaint was received on 15 June 2020. • MACH Energy investigated this and found that emissions were likely to have left the boundary. Measures were put in place. 2021: • The 2021 Annual Review report reported no blast fume events in the reporting period however the 2021 complaints log mentions two blast fume complaints on 30/03/2021 and 26/05/2021. These were investigated by MACH Energy. • The investigation of blasts on 30/03/2021 and 26/05/2021 found that the blast fume rating was zero and no post blast emissions left the EPL or DA boundary. 2022: • 2022 complaints log did not report any blast fume complaints in regard to AQ or odour. 2023: • No complaints for Jan, Feb, Mar 2023. **Recommendation (REC 15):** Review measures in the Blast Management Plan and the AQGHGMP for effectiveness and ensure these are being implemented on site.	NC9

Table 3.3 Non-compliances

Section	Requirement	Evidence	Findings/recommendations	Unique non-compliance identification number
L5.1	**Potentially offensive odour** No condition of this licence identifies a potentially offensive odour for the purposes of Section 129 of the Protection of the Environment Operations Act 1997. *Note: Section 129 of the Protection of the Environment Operations Act 1997, provides that the licensee must not cause or permit the emission of any offensive odour from the premises but provides a defence if the emission is identified in the relevant environment protection licence as a potentially offensive odour and the odour was emitted in accordance with the conditions of a licence directed at minimising odour.*	Annual Reviews for 2020, 2021 and 2022. 2020, 2021 and 2020 complaints registers.	12 odour complaints received in the audit period (no complaints regarding odour in 2023): • 21/05/2020 – MACH Energy investigated and could not identify odour. • 05/08/2020 – MACH Energy investigated and found that smoke was coming from the Pit E RL185 dump and therefore a capping task was completed. • 27/04/2021 – MACH Energy investigated and could not identify odour or heated material. • 14/05/2021 – Meteorological data recorded and notes that a prescribed burn had taken place on the same day. Inconclusive. • 04/07/2021 – MACH Energy investigated and found a small amount of heated material present in Pit D. • 11/07/2021 – MACH Energy investigated and found a small amount of heated material on the pit dump in areas of Pit A, D, & E. Capping was undertaken. • 15/08/2021 – MACH Energy investigated and found no areas of concern. • 15/08/2021 – MACH Energy investigated and found no heated materials in Pit C, D, R, F dumps. • 15/08/2021 – MACH Energy investigated and found no heated materials in Pit C, D, R, F dumps. • 15/07/2022 – MACH Energy investigated and found a small amount of smoke in the Northern Pit which did not reoccur the following day. Inspections were carried out on 15 and 16 July and odour was not detected. • 2022 Annual Review states that 3 odour complaints were made in 2022 and details the one above however, these are not identified as odour-related complaints in the 2022 complaints register (most likely spontaneous combustion).	NC10

Table 3.3 Non-compliances

Section	Requirement	Evidence	Findings/recommendations	Unique non-compliance identification number
			Recommendations: • **REC 2** – Complaints registers and annual reports should be consistent in stating odour complaints (e.g. 2022 Annual Report mentions 3 odour complaints but these are not listed as 'odour' in the 2022 complaints register but rather, refer to spontaneous combustion and the 'nature of complaint' is 'other'). **REC 16** – Use 'Consultation Manager' internal system to track all complaints and manage follow up.	
O1.1	**Activities must be carried out in a competent manner** Licensed activities must be carried out in a competent manner. This includes: a) the processing, handling, movement and storage of materials and substances used to carry out the activity b) the treatment, storage, processing, reprocessing, transport and disposal of waste generated by the activity.	Site inspection.	Non-compliant in the storage of materials and substances. The workshop area contained un-bunded chemicals in storage areas. All waste was disposed of and stored in appropriately labelled bins. **Recommendation (REC 8):** Ensure all chemicals/hydrocarbons are appropriately stored in bunded areas.	NC11

Table 3.3 Non-compliances

Section	Requirement	Evidence	Findings/recommendations	Unique non-compliance identification number
O3.1	**Dust** The premises must be maintained in a condition which minimises or prevents the emission of dust from the premises.	AQGHGMP. Annual Reviews for 2020, 2021 and 2022.	Management measures are detailed in the AQGHGMP and Annual Review reports. Site tour observations: • Water sprays were sighted in use during site inspection. Measures were put in place following sighting of visual dust. • Evidence of dust during tipping - see photo Photograph F.8 and F.9. **Recommendation (REC 17):** Site personnel to ensure that water sprays on materials/when loading or unloading materials are being applied per the AQGHGMP to minimise dust during tipping as far as possible. The measures in the AQGHGMP relating to this should be reviewed for effectiveness.	NC12
O3.2	**Dust** Activities occurring in or on the premises must be carried out in a manner that will minimise the generation, or emission from the premises, of wind-blown or traffic generated dust.	AQGHGMP. Annual Reviews for 2020, 2021 and 2022.	Management measures are detailed in the AQGHGMP and Annual Review reports. Site tour observations: • Only minor evidence of dust in tipping –see photo Photograph F.8 and F.9. • Measures were put in place following sighting of visual dust.	NC13
O3.3	**Dust** All trafficable areas, coal storage areas and vehicle manoeuvring areas in or on the premises must be maintained, at all times, in a condition that will minimise the generation, or emission from the premises, of wind-blown or traffic generated dust.	AQGHGMP. Annual Reviews for 2020, 2021 and 2022.	Management measures are detailed in the AQGHGMP and Annual Review reports. Site tour observations: • Only minor evidence of dust in tipping – see photo Photograph F.8 and F.9. • Measures were put in place following sighting of visual dust.	NC14

Table 3.3 Non-compliances

Section	Requirement	Evidence	Findings/recommendations	Unique non-compliance identification number
O3.9	**Dust** For the purpose of condition O3.5 (e), dust suppression systems must be operated in a manner to ensure that there is no visible dust emissions emitted from the premises.	Site inspection.	Dust suppressors (water sprays) sighted around CHPP area/rail area in use during site inspection. Evidence of visible dust in tipping – see photo Photograph F.8 and F.9. It is noted that measures were put in place to reduce/stop the visible dust. **Recommendation (REC 17):** Site personnel to ensure that water sprays on materials/when loading or unloading materials are being applied per the AQGHGMP to minimise dust during tipping as far as possible. The measures in the AQGHGMP relating to this should be reviewed for effectiveness.	NC15
O5	**Emergency response** Note: The licensee must prepare a Pollution Incident Response Management Plan (PIRMP) as per section 153A of the *Protection of the Environment Operations Act 2021*. The PIRMP must: 6. Include the information detailed in section 153A of the *Protection of the Environment Operations Act 2021*, and to be in the form required by clause 98B in the Protection of the Environment Operations (General) Regulation 2021. 7. Be kept at the premises to which the licence relates. 8. Be tested in accordance with clause 98E of the Protection of the Environment Operations (General) Regulation.	Sighted PIRMP (rev 05) during inspection. A copy of the PIRMP is available on MPO website. Review of the Protection of the Environment Operations (General) Regulation 2022.	A copy of the PIRMP was sighted in the office during inspection. A copy of the PIRMP is available on MPO website. As stated in the PIRMP, the most recent testing of the PIRNP was in January 2023. Prior to this, the PIRMP was tested in October 2021. This exceeds 12 months between tests. Clause 75 (2022 version) of the regulation states the PIRMP must be tested routinely at least once every 12 months. Therefore, this condition is non-compliant. **Recommendation (REC 18):** MPO to test PIRMP at least once prior to January 2024 and annually thereafter.	NC16

Table 3.3 Non-compliances

Section	Requirement	Evidence	Findings/recommendations	Unique non-compliance identification number
M2.1	**Requirement to monitor concentration of pollutants discharged** For each monitoring/discharge point or utilisation area specified below (by a point number), the licensee must monitor (by sampling and obtaining results by analysis) the concentration of each pollutant specified in Column 1. The licensee must use the sampling method, units of measure, and sample at the frequency, specified opposite in the other columns.	AQGHGMP. Annual Review for 2020, 2021 and 2022. Annual Returns for 2020, 2021 and 2022. Site inspection.	Details of monitors are provided in the AQGHGMP and Annual Review reports. Non-compliance per 2020 Annual Review report - *Incomplete data capture. No action required as data capture was high (at least 95% or 347 days) during the period. No action or comment required. Continue to capture data and monitor.* Non-compliances in Annual Returns: • 2019–2020: PM_{10} was not monitored continuously at EPL Point 1 (98.1%) and EPL Point 2 (92.7%) during the reporting period. • 2020–2021: PM_{10} was not monitored continuously at EPL Point 1 (98.1%) and EPL Point 2 (92.7%) during the reporting period. • 2021–2022: PM_{10} was not monitored continuously at EPL ID 1 (97.8%) and EPL ID 2 (52.6%) during the reporting period.	NC17
M2.2	**Air Monitoring Requirements** *Note: Special Method 1 requires the licensee to undertake the monitoring of PM10 concentrations in strict accordance with the manufacturer's operating manual supplied with the continuous monitoring equipment, or any updated versions as published by the manufacturer.*	AQGHGMP. Annual Review for 2020, 2021 and 2022. Annual Returns for 2020, 2021 and 2022. Site inspection.	As above.	NC18
M2.3	**Water and/or Land Monitoring Requirements**	Surface water pH results are presented in monthly reports. Annual Returns for 2020, 2021 and 2022.	The 2020-2021 Annual Return only completed 3 samples during the annual return period. As stated in the condition, samples are required quarterly. **Recommendation (REC 20):** Complete quarterly faecal and pH monitoring in line with the obligations of the EPL Condition M2.3.	NC19

Table 3.3 Non-compliances

Section	Requirement	Evidence	Findings/recommendations	Unique non-compliance identification number
M4.1	**Weather monitoring** At the point(s) identified below, the licensee must monitor (by sampling and obtaining results by analysis) the parameters specified in Column 1 of the table below, using the corresponding sampling method, units of measure, averaging period and sampling frequency, specified opposite in the Columns 2, 3, 4 and 5 respectively.	Annual Returns for 2020, 2021 and 2022.	The 2022 Annual Return reported a non-compliance against this condition stating: "Meteorological data at EPA ID 4 and 11 was not captured continuously (uninterrupted) during the reporting period." Compliance with this condition was achieved during 2020 and 2021.	NC20
R5.2	**Noise Monitoring Report** For each Annual Return reporting period the licensee must submit a Noise Compliance Assessment Report to the EPA for that period. The report must: a) be prepared by an appropriately qualified acoustic consultant and determine compliance with noise limits specified in this licence b) include all routine attended monitoring undertaken throughout the year c) include measurement and reporting of C-weighted noise levels d) outline management actions taken within the monitoring period to address any exceedances of the limits specified in this licence.	Annual Returns for 2020, 2021 and 2022. Noise Monitoring Reports. Noise monitoring data.	This condition requires a specific noise compliance assessment report prepared by an independent consultant for each Annual Return reporting period. While the contents of the report are also available to the EPA in the monthly monitoring reports and Annual Reviews, those reports were not prepared by an appropriately qualified acoustic consultant and do not satisfy this condition. **Recommendation (REC 22):** Noise Compliance Assessment Reports are to be prepared by an appropriately qualified acoustic consultant.	NC21

3.5 Previous audit recommendations

Table 3.4 outlines the audit recommendations that were made by SLR (2020) as part of the 2020 IEA.

Table 3.4 Previous audit recommendations

Aspect	Recommendation	Response	Completed?
Bitumen track	**REC 1 – Bitumen track** General recommendation relating to bitumen track (light vehicle medium vehicle track). Develop remediation plan for the failed sections. Repair the section of the light vehicle track where the bitumen has failed. Until the repair is complete regular watercarts are required to reduce dust impacts.	Temporary repairs were on the LVMV road. The detailed design has been completed by Stantec. A tender has gone to market to remediate the first 1,300 m of the road in 2023, with the intention of completing the remaining remediation in 2024. Until such time as the entire road can be repaired, MPO will continue to maintain the unsealed sections of the road.	Ongoing

Table 3.4 Previous audit recommendations

Aspect	Recommendation	Response	Completed?
Dust	**REC 2 – Dust** R2.1: Recommend reviewing the way dust is visually assessed with this based on the EPAs new Dust Management Handbook 2019. R2.2: Increased training in visual dust management at site. This should be regularly discussed and documented in toolbox talks. Increased training in visual dust management at site. This should be regularly discussed and documented in toolbox talks. R2.3: Ensuring water trucks are sent to areas of the site prior to there being a problem. If there is a delay in providing this water truck then operations need to change (e.g. Reduction in speed) or operations are to cease until adequate dust controls are available. R2.4: Update the MOP to include a defined timeframe to revegetate soil stockpiles. R2.5: Cameras of the pits could be more widely distributed to key MACH Energy Staff. Investigate establishing a series of video cameras to enable monitoring of key areas at the site which have high potential for dust and visual impacts. These would include the pits and higher areas of the site. All required personnel have access to cameras. R2.6: It is recommended that the calibration factor used with the Palas Fidas particulate monitors be based on a dataset that covers seasonal variations (rather than the single month the current calibration factors are based on) as changes in particulate loads, temperature, humidity, etc. can affect the instrument's readings. R2.7: It is recommended that an air quality expert be engaged to review exceedances of ambient air quality criteria where the exceedances are not due to exceptional events (as classified by the NSW DPIE) or invalid data. A summary report would also be included in the Annual Review.	R2.1–2.3: The EPA's Dust Assessment Handbook was reviewed by MPO. The operations were within the pit and a significant distance from the site boundary and sensitive receptors. Light winds were present, generally from the south-west (i.e. not towards key Complete closest receptors). As such, in-pit dust emissions would be considered unlikely to lead to off-site impacts. Further, no real time dust alarms were triggered at the time of the observations. Notwithstanding, the environmental team called for water carts to attend the pit area in question. MACH Energy noted that during the observation, water carts continued to operate in areas considered more likely to lead to offsite impacts. In addition, changes in operations, including reduction in speed and reducing or ceasing operations, occur as required during periods of elevated air quality levels or dust emissions. The daily dust risk forecast is provided to the Open Cut Examiner via email each morning to assist with operational planning and to inform the operations team of the dust risk for the day. Supervisors, OCEs, and the environment team also conduct regular checks on dust levels throughout MPO, and operators are proactive in responding to and communicating elevating dust levels. Daily pre-start meetings include discussion regarding dust management to each of the mining crews, including dust management during excavator loading. R2.4: The MOP has been updated to include timeframes for topsoil stockpile shaping and seeding. R2.5: MPO has multiple cameras within site, including those that cover the mining area. R2.6: Palas Fidas calibration is completed on a monthly basis. R2.7: Summary reports from air quality specialist have been included in the Annual Reviews.	Yes

Table 3.4 Previous audit recommendations

Aspect	Recommendation	Response	Completed?
Waste	**REC 3 – Waste** R3.1: In-pit storage • Ensure all waste is separated out and stored in the correct waste or recycle bin. • Ensure all hydrocarbon spills are cleaned up. • All hydrocarbons and chemicals should be stored in bunded areas. Used drums and containers are still to be stored in a bunded area until they are taken off site. R3.2: Workshop area • Ensure Remondis label all waste bins. • Place oil pan under any engines/equipment stored in unbunded areas, that have the potential to drip any hydrocarbons/fluid etc. • Ensure all chemicals/hydrocarbons are bunded. This includes both full and empty oil drums/containers. Old hydrocarbon containers should be removed from site as soon as practical. R3.3: Construction offices • Ensure all waste is separated out and stored in the correct waste or recycle bin. • Ensure all chemicals/hydrocarbons are bunded. • Ensure all contaminated material is transported to the bioremediation area or disposed of offsite by a suitable qualified contractor.	Waste management has been re-tool boxed as required following regular environmental inspections. Areas of waste storage have been tidied up, including cleaning up of spills. Remondis have updated bin labels as required. Tracked in monthly Contractor meetings. Areas of waste storage have been tidied up, including cleaning up of spills. Bunding was reviewed and will be updated as required for storage areas. New plant and MIA upgrade taking place. Bio-remediation site upgraded.	Yes

Table 3.4 Previous audit recommendations

Aspect	Recommendation	Response	Completed?
Water management	**REC 4 – Water Management** See water management/erosion and sediment control table in Section 5.4. There is a total of 13.	MPO engaged an external specialist to complete erosion and sediment control audits. Four ESC audits were completed during the IEA audit period. Recommendations were made during the ESC audits which MPO will continue to implement. The internal powerline pole that is located within the drainage line near the highwall dam has been monitored for integrity. The area near the current rehabilitation is being monitored and will be remediated with hay bales, if required. This area has been reworked, and permanent mine water management systems put in place as part of the MOD 4 construction works. Rill and gully erosion at the Mine Water Dam and Environment Dam 3 have been remediated. Rill and gully erosion at the Fines Emplacement Area has been remediated, with additional erosion measures put in place including geofabric in higher risk areas. The Water Management Plan will be updated to include all dams used in the mine water management system. Remediation of the borrow pit area, MIA drainage structures, CHPP and downstream of the MPO construction offices have been completed. Once construction areas are complete and rehabilitated (including adequate vegetation cover), sediment fencing is removed as part of the Ground Disturbance Permit close out process. This will continue to progress. The fines emplacement pipeline has end of line burst protection flow meters will alarm in the case of a spill.	Yes

Table 3.4 Previous audit recommendations

Aspect	Recommendation	Response	Completed?
Noise monitoring/ management	**REC 5 – Noise Monitoring/Management** R5.1: The monthly reports on the website should continue to report against how the site compared against the cumulative noise criteria. R5.2: It is recommended that an appendix is prepared to the Annual Review that summarises noise performance including: • date of monitoring • compliance against NAG's noise criteria, including a table/tables that summarises actual noise levels during monitoring events • compliance against cumulative criteria. Note – these two recommendations have been addressed in the 2019 Annual Review and Monthly Reports with this completed following the initial findings during the site inspection. R5.3: Record the specific noise level triggers for good (green), caution (orange) and exceeding (red) in the Thiess real time noise monitoring system (computer program). Update the Noise Management Plan if required.	R5.1: This was addressed in the monthly reports. R5.2: This was addressed in the 2019 Annual Review and Monthly Reports following the initial findings during the 2020 audit site inspection. R5.3: The Thiess real time noise monitoring system was updated to reflect trigger level colours. No update to the Noise Management Plan was required.	Yes

Table 3.4 Previous audit recommendations

Aspect	Recommendation	Response	Completed?
Blasting	**REC 6 – Blasting** R6.1: Any elevated blasting levels (i.e. Above 115 dBL and above 120 dBL) should be discussed in the monthly environmental reports. This does not have to be detailed but it needs to identify there could be a non - compliance based on the blast criteria. R6.2: Include a cumulative assessment of the percentage of blasts >115 dBL year to date to ensure <5%. R6.3: The time of the blasts for overpressure and vibration is not recorded in the 2017 and 2018 Annual Review. To be included in future Annual Reviews. Note – this has been addressed in the 2019 Annual Review. R6.4: The Annual Review and Monthly Environmental Reports should also record the day of the week that blasting occurred to verify no blasting is undertaken on a Sunday. R6.5 Ensure the Blast Scheduling information is available on the home page by a simple link i.e. 'Upcoming Blasting'. It is not obvious to find the blast scheduling information on the current website. R6.6: Results of blast fume monitoring should be included in monthly reports and the Annual Review.	R6.1: Addressed in monthly reports. R6.2: Addressed in monthly reports. R6.3: Addressed in monthly reports and the 2019 Annual Review. R6.4: Addressed in monthly reports and the 2019 Annual Review. R6.5: The MACH Energy website now has a 'ticker' on the front page that includes blast notification information. R6.6: Blast fume is reported in the monthly reports and in the Annual Reviews.	Yes
Weed management	**REC 7 – Weed Management** Continue to implement additional weed management activities onsite.	MPO engaged Enright Land Management to undertake weed and pest management. The scope included a site weed map and action plan, completed in 2019, and a quarterly weed management program. Thiess have recently employed a fulltime weed management expert to join their rehabilitation team who will manage weeds at MPO going forth.	Yes
Aboriginal heritage	**REC 8 – Aboriginal Heritage** Continue the process of progressing the covenant for the Aboriginal Conservation Area.	As reported in the 2022 Annual Review, suitable arrangements to provide appropriate long-term security for the Aboriginal Heritage Conservation Area (Areas B and C) are ongoing and include liaison with Heritage NSW and the RAPs for an alternative artefact keeping place and proposing Aboriginal Cultural Heritage survey of select biodiversity offset areas to potentially identify alternatives.	Ongoing

Table 3.4 Previous audit recommendations

Aspect	Recommendation	Response	Completed?
Visual and community management	**REC 9 – Visual and Community** It would be beneficial to have a camera in town pointing at the site for use of MACH Energy and contractors. This would assist in determining the impacts such as visual and dust.	MPO have multiple cameras within site, including those that cover the mining area. An additional six cameras were installed in operational areas covering the active mining area.	
Rehabilitation	**REC 10 – Rehabilitation** R10.1: Reshape, rip, topsoil and seed areas of rehabilitation which have been noted by Thiess as areas where improvement is required. MACH Energy have since provided evidence that this has been completed. R10.2: Some seeding should be completed in the area above ED2 which is showing signs of erosion. R10.3: Adding a defined timeframe to the MOP for how long topsoil stockpiles are stored until a cover crop is required. MACH Energy have since provided evidence that this has been completed. R10.4: Update the relevant document (MOP/RMP or Rehabilitation Strategy) to ensure there are no inconsistencies with the documents.	R10.1: Rehabilitation areas requiring improvement have been remediated. R10.2: Remediation works have been completed in this area, including remediation of the access road and areas surrounding water monitoring infrastructure. Areas have been seeded, as required. R10.3: The MOP was updated to include defined timeframes to shape and seed topsoil stockpiles. R10.4: The RMP was updated in August 2022.	Yes
Management Plans	**REC 11 – Management Plans** R11.1: When management plan updates are required in the future consider creating a table system for mitigation measures with separate columns for: • mitigation ID • mitigation measure • reference document • when required • responsibility. Based on discussions with site a staged approach is recommenced. R11.2: Update wording in the Annual Review to outline which management plans require updating and which management plans do not require updating.	MPO have advised that management plans will be updated when necessary to include this recommendation.	Ongoing

3.6 EMP, sub-plans and compliance documents

To determine the adequacy of the management plans applicable to the operation of MPO, the EMM audit team conducted reviews of the following plans:

- Environmental Management Strategy
- Noise Management Plan
- Blast Management Plan
- Air Quality and Greenhouse Gas Management Plan
- Biodiversity Management Plan
- Water Management Plan
- Aboriginal Heritage Management Plan
- Visual Management Plan
- Waste Management Plan
- Rehabilitation Management Plan.

The adequacy and implementation of these plans were also assessed during the site inspection. EMM determined these plans to be adequate for operation and implemented appropriately.

Opportunities for improvement are discussed in detail in Section 4.2.

3.7 Environmental performance

In addition to the above, in a letter dated 19 December 2022, the DPE requested the input of technical experts in the following fields:

- air quality and greenhouse gas
- biodiversity manage and offsetting
- noise.

A summary of their findings on environmental performance and those deemed relevant by the lead auditor are included below.

3.7.1 Noise, blast and vibration

Bridges Acoustics prepared a noise, blast and vibration audit report which is attached as Appendix E.

The acoustic audit included a comparison between the measured noise and blast levels from MPO in the consultant's noise and blast monitoring reports, the levels reported in the Monthly Environmental Monitoring Reports prepared by Mach Energy and the Annual Reviews also prepared by Mach Energy.

Some differences between the consultant's noise reports and the reported noise data in the monthly and annual reports prepared by Mach Energy were noted, generally due to transcription and/or copy/pasting errors.

Significant non-compliances with acoustic conditions in DA 92/97 and EPL 20850 relate to occasional noise levels over relevant criteria at monitoring locations north-east and south-east of MPO and night construction work on rail infrastructure that was not assessed to the correct night noise criteria and would have exceeded the correct night criteria at closest residences.

Less significant non-compliances with acoustic conditions, in that no acoustic impact occurred to any residence or other sensitive location as a result of these non-compliances, relate to a blast overpressure level measured at a location that does not represent a sensitive location, failure to prepare and submit all required compliance reports to the EPA and failure of the noise monitoring consultant to implement and document instrument calibration procedures in relevant standards.

Management plans, including key issues such as noise and blast monitoring locations, are appropriate and consistent with current best practise. Previous acoustic related commitments have been met.

Overall, MPO has been operated and managed in a competent manner from an acoustic perspective. Increased vigilance in implementing noise management measures, particularly during light winds from the western quadrant which is believed to be the main cause of noise criteria exceedances during the audit period, has been recommended to reduce the risk of noise criteria exceedances in the next few years.

3.7.2 Air quality and greenhouse gas emissions

Air quality and greenhouse gas emissions data were generally presented in a consistent and logical manner. Multi-year summaries were provided where data were available, allowing for analyses of patterns in the data, anomalies, and comparison to criteria.

There were 12 odour complaints received during the audit period which related to potential spontaneous combustion. There were two odour complaints in 2020, seven in 2021 and three in 2022. There were no odour complaints made in 2023 up to the end of the audit period. All complaints were investigated and documented by MACH Energy. Some appeared to be linked to potential spontaneous combustion and in some cases, odour or heated material was not identified.

There were no exceedances of applicable criteria for PM_{10}, $PM_{2.5}$ or TSP during the audit period. Measured annual average TSP, PM_{10} and $PM_{2.5}$ concentrations decreased from 2020 with the exception of PM_{10} at monitoring APF2, which increased slightly in 2022 despite remaining well below the criterion. Dust deposition levels also decreased from 2020 and were under the criterion for the audit period with the exception of dust gauges D7, and D8[1].

Greenhouse gas emissions increased by 44,962 t (or 6.3%) CO_2-e in 2022 compared to 2021. It is noted however that the amount of ROM coal mined increased by 516,506 t in 2022.

3.7.3 Biodiversity management, rehabilitation and offsetting

The audit of biodiversity management and rehabilitation largely included a review of activities undertaken in accordance with the Biodiversity Management Plan and Rehabilitation Management Plan (RMP), as required by DA 92/97. It is noted that no biodiversity offsets are required under DA 92/97, offsets are required under the Environmental Protection and Biodiversity Conservation Act (EPBC Act) approval 2011/5796. EPBC Act approval 2011/5796 is excluded from the scope of this audit.

No incidents or complaints were noted within the 2020, 2021 or 2022 Annual Reviews in relation to biodiversity management and rehabilitation. It is noted that the Resource Regulator identified MPO to have a leading practice in the construction quality assurance system for site rehabilitation in August 2021, as further described in Section 3.3.

[1] The Annual Reports state that D7 is located within he MPO boundary and between the MPO and a neighbouring mine and is therefore not used to assess compliance or to represent residences in the area. D8 is representative of the nearest residences which are subject to acquisition and therefore under the Development Consent, do not need to comply with the air quality criteria.

The audit determined that biodiversity management was undertaken in accordance with DA 92/97, in which systems established under the BMP, namely the ground disturbance procedure (GDP) and pre-clearance procedure, had been effectively implemented. The site inspection also sighted evidence of the salvage and relocation of features for habitat enhancement. The site inspection did identify that weed management across MPO could be improved. This has been recognised by MPO who have directly employed a weed management officer to improve weed management outcomes.

A review of the relevant Annual Reviews determined that rehabilitation has generally occurred in accordance with DA 92/97 and the RMP during the audit period. The site inspection sighted evidence of progressive rehabilitation activities and established rehabilitation currently under management. Weed management was identified as potential risk to the ongoing success of rehabilitation. A number of drainage channels within the rehabilitated areas were observed to be eroded.

3.7.4 Visual

During the audit period, visual screening along the Stage 2 rail infrastructure alignment was completed and progressive rehabilitation of the eastern out of pit emplacement area was undertaken. A total of 16 complaints were documented in 2021 in relation to visual impacts, whereas two were received during 2022 which demonstrates a reduction in visual impacts experienced by the community in proximity of MPO.

3.7.5 Water

i Water usage

MPO hold a series of water access licences (WAL) which are allocated under the *Water Sharing Plan for the Hunter Unregulated and Alluvial Water Sources 2009*.

The water reporting period is between 1 July – 30 June. As the water reporting period differs from the IEA period, water usage has been assessed based on the water take data reported in the 2021 and 2022 Annual Reviews.

The Annual Reviews reported that all water take associated with the operation of MPO has been below the allocated water entitlements during the audit period.

ii Water management

Water management is undertaken in accordance with the MPO Water Management Plan. During the site inspection, EMM observed a number of water storages, pipelines, pumps and sediment control structures consistent with the Water Management Plan and DA 92/97.

iii Water discharge

As noted in Appendix A, there were seven water discharge events which occurred during the audit period following periods of heavy rain. All events were reportable incidents and were reported to DPE and the EPA following the event. As required by the Water Management Plan, water quality sampling was undertaken during the events, with water quality showing negligible changes in the release water in pH, EC and TSS.

Regular inspections were implemented and undertaken prior to and during forecasted heavy rainfall events, in addition to regular third party inspections by a certified professional in erosion and sediment control (CPESC).

3.7.6 Waste

Waste is managed in accordance with the MPO Waste Management Plan. Waste management was sighted during the site inspection which identified a small hydrocarbon spill identified around workshop and refuelling bay. There were a number of 1,000 L pods located around the CHPP and MIA laydown areas (some full, some mostly empty) with oil and other chemicals. A recommendation (REC 8) has been made to ensure all chemicals/hydrocarbons are appropriately stored in bunded areas.

EMM sighted numerous waste and recycling bins around the site which were observed to be in order. There was no evidence of cross contamination of recyclable materials (refer to Photograph F.13 and F.14 in Appendix F).

Tyre disposal is generally in accordance with EPL 20850. It is recommended (REC 19) that the waste management requirements of Condition O6.1 be included in the Thiess Mount Pleasant Handling and Disposal of Waste Procedure.

3.7.7 Aboriginal cultural heritage

Aboriginal cultural heritage is managed in accordance with the Aboriginal Heritage Management Plan.

As reported in the 2022 Annual Review, suitable arrangements to provide appropriate long-term security for the Aboriginal Heritage Conservation Area (Areas B and C) are ongoing and include liaison with Heritage NSW and the RAPs for an alternative artefact keeping place and proposing Aboriginal Cultural Heritage survey of select biodiversity offset areas to potentially identify alternatives.

EMM observed Aboriginal heritage sites located at MPO to be fenced off and protected (refer to Photograph F.38 and F) during the site inspection.

In accordance with the obligations of the DA 92/97 Statement of commitments, a Historic Heritage Management Plan was prepared as part of the MOD 4 Construction Environmental Management Plan (CEMP) for the work undertaken with the Stage 2 rail project. All works were undertaking in accordance with the CEMP to ensure the appropriate management of the Overton Orchard and Race Track.

3.8 Consultation outcomes

Consultation was completed with the government agencies and the community consultative committee listed in Section 2.6. A summary of the consultation is included in Table 3.5, with evidence of consultation attached as Appendix C.

Table 3.5 Consultation

Agency/CCC member	Date	Method	Aspects/issues raised	Response
DPE	20/2/2023	Email	Email from Lead Auditor requesting advise of other parties or agencies who should be consulted to assist in informing the scope of the IEA.	Response received from DPE on 21/2/2023 – see below.
	21/2/23	Email	The following comments were received from DPE: 1. The auditor should consult with the following parties or agencies in the development of the IEA scope: • NSW Department of Regional NSW, Mining, Exploration and Geoscience • NSW Department of Planning and Environment, Biodiversity Conservation Division • NSW Department of Planning and Environment, Water Division • NSW Environment Protection Authority • NSW Resources Regulator • Muswellbrook Shire Council • Community Consultative Committee.	EMM issued letters to the below agencies, council and CCC seeking input to the IEA scope on 1 March 2023: • NSW Department of Regional NSW, Mining, Exploration and Geoscience • NSW Department of Planning and Environment, Biodiversity Conservation Division • NSW Department of Planning and Environment, Water Division • NSW Environment Protection Authority • NSW Resources Regulator • Muswellbrook Shire Council • Mount Pleasant CCC. Response received from MEG, BCD, Resource Regulator, MSC and two members of the CCC. All responses are summarised within this table. Responses were not received from DPE Water or the EPA. It is noted that the MEG referred the request for IEA input to the Resource Regulator and provided no further matters for consideration.

Table 3.5 Consultation

Agency/CCC member	Date	Method	Aspects/issues raised	Response
DPE	21/2/23	Email	**2. Greenhouse Gas Emissions** • A comparison of the actual annual greenhouse gas emissions generated during the audit period against the predictions in the environmental assessment. • An assessment of the adequacy of the measures employed by the site during the audit period to reduce greenhouse gas emissions.	• Section 5.4.3 of the 2021 and 2022 Annual Reviews compare GHG emissions for that financial year against those presented in MOD 3 EA (Mount Pleasant Operation Mine Optimisation Modification Air Quality and Greenhouse Gas Assessment [TAS, 2017]). GHG emissions increased by approx. 44,962 t CO2-e in 2022. It's noted that ROM increased in 2022 by approx. 515,000 t. MOD 3 EA 2021 predicted = 247,851 t CO_2-e vs actual of 711,080 CO2-e MOD 3 EA 2022 predicted = 232,159 t CO_2-e vs actual of 756,041 CO2-e The Annual Review reports for 2021 and 2022 state that *'The differences in the fugitive emission estimates between TAS (2017) and MACH's NGERS reporting arise primarily due to differing methodologies and associated emission factors being employed under the differing regulatory systems (i.e. NGERs reporting under the Commonwealth National Greenhouse and Energy Reporting Act 2007 using NGA default emission factors, and environmental assessment under the NSW Environmental Planning and Assessment Act 1979 using site-specific emissions data), plus periodic revisions to the GWP of methane, which is a large component of the fugitive emissions from coal mines*.' **Recommendation:** the totals in the GHG emissions tables presented in the Annual Review reports are provided. • The 2022 Annual Review report and AQGHGMP lists the following measures: – Optimising the design of haul roads to minimise the distance travelled between the pit and the CHPP. – Minimising the re-handling of material (i.e. coal, overburden and topsoil). – Maintaining the fleet in good operating order. It is noted that GHG emissions increased in 2022 (see above). Other measures to reduce GHG emissions may include: – Investigate the option to source all purchased electricity from certified renewable electricity providers. – Where feasible, equipment compliant with a more recent emission standard than USEPA Tier 2 will be sourced. – Where feasible, electricity-powered mining equipment will be adopted. – Haul roads will be routinely maintained to reduce truck tyre rolling resistance.

Table 3.5 Consultation

Agency/CCC member	Date	Method	Aspects/issues raised	Response
				– Haulage routes will be optimised to reduce haulage distances wherever feasible. – All equipment will be routinely serviced to maintain manufacturers' emission. specifications. – Performing pre-start inspections at each shift on mobile plant and vehicles. – Idling of diesel equipment will be minimised wherever feasible. – Low-sulfur diesel fuels and lubricants will be used where feasible. – Tracking electricity bills and fuel usage. – Investigate the feasibility of installing solar panels at the project site.
DPE	21/2/23	Email	**3. Noise Management** Adequacy of noise monitoring locations and mitigation measures.	Location N-AT1 represents closest receivers to the south-west with a criterion of 43 LAeq. Receiver 258a is further from MPO with a criterion of 40 LAeq. The NMP does not justify the selected location and increased criterion. Location N-AT2 represents closest receivers to the north-west with a criterion of 36 LAeq. Receiver 272 is a similar distance from MPO with a criterion of 36 LAeq. This location is appropriate. Location N-AT3 represents closest receivers to the north-east with a criterion of 41 LAeq. Receiver 140a is nearby with a criterion of 39 LAeq. The location appears appropriate, after having been recently adjusted, however the NMP does not justify the increased criterion at this location. Location N-AT4 represents closest receivers to the south-east with a criterion of 42 LAeq. Receiver 74 is nearby with a criterion of 42 LAeq and Receiver 77 is slightly further from MPO with a criterion of 41 LAeq. This location is appropriate. Location N-AT5 represents closest receivers near Racecourse Rd with a criterion of 40 LAeq. Racecourse Rd receivers, further from MPO, are in NAG 8 with a criterion of 39 LAeq. This location is adequate, or can optionally be relocated to Racecourse Rd closer to receivers with a criterion of 39 LAeq. Location N-AT6 represents closest receivers to the far south-west with a criterion of 35 LAeq. Closest receivers are outside all NAGs and are classified as 'all other land' with a criterion of 35 LAeq. Monitoring reports indicate MPO is rarely audible at this location, therefore ongoing monitoring may not be justified and this location can most likely be omitted.

Table 3.5 Consultation

Agency/CCC member	Date	Method	Aspects/issues raised	Response
				Recommendation: Amend the NMP to justify the location and criteria for N-AT1 and the criteria at N-AT3. Consider omitting N-AT6 from the NMP and future noise surveys.
DPE	21/2/23	Email	**4. Surface Water Management** Adequacy of measures undertaken to minimise the occurrence and impact of unplanned dirty water discharge.	During site inspection EMM sighted a number of sediment control structures including SD1, SD3, SD4 and ED2 among others. EMM sighted daily inspection sheets ensuring structures were adequately maintained. EMM sighted corrective actions in response to daily inspections including dewatering of sediment dams and removal of sediment laden within dams to maintain adequate capacity. In addition, EMM sighted early works currently in execution phase to reduce the risk of dirty water discharge by means of installation of water height telemetry and camera network. Site confirmed that dams have been constructed in accordance with approval requirements and accepted engineering principles. EMM noted ED2 whilst not strictly identified as a sediment dam does provide protection from unplanned dirty water discharges below the eastern emplacement area. It is recommended ED2 be managed in accordance with other sediment structures at MPO. Namely ensuring adequate float remains within ED2, reflective of the catchment. Furthermore, it is recommended telemetry proposed for other sediment dams be installed at ED2.
BCD	1/3/2023	Email	Email from Lead Auditor requesting any advice regarding any areas of compliance or environmental management at MPO, that should be of particular focus and included within the IEA scope.	Response received from BCD on 9/3/2023 – see below.

Table 3.5 Consultation

Agency/CCC member	Date	Method	Aspects/issues raised	Response
BCD	9/3/2023	Email	The following comments were provided from BCD: • An assessment of what contingency measures are available to minimise impacts of actions under the current consent to *Delma vescolineata* animals and habitat, and recommended management actions for the 'Mount Pleasant Operation Biodiversity Management Plan' for when it is next revised. BCD notes that the current Biodiversity Management Plan is dated 31 October 2019 and that Delma impar was not considered for this project, but has since been found on site during the assessment for the adjacent Mount Pleasant Optimisation Project. • An assessment of weed control works – is herbicide spraying and manual removal sufficient to control weed species 'to an appropriate level', particularly *Galenia pubescens*, Boxthorn, Mother of Millions, Prickly Pear and St Johns Wort which have been found on site (Section 5.5.2 of the 2020 and 2021 Annual Reviews). If not, what other weed control actions would EMM recommend? BCD notes that the establishment of such exotic species may hamper the realisation of some rehabilitation goals.	• *Delma vescolineata* is not listed in NSW and there is no legal requirement for MPO to manage this species within the current approval. MPO may wish to undertake additional management actions for this species, but would not be required to do so until such time as they revise the BMP for the Optimisation Project. Noting this, it is considered that *Delma vescolineata* is not within the scope of this audit, which is to "…assess the environmental performance of the development and whether it is complying with the requirements in this consent…". • Rehabilitation works at MPO have been ongoing since 2018 with monitoring undertaken from 2019. Rehabilitation is in the early phases of development. Monitoring indicates that weed cover across rehabilitation areas is quite high (2.9–76.6%) with high-threat weed cover, which presents a significant risk to achieving rehabilitation objectives, ranging from 0.2–61%. Complete removal of weeds is an unachievable objective; management should focus on managing high-threat weeds to ensure rehabilitation area tracking towards analogue sites.
DPE Water	1/3/2023	Email	Email from Lead Auditor requesting any advice regarding any areas of compliance or environmental management at MPO, that should be of particular focus and included within the IEA scope.	No response has been received from DPE Water.
EPA	1/3/2023	Email	Email from Lead Auditor requesting any advice regarding any areas of compliance or environmental management at MPO, that should be of particular focus and included within the IEA scope.	No response has been received from DPE Water.

Table 3.5 Consultation

Agency/CCC member	Date	Method	Aspects/issues raised	Response
MEG	1/3/2023	Email	Email from Lead Auditor requesting any advice regarding any areas of compliance or environmental management at MPO, that should be of particular focus and included within the IEA scope.	Email from MEG to Resources Regulator deferring responsibility on 2/3/2023.
MSC	1/3/2023	Email	Email from Lead Auditor requesting any advice regarding any areas of compliance or environmental management at MPO, that should be of particular focus and included within the IEA scope.	Response from MSC received on 1/3/2023 – see below.
MSC	1/3/2023	Email	The following comments were provided by MSC: 1. Consider inclusion of *Risk Levels for Non-Compliances* in accordance with DPE's IEA Guidelines (2015)? This makes it easier for the community to interpret the outcomes of the IEA.	As required by the DPE, the IEA and audit report has been conducted in accordance with the current guidelines *Independent Audit – Post Approval Requirements* (DPE, May 2020). Section 3.8 of the 2020 guidelines state that the terms compliant, non-compliant and not triggered must be used. No other terms may be used to describe the compliance status. The terms partial compliance, partial non-compliance, not verified or administrative non-compliance or other similar terms must not be used.
MSC	1/3/2023	Email	2. Provide a review and summary of the process for temporary rehabilitation for areas that are not going to be rehabilitated for some time (assumed to be six months).	Temporary rehabilitation is currently and will continue to occur in accordance with the Rehabilitation Management Plan (RMP). Landform establishment will occur in accordance with Section 6.2.3 of the RMP. Temporary rehabilitation will then be seeded with a temporary cover crop species in accordance with Section 6.2.4 of the RMP. Temporary rehabilitation was sighted during the site inspection at the eastern emplacement area.

Table 3.5 Consultation

Agency/CCC member	Date	Method	Aspects/issues raised	Response
MSC	1/3/2023	Email	3. DA 92/97 does not include the requirement to prepare a Historic Heritage Management Plan (other than for MOD4 construction works). However, the MTP EIS (1997) for DA 92/97 lists the following items to be impacted by blasting: • Rosedale Cottage, Kayuga • Negoa Homestead • Old Cemetery, Kayuga • Kayuga 1827 homestead • Bengalla homestead • Overdene homestead. Section 10.5.2 of the EIS states that the following safeguards will be used to protect impacted items: • Surveying buildings to assess their condition and ability to withstand expected maximum levels of vibration and overpressure. • Subject to the above, temporary reinforcement of buildings to minimise damage induced by blasting. • Regular monitoring. • Restoration of damage once impacts are within accepted standards. Please provide commentary on works being undertaken to address the above.	MPO confirmed since the environmental assessment completed to inform DA 92/97, blast design parameters have been adopted (maximum blast MIC 1,600kg) ensuring blasting impacts experienced at noted historic heritage items would comply with the conservative building damage vibration criteria of 10 mm/s and airblast overpressure criterion of 130 dBL, consistent with DA 92/97. Negating the requirement for ongoing monitoring. Noting blast monitors located at Negoa homestead and Kayuga, sample of blast data was sighted by audit team confirm results being below relevant limits. Of the noted buildings MPO owns the Negoa Homestead only, which is actively managed to ensure the building is maintained. EMM sight records of structural inspections, pest management, building repairs and restoration works. Site confirmed that temporary reinforcement of buildings not triggered. Blasting impacts were appropriately mitigated to avoid impacts to historic heritage structures. Ongoing monitoring is no longer required, in appreciation of blast design criteria. Negoa Homestead actively managed under MPO property portfolio. All other noted properties not owned by MPO with conservation management the responsibility of the associated owner. Temporary reinforcement of buildings not triggered.
MSC	1/3/2023	Email	4. Review the adequacy of the automated dust suppression spray systems at the ROM hopper, conveyor transfer points and product stockpiles	The ROM hopper sighted with water sprays actively managing dust from loader operations. Water cart relied upon to manage dust on ROM pad. Conveyor transfer points – conveyors enclosed no dust visible at transfer points at time of site inspection. Product stockpile – water sprays actively managing dust at stockpiles. No dust visible at time of site inspection.

Table 3.5 Consultation

Agency/CCC member	Date	Method	Aspects/issues raised	Response
MSC	1/3/2023	Email	5. Clarify if there has been anytime when there has been no access to the meteorological data or PM10 data from the Muswellbrook NW Upper Hunter Air Quality Monitoring Network monitoring station. If so, clarify the frequency	The Muswellbrook NW Upper Hunter Air Quality Monitoring Station is part of the New South Wales Air Quality Monitoring Network managed by the New South Wales Government. Access to this information is not influenced by MACH Energy, as such this is considered to be outside the audit scope.
MSC	1/3/2023	Email	6. Section 10.3.9 of the EIS (1997) proposes the following: "monitoring of demand for temporary accommodation". Please confirm whether MACH Energy are monitoring the demand for temporary accommodation.	The Mount Pleasant Optimisation Project – Social Impact Assessment dated December 2020, completed during the audit period contains an assessment of temporary accommodation. Internal documentation relied upon to inform business cases for future project sighted inclusive of an assessment of temporary accommodation.
Resources Regulator	1/3/2023	Email	Email from Lead Auditor requesting any advice regarding any areas of compliance or environmental management at MPO, that should be of particular focus and included within the IEA scope.	Response received from Resources Regulator on 3/3/20923 – see below.

Table 3.5 Consultation

Agency/CCC member	Date	Method	Aspects/issues raised	Response
Resources Regulator	3/3/2023	Email	The following comments were provided from Resources Regulator: Thank you for your email and letter dated 1 March 2023 requesting consultation on the independent environmental audit to be undertaken of the Mount Pleasant Coal Mine which is covered by the following mining leases: • ML1645 (1992) • ML1713 (1992) • ML1708 (1992) • ML1750 (1992) • ML1709 (1992) • ML1808 (1992). The independent environmental audit is required to assess compliance against the relevant environmental management conditions of the mining leases up to 1 July 2022, including implementation of the mining operations plan for the site. From 2 July 2022, the independent environmental audit should provide an assessment of compliance with the requirements of Schedule 8A Standard conditions of mining leases, Part 2 Standard conditions, as set out in the Mining Regulation 2016. It is noted that the six mining leases that comprise Mount Pleasant Coal Mine have been approved by the Regulator to be treated as a single lease for the purposes of Part 2 of Schedule 8A. The audit should note observations where rehabilitation procedures, practices and outcomes represent best industry practice. It would be appreciated if a copy of the final audit report could be sent to the Regulator at nswresourcesregulator@service-now.com upon completion of the audit.	This has been assessed under the Mining Leases audit table – Table A.4 of Appendix A.

Table 3.5 Consultation

Agency/CCC member	Date	Method	Aspects/issues raised	Response
CCC Members	21/2/2023	Email	Email from MPO to CCC Members requesting any aspects they would like addressed in the IEA.	Two CCC member responded – see below.
Llewellyn Bates – CCC Member	5/3/2023	Email	The following comments were provided by Llewellyn Bates: Having read the letter from EMM, and with reference to paragraph 2 – I would like the Fines Emplacement Area to be of particular focus and included within the IEA scope.	The fines emplacement area was inspected as part of the audit site visit. Works considered consistent with approval. Identified sediment erosion controls, stabilisation works and established cover crops on temporary disturbed areas. Noted that dumped overburden behind the Fines Emplacement area should be seeded to reduce erosion risk. MPO were aware of this.
Anthony Lonergan – CCC Member	22/2/2023	Email	The following comments were provided by Anthony Lonergan: I would like the auditors to look at a couple of issues: 1. I don't know the numbers but there has been a significant increase in the number of air quality alerts since it has become dryer. I think it deserves a look in relation to Muswellbrook. 2. The erosion on the eastern emplacement area is not acceptable in my mind. The emplacement slope is very steep. On the CCC tour we were told it would be dealt with at some point, but has not been yet. 3. Weed management on site and in the adjacent land needs to be better managed.	1. Environmental performance specifically in regards to air quality and greenhouse gas emissions is discussed in Section 3.7.2. 2. Erosion of the eastern out of pit emplacement area was inspected during the site inspection. A number of drainage lines within the rehabilitated area were noted as being eroded. EMM have included a recommendation in Chapter 4 and Appendix A to address the erosion issues identified during the site visit. MPO representatives were aware of erosion within the area and identified corrective measures proposed for the area. 3. It was noted during the site visit that weed management activities had fallen behind over the past 12 months due to difficulties in engaging contractors. This is a known issue. MPO have recently appointed a full-time contractor and are hoping to undertake additional work to get weed management back on track.

3.9 Complaints

A summary of the complaints received over the IEA period are outlined in Table 3.6.

Table 3.6 Summary of complaints

Aspect	2020 (after 27/2/2020)	2021	2022	2023 (up to 8/3/2023)
Noise	51	71	28	1
Air quality	14	19	1	2
Blasting	19	5	2	0
Lighting	14	15	1	3
Spontaneous combustion	2	6	3	0
Other	0	2	0	0

All complaints were satisfactorily followed up in accordance with the complaints management strategy outlined in Section 5.4 and Figure 6 of the Environmental Management Strategy (EMS).

In accordance with Schedule 5, Condition 11 of Development Consent DA 92/97, a summary of all complaints are uploaded to the MPO website.

3.10 Incidents

Table 3.7 provides a summary of the environmental incidents which occurred during the Audit period.

All incidents were reported in accordance with Schedule 5, Condition 7 of Development Consent DA 92/97 and Condition R2 and R3 of EPL 20850.

Table 3.7 Incidents

Date	Incident	Action
15/6/20	**Blast fume event** A blast fume event occurred after a blast with three complaints received after the blast. Post firing, a visible fume plume was emitted from the blast. The fume was classified as level 3 at 500 m from the blast location and as a level 2 as the emission dissipated towards the site boundary in a south-easterly direction.	MPO completed an investigation into the cause of the incident and reported the incident to the DPE and EPA. The mining contractor amended key pre-blast procedures to reduce the potential for a similar event to occur in the future. This included adjustment of the fume probability prediction model, additional surveillance cameras/drones and updates to the blasting Trigger Action Response Plan (TARP). MPO received and paid a penalty infringement notice for the incident.
21/1/21	**MOD 4 out of hours construction works** As part of the MOD 4 construction works located outside of the mining lease boundary, a concrete pour continued past 6:00 pm to ensure the engineering structural integrity of the MOD 4 rail loop viaduct pillar. No heavy vehicles (including the concrete agitator truck) were working after 6:00 pm. No real-time noise alarms or noise complaints received during the event. No adverse noise impacts to the surrounding community were observed and no environmental harm occurred due to the activity.	The incident was reported to DPE on 22/1/2021. MPO completed an investigation of the incident and submitted the investigation report to DPE on 5/2/2021. A warning letter was issued by DPE to MPO on 19/2/2021. MPO have since implemented additional measures to reduce the risk of reoccurrence of unauthorised out of hours works. An Out of Hours Work Protocol (OHWP) was approved by DPE on 15/3/2021.
8/3/21	**Water discharge event** Intense rainfall occurred (14.8 mm in a 50 minute period) and an environmental inspection was completed immediately following the rainfall event which identified a small section of erosion and sediment controls that had been impacted by the event. There was evidence that runoff had travelled downstream through an active construction area, into the Wybong Road reserve and through further sediment controls before reporting to the Wybong Road swale drain where the sediment ceased. No environmental harm occurred and no complaints were received.	MPO completed an investigation into the cause and reported the incident to the DPE and EPA. Reinstatement of erosion and sediment controls were undertaken on the same day. Regular inspections of erosion and sediment controls were implemented and undertaken prior to and during forecasted heavy rainfall events, in addition to a regular third party inspections by a CPESC.
31/3/21	**MOD 4 out of hours construction works** As part of the MOD 4 construction works located outside of the mining lease boundary, a concrete pour occurred past 6:00 pm. This occurred prior to notifying the nearby residents, as required by the OHWP. Attended noise monitoring was undertaken at two representative locations during the works, which indicated that the construction noise levels complied with all relevant consent and EPL conditions. No environmental harm occurred and no complaints were received.	MPO completed an investigation into the cause of the incident and reported the incident to the DPE. The OHWP, including the requirement for notification, was recommunicated to the team.

Table 3.7 Incidents

Date	Incident	Action
8/6/21	**Water discharge event** Intense rainfall occurred (28.3 mm) which resulted in two separate discharges of sediment-laden water from MOD 4 construction area into Wybong Road swale drains, where it ceased. The water discharge was confined to the Wybong Road upgrade construction area and road reserve within the MPO Development Consent DA 92/97 boundary. There were no adverse impacts to the surrounding community or any environmental harm due to the two water discharges. No complaints were received.	MPO completed an investigation into the cause and reported the incident to the DPE and EPA. Reinstatement of erosion and sediment controls were undertaken as soon as practicable. Water quality monitoring was undertaken in accordance with the Water Management Plan. Regular inspections of erosion and sediment controls were implemented and undertaken prior to and during forecasted heavy rainfall events, in addition to regular third party audits by a CPESC. DPE confirmed in writing on 9/7/2021 that no further action was required.
11/6/21	**Elevated EC surface water levels** Elevated EC readings at surface water monitoring site W17 was recorded on three consecutive monitoring rounds in April, May and June 2021.	MPO completed all steps outlined in Section 3.1.1 of the Surface and Ground Water Response Plan (Appendix 5 of the WMP). The investigation indicated that the elevated EC levels at site W17 was not attributed to MPO activities. DPE confirmed in writing that no further action was required.
27/8/21	**Noise exceedance** Attended monitoring identified a sustained exceedance (measurements at 00:18 and 00:54) of the $L_{A1(1\ minute)}$ criterion at monitoring location N-AT4. No environmental harm nor known impacts on the amenity of nearby residences occurred.	MPO notified the DPE and EPA of the incident on 1/9/2021. MPO also notified (in writing) the affected landowners and tenants of the potential exceedance. MPO followed the NMP procedure and modified operations upon notification of the exceedance. MPO completed additional $L_{A1(1\ minute)}$ monitoring rounds closer to the affected landowners and tenants during September – November 2021. A warning letter was received from DPE for non-compliance on 24/11/2021. The outcomes of the additional monitoring were communicated to DPE and the affected landowners and tenants in December 2021. No notification from DPE was received after the correspondence letter in December 2021.

Table 3.7 Incidents

Date	Incident	Action
12/11/21	**Water discharge event** Intense rainfall occurred (41mm in a 5 hour period) which resulted in a discharge of sediment-laden water from the Rail 2 Project Area into Wybong Road swale drains. The water discharge was confined to the Wybong Road upgrade construction area and road reserve within the MPO Development Consent DA 92/97 boundary.	MPO completed an investigation into the cause and reported the incident to the DPE and EPA. Water quality sampling was undertaken during the event, with water quality showing negligible changes in release water in pH, EC and TSS. Reinstatement of erosion and sediment controls were undertaken as soon as practicable (same day). Regular inspections of erosion and sediment controls were implemented and undertaken prior to and during forecasted heavy rainfall events, in addition to regular third party audits by a CPESC. There were no adverse impacts to the surrounding community or any environmental harm due to the water discharge. DPE confirmed that no further action was required on 7/12/2021.
8/12/21	**Water discharge event** Intense rainfall occurred (24.2 mm in a 30 minute period with a total of 47.8 mm in a 9 hour period) causing four sediment basins (SD 4, 6 and 7 and ED 2) to spill water offsite. The initial investigation indicated that no environmental harm occurred. No complaints were received.	MPO completed an investigation into the cause and reported the incidents to the DPE and EPA. Water quality sampling was undertaken during the events, with water quality showing negligible changes in release water in pH, EC and TSS. MPO completed actions to mitigate the impact of discharges prior to the rainfall event, including regular inspections and dewatering of sediment dams through pumping to the mine water system. Immediate actions following the incidents included pumping of the dams to reduce the quantity and duration of the discharge event. Pumping had already commenced at 3 of the 4 dams prior to the event. Regular inspections of erosion and sediment controls were implemented and undertaken prior to and during forecasted heavy rainfall events, in addition to regular third party inspections by a CPESC. Final outcomes of the investigation include increased capacity of the dams and increased pumping capacity.
9/12/21	**Water discharge event** Intense rainfall occurred (47.8 mm with a 1 in 10 year event triggered) causing four sediment basins SD 4, 6 and 7 and ED 2 to spill water offsite. The initial investigation indicated that no environmental harm occurred. No complaints were received.	

Table 3.7 Incidents

Date	Incident	Action
8/3/22	**Water discharge event** Discharge of sediment laden water from SD 1, 4, 6 and 7, and TSB 2 as the surface water run off to the dams exceeded the dam's respective design capacities.	MPO completed an investigation into the cause and advised DPE of the non-compliance on 15/3/2022. During the incident, MPO pumped water from the sediment dams to the mine water system to reduce the volume and duration of the overflow. DPE confirmed in writing on 20/4/2022 that no enforcement action would be taken as the incident resulted in minimal impact on the environment and remedial actions were in place to minimise the recurrence and impact of similar incidents. In accordance with Schedule 5, Condition 4, of the Development Consent DA 92/97, the WMP was updated on 24/10/2022 following completion of an internal review.
6/5/22	**Spontaneous combustion event** A complaint was received in relation to spontaneous combustion. The complaint received directly to the External Relations Manager's mobile phone. The area in question was continually inspected, with dozers tasked to cover the heated area with inert material. The area has since been covered and the event eliminated.	Upon receiving the complaint, the operation was inspected with an area of heated material identified on the Pit A low wall. During the inspection it was determined that accessing the heated material was a high-risk activity and a detailed risk assessment was conducted to work above a large body of water. Upon completion of the risk assessment, a dozer was used to cut down the low wall to cover the heated material with inert material. This occurred on 10/5/2022. Heated material within the active working areas will continue to be managed in accordance with the Spontaneous Combustion Principal Hazard Management Plan.
2/9/22	**Blast overpressure exceedance** An elevated blast overpressure reading was recorded at monitoring site B-VOA after a blast event. Although an elevated reading did occur at monitoring site B-VOA, the elevated overpressure result was not an exceedance of its operating condition in either the Development Consent DA 92/97, EPL 20850 or the BMP, as there are no privately owned residences in the area of B-VOA. There were no community complaints as a result of the incident. No blast fume events occurred during the reporting period.	MPO completed an investigation into the cause and reported the incident via email on the same day to DPE and EPA. A report was provided on 9/9/2022. From the investigation, MACH Energy notes that the elevated overpressure result is not an exceedance of its operating condition in either the Development Consent DA 92/97, EPL 20850 of the BMP, as there are no privately owned residences in the area of B-VOA. DPE advised on 30/9/2022 that MPO should review blast procedures. An EPL 20850 Variation occurred on 28/2/2023 to remove blast monitoring point 12 (B-VOA). Blast procedures were reviewed, and no changes were necessary as the results are used primarily for information and risk management purposes. Residential receivers to the north and east have existing monitors in place.

Table 3.7 Incidents

Date	Incident	Action
21/10/22	**Water discharge event** A spillway discharge was observed from SD 4. A possible 1 in 5 year event was triggered, with MPO receiving 9.2 mm of rain within a 5–10 minute period. The receiving environment is the Kayuga Road Culvert and Hunter River Flood Catchment.	MPO completed observation and field measurements of water quality during the discharge event at all dams. The results of the preliminary investigation indicate there were no adverse impacts to the surrounding community or any environmental harm due to the water release. MPO commenced an investigation into this event and provided outcomes to EPA on 28/10/2022. From the investigation, field observations during the release event, laboratory analytical data, and Hunter River Water Quality/flow levels at the time of the rainfall event provide supporting evidence to indicate there was no adverse impact to the local community or receiving environment because of the water release. The DPE requested a review of all sediment dam discharges a spart of this IEA. This is discussed in Section 2.6.
17/11/22	**Noise exceedance** Attended monitoring identified a sustained exceedance (at 00:11 and 00:42) of the $L_{A1(1\ minute)}$ criterion at N-AT4. Track noise from MPO at N-AT4 caused exceedances of the $L_{A1,1minute}$ criterion by up to 16 dBA. Elevated $L_{A1(1\ minute)}$ results were also measured at N-AT5 (49 dBA). MACH Energy considers that the duration of the non-compliance was short and not indicative of a sustained non-compliance with the relevant criteria. Additional attended noise monitoring throughout winter 2022 has indicated continued compliance, in addition to the regular compliance monitoring conducted and reported, and this outcome is supported by a reduction in complaints received year-to-date. No complaints were received in the night-time period of the elevated reading and no complaints were received from residents within the potentially impacted noise assessment group (NAG 7) in which N-AT4 is located.	Additional attended monitoring was commissioned and subsequent readings at N-AT5 returned measurements below the relevant noise criteria. As a result of the noise exceedance event at N-AT4, consultation with the affected landowners and tenants was conducted. In addition, MPO completed: • extended attended noise monitoring for up to three months to include measurements closer to the area of residence most likely to be impacted • notification (in writing) the affected landowner(s) and tenants of the potential exceedance and extended monitoring period • communication of results of the extended noise monitoring period (in writing) to the DPE and affected landowners and tenants following completion of the additional monitoring. MPO followed the NMP procedure and no environmental harm nor known impacts on the amenity of nearby residences occurred.

3.11 Actual verses predicted environmental impacts

The 2020, 2021 and 2022 annual reviews were reviewed in order to undertake an assessment of the compliance between actual and predicted impacts documented in relevant environmental assessments, including an assessment of the physical extent of the development in comparison with the approved boundary and any potential off-site impacts of the development required under the EP&A Act.

The annual reviews confirm the physical extent of MPO lies within the approved boundary.

Section 3.10 outlines environmental incidents which occurred during the audit period, as outlined in annual reviews. The noise, water and blast incidents, outlined in Section 3.910, demonstrate actual off-site impacts have been identified in excess of predicted environmental impacts. Section 3.15 confirms corrective actions taken by MPO to reduce the risk of reoccurrence. Recommendations are made within this audit, see Chapter 4, to address any further non-compliances identified as part of this audit.

It is noted that DPE requested a comparison of the actual annual greenhouse gas emissions generated during the audit period against the predictions in the environmental assessment be undertaken. The outcomes of this assessment are outlined in Section 3.8.

3.12 Site inspection

Areas inspected during the site inspection are identified within Section 2.5, with evidence collected through the site inspection summarised below.

i MIA

Inspection of the MIA was undertaken by the lead auditor and assistant auditor under escort by MPO representatives. The inspection included the site offices, carpark, workshop, wash down bays, store and fuel bay. The inspection demonstrated that the MIA was maintained generally in accordance with approved management plans, being well organised and positive segregation of waste streams. Hydrocarbon and chemical storage vessels were identified outside appropriately bunded areas and hydrocarbon spills were evident.

Photographs taken during the inspection of the MIA area available within Appendix F, specifically Photographs F.76 to Photograph F.107.

ii CHPP and associated infrastructure

Inspection of the CHPP was undertaken by the lead auditor and assistant auditor under escort by MPO representatives. The inspection included the Run of Mine (ROM) pad, ROM hopper, CHPP and associated laydown areas.

The inspection demonstrated that the CHPP and associated infrastructure was maintained generally in accordance with approved management plans, being well organised and maintained. Hydrocarbon and chemical storage vessels were identified outside appropriately bunded areas. Dust controls were in place including water cart and sprays at the ROM pad and ROM hopper at the time of inspection.

Photographs taken during the inspection of the CHPP and associated infrastructure area available within Appendix F, specially Photograph F.61 and Photograph F.69.

iii Stage 1 rail infrastructure area

Inspection of the stage 1 rail infrastructure area was undertaken by the lead auditor and assistant auditor under escort by MPO representatives. The inspection included viewing the area from the Bengalla Road bridge and the Wybong Road bridge.

The inspection demonstrated that the stage 1 rail infrastructure had been removed, as per DA 92/97, and adequately rehabilitated to the satisfaction of Bengalla Mining Company.

Photographs taken during the inspection of the stage 1 rail infrastructure area are available within Appendix F, specifically Photograph F.37.

iv Stage 2 rail infrastructure area

Inspection of the stage 2 rail infrastructure area was undertaken by the lead auditor and assistant auditor under escort by MPO representatives. The inspection included the rail viaduct, rail bridge over Wybong and Overton roads, new rail loop, visual screening, train load out (TLO) facility, the new overland conveyor and sediment control structure located along the rail alignment.

The inspection demonstrated stage 2 rail infrastructure area was maintained generally in accordance with approved management plans, being well organised and maintained. No matters in conflict with approved management plans were identified.

v Active mining areas including South Pit, Central Pit and North Pit

Inspection of the South Pit, Central Pit and North Pit was undertaken by the lead auditor and assistant auditor under escort by MPO representatives.

The inspection demonstrated that mining activities within the South Pit, Central Pit and North Pit was undertaken generally in accordance with approved management plans. At the time of inspection, active mining activities were located within the Central Pit, with overburden being extracted and dumped in the eastern out of pit emplacement area. Drilling was being undertaken approximately one strip to the west of the active mining area. Mulching and topsoil removal was not being undertaken at the time of inspection, however a previously cleared area prepared for mining activities was sighted, east of drilling activities.

At the time of inspection visible dust was evident at mining, dumping and drilling activities. MPOs dust control trigger action response plan was enacted by operational personal in accordance with the AQGHGMP.

Photographs taken during the inspection of the South Pit, Central Pit and North Pit are available within Appendix F, specifically Photographs F.1 to Photograph F.9.

vi Eastern out of pit emplacement area

Inspection of the eastern out of pit emplacement area was undertaken by the lead auditor and assistant auditor under escort by MPO representatives. The area was also inspected by the biodiversity management and offsetting technical expert as the area has been subject to rehabilitation activities.

The inspections demonstrated that progressive rehabilitation of the area has commenced, with final bulk shaping being undertaken during the inspection. Rehabilitation having commenced in 2018, was sighted to be in the early stages of development and demonstrated good establishment of target species in accordance with approved management plans. It is noted that weed cover across the eastern out of pit emplacement area was identified to be quite high with high-threat weed cover. In addition, a number of drainage lines within the rehabilitated area were significantly eroded.

Photographs taken during the inspection of the eastern out of pit emplacement area are available within Appendix F, specifically Photograph F.28 and F.30.

vii Sediment dams (SDs) 1, 3, 4, 6, 7 and 8

Inspections of the SDs 1, 3, 4, 6, 7 and 8 were undertaken by the lead auditor and assistant auditor under escort by MPO representatives.

The inspections demonstrated that SDs were being operated in accordance with approved management plans. Evidence of active management of sediment load and water levels within the SDs were sighted. SDs were also equipped with dewatering infrastructure. The lead auditor was provided evidence of daily inspections of all SDs.

Photographs taken during the inspection of the sediment dams are available within Appendix F, specifically Photograph F.32, Photograph F.27 and Photograph F.33.

viii Fines emplacement area

Inspection of the fines emplacement area was undertaken by the lead auditor and assistant auditor under escort by MPO representatives.

At the time of inspection, significant construction activities were being undertaken including the lift of the embankment and excavation of the fines emplacement to increase overall volume and provide material for the embankment lift. A clean water diversion, constructed prior to the noted activities, was sighted.

The inspection demonstrated that activities within the fines emplacement area were occurring in general accordance with approved management plans and DA 92/97. General construction activities, including excavation and material movement, had dust controls in place with a water cart operating within the area.

The clean water diversion drain and areas disturbed to facilitate the drain had been recently seeded with cover crop species presenting at the time of inspection. Sediment and erosion control structures, including sediment fencing and rock lined structures, did require maintenance. Noting that sediment laden water, at the time of inspection, reported either to ED2 or the fines emplacement and not offsite.

Photographs taken during the inspection of the fines emplacement area are available within Appendix F, specifically Photograph F.40 to Photograph F.50.

ix Water storages – ED2 and Mine Water Dam

Inspection of water storages ED2 and Mine Water Dam was undertaken by the lead auditor and assistant auditor under escort by MPO representatives.

The inspection demonstrated that the water storages were being operated in accordance with approved management plans.

During the site inspection, it was noted that ED2 was operating as mine water dam and was also relied upon as a sediment control structure, providing sediment control for the western side of the fines emplacement embankment.

Photographs taken during the inspection of ED2 are available within Appendix F, specifically Photograph F.53.

x Biodiversity management and rehabilitation

EMM's biodiversity management and offsetting technical specialist, Nathan Garvey, completed his site inspection on 7 March 2023. The inspection included the rehabilitated areas of the eastern out of pit emplacement area, relocation sites of orchids, pre-clearing activities and the salvage and reuse of habitat features within rehabilitated areas.

3.13 Site interviews

The audit site interviews were completed by the EMM audit team on 7–8 March 2023. In addition, interviews were conducted by the appointed biodiversity management and offsetting technical specialist on 7 March 2023. Interviews were conducted with MPO staff to verify compliance with relevant conditions. A summary of interviews conducted is outlined in Table 3.8.

Table 3.8 Site interviews summary

Name	Position	Interview matters
Andrew Reid	Environment Superintendent	• Overview of operational management systems to ensure environmental compliance. • Discussion on and provision of evidence to demonstrate compliance with relevant Development Consent, EPL, Mining leases and water license conditions. • Discussion on and provision of evidence to demonstrate suitable corrective actions in regard to prior audit findings. • Discussion on and provision of evidence in regard to preliminary non-compliances identified prior to the site visit and receipt of data. • Overview of activities undertaken during the audit period.
Mariah Lane	Environment Advisor	• Overview of operational management systems to ensure environmental compliance. • Overview of how compliance conditions in regard to Aboriginal cultural heritage are satisfied. • Overview of environmental compliance data. • Overview of rehabilitation and biodiversity management practices.
Scott Grunsell	Environment Advisor	• Overview of how MPO ensured compliance with Development Consent conditions relevant to Stage 2 infrastructure. Inclusive of demonstrating compliance with the Construction Environmental Management Plan. • Overview of MPO coal handling and transport processes.
Craig Hawkins	Project Lead	• Overview of MPO operational water management systems. • Confirmation of actions taken to reduce the risk of discharge events in response to water discharge incidents during the audit period. • Discussion on proposed improvements to sediment and erosion control structures.
Peter York	Environment and Community Superintendent	• Overview of operational and management systems to ensure environmental compliance. • Overview of complaint management process and internal procedures to address. • Overview of rehabilitation and mining activities in accordance with relevant approval conditions. • Overview of biodiversity management practices. • Overview of GDP procedures. • Overview of MPO operational water management systems.

3.14 Improvement opportunities

3.14.1 Noise, blast and vibration

Bridges Acoustics noted a number of improvement opportunities in their report (Appendix E).

In relation to the independent noise consultant's monitoring procedures and reports:

- Incorrect sound level meter calibration procedure. A Class 2 calibrator was used on a Class 1 sound level meter in all noise surveys, contrary to relevant standards.
- An invalid sound level meter calibration certificate, as it was issued after the date of the noise survey, was included in the January 2021 noise monitoring report.
- Instrument calibration certificates were not included in the April 2022 noise monitoring report.

These additional issues do not imply the noise levels reported by the consultant include significant errors or inaccuracies. A recommendation was made to annually review the noise monitoring consultant's procedures to ensure consistency with all relevant standards.

Condition R5.2 requires an annual report, prepared by a qualified acoustic consultant, to include monitoring data and other specified information and be submitted to the EPA. While the EPA has access to noise monitoring data in the monthly monitoring reports and Annual Reviews, those documents are not prepared by a qualified acoustic consultant and do not satisfy this condition. MPO are recommended to commission a noise monitoring report annually to satisfy this condition.

3.14.2 Air quality and greenhouse gas emissions

Air quality and greenhouse gas emissions data appears to be generally collected and presented in a logical manner.

The main point of improvement is related to clarity of information or data. For example, the categorisation of complaints (in particular odour complaints) in the complaints register and how this corresponds to that presented in the Annual Reports.

The documentation of updates and review of the AQGHGMP should also be improved. Or where there has not been an update or review, the reason should be stated.

As previously noted, GHG emissions increased in 2022 compared to 2021. Whilst the main reason is likely to be the increase in ROM coal extraction in 2022, reasoning or analysis of this increase has not been provided. It is also unclear whether GHG control measures have been reviewed and analysed for effectiveness particularly given the increase in emissions. The Annual Reports could be improved to provide more information related to this.

3.14.3 Biodiversity management and rehabilitation

Biodiversity management and rehabilitation activities at MPO demonstrated to occur largely in accordance with DA 92/97 and the relevant management plans.

Increased focus on weed management within rehabilitated areas and land under MPO management should be improved, minimising the risk of further establishment of high risks weeds both on MPO and neighbouring properties. This has been recognised by MPO who have directly employed a weed management officer. It is recommended that this position be maintained into the future.

Erosion within drainage channels within rehabilitated areas was observed during the site inspection. It is acknowledged that extreme weather events have contributed to the level of erosion, However, it is recommended that drainage channels be repaired to reduce further erosion from high rainfall events as rehabilitated areas mature.

3.14.4 Water management

Water storage ED2 is currently operated as mine water dam, however it also acts as the sediment control structure west of the fines emplacement area. It is recommended that ED2 be managed to ensure adequate freeboard is maintained, relevant to the catchment, in order to reduce the risk of future water discharge events. It is noted that during the heavy rainfall events within the audit period, no discharge occurred from ED2. However, given the changing catchment conditions as result of works to the fines emplacement area, the EMM audit team identifies this as potential risk. It is recommended MPO undertake an assessment of the catchment size and determine the appropriate freeboard required for ED2 to provide adequate protection against discharge events, consistent with other sediment and erosion control dams located at MPO.

As identified in Section 3.13, MPO noted proposed improvements to sediment control structure telemetry including improved camera network and dam height monitoring, providing an additional control to physical inspections. It is recommended that this is implemented to further reduce the risk of discharge events.

3.14.5 Waste

A number of 1,000 L pods located around the CHPP and MIA laydown areas (some full, some mostly empty) with oil and other chemicals were observed outside of appropriate storage areas during the site inspection.

It is recommended that all chemicals/hydrocarbons are appropriately stored in bunded areas.

3.15 Key strengths

Key strengths of MPOs environmental management and performance identified during the audit are identified in the following sections.

3.15.1 Noise, blast and vibration

Bridges Acoustics notes the NMP is consistent with current best practice, concluding that MPO has been operated and managed in a competent manner from an acoustic perspective.

3.15.2 Air quality and greenhouse gas emissions

MPO appears to be implementing their dust mitigation measures on-site as stated in their AQGHGMP. Whilst there was evidence of one visual dust event at the audit site inspection, mitigation (water sprays) was promptly put in place to reduce the dust as much as possible. The meteorological forecasting system also appears to be working as intended.

While some points of clarification are required in the data collection systems (as previously noted), air quality monitoring data is generally presented in a logical and clear manner (as attached to the Annual Returns) and is labelled in accordance with the requirements.

3.15.3 Biodiversity management and rehabilitation

MPOs established rehabilitation has demonstrated to be highly successful, with rehabilitation monitoring demonstrating progress towards completion criteria. The inclusion of stag trees and other habitat features within the early stages of rehabilitation is noted to best practice. MPO is also engaging with universities to further improve rehabilitation outcomes specifically in regard to soil erosion and use of alternative mediums (including tailings). The outcomes of which will improve future rehabilitation planning and implementation.

3.15.4 Waste

MPOs segregation of waste streams was noted as a key strength during the site inspection. A number of waste bins of numerous types (i.e. general, steel, paper, oily rags, etc.) were inspected during the audit, with no misplaced waste identified.

4 Recommendations

4.1 Non-compliances

Details of all non-compliances associated with this 2023 IEA can be found in Section 3.4. Where a non-compliance was identified, a recommendation for improvement was made. This is detailed below in Section 4.2.

4.2 Opportunities for improvement

Table 4.1 lists the recommendations made as part of the 2023 IEA.

Table 4.1 Recommendations

Recommendation number	Recommendations
REC 1	A Class 1 calibrator must be used with a Class 1 sound level meter for noise monitoring. Ensure all calibration certificates are included in consultants reports.
REC 2	Complaints registers and Annual Reviews should be consistent in stating odour complaints (e.g. 2022 Annual Reviews mentions three odour complaints but these are not listed as 'odour' in the 2022 complaints register but rather, refer to spontaneous combustion and the 'nature of complaint' is 'other').
REC 3	MACH Energy should ensure that odour and fume management conditions per Section 9.5 of the AQGHGMP are reviewed for effectiveness, updated where necessary and are being implemented effectively following staff education and training.
REC 4	MACH Energy should ensure that temperature lapse data is collected, stored and presented for audit purposes.
REC 5	Ensure corrective actions as per the investigations of incident events are implemented.
REC 6	It was noted during the site visit that weed management activities had fallen behind over the past 12 months due to difficulties in engaging contractors. This is a known issue. Thiess have appointed a full-time contractor and are hoping to undertake additional work to get weed management back on track.
REC 7	Adopt appropriate noise criteria for any out-of-hours construction work. Appropriate criteria are generally identical to usual MPO noise criteria unless alternative criteria are agreed with EPA/DPE.
REC 8	Ensure all chemicals/hydrocarbons are appropriately stored in bunded areas.
REC 9	Update Table 2-1 of the RMP to include Schedule 3, Condition 54 of DA 92/97.
REC 10	Update RMP to make reference to the Annual Rehabilitation and Forward Work Program to address the requirement of the RMP to an include indicative schedule.
REC 11	Address erosion issues within the rehabilitation areas which were observed during the site visit.
REC 12	Show EPL Point 14 and 15 on a figure in Water Management Plan.
REC 13	Implement diligent noise management practises to avoid exceedances of the noise criteria.
REC 14	Ensure the blast monitoring locations are regularly reviewed and represent closest privately owned receivers.
REC 15	Review measures in the Blast Management Plan and the AQGHGMP for effectiveness and ensure these are being implemented on site.
REC 16	Use 'Consultation Manager' internal system to track all complaints and manage follow up.

Table 4.1 Recommendations

Recommendation number	Recommendations
REC 17	Site personnel to ensure that water sprays on materials/when loading or unloading materials are being applied per the AQGHGMP to minimise dust during tipping as far as possible. The measures in the AQGHGMP relating to this should be reviewed for effectiveness.
REC 18	MPO to test PIRMP at least once prior to January 2024 and annually thereafter.
REC 19	Include the waste management requirements of EPL 20850 Condition O6.1 in the Thiess Mount Pleasant Handling and Disposal of Waste Procedure.
REC 20	Complete quarterly faecal and pH monitoring in line with the obligations of the EPL Condition M2.3.
REC 21	The 2021 met data spreadsheet should be amended if there is not actually a TEOM on-site. The monitoring equipment should be clear in all spreadsheets going forward.
REC 22	Noise Compliance Assessment Reports are to be prepared by an appropriately qualified acoustic consultant.

5 Conclusion

The audit team was endorsed as a suitably qualified, experienced and independent team of experts by the DPE to conduct an audit of MPO under DA 92/97.

The audit was conducted by Thomas Frankham (Lead Auditor Certification No. 207528) and assisted by Samantha Hayes and Bret Jenkins of EMM. The audit was informed by technical experts Mark Bridges in regard to noise, blasting and vibration, Scott Fishwick and Francine Manansala in regard to air quality and greenhouse gas emissions, and Nathan Garvey in regard to biodiversity management and rehabilitation.

A site inspection of MPO was completed over two days on 7 and 8 March 2023, attended by Thomas Frankham and Samantha Hayes, and Nathan Garvey who attended the inspection on 7 March 2023.

The Audit assessed compliance against the following:

- Development Consent DA 92/97 and the statement of commitments
- Environment EPL 20850
- MLs 1645, 1708, 1709, 1713, 1750 and 1808
- water licences
- Annual Reviews for 2020, 2021 and 2022
- environmental management plans (required under DA 92/97)
- non-compliances of the 2020 IEA.

The Audit consisted of a detailed desktop review, consultation with relevant agencies and the CCC, interviews with MPO staff, and a site inspection. The Audit was conducted in accordance with Schedule 5, Condition 9 of DA 92/97.

The audit identified 204 compliance conditions, of which the majority (78%) were found to be in compliance, 12% were found to have not been triggered and 10% were identified as non-complaint. EMM has identified corrective actions to address non-compliances, as well as opportunities for improvement of the environmental performance of MPO. In addition, key strengths have been identified for consideration in regard to environmental performance.

Appendix A
Independent Audit Table

EMM
creating opportunities

Table A.1 - Development Consent DA 92/97

Section	Requirement	Audit team responsible for condition	Evidence collected	Independent Audit Findings and Recommendations	Compliance status	Unique Identification Non-compliance
SCHEDULE 2 - ADMINISTRATIVE CONDITIONS						
OBLIGATION TO MINIMISE HARM TO THE ENVIRONMENT						
1	In addition to meeting the specific performance measures and criteria established under this consent, the Applicant must implement all reasonable and feasible measures to prevent, and if prevention is not reasonable and feasible, minimise, any material harm to the environment that may result from the construction and operation of the development, and any rehabilitation required under this consent.	EMM general audit team	EMM did not note any permanent environmental harm during the site inspection.	No material and environmental harm occurred during the audit period.	Compliant	
TERMS OF CONSENT						
2	The Applicant must carry out the development: (a) generally in accordance with the EIS, EA (MOD 1), EA (MOD 2), EA (MOD 3), EA (MOD 4) and project layout plans; and (b) in accordance with the Statement of Commitments and conditions of this consent. *Notes:* *• The project layout plans are shown in Appendix 2.* *• The Statement of Commitments is reproduced in Appendix 3*	EMM general audit team	EIS, EA (MOD 1), EA (MOD 2), EA (MOD 3), EA (MOD 4). Project layout plans. Statement of Commitments.	The development was carried out in accordance with the approvals and Statement of Commitments.	Compliant	
3	Consistent with the requirements in this consent, the Secretary may make written directions to the Applicant in relation to: (a) the content of any strategy, study, system, plan, program, review, audit, notification, report or correspondence submitted under or otherwise made in relation to this consent, including those that are required to be, and have been, approved by the Secretary; and (b) the implementation of any actions or measures contained in any such document referred to in condition 3(a).	EMM general audit team	No written direction from the Secretary received.	EMM did not identify any inconsistencies with the requirements of the consent during the audit period.	Not triggered	
4	The conditions of this consent and directions of the Secretary prevail to the extent of any inconsistency, ambiguity or conflict between them and a document/s listed in condition 2(a) above. In the event of an inconsistency, ambiguity or conflict between any of the document/s listed in condition 2(a) the most recent document prevails to the extent of the inconsistency, ambiguity or conflict.	EMM general audit team	Management plans and DPE approval of management plans.	All management plans have been approved by DPE with correspondence attached the each management plan.	Compliant	
LIMITS ON CONSENT						
Mining Operations						
5	The Applicant may carry out mining operations on the site until 22 December 2026. *Note: Under this consent, the Applicant is required to rehabilitate the site and carry out additional undertakings to the satisfaction of both the Secretary and the Resources Regulator. Consequently this consent will continue to apply in all other respects - other than the right to conduct mining operations - until the rehabilitation of the site and these additional undertakings have been carried out satisfactorily.*	EMM general audit team	N/A	Audit period is prior to 22 December 2026.	Compliant	
Coal Extraction						
6	The Applicant must not extract more than 10.5 million tonnes of ROM coal from the site in a calendar year.	EMM general audit team	Annual Reviews for 2020, 2021 and 2022.	As reported in the Annual Reviews; 2020: 8.54 Mt 2021: 10.07 Mt 2022: 9.99 Mt Based on the extraction volumes reported in the Annual Reviews, MPO was compliant.	Compliant	
Coal Transport						
7	Product coal may only be transported from the site by rail.	EMM general audit team	Train haulage data. Annual Reviews for 2020, 2021 and 2022.	As reported in the Annual Reviews, product coal was transported from the site by rail only.	Compliant	
8	The Applicant must ensure that train movements at the site (i.e. arrival or dispatch) do not exceed: (a) a maximum of 18 per day; or (b) 6 per day, averaged over each calendar year. *Note: In this condition, "day" means any 24-hour period.*	EMM general audit team	Train movement data and Annual Reviews for 2020, 2021 and 2022. 2020: Daily maximum = 12, annual average = 4 per day. 2021: Daily maximum = 12, annual average = 5 per day. 2022: Daily maximum = 12, annual average = 5-6 per day.	Based on the train movement numbers reported in the Annual Reviews, MPO was compliant.	Compliant	
STRUCTURAL ADEQUACY						
9	All new buildings and structures, and any alterations or additions to existing buildings and structures, that are part of the development, must be constructed in accordance with: (a) the relevant requirements of the BCA; and (b) any additional requirements of SA NSW where the building or structure is located on land within a declared Mine Subsidence District. *Notes:* *• Under Part 6 of the EP&A Act, the Applicant is required to obtain construction and occupation certificates for the proposed building works.* *• Part 8 of the EP&A Regulation sets out the requirements for the certification of the development* *• The development is located in the Muswellbrook Mine Subsidence District. Under section 21 of the Coal Mine Subsidence Compensation Act 2017, the Applicant is required to obtain the Chief Executive of SA NSW's approval before carrying out certain development in a Mine Subsidence District.*	EMM general audit team	Annual Reviews for 2020, 2021 and 2022. Construction certificates Occupancy certificates.	New construction reported as per Annual Reviews for 2020, 2021 and 2022. During the site visit, EMM sighted construction certificates and occupancy certificates. All construction activities were outside of subsidence area.	Compliant	
DEMOLITION						
10	The Applicant must ensure that all demolition work on site is carried out in accordance with *AS 2601-2001: The Demolition of Structures* , or its latest version.	EMM general audit team	Complying development certificates for demolition. Seven demolition certificates from 23/10/2020. Seven demolition certificates from 14/05/2021. HAZMAT reports for: * Melody's Farm * 137 Kayuga Rd, Muswellbrook * Jandel, 401 Wybong rd EPA consignment waste disposal records for asbestos, contaminated soil, non-friable material. Asbestos sampling results.	EMM reviewed demolition certificates, HAZMAT reports and EPA waste disposal records for hazardous substances such as asbestos. These were all carried out in accordance with AS 2601-2001.	Compliant	
PROTECTION OF PUBLIC INFRASTRUCTURE						
11	Unless the Applicant and the applicable authority agree otherwise, the Applicant must: (a) repair, or pay the full costs associated with repairing, any public infrastructure that is damaged by the development; and (b) relocate, or pay the full costs associated with relocating, any public infrastructure that needs to be relocated as a result of the development, *Note: This condition does not include matters that are expressly provided for in the conditions of this consent, such as the maintenance of public roads.*	EMM general audit team	Annual Reviews for 2020, 2021 and 2022.	During 2020 and 2022, mine affected properties were vacated and their electricity was disconnected. This included removal of associated power poles and wires services. MPO incurred the full costs of these removals. There was no damage to public infrastructure in 2021.	Compliant	
OPERATION OF PLANT AND EQUIPMENT						
12	The Applicant must ensure that all plant and equipment used on site, or to transport coal from the site, is: (a) maintained in a proper and efficient condition; and (b) operated in a proper and efficient manner.	EMM general audit team	Sewage treatment plant weekly servicing reports (Booth Contracting). Sewage treatment plant monthly maintenance reports (Ozzi Kleen). Waste water treatment plant annual maintenance reports (Mak Water). Plant maintenance schedule. Thiess Plan Maintenance Procedure.	EMM reviewed the plant maintenance schedule. All new equipment coming to site is sound power level tested. Servicing is based on hours run/used. The sewage/waste water system has been serviced appropriately and therefore maintained in a proper and efficient condition. Thiess operate a Computerised Maintenance Management Systems (CMMS) to manage maintenance planning.	Compliant	
APPLICATION OF EXISTING STRATEGIES, PLANS OR PROGRAMS						
13	The Applicant must continue to apply existing management strategies, plans or monitoring programs approved prior to the approval of Modification 4, until the approval of a similar plan, strategy or program following the approval of Modification 4.	EMM general audit team	Register of management plan updates. Management plans. Letters to/from DPE.	MOD 5 was approved on 29 June 2022. DPE were notified on 29 August 2022 that no updates to management plans were required following the approval of MOD 5.	Compliant	
PLANNING AGREEMENT						
14	By the end of March 2012, unless otherwise agreed by the Secretary, the Applicant must enter into a planning agreement with Council in accordance with: (a) Division 6 of Part 4 of the EP&A Act; and (b) the terms of the Applicant's offer dated 14 February 2011, which is summarised in Appendix 4. This agreement must provide for annual payments to be made to Council with the first period for payment commencing upon the commencement of development on the site.	EMM general audit team	VPA agreement. Letter received from Muswellbrook Shire Council acknowledging contributions.	This was executed outside of the audit period. However, the VPA is still in place.	Compliant	

EVIDENCE OF CONSULTATION						
15	Where conditions of this consent require consultation with an identified party, the Applicant must: (a) consult with the relevant party prior to submitting the subject document to the Secretary for approval; and (b) provide details of the consultation undertaken including: (i) the outcome of that consultation, matters resolved and unresolved; and (ii) details of any disagreement remaining between the party consulted and the Applicant and how the Applicant has addressed the matters not resolved.	EMM general audit team	Management plans. Management plan approvals from DPE. Evidence of consultation with relevant parties for management plans. Construction Environmental Management Plan for MOD 4 construction works.	Consultation through the development of the management plans under the consent was completed and reported on in previous IEAs. The Construction Environmental Management Plan for MOD 4 construction works was prepared in consultation with the EPA, Council, Telstra and Ausgrid.	Compliant	
COMPLIANCE						
16	The Applicant must ensure that all of its employees, contractors (and their sub-contractors) are made aware of, and are instructed to comply with, the conditions of this consent relevant to activities they carry out in respect of the development.	EMM general audit team	Induction and training processes.	EMM sighted induction presentations during the site inspection which identified environmental compliance matters. Note: Thiess, MACH and Sedgmen all have their own induction process.	Compliant	
APPLICABILITY OF GUIDELINES						
17	References in the conditions of this consent to any guideline, protocol, Australian Standard or policy are to such guidelines, protocols, Standards or policies in the form they are in as at the date of this consent. However, consistent with the conditions of this consent and without altering any limits or criteria in this consent, the Secretary may, when issuing directions under this consent in respect of ongoing monitoring and management obligations, require compliance with an updated or revised version of such a guideline, protocol, Standard or policy, or a replacement of them.	EMM general audit team	N/A	There has been no direction from the Secretary for any updates during the audit period.	Not triggered	
SCHEDULE 3 - ENVIRONMENTAL PERFORMANCE CONDITIONS						
ACQUISITION UPON REQUEST						
1	If the Applicant receives a written request for acquisition from the owner of any land listed in Table 1, then the Applicant must acquire the land in accordance with the procedures in conditions 6-7 of Schedule 4. *Table 1: Land subject to acquisition upon request* **Basis** / **Receiver** Noise: 23, 45, 47, 67, 96, 102, 108, 112, 118, 120, 120c, 121, 136, 143a, 143b, 143c, 143d, 143e,147, 153a, 153b, 156a, 157a, 158, 159, 447, 448, 449 Noise & Air: 43, 43b Air: 20[2], 21[2] *Notes:* *1 To identify the locations referred to in Table 1, see the figures in Appendix 5.* *2 The Applicant is only required to acquire and/or install mitigation measures at this property if acquisition and/or mitigation is not reasonably achievable under a separate approval for the Bengalla mine.*	EMM general audit team	N/A	There have been no written requests for acquisition during the audit period.	Not triggered	
ADDITIONAL MITIGATION UPON REQUEST						
2	Upon receiving a written request from the owner of any residence on any land listed in Table 1 (unless the owner of that land has requested acquisition) or Table 2, the Applicant must implement additional: (a) noise mitigation measures (such as double-glazing, insulation and/or air conditioning); and/or (b) air quality mitigation measures (such as air filters, a first flush roof water drainage system and/or air conditioning), as relevant, at the residence(s) in consultation with the owner. These measures must be reasonable and feasible, and directed towards reducing the noise and/or air quality impacts of the development on the residence(s). The Applicant must also be responsible for the reasonable costs of ongoing maintenance of these additional mitigation measures until the cessation of mining operations. If within 3 months of receiving this request from the owner, the Applicant and the owner cannot agree on the measures to be implemented, or there is a dispute about the implementation of these measures, then either party may refer the matter to the Secretary for resolution. *Table 2: Land where additional mitigation measures are available on request* **Basis** / **Receiver** Noise: 19, 20, 21, 68, 74, 77, 79, 80a, 84a, 86a, 139, 140a, 140c, 154, 203, 207, 257, 258, 259, 526 *Note:* *1 To identify the locations referred to in Table 2, see the figures in Appendix 5.*	EMM general audit team	Five requests for acquisition during the audit period.	There have been five requests for acquisition during the audit period. MPO have completed 4/5 requests. The final request is still in negotiations with the land holder. The land holder has requested the acquisition request be put on hold for the time being.	Compliant	
NOISE						
Noise Criteria						
3	Except for the noise-affected land referred to in Table 1, the Applicant must ensure that the operational noise generated by the development does not exceed the criteria in Table 3 at any residence on privately-owned land. *Table 3: Noise criteria dB(A)* **Receiver or other location** / **Day** $L_{Aeq(15min)}$ / **Evening** $L_{Aeq(15min)}$ / **Night** $L_{Aeq(15min)}$ / **Night** $L_{A1(1min)}$ 68, 74: 43, 42, 42, 45 86a: 42, 42, 42, 45 35, 35b, 77: 42, 41, 41, 45 79, 80a, 140c, 526: 41, 41, 41, 45 289: 41, 40, 40, 45 84a, 139, 154, 203, 257, 258a: 40, 40, 40, 45 83: 40, 39, 39, 45 86b, 140a, 202, 259: 39, 39, 39, 45 198, 202b: 38, 38, 38, 45 260, 261: 37, 37, 37, 45 169, 272: 36, 36, 36, 45 NAG 5 - All privately-owned land: 41, 40, 39, 45 NAG 6 - All privately-owned land: 37, 37, 37, 45 NAG 7 - All privately-owned land: 40, 37, 37, 45 NAG 8 - All privately-owned land: 41, 39, 39, 45 NAG 9 - All privately-owned land: 39, 38, 37, 45 NAG 11 - All privately-owned land: 37, 36, 35, 45 All other privately-owned land: 35, 35, 35, 45 *Notes:* *• To identify the locations referred to in Table 3, see the figures in Appendix 5.* *• Noise generated by the development is to be measured in accordance with the relevant procedures and exemptions (including certain meteorological conditions) of the NSW Industrial Noise Policy, with the exception of the application of modifying factors under Fact Sheet C of the Noise Policy for Industry.* However, these criteria do not apply if the Applicant has a written agreement with the relevant landowner to exceed the criteria, and the Applicant has advised the Department in writing of the terms of this agreement.	Bridges Acoustics	19/11/21 - DPE warning letter - Sustained exceedance (measurements at 00:18 and 00:54) of the LA1(1 minute) criterion at monitoring location N-AT4. Consultants monitoring reports Monthly monitoring reports Annual Reviews for 2020, 2021 and 2022.	Review of consultant's noise monitoring reports indicates: (**non-compliances in bold**, other comments not bold) **- April 2020 - Exceedance of the LA1,1min criterion at N-AT4** **- July 2020 - Exceedance of the LAeq,15min and LA1,1min criteria at N-AT3** - July 2021 - Exceedance of the LA1,1min criterion at N-AT3, although the follow-up measurement showed compliance **- August 2021 - Exceedance of the LA1,1min criterion at N-AT4** **- November 2022 - Exceedance of the LA1,1min criterion at N-AT4.** Exceedance of the LA1,1min criterion at N-AT5, although the follow-up measurement showed compliance Review of the monthly monitoring reports prepared by MACH Energy indicates: - December 2020 - Incorrect results were reported in Table 9-2 for the LAeq,15min levels at N-AT4 and N-AT5 - July 2021 - The LA1,1min exceedance was not reported. The report only includes the follow-up measurement result - September 2021 - Incorrect results were reported in Tables 9-1 and 9-2 for the LAeq,15min and LA1,1min levels at N-AT4, N-AT5 and N-AT6 - January 2022 - Incorrect results are reported in Table 9-2 for all LAeq,15min levels A review of the 2020 Annual Review indicates: Results are correctly reported. Exceedances of the LA1,1min criterion at N-AT3 in July 2020 are acknowledged, however the Annual Review states noise levels would have been acceptable at more remote sensitive receptors. N-AT3 was later relocated closer to residences, which is appropriate A review of the 2021 Annual Review indicates: Section 5.2.2 does not mention the exceedance of LA1,1min criterion in July consistent with the monthly monitoring report, although this event is correctly recorded in Appendix A Section 5.2.3 states the August 2021 LA1,1min exceedance did not impact any residence, although this statement is not justified as N-AT4 is close to residences A review of the 2022 Annual Review indicates: Section 5.2.2 correctly reports results for the period Section 5.2.3 states the November 2022 LA1,1min exceedances did not impact any residence, although this statement is not justified as N-AT4 is close to residences **Other issues or recommendations (REC1):** 1. All noise monitoring reports during the audit period indicate at least one Class 2 acoustic calibrator was used for a field-check of a Class 1 sound level meter, contrary to relevant standards and policies including *IEC 61672-1* and *Approved Methods for the*	Non-compliant	NC1

				of a Class 1 sound level meter, contrary to relevant standards and policies including IEC 61672-1 and *Approved Methods for the Measurement and Analysis of Environmental Noise in NSW (EPA, 2022).* A Class 1 calibrator must be used with a Class 1 sound level meter. 2. One sound level meter calibration certificate in the January 2021 consultant's report was invalid, as it was dated after the noise survey. 3. The April 2022 consultant's report did not include calibration certificates for any instruments.		
4	Deleted.					
Cumulative Noise Criteria						
5	Except for the noise-affected land referred to in Table 1, the Applicant must implement all reasonable and feasible measures to ensure that the operational noise generated by the development combined with the noise generated by other mines in the area does not exceed the criteria in Table 5 at any residence on privately-owned land. *Table 5: Cumulative noise criteria dB(A) $L_{Aeq\ (period)}$* **Location** / **Day** / **Evening** / **Night** NAG 8, 9 — 55 — 45 — 40 All other privately-owned land — 50 — 45 — 40 *Notes:* *• To identify the locations referred to in Table 5, see the figures in Appendix 5; and* *• Cumulative noise is to be measured in accordance with the relevant procedures and exemptions (including certain meteorological conditions) of the NSW Industrial Noise Policy.*	Bridges Acoustics	Annual Reviews for 2020, 2021 and 2022. Consultants monitoring reports. Monthly monitoring reports.	A review of consultant's report, monthly monitoring reports and Annual Reviews indicates no exceedances of the cumulative noise criteria occurred during the audit period.	Compliant	
6	Deleted.					
Rail Noise						
7	The Applicant must only use locomotives and rolling stock that are approved to operate on the NSW rail network in accordance with the noise limits in Sydney Trains' EPL (No. 12208) and ARTC's EPL (No. 3142).	Bridges Acoustics	Noise Management Plan. Sydney Trains and ARTC rail agreements.	Section 6.1.5 of the Noise Management Plan acknowledges this condition. MACH Energy personnel advised rail contracts with Aurizon include a requirement that all trains must comply with the Sydney Trains EPL 12208 and ARTC EPL 3142.	Compliant	
Noise Operating Conditions						
8	The Applicant must: (a) implement best practice noise management, including all reasonable and feasible noise mitigation measures to minimise the construction, operational, low frequency, and rail noise generated by the development; (b) minimise the noise impacts of the development during temperature inversions; (c) regularly assess the real-time noise monitoring and meteorological forecasting data and relocate, modify, and/or stop operations on site to ensure compliance with the relevant conditions of this consent; and (d) co-ordinate the noise management on site with the noise management at nearby mines (including the Bengalla mine) to minimise the cumulative noise impacts of the mines, to the satisfaction of the Secretary. *Note: Monitoring under this consent is not required at all residences and the use of representative monitoring locations can be used to demonstrate compliance with criteria, if agreed to by the Secretary.*	Bridges Acoustics	Noise Management Plan. Noise monitoring reports. Monitoring data.	(a) Section 8 of the Noise Management Plan describes a range of proactive and reactive noise management measures that are consistent with current best-practise. Section 9 of the Noise Management Plan describes compliance attended and real time unattended noise monitoring procedures to either confirm compliance with relevant limits or to identify any exceedances. (b) Monthly noise monitoring results indicate general compliance with the noise limits, with only intermittent rather than sustained exceedances of the limits at specific monitoring locations, including during periods of significant temperature inversion or other adverse weather conditions. (c) Monthly noise monitoring reports in which exceedances are measured note MACH Energy modified operations when an exceedance of the criteria was identified. Follow-up measurements typically show a reduction of measured noise levels after management measures were implemented. (d) Exceedances of the cumulative noise limits were not measured during the audit period, therefore detailed coordination with other industrial developments was not required.	Compliant	
Noise Management Plan						
9	The Applicant must prepare a Noise Management Plan for the development to the satisfaction of the Secretary. This plan must: (a) be submitted to the Secretary for approval by 30 June 2019, unless otherwise agreed by the Secretary; (b) describe the measures (including both proactive and reactive mitigation measures) to be implemented to: • ensure compliance with the noise criteria and operating conditions in this consent; • minimise rail noise (including wheel and brake squeal) to the greatest extent practicable; and • minimise the noise impacts of the development during noise-enhancing meteorological conditions when the operational noise criteria in this consent do not apply (see Notes to condition 3 of Schedule 3); (c) include a noise monitoring program that: • uses a combination of real-time and supplementary attended monitoring to evaluate the performance of the development; • accounts for the occurrence of any noise enhancement between the site, and any sensitive receivers located beyond the site boundary; and • includes a protocol for determining exceedances of the relevant conditions of this consent. (d) include a protocol that has been prepared in consultation with the owners of the nearby mines (including the Bengalla mine) to minimise the cumulative noise impacts of the mines. The Applicant must implement the management plan as approved by the Secretary.	Bridges Acoustics	Noise Management Plan.	(a) Noise Management Plan was last revised in December 2021 and approved by the Secretary's nominee in December 2021. (b) Section 8 of the Noise Management Plan describes a range of proactive and reactive noise management measures that are consistent with current best-practise. (c) Section 9 of the Noise Management Plan describes compliance attended and real time unattended noise monitoring procedures to either confirm compliance with relevant limits or to identify any exceedances. (d) Section 8.6 of the Noise Management Plan describes management measures to avoid exceedances of the cumulative noise limits. Exceedances of the cumulative noise limits were not measured during the audit period.	Compliant	
BLASTING						
Blasting Criteria						
10	The Applicant must ensure that the blasting on the site does not cause exceedances of the criteria in Table 7. *Table 7: Blasting criteria* **Location** / **Airblast overpressure (dBL in Peak))** / **Ground vibration (mm/s)** / **Allowable exceedance** — 120 — 10 — 0% Residence on privately owned land — 115 — 5 — 5% of the total number of blasts over a period of 12 months Historic heritage sites — - — 10 — 0% All public infrastructure — - — 50 — 0% However, these criteria do not apply if the Applicant has a written agreement with the relevant owner or infrastructure provider/owner, and the Applicant has advised the Department in writing of the terms of this agreement.	Bridges Acoustics	Annual Reviews for 2020, 2021 and 2022. Blast monitoring data obtained from the blast monitoring service provider's monthly data. Monthly monitoring reports.	Detailed blast monitoring data were reviewed. The data indicate: - no exceedance of the vibration limits. - one exceedance of the overpressure limit, 122.7 dBL at BVOA on 2 September 2022, although this location is not close to residences. Monitor at residences (BVOC) indicated no exceedance at residences for this event. - exceedances of 5 mm/s and 115 dB occurred less than 5% of blasts at residential locations.	Compliant	
Blasting Hours						
11	The Applicant must only carry out blasting on site between 9am and 5pm Monday to Saturday inclusive. No blasting is allowed on Sundays, public holidays, or at any other time without the written approval of the Secretary.	Bridges Acoustics	Annual Reviews for 2020, 2021 and 2022. Blast monitoring data obtained from the blast monitoring service provider's monthly data. Monthly monitoring reports.	Detailed review of raw blast data indicate: - 4 June 2020 - Reported blast event at 2:48 am - 8 June 2020 - Reported blast event at 5:10 am The above events are false triggers as they did not coincide with blast events at MPO, therefore were not included in the monthly monitoring report or Annual Review. Investigation by site personnel into the data anomalies for 4 and 8 June 2020 confirmed no blast occurred at these times.	Compliant	
Blasting Frequency						
12	Unless otherwise agreed by the Secretary, the Applicant may carry out a maximum of: (a) 1 blast a day; and (b) 5 blasts a week, averaged over any calendar year; for the development. This condition does not apply to blasts that generate ground vibration of 0.5 mm/s or less at any residence on privately-owned land, or to blasts required to ensure the safety of the mine or its workers. *Note: For the purposes of this condition, a blast refers to a single blast event, which may involve a number of individual blasts fired in quick succession in a discrete area of the mine.*	Bridges Acoustics	Annual Reviews for 2020, 2021 and 2022. Blast monitoring data obtained from the blast monitoring service provider's monthly data. Monthly monitoring reports.	Detailed review of raw blast data indicate a number of instances of two blast events in a day, however in all cases: - one of the recorded blast events occurred at the neighbouring Bengalla Mine, or - the two blasts occurred within a minute of each other and represented a 'syncro-shot' at MPO, considered a single blast event.	Compliant	
Property Inspections						

13	If the Applicant receives a written request from the owner of any privately-owned land within 2 kilometres of the approved open cut mining pit/s on site, for a property inspection to establish the baseline condition of any buildings and/or structures on his/her land, or to have a previous property inspection report updated, then within 2 months of receiving this request the Applicant must: (c) commission a suitably qualified, experienced and independent person, whose appointment is acceptable to both parties, to: • establish the baseline condition of the buildings and/or structures on the land, or update the previous property inspection report; • identify any measures that should be implemented to minimise the potential blasting impacts of the development on these buildings and/or structures; and (d) give the landowner a copy of the new or updated property inspection report. If there is a dispute over the selection of the suitably qualified, experienced and independent person, or the Applicant or the landowner disagrees with the findings of the property inspection report, either party may refer the matter to the Secretary for resolution.	Bridges Acoustics	Property inspection reports for residences and related buildings	A property was subject to a condition survey in November 2022, more than 2 months after a request in June 2022. Site personnel advised the inspection was delayed at the request of the property owner. Other inspections were arranged or completed within the required timeframe.	Compliant	
Property Investigations						
14	If the owner of any privately-owned land claims that the buildings and/or structures on his/her land have been damaged as a result of blasting on site, then within 2 months of receiving this claim the Applicant must: (a) commission a suitably qualified, experienced and independent person, whose appointment is acceptable to both parties, to investigate the claim; and (b) give the landowner a copy of the property investigation report. If there is a dispute over the selection of the suitably qualified, experienced and independent person, or the Applicant or the landowner disagrees with the findings of the property investigation report, either party may refer the matter to the Secretary for resolution. If this independent property investigation confirms the landowner's claim, and both parties agree with these findings, then the Applicant must repair the damages to the satisfaction of the Secretary. If the Applicant or landowner disagrees with the findings of the independent property investigation, then either party may refer the matter to the Secretary for resolution.	Bridges Acoustics	Property inspection reports for residences and related buildings	A property was subject to a condition assessment in October 2020, more than 2 months after a request in July 2020. Site personnel advised the delay was due to discussions with the property owner regarding selection of a consultant, resulting in delays beyond MPO's control. Other inspections were arranged or completed within the required timeframe	Compliant	
Blast Operating Conditions						
15	The Applicant must: (a) implement best blasting management practice on site to: • protect the safety of people and livestock in the surrounding area; • protect public or private infrastructure/property in the surrounding area; • minimise the dust and fume emissions of the blasting on site; and • minimise blasting impacts on heritage items in the vicinity of the site; (b) co-ordinate the blasting on site with the blasting at nearby mines (including the Bengalla mine) to minimise the cumulative blasting impacts of the mines; and (c) operate a suitable system to enable the public to get up-to-date information on the proposed blasting schedule on site, to the satisfaction of the Secretary.	Bridges Acoustics	Annual Reviews for 2020, 2021 and 2022. Blast monitoring data. Blast Management Plan.	Detailed review of blast data indicates: (a) Blast vibration and overpressure met relevant criteria at residences. This indicates management measures, primarily predictive forecasting and weather monitoring, are effective in minimising blast related impacts. One fume event in June 2020 was reported in the 2020 Annual Review. This event triggered a review of management measures to minimise fume generation and has not since reoccurred. Heritage items are considered in Sections 9.4 and 9.5 of the Blast Management Plan. (b) Section 9.5.3 of the Blast Management Plan describes a procedure to coordinate blast events with other mines to avoid simultaneous blasts and back-to-back road closures. (c) Section 9.5.4 of the Blast Management Plan describes the current public notification system.	Compliant	
16	The Applicant must not undertake blasting within 500 metres of: (a) a public road without the approval of Council; and (b) any land outside the site not owned by the Applicant, unless: • the Applicant has a written agreement with the relevant landowner to allow blasting to be carried out closer to the land, and the Applicant has advised the Department in writing of the terms of this agreement, or • the Applicant has: o demonstrated to the satisfaction of the Secretary that the blasting can be carried out closer to the land without compromising the safety of the people or livestock on the land, or damaging the buildings and/or structures on the land; and o updated the Blast Management Plan to include the specific measures that would be implemented while blasting is being carried out within 500 metres of the land.	Bridges Acoustics	Blast Management Plan.	(a) Section 9.3 of the Blast Management Plan includes a commitment to monitor blasts within 500 m of public infrastructure including roads. Appendix B include a Road Closure Management Plan for Wybong Road, Kayuga Road and Castlerock Road, prepared in consultation with Muswellbrook Shire Council. (b) Section 9.1.2 of the Blast Management Plan indicates blasting within 500 m of private land is not required.	Compliant	
Blast Management Plan						
17	The Applicant must prepare a Blast Management Plan for the development to the satisfaction of the Secretary. This plan must: (a) be submitted to the Secretary for approval prior to carrying out any blasting on site; (b) describe the measures that would be implemented to ensure compliance with the relevant conditions of this consent; (c) include a road closure management plan, prepared in consultation with Council; (d) include a blast monitoring program for evaluating compliance with the relevant conditions of approval; and (e) include a protocol that has been prepared in consultation with the owners of nearby mines (including the Bengalla mine) for minimising and managing cumulative blasting impacts of the mines. The Applicant must implement the management plan as approved by the Secretary.	Bridges Acoustics	Blast Management Plan.	A review of the Blast Management Plan indicates: (a) The current plan was approved by the Secretary's nominee on 14 April 2020. (b) Section 8 of the Plan describes predicted blast effects while Section 9 describes mitigation and management measures. (c) Appendix B of the Plan includes a road closure plan prepared in consultation with Council. (d) Section 10 of the plan describes the blast monitoring procedure and monitoring locations. (e) Section 9.5.3 of the Plan describes the procedure to coordinate blast events, including any road closures, with other mines.	Compliant	
AIR QUALITY & GREENHOUSE GAS						
Odour						
18	The Applicant must ensure that no offensive odours are emitted from the site, as defined under the POEO Act, unless otherwise authorised by an EPL.	EMM Air quality team	Annual Reviews for 2020, 2021 and 2022. 2020, 2021 and 2020 complaints registers.	12 odour complaints received in the audit period (no complaints regarding odour in 2023): * 21/05/2020 - MACH Energy investigated and could not identify odour. * 05/08/2020 - MACH Energy investigated and found that smoke was coming from the Pit E RL185 dump and therefore a capping task was completed. * 27/04/2021 - MACH Energy investigated and could not identify odour or heated material. * 14/05/2021 - Meteorological data recorded and notes that a prescribed burn had taken place on the same day. Inconclusive. * 04/07/2021 - MACH Energy investigated and found a small amount of heated material present in Pit D. * 11/07/2021 - MACH Energy investigated and found a small amount of heated material on the pit dump in areas of Pit A, D, & E. Capping was undertaken. * 15/08/2021 - MACH Energy investigated and found no areas of concern. * 15/08/2021 - MACH Energy investigated and found no heated materials in Pit C, D, R, F dumps. * 15/08/2021 - MACH Energy investigated and found no heated materials in Pit C, D, R, F dumps. * 15/07/2022 - MACH Energy investigated and found a small amount of smoke in the Northern Pit which did not reoccur the following day. Inspections were carried out on 15 and 16 July and odour was not detected. * 2022 Annual Review states that 3 odour complaints were made in 2022 and details the one above however, these are not identified as odour-related complaints in the 2022 complaints register (most likely spon com). **Recommendations:** * **REC 2** - Complaints registers and Annual Reviews should be consistent in stating odour complaints (e.g. 2022 Annual Review mentions 3 odour complaints but these are not listed as 'odour' in the 2022 complaints register but rather, refer to spontaneous combustion and the 'nature of complaint' is 'other'). * **REC 3** - MACH Energy should ensure that odour and fume management conditions per Section 9.5 of the AQGHGMP are reviewed for effectiveness, updated where necessary and are being implemented effectively following staff education and training.	Non-compliant	NC2
Greenhouse Gas Emissions						
19	The Applicant must implement all reasonable and feasible measures to minimise the release of greenhouse gas emissions from the site.	EMM Air quality team	AQGHGMP lists mitigation measures (Section 9.6). 2021 and 2022 Annual Reviews provide a summary of GHG emissions in Tables 17 and 18, and Tables 18 and 19 respectively. Site inspection.	AQGHGMP lists the following measures: - Optimising the design of haul roads to minimise the distance travelled between the pit and the CHPP. - Minimising the re-handling of material (i.e. coal, overburden and topsoil). - Maintaining the fleet in good operating order. 2021 and 2022 Annual Reviews provides a summary of GHG emissions. Sighted appropriate operating conditions on-site.	Compliant	
Air Quality Criteria						

20	Except for the air quality-affected land referred to in Table 1, the Applicant must ensure that all reasonable and feasible avoidance and mitigation measures are employed so that particulate matter emissions generated by the development do not exceed the criteria listed in Tables 8, 9 or 10 at any residence on privately-owned land. *Table 8: Long term criteria for particulate matter* **Pollutant** / **Averaging Period** / **[d] Criterion** Total suspended particulate (TSP) matter / Annual / [a] 90 µg/m³ Particulate matter < 10 µm (PM_{10}) / Annual / [a] 25 µg/m³ Particulate matter < 2.5 µm ($PM_{2.5}$) / Annual / [a] 8 µg/m³ *Table 9: Short term criteria for particulate matter* **Pollutant** / **Averaging Period** / **[d] Criterion** Particulate matter < 10 µm (PM_{10}) / 24 hour / [b] 50 µg/m³ Particulate matter < 2.5 µm ($PM_{2.5}$) / 24 hour / [b] 25 µg/m³ *Table 10: Long term criteria for deposited dust* **Pollutant** / **Averaging Period** / **Maximum increase in deposited dust level** / **Maximum total deposited dust level** [c] Deposited dust / Annual / [b] 2 g/m²/month / [a] 4 g/m²/month *Notes to Tables 8-10:* *a Total impact (i.e. incremental increase in concentrations due to the development plus background concentrations due to all other sources);* *b Incremental impact (i.e. incremental increase in concentrations due to the development on its own);* *c Deposited dust is to be assessed as insoluble solids as defined by Standards Australia, AS/NZS 3580.10.1:2003: Methods for Sampling and Analysis of Ambient Air - Determination of Particulate Matter -* *Deposited Matter - Gravimetric Method; and* *d Excludes extraordinary events such as bushfires, prescribed burning, dust storms, sea fog, fire incidents or any other activity agreed by the Secretary.*	EMM Air quality team	Annual Reviews for 2020, 2021 and 2022.	Dust gauge D7 exceeded the annual average criteria in 2020, 2021, and 2022 and D8 exceeded in 2020. Annual reports state that D7 is located within the MPO boundary and between the MPO and a neighbouring mining operation and is therefore not used to assess compliance or to represent residential receivers in the area. According to the 2020 Annual Review report, D8 is representative of the nearest residences which are subject to acquisition and therefore under the Development Consent, do not need to comply with the criteria. There were no exceedances of PM_{10}, $PM_{2.5}$ or TSP in the reporting period.	Compliant	
21	Deleted.					
Air Quality Operating Conditions						
22	The Applicant must: (a) implement best practice air quality management, including all reasonable and feasible measures to minimise the odour, fume and dust emissions of the development; (b) minimise visible air pollution generated by the development; (c) minimise, where reasonable and feasible, the extent of potential dust generating surfaces exposed on the site at any given point in time; (d) minimise the air quality impacts of the development during adverse meteorological conditions and extraordinary events (see Note d above under Tables 8-10); (e) regularly assess the real-time air quality monitoring and meteorological forecasting data and relocate, modify and/or stop operations on site to ensure compliance with the relevant conditions of this consent; and (f) co-ordinate the air quality management on site with the air quality management at nearby mines (including the Bengalla mine) to minimise cumulative air quality impacts from the mines, to the satisfaction of the Secretary.	EMM Air quality team	AQGHGMP. Annual Reviews for 2020, 2021 and 2022. Site inspection.	Mitigation measures detailed in the AQGHGMP and Annual Review reports. Monitoring data analysed in Annual Review reports. Following sighted during site tour: - water carts and active management of dust. - online 'CatTool' allowing real-time response to air quality alarms. - Jacobs forecast of met conditions.	Compliant	
Air Quality and Greenhouse Gas Management Plan						
23	The Applicant must prepare an Air Quality and Greenhouse Gas Management Plan for the development to the satisfaction of the Secretary. This plan must: (a) be submitted to the Secretary for approval prior to carrying out any development on site; (b) describe the measures that would be implemented to ensure compliance with the relevant conditions of this consent, including a real-time air quality management system that employs reactive and proactive mitigation measures; (c) include an air quality monitoring program that: • uses a combination of real-time monitors and supplementary monitors to evaluate the performance of the development; • includes PM2.5 monitoring (although this obligation could be satisfied by the regional air quality monitoring network if sufficient justification is provided); • includes a protocol for determining exceedances of the relevant conditions of this consent; and (d) include a protocol that has been prepared in consultation with the owners of nearby mines to minimise the cumulative air quality impacts of the mines. The Applicant must implement the management plan as approved by the Secretary.	EMM Air quality team	AQGHGMP. Annual Reviews for 2020, 2021 and 2022. Site inspection.	AQGHGMP prepared with relevant sections including AQ monitoring program, protocol for determining exceedances, and cumulative air quality management protocol. Annual Reviews include AQ monitoring results (incl. $PM_{2.5}$).	Compliant	
METEOROLOGICAL MONITORING						
24	For the life of the development, the Applicant must ensure that there is a meteorological station operating in the vicinity of the site that: (a) complies with the requirements in the Approved Methods for Sampling of Air Pollutants in NSW guideline; and (b) is capable of continuous real-time measurement of temperature lapse rate in accordance with the *NSW Industrial Noise Policy* , or as otherwise approved by the Secretary.	EMM Air quality team	AQGHGMP. Met data provided for audit period. Site inspection.	Site inspection confirmed met station working. Temperature lapse rate data has been provided.	Compliant	
SOIL & WATER						
	Note: Under the Water Act 1912 and/or the Water Management Act 2000, the Applicant is required to obtain water licences for the development.					
Water Supply						
25	The Applicant must ensure that it has sufficient water for all stages of development, and if necessary, adjust the scale of mining operations on site, to match its available water supply to the satisfaction of the Secretary.	EMM general audit team	Annual Reviews for 2020, 2021 and 2022. Site water balance. Water take data.	Water take data from the Annual Reviews confirmed no exceedances of water entitlements.	Compliant	
Water Discharges						
26	The Applicant must ensure that any surface water discharges from the site comply with the: (a) discharge limits (both volume and quality) set for the development in any EPL; or (b) relevant provisions of the POEO Act or Protection of the Environment Operations (Hunter River Salinity Trading Scheme) Regulation 2002.	EMM general audit team	Annual Reviews for 2020, 2021 and 2022. Letters to/from agencies reporting the events. Water management plan. Site inspection/interviews.	Seven water discharge events occurred during the audit period following periods of heavy rain (1:5 year and 1:10 year rainfall events). These occurred on: * 8 March 2021 - failure of erosion and sediment controls resulted in run off leaving site. * 8 June 2021 - two separate discharges of sediment-laden water from MOD 4 construction area and into Wybong Road swale drains, where it ceased. * 12 November 2021 - discharge of sediment-laden water from the Rail 2 Project Area and into Wybong Road swale drains. * 8 December 2021 - discharge from four sediment basins (SD4, SD6, SD7 and ED2) offsite. * 9 December 2021 - discharge from four sediment basins (SD4, SD6, SD7 and ED2) offsite. * 8 March 2022 - discharge from five sediment basins (SD1, SD4, SD6, SD7 and TSB2) offsite. * 21 October 2022 - spillway discharge was observed from SD4. MPO confirmed during the site interviews that the sediment dams are designed, constructed and managed in accordance with Managing Urban Stormwater: Soils and Construction – Volume 2E, Mines and Quarries “the Blue Book” (Landcom, 2004). The water releases exceeded capacities for which the sediment dams were designed and managed. Following the rainfall events, MPO completed investigations into the cause and reported the incidents to DPE and EPA. As required by the water management plan, water quality sampling was undertaken during the events, with water quality showing negligible changes in release water in pH, EC and TSS. Regular inspections were implemented and undertaken prior to and during forecasted heavy rainfall events, in addition to regular third party inspections by a CPESC. MPO reviewed and updated the water management plan in accordance with Schedule 5, Condition 4. **Recommendation (REC 5):** Ensure corrective actions as per the investigations of incident events are implemented.	Non-compliant	NC3
Compensatory Water Supply						

27	The Applicant must provide compensatory water supply to any landowner of privately-owned land whose water entitlements are adversely and directly impacted (other than an impact that is negligible) as a result of the development, in consultation with DPE Water, and to the satisfaction of the Secretary. The compensatory water supply measures must provide an alternative long-term supply of water that is equivalent, in quality and volume, to the loss attributed to the development. Equivalent water supply should be provided (at least on an interim basis) as soon as practicable after the loss is identified, unless otherwise agreed with the landowner. If the Applicant and the landowner cannot agree on the measures to be implemented, or there is a dispute about the implementation of these measures, then either party may refer the matter to the Secretary for resolution. If the Applicant is unable to provide an alternative long-term supply of water, then the Applicant must provide alternative compensation to the satisfaction of the Secretary.	EMM general audit team	No evidence of water loss to landowner of privately-owned land.	No compensatory water supply required.	Not triggered	
Water Management Plan						
28	The Applicant must prepare a Water Management Plan for the development to the satisfaction of the Secretary. This plan must be prepared in consultation with DPE Water and EPA, and be submitted to the Secretary for approval by 30 June 2019, unless otherwise agreed by the Secretary. The plan must include: (a) a Site Water Balance, which must: • include details of: o sources and security of water supply; o water use on site; o water management on site; o any off-site water transfers; and • investigate and implement all reasonable and feasible measures to minimise water use by the development; (b) an Erosion and Sediment Control Plan, which must: • identify activities that could cause soil erosion, generate sediment or affect flooding; • describe measures to minimise soil erosion and the potential for the transport of sediment to downstream waters, and manage any flood risk; • describe the location, function, and capacity of erosion and sediment control structures; • describe what measures would be implemented to maintain the structures over time; (c) a Surface Water Management Plan, which must include: • detailed baseline data on surface water flows and quality in creeks and other waterbodies that could potentially be affected by the development; • surface water and stream health impact assessment criteria including trigger levels for investigating any potentially adverse surface water impacts; • a program to monitor and maintain the bridge openings and culverts associated with the MOD 4 rail infrastructure and ensure that they remain clear of blockages; • a program to monitor surface water flows and quality in the watercourses that could be affected by the project; and • reporting procedures for the results of the monitoring program; (d) a Groundwater Management Plan, which must include: • detailed plans, including design objectives and performance criteria, for the design and management of the proposed final voids; • detailed baseline data of groundwater levels, yield and quality in the region, and privately-owned groundwater bores, that could be affected by the development; • groundwater impact assessment criteria including trigger levels for investigating any potentially adverse groundwater impacts; • a program to monitor and assess: o groundwater inflows to the mining operations; o impacts on regional and local (including alluvial) aquifers; o impacts on the groundwater supply of potentially affected landowners; o impacts on groundwater dependent ecosystems and riparian vegetation; (e) a Surface and Ground Water Response Plan, which must include: [illegible] surface water and groundwater assessment criteria;	EMM general audit team	Evidence of DPE approval of WMP on 24/10/22 and associated sub-plans. Evidence of consultation to/from DPE Water and EPA. Review of: - Site water balance (Appendix 1) - Erosion and Sediment Control Plan (Appendix 2) - Surface Water Management Plan (Appendix 3) - Groundwater Management Plan (Appendix 4) - Surface and Ground Water Response Plan (Appendix 5).	Initial review outside of audit period. The latest version of the Water Management Plan was endorsed by the DPE on 24/10/22. Endorsement for each of the sub-plans were received on the following dates: - Site Water Balance = 6/06/22. - Erosion and Sediment Control Plan. - Surface Water Management Plan = 7/09/22. - Groundwater Management Plan = 6/06/22 - Surface and Ground Water Response Plan = 6/06/22. A review of the Site Water Balance, Erosion and Sediment Control Plan, Surface Water Management Plan, Surface Water Management Plan, Groundwater Management Plan, and the Surface and Ground Water Response Plan shows that all inclusions requested as part of the consent condition have been included in each report. Table 1 of each report outlines the sections these are addressed. MPO consulted the EPA during the audit period. On 15/10/20 and 21/10/20, the EPA indicated that their role is to set environmental management objectives rather than being involved in development strategies to meet the objectives (i.e. management plans). The EPA therefore did not provide any comments on this WMP. Sighted correspondence to DPE confirm WMP was reviewed as per the below: - 15 September 2020 - reviewed in accordance with Condition 4 of Schedule 5 of DA 92/97, noting WMP to be submitted 16 October 2020 for Secretary approval. - 30 June 2021 - reviewed in accordance with condition 4 of DA92/97 - 9 March 2022 reviewed in accordance with Condition 7A of Schedule 5 of DA 92/97, following two self reported incidents 12 November 2021 and 8 December 2021. - 20 May 2022 - reviewed in accordance with Condition 7A of Schedule 5 of DA 92/97, following a self reported incident 8 March 2022 - 30 June 2022 - reviewed in accordance with Condition 4 of Schedule 5 of DA 92/97 29 August 2022 - reviewed following approval of MOD 5. 21 January 2023 - reviewed in accordance with Condition 7A of Schedule 5 of DA 92/97, following a self reported incident on 21 November 2023.	Compliant	
28A	The Applicant must decommission the existing water supply infrastructure within the rail loop and infrastructure corridor, including the associated pump station, within 6 months of the commissioning of the MOD 4 water infrastructure. *Notes:* *• The existing rail loop and infrastructure corridor is shown in Figure 3 of Appendix 2.* *• The decommissioning of infrastructure within the rail loop and infrastructure corridor is also controlled under condition 37 of Schedule 3.*	EMM general audit team	Sighted evidence the Hunter River 1 pumping station has been decommissioned. It is noted that the MOD 4 water infrastructure has not been commissioned at the time of audit	MOD 4 infrastructure not yet commissioned, however Hunter River 1 pumping station has been decommissioned.	Compliant	
28B	The Applicant must notify DPE Water, in writing, within 14 days of completing the following: (a) the commissioning of the MOD 4 water infrastructure; and (b) the decommissioning of existing water supply infrastructure within the rail loop and infrastructure corridor.	EMM general audit team	a) Site confirmed commissions of the MOD 4 water supply infrastructure is yet to occur. b) Existing water supply infrastructure has been decommissioned - sighted correspondence confirming this which was uploaded to DPE portal on 1/07/2022. Email response from DPE on 21/02/2023.	MOD 4 infrastructure not yet commissioned, however Hunter River 1 pumping station has been decommissioned. MACH advised DPE Water within 14 days of condition 28B (b).	Compliant	
BIODIVERSITY						
29	Deleted.					
30	Deleted.					
31	Deleted.					
Biodiversity Management Plan						
32	The Applicant must prepare a Biodiversity Management Plan for the development to the satisfaction of the Secretary. This plan must: (a) be prepared in consultation with BCD and Council, and be submitted to the Secretary for approval by 30 June 2019, unless otherwise agreed by the Secretary; (b) include: • a description of the short, medium, and long term measures that would be implemented to: o manage the remnant vegetation and habitat on the site; and o avoid and manage remnant vegetation and habitat within the relinquishment area; • a detailed description of the measures that would be implemented over the next 3 years, including the procedures to be i implemented for: o implementing revegetation and regeneration within the disturbance areas, including establishment of canopy, sub-canopy (if relevant), understorey and ground strata; o maximising salvage and beneficial use of resources in areas that are to be impacted, including vegetative, soil and cultural heritage resources; o protecting vegetation and soil outside the disturbance areas; o rehabilitating creeks and drainage lines on the site, to minimise net loss of stream length and aquatic habitat; o managing salinity; o conserving and reusing topsoil; o undertaking pre-clearance surveys; o managing impacts on fauna; o landscaping the site and along public roads to minimise visual and lighting impacts; o collecting and propagating seed; o salvaging and reusing material from the site for habitat enhancement; o salvaging, transplanting and/or propagating threatened flora and native grassland; o controlling weeds and feral pests; o managing grazing and agriculture on site; o controlling access; and o bushfire management; • a program to monitor and report on the effectiveness of these measures, and progress against the performance and completion criteria; • a description of the potential risks to successful revegetation, and a description of the contingency measures that would be implemented to mitigate these risks; and • details of who would be responsible for monitoring, reviewing, and implementing the plan. The Applicant must implement the management plan as approved by the Secretary.	EMM Ecology team	Biodiversity Management Plan (Document ID MP001-0000-ENV-PLN-0012, dated 31 October 2019).	A BMP has been prepared and has been approved by the Secretary of the DPE (cover letter from DPE provided, dated 31 October 2019). Section 1.1.2 states that the BMP was provided to the Biodiversity and Conservation Division (BCD) and Muswellbrook Shire Council (MSC) for the purposes of consultation with comments received from BCD in June 2019. No comments were received by Council. Table 1 shows where the requirements of Condition 32 have been addressed within the BMP. All requirements have been addressed. The site audit indicated that the site is generally being managed in accordance with the BMP. **Recommendation (REC 6):** It was noted during the site visit that weed management activities had fallen behind over the past 12 months due to difficulties in engaging contractors. This is a known issue. Theiss have appointed a full-time contractor and are hoping to undertake additional work to get weed management back on track.	Compliant	
HERITAGE						

	Note: Under the National Parks and Wildlife Act 1974 or the Heritage Act 1977, the Applicant is required to obtain approvals for any impacts to Aboriginal objects and/or significant relics.					
Aboriginal Heritage Conservation Strategy						
33	The Applicant must prepare an Aboriginal Heritage Conservation Strategy for the development to the satisfaction of the Secretary. This strategy must: (a) be prepared by suitably qualified and experienced persons whose appointment has been endorsed by the Secretary; (b) be prepared in consultation with Heritage NSW and the Registered Aboriginal Parties; (c) be submitted to the Secretary for approval prior to carrying out any development on site; (d) provide for the establishment and conservation of an off-site Aboriginal cultural heritage conservation area/s that has comparable Aboriginal cultural heritage values (both cultural and archaeological) to the areas that would be developed on site; (e) describe the measures that would be implemented to provide appropriate long term security for the proposed Aboriginal cultural heritage conservation areas; and (f) include an action plan for the implementation of the strategy. The detailed measures for the implementation of the strategy are to be outlined in the Heritage Management Plan (see condition 36). The Applicant must implement the approved strategy as approved from time to time by the Secretary. *Note: The Aboriginal cultural heritage conservation area/s may be combined with any similar offset/conservation area required for the development under Commonwealth legislation, subject to suitably offsetting the cultural heritage impacts of the development.*	EMM general audit team	Aboriginal Heritage Management Plan (AHMP). Approval of the AHMP by DPE on 31/10/19. Peter Kuskie endorsed on 5/07/17.	The Aboriginal Heritage Conservation Strategy is included as Section 5 of the AHMP. The AHMP was approved by DPE on 31/10/19. As reported in the 2022 Annual Review, suitable arrangements to provide appropriate long-term security for the Aboriginal Heritage Conservation Area (Areas B and C) are ongoing and include liaison with Heritage NSW and the RAPs for an alternative artefact keeping place and proposing Aboriginal Cultural Heritage survey of select biodiversity offset areas to potentially identify alternatives.	Compliant	
34	Within 2 years of the approval of the Aboriginal Heritage Conservation Strategy, the Applicant must demonstrate to the satisfaction of the Secretary, that it has made suitable arrangements to provide appropriate long term security for the Aboriginal cultural heritage conservation area/s in the Aboriginal Heritage Conservation Strategy.	EMM general audit team	Aboriginal Heritage Management Plan. Approval of the AHMP by DPE on 31/10/19.	The Aboriginal Heritage Conservation Strategy is included as Section 5 of the AHMP. The AHMP was approved by DPE on 31/10/19.	Compliant	
Oral History						
35	By the end of December 2013, the Applicant must prepare a detailed history of the Mount Pleasant locality to the satisfaction of the Secretary. This history must: (a) be prepared by suitably qualified and experienced persons whose appointment has been endorsed by the Secretary; (b) be prepared in consultation with the Heritage NSW, the local history society, local community (including former residents as far as is practicable), and Registered Aboriginal Parties; (c) be prepared in accordance with the relevant Heritage Council of NSW guidelines; and (d) include detailed historical research as well as an oral history.	EMM general audit team	Aboriginal Heritage Management Plan	This condition is prior to the audit period. The AHMP states: The Oral History Report was prepared in 2004 (and subsequently reviewed in 2014). On 20 January 2014 then NSW Department of Planning and Infrastructure approved the report and advised that Condition 35, Schedule 3 of Development Consent DA 92/97 had been satisfied.	Compliant	
Aboriginal Heritage Management Plan						
36	The Applicant must prepare a Aboriginal Heritage Management Plan for the development to the satisfaction of the Secretary. This plan must: (a) be prepared in consultation with Heritage NSW and the Registered Aboriginal Parties by suitably qualified and experienced persons whose appointment has been endorsed by the Secretary; (b) be submitted to the Secretary for approval by 30 June 2019, unless otherwise agreed by the Secretary; (c) include: • a detailed plan for the implementation of the approved Aboriginal Heritage Conservation Strategy (required under condition 34); • a description of the measures that would be implemented to: o comply with the requirements of any Aboriginal Heritage Impact Permit issued for the development, including any approved archaeological testing and salvage program; o store the Aboriginal objects salvaged, both during construction and in the long term; o protect, monitor and/or manage all Aboriginal objects on site until the impacts of the development on these objects is unavoidable; o minimise the blasting impacts of the development on Aboriginal objects in the vicinity of the site; o manage the discovery of any human remains or previously unidentified Aboriginal objects on site; o enable Registered Aboriginal Parties to get reasonable access to the site during the development; o ensure Registered Aboriginal Parties are consulted about the conservation and management of Aboriginal cultural heritage on site; and o ensure construction personnel receive suitable heritage inductions prior to carrying out any development on site, and that suitable records are kept of these inductions. The Applicant must implement the management plan as approved by the Secretary. *Notes:* *• The Aboriginal Heritage Management Plan must be consistent with the requirements of any Aboriginal Heritage Impact Permit(s) issued by Heritage NSW relevant to the development.* *• The Applicant must ensure that Aboriginal site recording forms for newly recorded sites and Aboriginal site impact recording forms for salvaged sites are submitted to Heritage NSW for inclusion on the Aboriginal Heritage Information Management System database.*	EMM general audit team	a) AHMP. b) RAP consultation. c) AHMP Section 2-6. Induction records. Evidence of Heritage artefact keeping place at Broomfield Homestead.	a) The most recently approved version of the ACHMP was approved on 31 October 2019. This document has been reviewed as part of the Audit. Evidence of consultation provided in Section 1.3 of the MP. Includes consultation for MOD 4. Appendix H provides key correspondence. b) Site has provided evidence of consultation with the RAP's. c) The key aspects of the dot points in this condition have been covered in Section 2-6 of the ACHMP. The document is set out with cross referencing tables outlining where sub conditions have been covered. Evidence of inductions relating to heritage items Evidence of Heritage artefact keeping place at Broomfield Homestead. This is temporary keeping place. MACH Energy has been discussing with RAP's regarding a long term keeping place. Heritage items covered as part of this process. Evidence of ground disturbance permits. The salvaging generally occurs well before disturbance due to the time it takes for salvage. All those involved in disturbance have to sign onto the permit. Flagging and signage around areas of known heritage items. ACHMP appears to meet the requirements of HeritageNSW.	Compliant	
TRANSPORT						
Removal of Rail Loop and Infrastructure Corridor						
37	The Applicant must, by no later than 31 October 2022: (a) remove all infrastructure associated with the development within Mining Lease No. 1645 (ML 1645) south of Wybong Road (other than infrastructure which the operator of the Bengalla mine agrees with the Applicant, in writing, can remain in situ); (b) do all things available to transfer or cause the grant of a mining lease over that part of ML 1645 south of Wybong Road to the operator of Bengalla mine or its nominee; (c) transfer the freehold land owned by the Applicant within ML 1645 south of Wybong Road to the operator of Bengalla mine (or its nominee) at rural market value; (d) release any easements for pipeline and rail spur within or in the vicinity of ML 1645 south of Wybong Road which benefit land owned by the Applicant; and (e) demolish the Bengalla Link Road bridge required under condition 38 (a) below and, unless otherwise agreed by the Secretary, reinstate the road reserve to the satisfaction of Council. *Note: The rail loop and infrastructure corridor is shown in Figure 3 of Appendix 2.*	EMM general audit team	a) Sighted letter dated 28 October from MACH to DPE confirming removal of all infrastructure within ML 1645. With the exception of the bridge in agreement Bengalla. b) Sighted letter dated 28 October from MACH to DPE confirming part transfer of ML 1645 to Bengalla on 23 December 2020. c) Sighted letter dated 28 October from MACH to DPE confirming land transfer completed 6 December 2019. d) Sighted letter dated 28 October from MACH to DPE confirming release of required easements to Bengalla/ e) Sighted letter dated 28 October from MACH to DPE confirming in consultation with DPE and Bengalla the demolition of the bridge would not be required till the realignment of Bengalla Link road is completed by Bengalla.	Sighted all rail corridor all infrastructure removed during site inspection. Noting bridge remains in consult with Bengalla, MSC and DPE. Sighted evidence of correspondence satisfying condition.	Compliant	
Road Works						
	Note: Under the Roads Act 1993, the Applicant is required to obtain the consent of the appropriate roads authority prior to carrying out work on or over a public road.	EMM general audit team	Noted.	Noted.		
38	The Applicant must, at its own expense: (a) construct a bridge to carry the Bengalla Link Road over the proposed Mount Pleasant rail loop, in consultation with the operators of the Bengalla Mine; (b) construct the Mount Pleasant Northern Link Road to Dorset Road, prior to the closure of Castlerock Road; (c) construct the Mount Pleasant Western Link Road (generally in accordance with Council's Western Roads Strategy) from the intersection of the Bengalla Link Road to the intersection of the Mount Pleasant Northern Link Road, prior to the closure of Wybong Road; (d) construct the Mount Pleasant Mine Access Road; (e) upgrade the Wybong Road from the Bengalla Link Road to the Mount Pleasant Mine Access Road; and (f) construct an overpass or underpass across Wybong Road, or other means of crossing Wybong Road, should a construction road be proposed, to the satisfaction of Council.	EMM general audit team	Based on site communications all roads are Council Roads. Schedule confirmed during site audit. a) Completed Jan 2018; b) Works proposed early 2024; c)The current mine plan does not require the closure of Wybong Road. MPO will update Council if this requirement changes; d) Completed December 2016; e) Completed January 2018; and f) Wybong Road crossing completed May 2018	Sighted completion of works during site and confirmed with site representatives remaining road closure timing.	Compliant	
39	Should the following intersections be required, the Applicant must undertake construction works at: (a) the intersection of the Western Link Road and access to the mine site; (b) the intersection of the Bengalla Link Road and the Western Link Road; (c) the intersection of the Castlerock/Mount Pleasant Northern Link Road and the Western Link Road; and (d) the intersection of the Mount Pleasant Northern Link Road and Kayuga Road, to the satisfaction of Council and/or TfNSW. If there is any dispute between the Applicant and Council or TfNSW in relation to the funding or upgrade works, then any of the parties may refer the matter to the Secretary for resolution.	EMM general audit team	a) MPO site access intersection completed with the Wybong Road upgrade works. As per Condition 38 (c), Western Link Road should no longer be required. MPO will update Council if this requirement changes. b) Bengalla Link Road intersection works completed with the Wybong Road upgrade works. c) As per Condition 38 (b). d) As per Condition 38 (b). MACH Energy paid for all these road works. Based on site communications there have been no disputes. They were all Council roads.	A Road Works Schedule document was sighted during the site visit and status confirmed by site representatives.	Compliant	

39A	The Applicant must, by no later than 31 October 2022: (a) construct a rail overpass to carry the MOD 4 rail infrastructure over Wybong Road; (b) construct a road bridge to carry Overton Road over the MOD 4 rail infrastructure; and (c) partially realign Overton Road, as shown conceptually in Figure 5 of EA (MOD 4), in accordance with the relevant requirements of Austroads Guide to Road Design and to the satisfaction of Council. The Secretary may waive or alter the above requirements if they are no longer required following the completion of the final design of the MOD 4 rail infrastructure.	EMM general audit team	a) Complete. b) Overton intersection with Wybong road located under MOD 4 rail bridge of Wybong Road. Done in consult with MSC and DPE. c) Road designed as per final design.	Confirmed completion of works and consultation with MSC.	Compliant	
40	The Applicant must: (a) prepare a detailed schedule outlining the timing of the road works required by conditions 38, 39 and 39A by the end of June 2018; and (b) update this schedule annually, to the satisfaction of Council.	EMM general audit team	N/A	Not within audit period - however confirmed as compliant via pervious 2020 IEA (SLR 2020). Confirmed via previous audit findings.	Compliant	
Road Maintenance						
41	During the development, the Applicant must maintain the roads and intersections between the Bengalla Mine main entrance and the Mt Pleasant Mine main entrance, including: (a) part of the Bengalla Link Road; (b) part of the Wybong Road; and (c) part of the Mount Pleasant Western Link Road. The Applicant must develop a Maintenance Management Plan in respect of these roads, to the satisfaction of Council.	EMM general audit team	Evidence of road maintenance plan dated September 2021 with this signed by MACH Energy and Council. The plan outlines assets and maintenance. Based on site inspection there were no issues. Note: Mount Pleasant Western link not yet constructed therefore not included within Plan.	Sighted road maintenance plan dated September 2021 with this signed by MACH Energy and Council.	Compliant	
Thomas Mitchell Drive						
41A	The Applicant must contribute to the upgrade and maintenance of Thomas Mitchell Drive, proportionate to its impact (based on usage) on that infrastructure, in accordance with the Contributions Study prepared by GHD titled, "Thomas Mitchell Drive Contributions Study, May 2015" as amended by the supplementary report dated, August 2018 (as amended from time to time), unless otherwise agreed with the Secretary. For Thomas Mitchell Drive, the contributions must be paid to Council in accordance with: (a) the payment schedule in the Contributions Study for the upgrade works; and (b) the maintenance schedule established in accordance with the Contributions Study during the life of the development, unless otherwise agreed with Council. *Notes:* *• In making a determination about the applicable contribution/s under this condition, the Secretary will take into account the contributions already paid or required to be paid towards the upgrade and maintenance of the local road network in the Muswellbrook Local Government Area under this consent and any associated Planning Agreement with Council.* *• If there is a dispute between the relevant parties about the implementation of this condition, then any party may refer the matter to the Secretary for resolution.*	EMM general audit team	a) Sighted Scenario 2 - contribution analysis from the Thomas Mitchell Drive contribution study, and Purchase Order raised for MSC for the required amount. b) Sighted evidence of contribution in accordance with contribution analysis	Sighted payment schedule and evidence of payments.	Compliant	
Road Access and Signage						
42	The Applicant must ensure that as far as possible the preferred mine access road route, as described in the EIS, is the only route used by employees and contractors travelling to the mine site from Muswellbrook.	EMM general audit team	Site inspection.	Mine access road sighted at audit. No reason to determine non-compliance. Staff and contractors are informed of the requirement to not use Wybong Road.	Compliant	
43	The Applicant must maintain signs and give at least 24 hours notice of temporary road closures. The location and wording of the signs are to be approved by Council. A protocol is to be established, in consultation with the emergency service providers and Council, to permit the passage of emergency vehicles during road closures.	EMM general audit team	Signage and notifications in accordance with BMP.	Blasting schedule not available online 3/3/23 as no blast were planned during audit site visit. Sample evidence provided by site. No blast notification on MSC website as no blast were planned. Sample evidence provided by site. Section 9 of Blast Management Plan confirms road closure protocol. Section 6.5 confirms consultation with MSC.	Compliant	
Monitoring of Coal Transport						
44	The Applicant must: (a) keep records of the: • amount of coal transported from the site (on a monthly basis); and • date and time of each train movement generated by the development; and (b) make these records available on its website at the end of each calendar year.	EMM general audit team	Signed coal transport records for the audit period, example available at the below link: https://machenergyaustralia.com.au/wp-content/uploads/Coal-Transport-Records-2022.pdf	Signed coal transport records for the audit period.	Compliant	
CONSTRUCTION OF RAIL AND WATER SUPPLY INFRASTRUCTURE						
44A	The Applicant must carry out a detailed geotechnical investigation of former underground mine workings in the vicinity of the MOD 4 rail infrastructure. This investigation must: (a) be undertaken by suitably qualified and experienced persons; (b) be undertaken in consultation with SA NSW; (c) determine the extent of underground mine workings; (d) provide recommendations to ensure the geotechnical stability of MOD 4 rail infrastructure; and (e) be conducted and reported to the satisfaction of the Secretary. A final report detailing the outcomes of the geotechnical investigation must be submitted to the Secretary. The Applicant must not commence MOD 4 construction works in the vicinity of the former underground mine until the Geotechnical Investigation Report is approved by the Secretary.	EMM general audit team	Correspondence from DPE satisfying condition.	Sighted letter from DPE dated 22 Jun 2020 confirming Geotechnical Investigation Report provided 17 April 2020 satisfies condition.	Compliant	
44B	The Applicant must implement the recommendations of the Geotechnical Investigation Report to the satisfaction of the Secretary.	EMM general audit team	Geotechnical Investigation Report (AECOM 2021)	Site confirmed works were undertaken in accordance with Geotechnical Investigation Report (AECOM 2021)	Compliant	
44C	The Applicant must design and construct the MOD 4 rail infrastructure to meet the following performance criteria during a 1% Annual Exceedance Probability flood event: (a) no more than 0.1 m increase in flood levels on any privately-owned land; (b) no more than 0.01 m increase in flood levels at any privately-owned residence or commercial spaces; (c) no more than 0.01 m increase in flood levels at any public roads servicing privately-owned properties; and (d) no more than 0.1 m per second increase in flood velocities at privately-owned residences or commercial spaces.	EMM general audit team	Correspondence from DPE satisfying condition.	Sighted letter from DPE dated 8 Aug 2020 confirming documentation provided to DPE satisfies condition.	Compliant	
44D	The Applicant must commission an independent review of the final design of the MOD 4 rail infrastructure, including any associated hydraulic structures. This review must: (a) be undertaken by suitably qualified and experienced persons; (b) be undertaken in consultation with BCD; (c) demonstrate that the final design meets the performance criteria in condition 44C above; (d) be conducted and reported to the satisfaction of the Secretary. A final report detailing the outcomes of the independent review must be submitted to the Secretary. The Applicant must not commence MOD 4 construction works until the final report is approved by the Secretary.	EMM general audit team	Correspondence from DPE satisfying condition.	Sighted letter from DPE dated 8 Aug 2020 confirming documentation provided to DPE satisfies condition.	Compliant	
44E	The Applicant must ensure that any asbestos encountered during MOD 4 construction works is monitored, handled, transported and disposed of by appropriately qualified and licensed contractors in accordance with the requirements of SafeWork NSW and relevant guidelines, including: (a) Work Health and Safety Regulation 2017; (b) SafeWork NSW Code of Practice – How to Manage and Control Asbestos in the Workplace September 2016; (c) SafeWork NSW Code of Practice – How to Safely Remove Asbestos September 2016; (d) Protection of the Environment Operations (Waste) Regulation 2014; and (e) the EPA's Waste Classification Guidelines.	EMM general audit team	Site confirmed asbestos was encountered during MOD4 construction works. Sighted sample of associated EPA Consignment sheets.	Site confirmed asbestos was encountered during MOD 4 construction works. Asbestos managed in accordance with CEMP Section 5.7. Sighted sample of associated EPA Consignment sheets.	Compliant	
44F	All MOD 4 construction works outside of the Mining Lease Boundary must be carried out during Standard Construction Hours (7 am to 6 pm, Monday to Friday; and 8 am to 1 pm on Saturdays), unless the works are: (a) required by: • NSW Police; or • a public authority for the delivery of vehicles, plant or materials; or (b) required in an emergency to avoid the loss of life, damage to property or to prevent material harm to the environment; or (c) approved under an Out of Hours Work Protocol. *Note: The Mining Lease Boundary is shown in Figure 2 of Appendix 2.*	EMM general audit team	2021 Annual Review. CEMP for MOD 4.	2021 Annual Review notes non-compliance on 31/3/21. Non-compliance reported. All construction works associated with MOD 4 has now been completed. Section 5.1.3 of the CEMP address the noted requirements. Noted an Out of Hours Works Protocol (OHWP), approved by the DPE Secretary 15/3/21. Available: https://machenergyaustralia.com.au/wp-content/uploads/Mount-Pleasant-Operation-Out-of-Hours-Work-Protocol-Final-March-2021.pdf	Non-compliant	NC4

44G	If the Applicant proposes to undertake MOD 4 construction works (outside of the Mining Lease Boundary) outside the hours specified in condition 44F above, then the Applicant must prepare an Out of Hours Work Protocol for these works, to the satisfaction of the Secretary. This protocol must: (a) be prepared in consultation with the EPA and any residents who may be affected by the noise generated by these works; (b) address the relevant requirements of the Interim Construction Noise Guideline (DECC, 2009); and (c) be approved by the Secretary before any out of hours construction works are carried out. The Applicant must implement the Out of Hours Work Protocol as approved by the Secretary. *Note: For areas where construction noise is predicted to be at or below operational noise criteria at sensitive receptors, this is likely to provide sufficient justification for the need to operate outside of recommended standard hours as specified in the Interim Construction Noise Guideline (DECC, 2009).*	EMM general audit team	CEMP for MOD 4. Out of Hours Works Protocol (OHWP).	Out of Hours Works Protocol (OHWP), approved by the DPE Secretary 15/3/21. Available: https://machenergyaustralia.com.au/wp-content/uploads/Mount-Pleasant-Operation-Out-of-Hours-Work-Protocol-Final-March-2021.pdf a) Evidence of consultation with EPA and residencies provided in Appendix A and B of OHWP. b) Sections 2 and 3 of the OHWP address the noted requirements. c) Sighted - approved by the DPE Secretary 15/3/22	Compliant	
44H	The Applicant must ensure that the combined operational noise of the development and noise generated by the MOD 4 construction works outside of the Mining Lease Boundary does not exceed the criteria in Table 10A at any residence on privately-owned land *Notes:* *• To identify the locations referred to in Table 10A, see the figures in Appendix 5.* *• The Mining Lease Boundary is shown in Figure 2 of Appendix 2.* *• Noise generated by the development is to be measured in accordance with the relevant procedures and exemptions (including certain meteorological conditions) of the NSW Industrial Noise Policy, with the exception of the application of modifying factors under Fact Sheet C of the Noise Policy for Industry.* However, these criteria do not apply if the Applicant has a written agreement with the relevant landowner to exceed the criteria, and the Applicant has advised the Department in writing of the terms of this agreement.	Bridges Acoustics	Review of monthly monitoring reports and annual reviews Construction equipment noise testing reports Two construction noise monitoring reports, for 25-27 May 2021 and 10 August 2021	Section 5.2.2 of the 2020 Annual Review states there were no exceedances of the construction noise criteria during the reporting period. Section 4.1 of the Construction Environmental Management Plan includes noise criteria for construction activities, for standard (daytime) construction hours. Section 6.2.1 of the Construction Environmental Management Plan states monitoring would occur according to the Noise Management Plan, which only requires noise monitoring at night. Review of construction equipment noise test reports indicates equipment produces acceptable sound power levels for heavy diesel powered machines. The construction noise survey report for 25-27 May 2021 indicated compliance with the construction noise criteria during the day. However, the day criteria were also incorrectly applied to the night period, with monitoring results indicating night noise levels reaching the range 40 to 50 LAeq at the monitoring locations representative of nearest receivers. The construction noise survey report for 10 August 2021 indicated compliance with the construction noise criteria during the day. No noise monitoring occurred during the night. **Recommendation (REC 7):** Adopt appropriate noise criteria for any out-of-hours construction work. Appropriate criteria are generally identical to usual MPO noise criteria unless alternative criteria are agreed with EPA/DPE.	Non-compliant	NC5
44I	The Applicant must prepare a Construction Environmental Management Plan for MOD 4 construction works, to the satisfaction of the Secretary. This plan must: (a) be prepared in consultation with the EPA, Council and any relevant road or utilities authorities; (b) describe measures to be implemented to minimise construction-related noise, vibration, dust, biodiversity and visual impacts, including specific measures to minimise: • surface disturbance; and • the cumulative impacts of construction and operational noise; (c) describe detailed procedures to be implemented to: • notify affected landowners of upcoming construction activities; • receive, record, handle and respond to construction-related complaints; and • resolve any disputes that may arise during MOD 4 construction works; (d) include a Construction Traffic Management Plan which: • describes the measures to be implemented to minimise traffic safety issues and disruption to local road users, including managing light, heavy and over-dimensional vehicles during construction works; and • includes procedures for notifying other road users (including local bus operators) of any construction works that may disrupt their usual use of the road; and (e) include a Historic Heritage Management Plan which describes measures to implement the relevant historic heritage management commitments outlined in Appendix 3; and (f) include an Unexpected Contamination Protocol which describes the procedures to be implemented in the event that potentially contaminated material is identified during construction, including: • procedures for testing, removal and disposal of potentially contaminated material; and • measures to ensure compliance with the requirements of SafeWork NSW and relevant guidelines. The Applicant must not commence MOD 4 construction works until the Construction Environmental Management Plan is approved by the Secretary. The Applicant must implement the Construction Environmental Management Plan as approved by the Secretary.	EMM general audit team	CEMP for MOD 4.	Sighted MPO - Construction Environmental Management Plan, approved by DPE Secretary 10/3/2020. Available online (https://machenergyaustralia.com.au/wp-content/uploads/Mount-Pleasant-Operation-Redacted-Construction-Environmental-Management-Plan-MOD-4.pdf). a) Section 1.3 of the CEMP confirms consultation with EPA, MSC, Telstra and Ausgrid. b) Section 5 of the CEMP includes measures to minimise environmental impacts, disturbance and cumulative impacts. c) Section 9 of the CEMP details notification, handling and reporting systems. d) Section 5.5 and Appendix A of the CEMP address the noted requirements. e) Section 5.6 and Appendix B of the CEMP address the noted requirements. f) Section 5.7 and Appendix C of the CEMP address the noted requirements	Compliant	
VISUAL						
Visual Amenity and Lighting						
45	The Applicant must: (a) implement all reasonable and feasible measures to minimise the visual and off-site lighting impacts of the development; (b) ensure no outdoor lights shine above the horizontal; and (c) ensure that all external lighting associated with the development complies with Australian Standard AS4282 (INT) 1997 – Control of Obtrusive Effects of Outdoor Lighting or its latest version, to the satisfaction of the Secretary.	EMM general audit team	Visual Impact Management Plan. Site inspection. Complaints: * 2020 - 16 complaints * 2021 - 14 complaints * 2022 - 1 complaint Sighted response to complaints and general inspections to sight lighting plant to the north west/west.	The lighting plants are passed to full specifications when they are delivered to site. These meet Australian standards. Based on site communications lighting plants are pointed down and orientated to reduce visual impacts. Evidence of review and comms to site dated 1/3/2022. Lighting plant inspected during site visit which demonstrated lights facing down and not shining above horizon. The site inspection confirmed the site is managed generally in accordance with the Visual Impact Management Plan. EMM reviewed the complaints register found on the MPO website. There were 31 complaints related to lighting over 2020-2023. Sighted response process during site visit.	Compliant	
Additional Visual Mitigation Measures						
46	Upon receiving a written request from the owner of any residence on privately-owned land which has, or would have, significant direct view of the mining operations on site, the Applicant must implement visual mitigation measures (such as landscaping treatments or vegetation screens) on the land in consultation with the landowner. These measures must be reasonable and feasible, and directed toward minimising the visibility of the mining operations from the residence. If within 3 months of receiving this request from the owner, the Applicant and the owner cannot agree on the measures to be implemented, or there is a dispute about the implementation of these measures, then either party may refer the matter to the Secretary for resolution. *Note: Except in exceptional circumstances, the Secretary will not require additional visual impact mitigation to be undertaken for residences that are more than 3 kilometres from the mining operations.*	EMM general audit team	N/A	MACH confirmed no request received during audit period.	Not triggered	
Visual Impact Management Plan						
47	The Applicant must prepare a Visual Impact Management Plan to mitigate the visual impacts of the development to the satisfaction of the Secretary. This plan must: (a) be prepared in consultation with Council, and submitted to the Secretary for approval by 30 June 2019, unless otherwise agreed by the Secretary; (b) provide for the establishment of trees and shrubs and/or the construction of mounding or bunding: • along the access road to the mine site; • around the water storage dams and coal preparation plant; • at other areas identified as necessary for the maintenance of satisfactory visual amenity; (c) include details of the visual appearance of all buildings, structures, facilities or works (including paint colours and specifications), aimed at blending as far as possible with the surrounding landscape; and (d) include detailed measures to minimise the visual impacts of the MOD 4 rail infrastructure, including: • details regarding any proposed light screens, earth bunds and screen planting; and • procedures to monitor and maintain the effectiveness of visual impact mitigation measures for the life of the development. The Applicant must implement the management plan as approved by the Secretary.	EMM general audit team	a) Current Visual Impact Management Plan approved by DPE on 31 October 2019. Appendix A - Consultee feedback was available in the site document. b) Contained in Section 5.5. Bunding shown in figure. c) Section 5.4 d) Section 5, 6 and 8.	The lighting plants are passed to full specifications when they are delivered to site. These meet Australian standards. Based on site communications lighting plants are pointed down and orientated to reduce visual impacts. Evidence of third party audits sighted. Sample of lighting plants were reviewed as part of the audit. Which were orientated down. There are complaints relating to visual impacts with evidence provided to EMM illustrating the response by MACH Energy.	Compliant	
BUSHFIRE MANAGEMENT						
48	The Applicant must: (a) ensure that the development is suitably equipped to respond to any fires on site; and (b) assist the Rural Fire Service and emergency services as much as possible if there is a fire in the vicinity of the site.	EMM general audit team	a) Evidence of fire management including water trucks. Also some water trucks are road registered. There is an emergency response team. b) Copy of the Bushfire management plan sighted by EMM.	Sighted fire management equipment and BMP during sight inspection.	Compliant	
WASTE						
Waste Minimisation and Disposal						

49	The Applicant must: (a) minimise the waste (including coal reject) generated by the development; (b) ensure that the waste generated by the development is appropriately stored, handled and disposed of in a lawful manner.	EMM general audit team	a) Based on the evidence provided the site has minimised the amount of waste being generated. b) Sighted appropriate waste storage and handling during site visit. Evidence of license contractor removing waste sighted.	Sighted implementation of waste minimisation strategies during site visit. Sighted evidence of engagement of waste contractor and reporting requirements under the engagement contractor to identify areas of improvement.	Compliant	
On-site Sewage						
50	The Applicant must ensure that all sewage generated on site is treated and disposed of to the satisfaction of Council.	EMM general audit team	Sighted sample of sewage treatment plant inspections. Sighted Annual return sewage treatment plant Inspection and maintenance reports. Sighted work orders for ongoing maintenance.	Sighted evidence of maintenance and management of Sewerage Treatment Plant. Outcomes reported in annual returns.	Compliant	
Disposal of Fine Rejects						
51	The Applicant must not emplace fine rejects in the southern catchment without the written approval of the Secretary	EMM general audit team	Based on site communications this has not been triggered. No evidence from inspection.	Site to reaffirm previous audit findings.	Not triggered	
Waste Management Plan						
52	The Applicant must prepare a Waste Management Plan for the development to the satisfaction of the Secretary. This plan must: (a) be prepared in consultation with DPE Water and the Resources Regulator, and submitted to the Secretary for approval prior to carrying any development on site; (b) describe the measures that would be implemented to avoid, minimise, reuse and recycle all waste streams generated by the development; (c) include a fines emplacement plan; and (d) a program to evaluate the fines emplacement plan and methods, with a view to emplacing fines within active mining areas. The Applicant must implement the management plan as approved by the Secretary.	EMM general audit team	a) Current version of Waste Management Plan approved by DPIE on 14 January 2019. Evidence of consultation provided in site version of the management plan. b) Section 5. c) Appendix 1. d) Section 7.2. Non - compliant for hydrocarbon and chemical storage. MIA and CHPP area: a) Small hydrocarbon spills identified around workshop and refuelling bay. b) There were 1,000 L pods located around the CHPP and MIA laydown areas (some full, some mostly empty) with oil and other chemicals.	Hydrocarbon spills to be managed in accordance with Waste Management Plan and spills procedure. 1000 litre pods to be stored within appropriately bunded areas. **Recommendation (REC 8):** Ensure all chemicals/hydrocarbons are appropriately stored in bunded areas.	Non-compliant	NC6
REHABILITATION						
Rehabilitation Objectives						
53	The Applicant must rehabilitate the site in accordance with the provisions under the Mining Act 1992. This rehabilitation must be generally consistent with the conceptual final landform depicted in Figure 4 in Appendix 2, and comply with the objectives in Table 11. *Table 11: Rehabilitation Objectives* **Feature** / **Objective** All areas of the site affected by the development: • Safe, stable & non-polluting; • Fit for the intended post-mining land use/s Areas proposed for native ecosystem re-establishment: • Restore self-sustaining native woodland ecosystems characteristic of vegetation communities found in the local area, as shown conceptually in Figure 4 in Appendix 2; • Establish areas of self-sustaining: – riparian habitat, with any diverted and/or re-established creek lines and retained water features; – potential habitat for threatened flora and fauna species; and – wildlife corridors, as far as is reasonable and feasible, and as shown conceptually in Figure 4 in Appendix 2. Areas proposed for agricultural land: • Establish/restore grassland areas to support sustainable agricultural activities; • Achieve the nominated land capability classification Other land affected by the development: • Restore ecosystem function, including maintaining or establishing self-sustaining ecosystems comprised of local native plant species (unless the Resources Regulator agrees otherwise) Final Landform: • Stable and sustainable for the intended post-mining land use/s; • Integrated with surrounding natural landforms; • Incorporate micro-relief and drainage lines that are consistent with surrounding topography, to the greatest extent practicable; • Maximise surface water drainage to the natural environment (excluding final void catchment) Final voids: • Designed as long term groundwater sinks to maximise ground water flows across back filled pits to the final void; • Minimise to the greatest extent practicable: – the size and depth of final voids; – the drainage catchment of final voids; – any high wall instability risk; and – the risk of flood interaction Surface infrastructure of the development: • To be decommissioned and removed, unless the Resources Regulator agrees otherwise Rehabilitation materials: • Materials from areas disturbed under this consent (including topsoils, substrates and seeds) are to be recovered, managed and used as rehabilitation resources, to the greatest extent practicable Water quality: • Water retained on the site is fit for the intended post-mining land use/s; • Water discharged from the site is suitable for receiving waters and fit for aquatic ecology and riparian vegetation Community: • Ensure public safety; • Minimise adverse socio-economic effects associated with mine closure	EMM general audit team supported by the EMM Ecology team	Annual Reviews for 2020, 2021 and 2022. Site inspection.	As per the 2022 Annual Review, 131 ha of land is currently under active rehabilitation with a further 32 ha being prepared for rehabilitation. There is a 151 ha forecasted for rehabilitation in 2023. Rehabilitation of the Eastern Out of Pit Emplacement progressed. An additional 32.4 ha was rehabilitated, which included: - bulk and detailed re-shaping of overburden material to final landform; - installation of habitat features such as habitat/stag trees, log piles and rock piles across the rehabilitation area; - topsoil spreading to a minimum depth of 100 mm; - gypsum application at a rate of 10 tonnes per hectare (t/ha); - deep ripping/timing along the contour of the final landform to a depth of 500 mm; - planting of tube stock including ground, middle and upper stratum species of relevant target PCTs; - direct/hand seeding of endangered ecological community tree/shrub/grass indicative species plus an additional grass cover crop; and - planting of approximately 100 native trees per ha. Rehabilitation areas were subject to ongoing weed and pest control measures throughout the reporting period to facilitate and promote successful vegetation establishment. The overarching objective for rehabilitation of the Fines Emplacement Area (FEA) is to establish a safe, stable and non-polluting landform with a sustainable surface cover that minimises erosion (to prevent exposure of the underlying fines material) and sustains grassland vegetation in the long-term. During the reporting period, MACH Energy operated the FEA using sub-aerial deposition which involves an extended period of air drying that maximises in-situ tailings densities, and in turn, maximises the storage efficiency of the facility as well as providing a more competent fines surface for future rehabilitation purposes.	Compliant	
54	By the end of January 2019, unless otherwise agreed by the Secretary, the Applicant must prepare a Rehabilitation Strategy for the development to the satisfaction of the Secretary. This strategy must: (a) be prepared by a suitably qualified and experienced person/s whose appointment has been endorsed by the Secretary; (b) be prepared in consultation with the Resources Regulator and Council; (c) build upon the Rehabilitation Objectives in Table 11 and the conceptual final landform depicted in Figure 4 in Appendix 2, including identification of opportunities for increasing the areas of woodland and habitat connectivity within the rehabilitated landscape; (d) include details of the canopy, sub-canopy, understory and ground strata species to be established in the rehabilitation areas, with a particular focus on ensuring the achievement of an appropriate level of diversity and mix of functional groups within each target community; (e) include an indicative schedule for the staged rehabilitation of the development; (f) include a protocol for periodic trials to demonstrate that the proposed agricultural land capability of grassland areas in the final landform is being achieved; and (g) include a protocol for periodic trials to demonstrate that the target vegetation communities proposed in rehabilitated woodland areas and fauna habitat is being achieved. The Applicant must implement the approved strategy as approved from time to time by the Secretary.	EMM general audit team	Sighted MPO Rehabilitation Management Plan (RMP) dated 1 August 2022, superseding the previous Rehabilitation Strategy. a) RMP does not confirm that it has been prepared by a suitably qualified persons whose appointment has been endorsed by the Secretary. Evidence supplied by MACH to EMM confirm it was. b) RMP section 4.2 notes consultation undertaken with Resource Regulator and MSC. It further notes consultation undertaken with the CCC, DPE, DPE-Water, BCD and DPI-Agriculture. c) Rehabilitation objectives are outlined in Section 4 of the RMP. d) RMP Section 6.2.5 outlines (Plant Community Types) to be established within rehabilitated areas. e) The RMP does not provide an indicative schedule for the stage rehabilitation of the development. It is noted that this is identified within the MACH Annual Rehabilitation and Forward Work Program. f) RMP Section 8 outlines processes to establish agricultural rehabilitation establishment.	RMP does not identify that it has been prepared by a suitably qualified person whose appointment has been approved by the Secretary. It is recommended that this is correct. Noting the previous version of the document as noted in the previous audit was prepared by a suitable qualified person. **Recommendation:** - **REC 9** - Update Table 2-1 of the RMP to include Schedule 3, Condition 54 of DA 92/97. - **REC 10** - Update RMP to make reference to the Annual Rehabilitation and Forward Work Program to address the requirement of the RMP to include an indicative schedule. - **REC 11** - Address erosion issues within the rehabilitation areas which were observed during the site visit.	Compliant	
Progressive Rehabilitation						
55	The Applicant must rehabilitate the site progressively, that is, as soon as reasonably practicable following disturbance. All reasonable steps must be taken to minimise the total area exposed at any time. Interim stabilisation and temporary vegetation strategies must be employed when areas prone to dust generation, soil erosion and weed incursion cannot be permanently rehabilitated. *Note: It is accepted that some parts of the site that are progressively rehabilitated may be subject to further disturbance at some later stage of the development.*	EMM general audit team	Evidence of some progressive rehabilitation. Namely around the eastern dump area. The mine plan is designed to minimise disturbance areas. Forward Work Program sighted confirming proposed progressive rehabilitation.	Sighted progressive rehabilitation during site inspection and documents supporting the implementation of progressive rehabilitation.	Compliant	
55A	The Applicant must implement all reasonable and feasible measures to provide for the interim stabilisation and temporary vegetation of the existing rail loop and infrastructure corridor, as soon as reasonably practicable following the removal of infrastructure as required under condition 37. *Note: The Applicant's obligations under this condition will cease following the transfer or grant of a mining lease over that part of ML 1645 south of Wybong Road to the operator of Bengalla mine (or its nominee).*	EMM general audit team	Sighted rehabilitation works undertaken within the existing rail loop infrastructure corridor which has since been provided to Bengalla.	Sighted rehabilitation works undertaken within the existing rail loop infrastructure corridor which has since been provided to Bengalla.	Compliant	
Rehabilitation Management Plan						

56	By the end of April 2019, unless otherwise agreed by the Secretary, the Applicant must prepare a Rehabilitation Management Plan for the development in accordance with the provisions under the *Mining Act 1992* .	EMM general audit team	Sighted MPO Rehabilitation Management Plan (RMP) dated 1 August 2022.	Sighted document.	Compliant	
SCHEDULE 4 - ADDITIONAL PROCEDURES						
NOTIFICATION OF LANDOWNERS						
1	By the end of December 2011, the Applicant must: (a) notify in writing the owners of: • the land listed in Table 1 of Schedule 3 that they have the right to require the Applicant to acquire their land at any stage of the development; • any residence on the noise-affected land in Table 1 or Table 2 of Schedule 3 that they are entitled to ask for additional noise mitigation measures to be installed at their residence at any stage of the development; • any residences on the air quality-affected land listed in Table 1 that they are entitled to ask for additional air quality mitigation measures to be installed at their residence at any stage of the development; • any privately-owned land within 2 kilometres of the approved open cut mining pit on the site that they are entitled to ask for an inspection to establish the baseline condition of any buildings and/or structures on their land, or to have a previous property inspection updated; and (b) send a copy of the NSW Health fact sheet entitled "Mine Dust and You" (as may be updated from time to time) to the owners and/or existing tenants of any land (including mine-owned land) where the predictions in the documents listed in condition 2(a) of Schedule 2 identify that dust emissions generated by the development are likely to be greater than the relevant air quality criteria in Schedule 3 at any time during the life of the development. Within one month of any modification that leads to new land being added to Tables 1 or 2 of Schedule 3, the Applicant must notify affected land owners in accordance with the requirements of paragraph (a).	EMM general audit team	N/A	Historical condition. Outside of audit period.	Not triggered	
1A	Prior to entering into any tenancy agreement for any land owned by the Applicant that is predicted to experience exceedances of the recommended dust and/or noise criteria, the Applicant must: (a) advise the prospective tenants of the potential health and amenity impacts associated with living on the land, and give them a copy of the NSW Health fact sheet entitled "Mine Dust and You" (as may be updated from time to time); and (b) advise the prospective tenants of the rights they would have under this consent, to the satisfaction of the Secretary.	EMM general audit team	Residential agreements. Letters to/from landowners advising of monitoring exceedances.	The residential agreement contains a section which discusses the 'right to mine'. Signed agreements therefore acknowledge the potential impacts of mining.	Compliant	
2	As soon as practicable after obtaining monitoring results showing: (a) exceedance of the relevant criteria in Schedule 3, the Applicant must notify the affected landowner and tenants in writing of the exceedance, and provide regular monitoring results to each of these parties until the development is complying with the relevant criteria again; and/or (b) an exceedance of the relevant criteria of Schedule 3, the Applicant must send a copy of the NSW Health fact sheet entitled "Mine Dust and You" (as may be updated from time to time) to the affected landowners and/or existing tenants of the land (including the tenants of any mine- owned land).	EMM general audit team	Residential agreements. Letters to/from landowners advising of monitoring exceedances.	The residential agreement contains a section which discusses the 'right to mine'. Signed agreements therefore acknowledge the potential impacts of mining. Letters were provided to landowners following exceedances which discuss additional monitoring results and any corrective actions.	Compliant	
INDEPENDENT REVIEW						
3	If an owner of privately-owned land considers the development to be exceeding the criteria in Schedule 3, then he/she may ask the Secretary in writing for an independent review of the impacts of the development on his/her land. If the Secretary is not satisfied that an independent review is warranted, the Secretary will notify the landowner in writing of that decision, and the reasons for that decision, within 21 days of the request for a review. If the Secretary is satisfied that an independent review is warranted, then within 2 months of the Secretary's decision, the Applicant must: (a) commission a suitably qualified, experienced and independent expert, whose appointment has been approved by the Secretary, to: • consult with the landowner to determine his/her concerns; • conduct monitoring to determine whether the development is complying with the relevant criteria; and • if the development is not complying with these criteria then: o determine if more than one mine is responsible for the exceedance, and if so the relative share of each mine towards the impact on the land; o identify the measures that could be implemented to ensure compliance with the relevant criteria; and (b) give the Secretary and landowner a copy of the independent review.	EMM general audit team	Structural Assessment of Mine Blasting Impacts. Structural Engineering reports. Letters to landowners advising that they would engage an independent engineering consultant to complete a structural assessment.	Evidence provided to EMM shows that independent assessments of damage caused by blasting incidents were completed within 2 months following request from the landowner.	Compliant	
4	Deleted		N/A		Not triggered	
5	Deleted		N/A		Not triggered	
LAND ACQUISITION						
6	Within 3 months of receiving a written request from a landowner with acquisition rights, the Applicant must make a binding written offer to the landowner based on: (a) the current market value of the landowner's interest in the land at the date of this written request, as if the land was unaffected by the development, having regard to the: • existing and permissible use of the land, in accordance with the applicable planning instruments at the date of the written request; and • presence of improvements on the land and/or any approved building or structure which has been physically commenced at the date of the landowner's written request, and is due to be completed subsequent to that date, but excluding any improvements that have resulted from the implementation of the additional mitigation measures required under condition 2 of Schedule 3; (b) the reasonable costs associated with: • relocating within the Muswellbrook, Singleton or Scone local government area, or to any other local government area determined by the Secretary; and • obtaining legal advice and expert advice for determining the acquisition price of the land, and the terms upon which it is to be acquired; and (c) reasonable compensation for any disturbance caused by the land acquisition process. However, if at the end of this period, the Applicant and landowner cannot agree on the acquisition price of the land and/or the terms upon which the land is to be acquired, then either party may refer the matter to the Secretary for resolution. Upon receiving such a request, the Secretary shall request the President of the NSW Division of the Australian Property Institute to appoint a qualified independent valuer to: • consider submissions from both parties; • determine a fair and reasonable acquisition price for the land and/or the terms upon which the land is to be acquired, having regard to the matters referred to in paragraphs (a)-(c) above; • prepare a detailed report setting out the reasons for any determination; and • provide a copy of the report to both parties. Within 14 days of receiving the independent valuer's report, the Applicant must make a binding written offer to the landowner to purchase the land at a price not less than the independent valuer's determination. However, if either party disputes the independent valuer's determination, then within 14 days of receiving the independent valuer's report, they may refer the matter to the Secretary for review. Any request for a review must be accompanied by a detailed report setting out the reasons why the party disputes the independent valuer's determination. Following consultation with the independent valuer and both parties, the Secretary will determine a fair and reasonable acquisition price for the land, having regard to the matters referred to in paragraphs (a)-(c) above, the independent valuer's report, the detailed report of the party that disputes the independent valuer's determination and any other relevant submissions. Within 14 days of this determination, the Applicant must make a binding written offer to the landowner to purchase the land at a price not less than the Secretary's determination. If the landowner refuses to accept the Applicant's binding written offer under this condition within 6 months of the offer being made, then the Applicant's obligations to acquire the land shall cease, unless the Secretary determines otherwise.	EMM general audit team	N/A	There have been no instances of acquisition triggered under this development consent.	Not triggered	
7	The Applicant must pay all reasonable costs associated with the land acquisition process described in condition 6 above, including the costs associated with obtaining Council approval for any plan of subdivision (where permissible), and registration of this plan at the Office of the Registrar-General.	EMM general audit team	N/A	There have been no instances of acquisition triggered under this development consent.	Not triggered	
SCHEDULE 5 - ENVIRONMENTAL MANAGEMENT, REPORTING AND AUDITING						
ENVIRONMENTAL MANAGEMENT						
Environmental Management Strategy						

1	If the Secretary requires, the Applicant must prepare an Environmental Management Strategy for the development to the satisfaction of the Secretary. This strategy must: (a) be submitted to the Secretary for approval prior to carrying out any development on site; (b) provide the strategic framework for environmental management of the development; (c) identify the statutory approvals that apply to the development; (d) describe the role, responsibility, authority and accountability of all key personnel involved in the environmental management of the development; (e) describe the procedures that would be implemented to: • keep the local community and relevant agencies informed about the operation and environmental performance of the development; • receive, handle, respond to, and record complaints; • resolve any disputes that may arise during the course of the development; • respond to any non-compliance; • respond to emergencies; and (f) include: • copies of any strategies, plans and programs approved under the conditions of this consent; and • a clear plan depicting all the monitoring to be carried out in relation to the development. The Applicant must implement the approved strategy as approved from time to time by the Secretary.	EMM general audit team	Environmental Management Strategy	Sighted EMS dated 20 May 2021, approved by DPE Secretary 20/5/21. a) Works commenced prior to audit period. Current EMS approved by DPE Secretary 20/5/21. b) Sections 3 and 4 of EMS. c) Section 4 of EMS. d) Section 5.1 and Appendix B of EMS. e) Section 5 of the EMS. f) Supporting documents refenced throughout EMS and linked to MPO website within Appendix C of the EMS. Monitoring locations identified in Figure 5 of EMS.	Compliant	
Adaptive Management						
1A	The Applicant must assess and manage development-related risks to ensure that there are no exceedances of the criteria and/or performance measures in Schedule 3. Any exceedance of these criteria and/or performance measures constitutes a breach of this consent and may be subject to penalty or offence provisions under the EP&A Act or EP&A Regulation. Where any exceedance of these criteria and/or performance measures has occurred, the Applicant must, at the earliest opportunity: (a) take all reasonable and feasible steps to ensure that the exceedance ceases and does not recur; (b) consider all reasonable and feasible options for remediation (where relevant) and submit a report to the Department describing those options and any preferred remediation measures or other course of action; and (c) implement remediation measures as directed by the Secretary, to the satisfaction of the Secretary.	EMM general audit team	Annual Reviews for 2020, 2021, 2022. Monthly, quarterly and annual environmental reports.	Annual reports identify dust, blast fume, noise and water discharge as areas in which improvement measures can be enacted to ensure exceedances cease or does not occur. The Annual Reviews confirm that all reasonable and feasible measures to reduce the likelihood of exceedance events were implemented and reported, as required.	Compliant	
Management Plan Requirements						
2	The Applicant must ensure that the management plans required under this consent are prepared in accordance with any relevant guidelines, and include: (a) detailed baseline data; (b) a description of: • the relevant statutory requirements (including any relevant consent, licence or lease conditions); • any relevant limits or performance measures/criteria; • the specific performance indicators that are proposed to be used to judge the performance of, or guide the implementation of, the development or any management measures; (c) a description of the measures that would be implemented to comply with the relevant statutory requirements, limits, or performance measures/criteria; (d) a program to monitor and report on the: • impacts and environmental performance of the development; • effectiveness of any management measures (see c above); (e) a contingency plan to manage any unpredicted impacts and their consequences; (f) a program to investigate and implement ways to improve the environmental performance of the development over time; (g) a protocol for managing and reporting any: • incidents; • complaints; • non-compliances with statutory requirements; and • exceedances of the impact assessment criteria and/or performance criteria; and (h) a protocol for periodic review of the plan. *Note: The Secretary may waive some of these requirements if they are unnecessary or unwarranted for particular management plans.*	All teams in relation to their applicable management plan	Management plans	EMM sighted all management plans prepared for MPO and can confirm that all plans have been prepared to cover the requirements of this condition. These are covered in various sections of the management plans.	Compliant	
Annual Review						
3	By the end of March each year (or other such timing as agreed by the Secretary), the Applicant must submit a report to the Department reviewing the environmental performance of the development to the satisfaction of the Secretary. This review must: (a) describe the development (including any rehabilitation) that was carried out in the past calendar year, and the development that is proposed to be carried out over the next calendar year; (b) include a comprehensive review of the monitoring results and complaints records of the development over the past calendar year, which includes a comparison of these results against the: • relevant statutory requirements, limits or performance measures/criteria; • monitoring results of previous years; and • relevant predictions in the documents listed in condition 2(a) of Schedule 2; (c) identify any non-compliance over the last year, and describe what actions were (or are being) taken to ensure compliance; (d) identify any trends in the monitoring data over the life of the development; (e) identify any discrepancies between the predicted and actual impacts of the development, and analyse the potential cause of any significant discrepancies; and (f) describe what measures will be implemented over the next year to improve the environmental performance of the development.	EMM general audit team	Annual Reviews for 2020, 2021 and 2022.	The 2020 Annual Review was lodged to the DPE on 31 March 2021. Additional information was required and the revised version was submitted on 22 July 2021 and approved by DPE 23 July 2021. The 2021 Annual Review was lodged to the DPE on 30 March 2022 and approved by DPE 1 July 2022. The 2022 Annual Review was lodged to the DPE on 31 March 2023.	Compliant	
Revision of Strategies, Plans and Programs						
4	Within 3 months of: (a) the submission of an annual review under condition 3 above; (b) the submission of an incident report under condition 7 below; (c) the submission of an audit under condition 9 below; and (d) any modification to the conditions of this consent, the Applicant must review, and if necessary revise, the strategies, plans, and programs required under this consent to the satisfaction of the Secretary. Within 4 weeks of conducting any such review, the Applicant must advise the Secretary of the outcomes of the review, and submit any revised documents for the approval of the Secretary. *Notes:* *• The purpose of this condition is to ensure that strategies, plans and programs are regularly updated to incorporate any measures recommended to improve environmental performance of the project.* *• In the event of an inconsistency between condition 4(d) above and any condition in Schedule 3 of this consent, the latter prevails.*	EMM general audit team	Register of management plan updates. Management plans. Letters to/from DPE.	MOD 5 was approved on 29 June 2022. DPE were notified on 29 August 2022 that no updates to management plans were required following the approval of MOD 5.	Compliant	
Updating & Staging Strategies, Plans or Programs						
4A	The Applicant may at any time submit revised strategies, plans or programs for the approval of the Secretary. With the agreement of the Secretary, the Applicant may also submit any strategy, plan or program required by this consent on a staged basis. With the agreement of the Secretary, the Applicant may prepare a revision or stage of any strategy, plan or program required under this consent without undertaking consultation with all parties nominated under the applicable condition in this consent. *Notes:* *• While any strategy, plan or program may be submitted on a staged basis, the Applicant must ensure that the existing operations on site are covered by suitable strategies, plans or programs at all times.* *• If the submission of any strategy, plan or program is to be staged, then the relevant strategy, plan or program must clearly describe the specific stage to which the strategy, plan or program applies, the relationship of this stage to any future stages, and the trigger for updating the strategy, plan or program.*	EMM general audit team	Noted.	The management plans have been regularly updated during the life of the operations.	Compliant	
Management of Cumulative Impacts						

5	In conjunction with the owners of the nearby mines (including the Bengalla mine), the Applicant must use its best endeavours to minimise the cumulative impacts of the development on the surrounding area to the satisfaction of the Secretary. *Note: Nothing in this consent is to be construed as requiring the Applicant to act in a manner which is contrary to the Trade Practices Act 1974.*	EMM general audit team	Quarterly cumulative Framework Meeting Minutes between MPO, BHP and Bengalla mines. Council website.	EMM sighted meeting minutes between MPO, BHP's Mt Arthur Coal mine and BMC's Bengalla mine which are held on a quarterly basis. The meetings are held to discuss site operations and initiatives across the mines. EMM understands General Manager meetings are also held on a quarterly basis between the mines. The mines share data in a collaborative way with regards to met data, air quality and noise. Council operates a blast notification page on their website for coal mines in the area.	Compliant	
Community Consultative Committee						
6	The Applicant must operate a Community Consultative Committee (CCC) for the development to the satisfaction of the Secretary. This CCC must be operated in general accordance with the Department's Community Consultative Committee Guidelines State Significant Projects November 2016, or its latest version. *Note: The CCC is an advisory committee. The Department and other relevant agencies are responsible for ensuring that the Applicant complies with this consent.*	EMM general audit team	CCC meeting minutes. MPO website.	No evidence sighted to suggest non-compliance with this condition. Copies of the CCC minutes are available on the MPO website.	Compliant	
Incident Notification						
7	The Applicant must immediately notify the Department and any other relevant agencies after it becomes aware of an incident. The notification must be in writing via the Department's Major Projects Website and identify the development (including the development application number and name) and set out the location and nature of the incident.	EMM general audit team	2020 Annual Review = 1 reportable incident: * 15/6/20 - blast fume event. 2021 Annual Review = 9 reportable incidents: * 21/1/21 - MOD 4 out of hours construction works. * 8/3/21 - Water discharge event. * 31/3/21 - MOD 4 out of hours construction works. * 9/6/21 - Water discharge event. * 11/6/21 - Elevated EC levels at surface water site W17 on three consecutive monitoring rounds. * 27/8/21 - Noise exceedance. * 12/11/21 - Water discharge event. * 8/12/21 - Water discharge event. * 9/12/21 - Water discharge event. 2022 Annual Review = 5 reportable incidents: * 8/3/22 - Water discharge event. * 6/5/22 - Spontaneous combustion event * 2/9/22 - Blast overpressure exceedance. * 21/10/22 - Water discharge event. * 17/11/22 - Noise exceedance	EMM sighted evidence of submission via the portal and written notification of the incidents to DPE with in 7 days of becoming aware of the incident.	Compliant	
Non-Compliance Notification						
7A	Within seven days of becoming aware of a non-compliance, the Applicant must notify the Department of the non-compliance. The notification must be in writing via the Department's Major Projects Website and identify the development (including the development application number and name), set out the condition of this consent that the development is non-compliant with, why it does not comply and the reasons for the non-compliance (if known) and what actions have been, or will be, undertaken to address the non-compliance. *Note: A non-compliance which has been notified as an incident does not need to also be notified as a non- compliance.*	EMM general audit team	Evidence of submission via the portal. Written notifications to DPE.	EMM sighted evidence of submission via the portal and written notification of the non-compliance to DPE with in 7 days of the date on which they became aware of the non-compliance.	Compliant	
Monitoring and Environmental Audits						
7B	Any condition of this consent that requires the carrying out of monitoring or an environmental audit, whether directly or by way of a plan, strategy or program, is taken to be a condition requiring monitoring or an environmental audit under Division 9.4 of Part 9 of the EP&A Act. This includes conditions in respect of incident notification, reporting and response, non-compliance notification, compliance report and independent audit. *Note: For the purposes of this condition, as set out in the EP&A Act, "monitoring" is monitoring of the development to provide data on compliance with the consent or on the environmental impact of the development, and an "environmental audit" is a periodic or particular documented evaluation of the development to provide information on compliance with the consent or the environmental management or impact of the development.*	EMM general audit team	N/A	Noted.	Compliant	
Regular Reporting						
8	The Applicant must provide regular reporting on the environmental performance of the development on its website, in accordance with the reporting arrangements in any plans or programs approved under the conditions of this consent, and to the satisfaction of the Secretary.	EMM general audit team	MPO website. Monthly environmental monitoring reports. CCC minutes. Complaints register. Annual reviews	A review of the MPO website show monthly environmental performance reports from May 2018 to January 2023. The website also contains copies of the Annual Reviews, CCC minutes and complaints registers.	Compliant	
INDEPENDENT ENVIRONMENTAL AUDIT						
9	By the end of March 2014, and every 3 years thereafter, unless the Secretary directs otherwise, the Applicant must commission, commence and pay the full cost of an Independent Environmental Audit of the development. This audit must: (a) be conducted by a suitably qualified, experienced and independent team of experts whose appointment has been endorsed by the Secretary; (b) include consultation with the relevant agencies and the CCC; (c) assess the environmental performance of the development and whether it is complying with the requirements in this consent and any relevant EPL or Mining Lease or necessary water licences (including any assessment, plan or program required under these approvals); (d) review the adequacy of strategies, plans or programs required under the abovementioned approvals (including whether the development has met or is trended towards the progressive performance and completion criteria detailed in these strategies, plans or programs); (e) if necessary, recommend appropriate measures or actions to improve the environmental performance of the development, and/or any strategy, plan or program required under the abovementioned approvals; and (f) be conducted and reported to the satisfaction of the Secretary. *Notes:* *• This audit team must be led by a suitably qualified auditor and include experts in any fields specified by the Secretary.*	EMM general audit team	a) Endorsement letter from DPE dated 20/2/2023, attached as Appendix B. b) Evidence of consultation in Section 2.6 and 3.8, and Appendix C of Audit report. c) Assessed throughout and attached as Appendix A of audit report. d) Assessed throughout and attached as Appendix A of audit report. e) Section 4 of Audit Report. f) This IEA will be submitted to DPE for approval within 2 months of conducting the site inspection.	The 2020 IEA was approved by DPE on 6/7/2020 This IEA covers the audit period from 28 February 2020 to 6 March 2023. The IEA has been prepared in accordance with this condition and the requirements of the Independent Audit guidelines (2020).	Compliant	
10	Within 12 weeks of commencing any audit, or as otherwise agreed by the Secretary, the Applicant must submit a copy of the audit report to the Secretary and any other NSW Government agency that requests it, together with its response to any recommendations contained in the audit report and a timetable for the implementation of these recommendations, as required. The Applicant must implement the audit report recommendations, to the satisfaction of the Secretary.	EMM general audit team	Letter from DPE dated 6/7/2020 confirming the audit satisfies the requirements of the consent.	The previous audit was first submitted to DPIE on 27 February 2018. Evidence of resubmission on 18 May 2018. Whilst this exceeds the 12 week period, correspondence with DPE permitting an extension was sighted.	Compliant	
ACCESS TO INFORMATION						
11	The Applicant must: (a) make the following information publicly available on its website: • the documents listed in condition 2(a) of Schedule 2; • all current statutory approvals for the development; • approved strategies, plans and programs required under the conditions of this consent; • a comprehensive summary of the monitoring results of the development, which have been reported in accordance with the various plans and programs approved under the conditions of this consent; • a complaints register, which is to be updated on a monthly basis; • minutes of CCC meetings; • the annual reviews (over the last 5 years); • any independent environmental audit, and the Applicant's response to the recommendations in any audit; • any other matter required by the Secretary; and (b) keep this information up to date, to the satisfaction of the Secretary.	EMM general audit team	Review of the MPO website: https://machenergyaustralia.com.au/mount-pleasant/documentation/	A review of the MPO website shows that all information listed under condition 11 is uploaded to the website. On each occasion the complaint was managed in accordance with the Complaints Response Protocol outlined in Section 5.4 and Figure 6 Environmental Management Strategy (EMS). Feedback on the investigation was provided within the approved timeframe, however on at least one occasion the investigation was awaiting further information/confirmation from the EPA.	Compliant	

Table A.2 - DA 92/97 Statement of Commitments

Environmental aspect	Requirement	Audit team responsible for condition	Evidence collected	Independent Audit Findings and Recommendations	Compliance status	Unique Identification Non-compliance
APPENDIX 3 - STATEMENT OF COMMITMENTS						
Noise and vibration	• A NMP will be prepared in accordance with the development consent. • The NMP will be extended to include management of potential noise emissions associated with the MOD 4 rail infrastructure. The plan will also consider pro- active and predictive modelling and management, and protocols for managing noise during adverse meteorological conditions. • Noise monitoring will continue to be undertaken in accordance with the development consent. • Implementation of the following feasible and reasonable mitigation measures: - Deleted; - plant will operate in less exposed areas during the more sensitive night period; - procurement of new and best available technology plant; - provision of noise suppression on all mobile plant. It anticipated that the noise suppression technology will require an outlay of capital expenditure of between $15M and $20M; and - updating the comprehensive operational noise management plan to include real-time back to base noise monitoring using the best available technology. • The Applicant is committed to working with its communities and extend the opportunity for upfront acquisition upon request to the privately-owned properties listed in Table 1 of Schedule 3.	Bridges Acoustics	Noise management plan	A review of the Noise Management Plan indicates: Section 6.1.5 notes the requirement to use rolling stock that complies with the Sydney Trains EPL 12208 and ARTC EPL 3142. Section 8.1 includes a commitment to design the relocated rail spur to minimise wheel and brake squeal. Section 8.4 of the Plan describes the predictive modelling procedure, while Section 8.5 describes real time response protocols to manage noise under adverse meteorological conditions. Section 8.2 of the Plan includes mitigation measures including plant not operating in exposed areas and noise suppression on major plant.	Compliant	
Ecology	• Deleted • Details of the rehabilitation of the infrastructure area upon decommissioning will be provided in the REMP. • Ecological management for the Mount Pleasant Project will be undertaken in accordance with the existing development consent.	EMM Ecology team	Rehabilitation management plan. Biodiversity management plan.	Section 6.2.2 of the REMP outlines the requirements of rehabilitation of the site following decommissioning. It states that a detailed Mine Closure Plan will be developed prior to the close of MPO. The site audit indicated that the site is generally being managed in accordance with the BMP and existing development consent.	Compliant	
Air quality	• Air quality management for the Mount Pleasant Project will be undertaken in accordance with the Air Quality Management Plan which is a requirement under the existing development consent.	EMM Air quality team	AQGHGMP. Annual Reviews for 2020, 2021 and 2022. Site inspection.	Auditors during site tour found that management measures were compliant with those listed in the AQGHGMP (see Air Quality & GHG MP tab).	Compliant	
Aboriginal cultural heritage	• Aboriginal cultural heritage management will continue to be undertaken in accordance with relevant Applicant procedures. • Deleted • Where site avoidance is impossible, cultural heritage management approaches that are set out in the CHMP for the Mount Pleasant Project area will be applied. This will include lodging an application for the relevant AHIPs under section 90 of the NPW Act. • Deleted • Aboriginal cultural heritage sites that cannot be avoided will be mitigated by standard salvage collection measures in accordance with the Aboriginal Heritage Management Plan, following the issue of an AHIP (section 90, NPW Act). • The Aboriginal Heritage Management Plan will be revised to include the proposed modifications and any requirements specified by the regulator. • Any mitigation salvage will be staged over time based upon mine operation plan requirements and the zoning regime of the CHMP. • All cultural materials collected will be stored in a storage facility to be established at the Mount Pleasant Project or VCA under an approved Care and Control Permit. • All cultural heritage sites not affected by the proposed development will be managed in situ in accordance with the Aboriginal Heritage Management Plan procedures for long-term protective management and to minimise future development disturbance. • Sites that are assessed as vulnerable to damage due to the proximity to roads and tracks or other operational infrastructure will be appropriately buffered and barricaded in accordance with existing site protection protocols including monitoring protocols.	EMM general audit team	Annual Reviews for 2020, 2021 and 2022. Aboriginal Heritage Management Plan. Site inspection.	No issues identified in Annual reviews. EMM sighted fenced off Aboriginal heritage items at site. No evidence of non compliances associated with Aboriginal Cultural Heritage. Effective implementation of the Aboriginal Heritage Management Plan. Evidence of pre clearance permits and salvage requirements.	Compliant	
Visual amenity	• Visual amenity management will be undertaken in accordance with the development consent, which requires the preparation of a Visual Impact Management Plan. • Lighting management will be undertaken in accordance with the development consent, including preparation of an engineering report regarding light emissions.	EMM general audit team	Visual Impact Management Plan. Site inspection. Complaints: * 2020 - 16 complaints * 2021 - 14 complaints * 2022 - 1 complaint Sighted response to complaints and general inspections to sight lighting plant to the north west/west.	The lighting plants are passed to full specifications when they are delivered to site. These meet Australian standards. Based on site communications lighting plants are pointed down and orientated to reduce visual impacts. Evidence of review and comms to site dated 1/3/2022. Lighting plant inspected during site visit which demonstrated lights facing down and not shining above horizon. The site inspection confirmed the site is managed generally in accordance with the Visual Impact Management Plan. EMM reviewed the complaints register found on the MPO website. There were 31 complaints related to lighting over 2020-2023. Sighted response process during site visit.	Compliant	
Removal of Mount Pleasant Infrastructure South of Wybong Road	• MACH Energy Australia Pty Ltd (MACH Energy) or any person/s who rely on any development consent to carry out the Mount Pleasant development (as modified or replaced by a new development consent from time to time) will, by no later than 31 October 2022: a) remove all infrastructure associated with the Development within Mining Lease No. 1645 (ML 1645) south of Wybong Road (other than infrastructure which the operator of the Bengalla Mine agrees with MACH Energy in writing can remain in situ); b) do all things available to transfer or cause the grant of a mining lease over that part of ML 1645 south of Wybong Road to the operator of Bengalla Mine or its nominee; c) transfer the freehold land owned by MACH Energy within ML 1645 south of Wybong Road to the operator of Bengalla Mine (or its nominee) at rural market value; and d) release the easements for pipeline and rail spur within or in the vicinity of ML 1645 south of Wybong Road which benefit land owned by MACH Energy. *Note: The obligations under this commitment are not subject to the grant of development consent or any other approvals or access arrangements for alternative coal transport infrastructure for the Development and must be satisfied irrespective of the existence of any such approvals or infrastructure.*	EMM general audit team	Water management plan. Sighted letter dated 28 October from MACH to DPE confirming removal of all infrastructure within ML 1645. With the exception of the bridge in agreement Bengalla. Sighted letter dated 28 October from MACH to DPE confirming part transfer of ML 1645 to Bengalla on 23 December 2020. Sighted letter dated 28 October from MACH to DPE confirming land transfer completed 6 December 2019. Sighted letter dated 28 October from MACH to DPE confirming release of required easements to Bengalla/ Sighted letter dated 28 October from MACH to DPE confirming in consultation with DPE and Bengalla the demolition of the bridge would not be required till the realignment of Bengalla Link road is completed by Bengalla.	Sighted all rail corridor all infrastructure removed during site inspection. Noting bridge remains in consult with Bengalla, MSC and DPE. Sighted evidence of correspondence satisfying condition.	Compliant	
Flooding	• MACH Energy will design the MOD 4 rail infrastructure (including associated hydraulic structures) to meet the following criteria for potential flooding impacts for a 1% Annual Exceedance Probability flood event: o no more than 0.1 m increase in flood levels on any privately-owned land; o no more than 0.01 m increase in flood levels at any privately-owned dwellings or commercial spaces; o no more than 0.01 m increase in flood levels at any public roads servicing privately-owned properties; and o no more than 0.1 metres per second (m/s) increase in flood velocities at privately-owned dwellings or commercial spaces.	EMM general audit team	Sighted correspondence from DPE satisfying condition.	Sighted letter from DPE dated 8 Aug 2020 confirming documentation provided to DPE satisfies condition.	Compliant	
Rail Noise	• MACH Energy will document in the Mount Pleasant Operation Noise Management Plan reasonable and feasible measures that can be undertaken to minimise rail brake squeal associated with the MOD 4 rail infrastructure. • The MOD 4 rail infrastructure will be subject to best practice detailed design, including consideration of brake squeal and bunching potential. • MACH Energy will work with rail freight providers and a noise specialist during the final commissioning of the MOD 4 rail infrastructure to undertake trials and implement operational noise controls. This may include, for example, optimising train speed to reduce observed excessive noise. • In the event of recurring rail noise complaints, MACH Energy will consult with rail freight providers to investigate the cause of the noise and investigate reasonable and feasible mitigation options to address the issue. This may include, for example, further varying rail speeds, driver behaviour or stock maintenance. MACH Energy will consider the outcomes of any such investigation in the renewal or extension of Mount Pleasant Operation rail freight contracts.	Bridges Acoustics	Noise management plan	Section 8.1 of the Noise Management Plan states the relocated rail spur will be designed and constructed considering the potential for wheel and brake squeal. Section 8.2 of the Noise Management Plan commits to additional investigation and mitigation measures if significant wheel and brake squeal occurs. A review of the complaints register during the audit period indicated no complaints were received regarding rail or train noise.	Compliant	
Redundant Infrastructure Removal in Bengalla Mine Footprint	• MACH Energy will stabilise redundant rail infrastructure areas within the footprint of the Bengalla Mine such that they do not pose an ongoing material source of dust emissions (i.e. seeding to establish a cover crop and/or application of a dust suppressant) prior to management of these areas being transferred to Bengalla Mine. • Existing Mount Pleasant Operation rail spur erosion and sediment control water management structures (e.g. sediment fences) within the footprint of Bengalla Mine will also be left in place, subject to agreement of Bengalla Mine.	EMM Air quality team	a) Sighted letter dated 28 October from MACH to DPE confirming removal of all infrastructure within ML 1645. With the exception of the bridge in agreement Bengalla. b) Sighted letter dated 28 October from MACH to DPE confirming part transfer of ML 1645 to Bengalla on 23 December 2020. c) Sighted letter dated 28 October from MACH to DPE confirming land transfer completed 6 December 2019. d) Sighted letter dated 28 October from MACH to DPE confirming release of required easements to Bengalla/ e) Sighted letter dated 28 October from MACH to DPE confirming in consultation with DPE and Bengalla the demolition of the bridge would not be required till the realignment of Bengalla Link road is completed by Bengalla.	Sighted all rail corridor all infrastructure removed during site inspection. Noting bridge remains in consult with Bengalla, MSC and DPE. Sighted evidence of correspondence satisfying condition.	Compliant	

Visual Vegetation Screens	• MACH Energy will inspect the condition of the vegetation visual screens described in the Visual Impact Management Plan on a quarterly basis, and maintain these vegetation visual screens to the satisfaction of the Secretary.	EMM general audit team	Visual Impact Management Plan Site inspection. Inspection records.	Evidence of visual vegetation screen inspections. Areas inspected once per month.	Compliant	
Construction Traffic	• MACH Energy will develop a Construction Traffic Management Plan for the MOD 4 construction works in consultation with Council and to the satisfaction of the Secretary.	EMM general audit team	Appendix A of the Construction Environmental Management Plan for the MOD 4. Secretary approval.	The CTMP can be found in Appendix A of the CEMP prepared for the MOD 4 project. Secretary approval of the CEMP was received on 10 March 2020. Council were consulted with during the development of the CEMP.	Compliant	
Management of Historic Heritage Items	• MACH Energy will implement historic heritage management associated with MOD 4 in consultation with Council and a copy of any resulting reports/documentation will be provided to Council for its records. • MACH Energy will consult with Council on the content of the photographic record of Overton Orchard and Race Track. • MACH Energy will limit movement of vehicles/machinery in the area of the Overton Orchard and Race Track to avoid potential damage outside of the MOD 4 disturbance footprint, in consultation with Council. This includes avoiding disturbance of the areas shown in blue on Figure 6 of the Statement of Heritage Impact (Extent, 2007) included as Appendix F of EA (MOD 4). • MACH Energy will consult with Council on potential points of access and routes for heavy vehicles and machinery at the Blunt's Butter Factory. Points of access and routes will be demarcated and MACH Energy will ensure heavy vehicles remain within the demarcated areas. • MACH Energy will consult with Council regarding appropriate demarcation to restrict movement of heavy vehicles near the two cuttings located east of Overton Orchard. If artefacts are exposed at the base of the well at MP13, works will cease until an archaeologist advises whether or not they constitute 'relics' under the NSW *Heritage Act 1977* and whether works should proceed pursuant to an application for an 'exception', or an excavation permit.	EMM general audit team	Construction Environmental Management Plan for MOD 4 (Appendix B).	CEMP prepared in consultation with Council. CEMP includes discussion with Council regarding Overton Orchard and Race Track. Appendix B of the CEMP details the Historic Heritage Management Plan.	Compliant	

Table A.3 - EPL 20850

Section	Requirement	Audit team responsible for condition	Evidence collected	Independent Audit Findings and Recommendations	Compliance status	Unique Identification Non-compliance
1 - Administrative Conditions						
A1 - What the licence authorises and regulates						
A1.1	This licence authorises the carrying out of the scheduled activities listed below at the premises specified in A2. The activities are listed according to their scheduled activity classification, fee-based activity classification and the scale of the operation. Unless otherwise further restricted by a condition of this licence, the scale at which the activity is carried out must not exceed the maximum scale specified in this condition. **Scheduled Activity** / **Fee Based Activity** / **Scale** Coal works / Coal works / > 5000000 T annual handing capacity Mining for coal / Mining for coal / > 5000000 T annual production capacity	EMM general audit team	Annual Reviews for 2020, 2021 and 2022. Annual Returns for 2020, 2021 and 2022.	The annual reviews for the audit period indicate the following volumes of ROM coal was produced: 2020: 8.54 Mt 2021: 10.07 Mt 2022: 9.99 Mt This was below the capacity outlined in the EPL.	Compliant	
A2 - Premises or plant to which this licence applies						
A2.1	The licence applies to the following premises: **Premises Details** MOUNT PLEASANT OPERATION 1100 WYBONG ROAD MUSWELLBROOK NSW 2333 AREA IDENTIFIED AS 'MOUNT PLEASANT EPL 20850 (2021-9)' ON PLAN TITLED "MACH ENERGY AUSTRALIA MOUNT PLEASANT OPERATION ENVIRONMENT PROTECTION LICENCE PREMISES MAP" DATED 25/11/2021, PDF REF: MACH EPL - 9 211126.PDF EPA DOCUMENT REFERENCE: DOC21/1102190. THIS LICENCE DOES NOT APPLY TO, OR INCLUDE PUBLIC ROADS.	EMM general audit team	EPL 20850	EMM confirmed the EPL relates to the MPO site.	Compliant	
A3 - Other activities						
A3.1	This licence applies to all other activities carried on at the premises, including: **Ancillary Activity** Coal Works Land-based extractive activity sewage treatment plant	EMM general audit team	Site inspection	Coal works, land-based extractive activities and operation of the sewage treatment plant were all noted during the site inspection. No further works demonstrated during site inspection.	Compliant	
A4 - Information supplied to the EPA						
A4.1	Works and activities must be carried out in accordance with the proposal contained in the licence application, except as expressly provided by a condition of this licence. In this condition the reference to "the licence application" includes a reference to: a) the applications for any licences (including former pollution control approvals) which this licence replaces under the Protection of the Environment Operations (Savings and Transitional) Regulation 1998; and b) the licence information form provided by the licensee to the EPA to assist the EPA in connection with the issuing of this licence.	EMM general audit team	Site inspection. Annual Returns for 2020, 2021 and 2022.	EMM deem that MPO are compliant with this condition.	Compliant	
2 - Discharges to Air and Water and Applications to Land						
P1 - Location of monitoring/discharge points and areas						
P1.1	The following points referred to in the table below are identified in this licence for the purposes of monitoring and/or the setting of limits for the emission of pollutants to the air from the point. *Air* **EPA identification no.** / **Type of Monitoring Point** / **Type of Discharge Point** / **Location Description** 1 / Particulate Matter Monitoring (PM10) / / Continuous particulate monitor located to the south-east of the premises, at MGA56 299558 6428748 shown as "A-PF2" on plan titled "Environment Protection Licence Premises Map" at EPA Reference: DOC21/1102190. 2 / Particulate Matter Monitoring (PM10) / / Continuous particulate monitor located to the north of the premises, at coordinates MGA56 295811 6434686 shown as "A-PF5" on plan titled "Environment Protection Licence Premises Map" at EPA Reference: DOC21/1102190.	EMM Air quality team	Air quality monitoring sites (A-PF22 and A-PF5) are included on Figure 5 of the Air Quality Management Plan. Monitoring data provided in Excel sheets. Annual Reviews for 2020, 2021 and 2022. Environment Protection Licence Premises Map.	Both monitoring points 1 and 2 shown on the Environment Protection Licence Premises Map and in the AQGHGMP.	Compliant	
P1.2	The following points referred to in the table are identified in this licence for the purposes of the monitoring and/or the setting of limits for discharges of pollutants to water from the point. *Water and land* **EPA Identification no.** / **Type of Monitoring Point** / **Type of Discharge Point** / **Location Description** 14 / Effluent quality monitoring; Discharge to mine water system / Effluent quality monitoring; Discharge to mine water system / Monitoring of effluent discharge quality from CHPP STP at MGA56 293641 6429993 shown as "CHPP-STP" on plan titled "Environment Protection Licence Premises Map" at EPA Reference: DOC21/1102190. 15 / Effluent quality monitoring; Discharge to mine water system / Effluent quality monitoring; Discharge to mine water system / Monitoring of effluent discharge quality from MIA STP at MGA56 294163 6429420, shown as "MIA-STP" on plan titled "Environment Protection Licence Premises Map" at EPA Reference: DOC21/1102190.	EMM general audit team	Environment Protection Licence Premises Map. Water management plan.	No effluent was discharged during the audit period. Effluent is removed from site by a suitably qualified contractor. Any treated effluent released from the MWD to the Hunter River via the HRSTS is compliant EPL 20850. **Recommendation (REC 12) :** Show EPL Point 14 and 15 on a figure in Water Management Plan.	Compliant	

<table>
<tr><td>P1.3</td><td>The following points referred to in the table below are identified in this licence for the purposes of weather and/or noise monitoring and/or setting limits for the emission of noise from the premises.
Noise/Weather
<table><tr><th>EPA identification no.</th><th>Type of monitoring point</th><th>Location description</th></tr><tr><td>3</td><td>Air blast overpressure & ground vibration peak particle velocity monitoring</td><td>Blast monitor located to the south-west of the premises, at MGA56 296265 6430737, shown as "B-VOC" on plan titled "Environment Protection Licence Premises Map" at EPA Reference: DOC21/1102190.</td></tr><tr><td>4</td><td>Meteorological Station</td><td>Meteorological monitoring located at MGA56 299023 6433749, shown as "M-WS4" on plan titled "Environment Protection Licence Premises Map" at EPA Reference: DOC21/1102190.</td></tr><tr><td>5</td><td>Noise monitoring</td><td>Attended noise monitoring at MGA56 291465, 6427182, shown as "N-AT1" on plan titled "Environment Protection Licence Premises Map" at EPA Reference: DOC21/1102190.</td></tr><tr><td>6</td><td>Noise monitoring</td><td>Attended noise monitoring at MGA56 290608 6434490, shown as "N-AT2" on plan titled "Environment Protection Licence Premises Map" at EPA Reference: DOC21/1102190.
Representative of dwellings to the north-west of the premises.</td></tr><tr><td>7</td><td>Noise monitoring</td><td>Attended noise monitoring at MGA56 300725 6432946, shown as "N-AT3" on plan titled "Environment Protection Licence Premises Map" at EPA Reference: DOC21/1102190.
Representative of NAG 5.</td></tr><tr><td>8</td><td>Noise monitoring</td><td>Attended noise monitoring at MGA56 299947 6429264, shown as "N-AT4" on plan titled "Environment Protection Licence Premises Map" at EPA Reference: DOC21/1102190.
Representative of NAG 6 & 7.</td></tr><tr><td>9</td><td>Noise monitoring</td><td>Attended noise monitoring at MGA56 299161 6427503, shown as "N-AT5" on plan titled "Environment Protection Licence Premises Map" at EPA Reference: DOC21/1102190.
Representative of NAG 8 & 9.</td></tr><tr><td>10</td><td>Noise monitoring</td><td>Attended noise monitoring at MGA56 289092 6423155, shown as "N-AT6" on plan titled "Environment Protection Licence Premises Map" at EPA Reference: DOC21/1102190.
Representative of NAG 11.</td></tr><tr><td>11</td><td>Meteorological Station</td><td>Meteorological monitoring located at MGA56 299558 6428748, shown as "M-WM2" on plan titled "Environment Protection Licence Premises Map" at EPA Reference: DOC21/1102190.</td></tr><tr><td>12</td><td>Air blast overpressure & ground vibration peak particle velocity monitoring</td><td>Blast monitor located to the south-west of the premises, at MGA56 294752 6429059, shown as "B-VOA" on plan titled "Environment Protection Licence Premises Map" at EPA Reference: DOC21/1102190.</td></tr><tr><td>13</td><td>Air blast overpressure & ground vibration peak particle velocity monitoring</td><td>Blast monitor located to the south-west of the premises, at MGA56 300036 6428891, shown as "B-VO2" on plan titled "Environment Protection Licence Premises Map" at EPA Reference: DOC21/1102190.</td></tr></table></td><td>Bridges Acoustics</td><td>Noise management plan
Blast management plan
Noise and blast monitoring data
Environment Protection Licence Premises Map</td><td>The Noise Management Plan and all noise monitoring reports include monitoring points 5 to 10.
The Blast Management Plan and all supplied blast data include monitoring points 3, 12 and 13.</td><td>Compliant</td><td></td></tr>
<tr><td>P1.4</td><td>For the purpose of Condition P1.3, NAG refers to the Noise Assessment Groups shown in Figure 5-3 of Appendix 5 of DA 92/97 (MOD 4) dated 16 November 2018 (EPA reference DOC19/1010437).</td><td>Bridges Acoustics</td><td></td><td>Noted</td><td>Not triggered</td><td></td></tr>
<tr><td colspan="7">3 - Limit Conditions</td></tr>
<tr><td colspan="7">L1 - Pollution of waters</td></tr>
<tr><td>L1.1</td><td>Except as may be expressly provided in any other condition of this licence, the licensee must comply with section 120 of the Protection of the Environment Operations Act 1997 .</td><td>EMM general audit team</td><td>Annual Reviews for 2020, 2021 and 2022.
Letters to/from agencies reporting the events.
Water management plan.</td><td>Seven water discharge events occurred during the audit period following periods of heavy rain. These occurred on:
* 8 March 2021 - failure of erosion and sediment controls resulted in run off leaving site.
* 8 June 2021 - two separate discharges of sediment-laden water from MOD 4 construction area and into Wybong Road swale drains, where it ceased.
* 12 November 2021 - discharge of sediment-laden water from the Rail 2 Project Area and into Wybong Road swale drains.
* 8 December 2021 - discharge from four sediment basins (SD4, SD6, SD7 and ED2) offsite.
* 9 December 2021 - discharge from four sediment basins (SD4, SD6, SD7 and ED2) offsite.
* 8 March 2022 - discharge from five sediment basins (SD1, SD4, SD6, SD7 and TSB2) offsite.
* 21 October 2022 - spillway discharge was observed from SD4.
Following the rainfall events, MPO completed investigations into the cause and reported the incidents to DPE and EPA.
As required by the water management plan, water quality sampling was undertaken during the events, with water quality showing negligible changes in release water in pH, EC and TSS.
Regular inspections of were implemented and undertaken prior to and during forecasted heavy rainfall events, in addition to regular third party inspections by a CPESC.
MPO reviewed and updated the water management plan in accordance with Schedule 5, Condition 4.
Elevated EC levels at surface water site W17 on three consecutive monitoring rounds notified on 11 June 2021 (Section 6.1.3 of 2021 Annual Review).
EMM understand no further compliance action is proposed by DPE or the EPA in regards to the above matters, as such considers this condition compliant.</td><td>Compliant</td><td></td></tr>
<tr><td colspan="7">L2 - Waste</td></tr>
<tr><td>L2.1</td><td>The licensee must not cause, permit or allow any waste to be received at the premises, except the wastes expressly referred to in the column titled “Waste” and meeting the definition, if any, in the column titled “Description” in the table below.
Any waste received at the premises must only be used for the activities referred to in relation to that waste in the column titled “Activity” in the table below.
Any waste received at the premises is subject to those limits or conditions, if any, referred to in relation to that waste contained in the column titled “Other Limits” in the table below.
This condition does not limit any other conditions in this licence.
<table><tr><th>Code</th><th>Waste</th><th>Description</th><th>Activity</th><th>Other Limits</th></tr><tr><td>NA</td><td>Waste tyres</td><td>Disposal of used heavy mobile equipment tyres at approved on-site locations.</td><td>Waste disposal (application to land)</td><td>50 tonnes of used tyres stored per dump location.</td></tr></table></td><td>EMM general audit team</td><td>Annual Reviews for 2020, 2021 and 2022.
Annual Returns for 2020, 2021 and 2022.</td><td>2020 Annual Review states no waste tyres buried on site.
2021 Annual Review states a waste tyre in-pit burial campaign was undertaken in Jan 2021 and Oct 2021:
- 40 tyres disposed of in Pit B
- 55 tyres disposed of in Pit D
- 39 tyres utilised around on-site laydown areas.
2022 Annual Review states a waste tyre in-pit burial campaign was undertaken in March 2022 with the majority of the tyres disposed of in Pit B. All waste tyres were disposed in accordance with Condition O6 of EPL 20850.

All waste tyres were disposed in accordance with EPL 20850.</td><td>Compliant</td><td></td></tr>
<tr><td colspan="7">L3 - Noise limits</td></tr>
</table>

<table>
<tr>
<td>L3.1</td>
<td>Noise generated at the premises must not exceed the noise limits presented in the table below.
Note:
The noise limits in the table below do not apply if the licensee has a written agreement with the relevant landowner to exceed the noise limit and the licensee has advised the EPA in writing of the terms of the agreement.
The noise limits in the table below do not apply to residences owned by the licensee or those residences that are subject to acquisition as listed in Table 1 of Schedule 3 of Development Consent DA 92/97 (MOD 4), dated 16 November 2018.
Residences referenced in this table are from Table 3 of Schedule 3 of Development Consent DA92/97 (MOD 4), dated 16 November 2018 (EPA reference DOC19/1010437).
<table>
<tr><th>Location</th><th>Day - LAeq(15 minute)</th><th>Evening - LAeq(15 minute)</th><th>Night - LAeq(15 minute)</th><th>Night - LA1(1 minute)</th></tr>
<tr><td>EPA Point 5</td><td>43</td><td>43</td><td>43</td><td>45</td></tr>
<tr><td>EPA Point 6</td><td>36</td><td>36</td><td>36</td><td>45</td></tr>
<tr><td>EPA Point 7</td><td>41</td><td>41</td><td>41</td><td>45</td></tr>
<tr><td>EPA Point 8</td><td>43</td><td>42</td><td>42</td><td>45</td></tr>
<tr><td>EPA Point 9</td><td>40</td><td>40</td><td>40</td><td>45</td></tr>
<tr><td>EPA Point 10</td><td>35</td><td>35</td><td>35</td><td>45</td></tr>
<tr><td>Residence 68 & 74</td><td>43</td><td>42</td><td>42</td><td>45</td></tr>
<tr><td>Residence 86a</td><td>42</td><td>42</td><td>42</td><td>45</td></tr>
<tr><td>Residence 35, 35b & 77</td><td>42</td><td>41</td><td>41</td><td>45</td></tr>
<tr><td>Residence 79, 80a, 140c & 526</td><td>41</td><td>41</td><td>41</td><td>45</td></tr>
<tr><td>Residence 289</td><td>41</td><td>40</td><td>40</td><td>45</td></tr>
<tr><td>Residence 84a, 139, 154, 203, 257 & 258a</td><td>40</td><td>40</td><td>40</td><td>45</td></tr>
<tr><td>Residence 83</td><td>40</td><td>39</td><td>39</td><td>45</td></tr>
<tr><td>Residence 86b, 140a, 202 & 259</td><td>39</td><td>39</td><td>39</td><td>45</td></tr>
<tr><td>Residence 198 & 202b</td><td>38</td><td>38</td><td>38</td><td>45</td></tr>
<tr><td>Residence 260 & 261</td><td>37</td><td>37</td><td>37</td><td>45</td></tr>
<tr><td>Residence 169 & 272</td><td>36</td><td>36</td><td>36</td><td>45</td></tr>
<tr><td>NAG 5 - All other privately-owned land</td><td>41</td><td>40</td><td>39</td><td>45</td></tr>
<tr><td>NAG 6 - All other privately-owned land</td><td>37</td><td>37</td><td>37</td><td>45</td></tr>
<tr><td>NAG 7 - All other privately-owned land</td><td>40</td><td>37</td><td>37</td><td>45</td></tr>
<tr><td>NAG 8 - All other privately-owned land</td><td>41</td><td>39</td><td>39</td><td>45</td></tr>
<tr><td>NAG 9 - All other privately-owned land</td><td>39</td><td>38</td><td>37</td><td>45</td></tr>
<tr><td>NAG 11 - All other privately-owned land</td><td>37</td><td>36</td><td>35</td><td>45</td></tr>
<tr><td>All other privately-owned land</td><td>35</td><td>35</td><td>35</td><td>45</td></tr>
</table>
</td>
<td>Bridges Acoustics</td>
<td>19/11/21 - DPE warning letter - Sustained exceedance (measurements at 00:18 and 00:54) of the LA1(1 minute) criterion at monitoring location N-AT4 .
Consultants monitoring reports
Monthly monitoring reports
Annual Reviews for 2020, 2021 and 2022.</td>
<td>Review of consultant's noise monitoring reports indicates: (non-compliant in bold, other comments non-bold)
- April 2020 - Exceedance of the LA1,1min criterion at N-AT4
- July 2020 - Exceedance of the LAeq,15min and LA1,1min criteria at N-AT3
- July 2021 - Exceedance of the LA1,1min criterion at N-AT3, although the follow-up measurement showed compliance
- August 2021 - Exceedance of the LA1,1min criterion at N-AT4
- November 2022 - Exceedance of the LA1,1min criterion at N-AT4. Exceedance of the LA1,1min criterion at N-AT5, although the follow-up measurement showed compliance.

Non-compliance as per 2022 Annual Return - Exceedance of EPA Point 8 (ID 8) LA (1 minute) and EPA Point 9 (ID 9) LA1 (1 minute) noise limit of 45dB during operator attended noise monitoring.

<u>Recommendation (REC 13):</u> Implement diligent noise management practises to avoid exceedances of the noise criteria.</td>
<td>Non-compliant</td>
<td>NC7</td>
</tr>
<tr>
<td>L3.2</td>
<td>For the purposes of the noise limits in this licence:
a) Day is defined as the period from 7 am to 6 pm Monday to Saturday, and 8 am to 6 pm Sundays and Public Holidays,
b) Evening is defined as the period from 6 pm to 10 pm, and
c) Night is defined as the period from 10 pm to 7 am Monday to Saturday, and 10 pm to 8 am Sundays and Public Holidays.</td>
<td>Bridges Acoustics</td>
<td>N/A</td>
<td>Noted</td>
<td>Not triggered</td>
<td></td>
</tr>
<tr>
<td>L3.3</td>
<td>The noise limits set out in this licence apply under all meteorological conditions except for the following:
a) Wind speeds greater than 3 metres/second at 10 metres above ground level; or
b) Stability category F temperature inversion conditions and wind speeds greater that 2 metres/second at 10 metres above ground level; or
c) Stability category G temperature inversion conditions.</td>
<td>Bridges Acoustics</td>
<td>Noise Management Plan
Noise monitoring reports</td>
<td>Sections 8.5 and 9.2.4 of the Noise Management Plan acknowledge the meteorological conditions specified in this condition.
Noise monitoring reports include weather conditions at the time of each noise measurement and exclude noise measurement data collected under invalid conditions as specified in this condition.</td>
<td>Compliant</td>
<td></td>
</tr>
<tr>
<td>L3.4</td>
<td>For the purposes of condition L3.3:
a) Data recorded by the closest and most representative meteorological station installed on the premises at EPA Identification Point 4 or 11 must be used to determine the meteorological conditions; and
b) Temperature inversion conditions (stability category) are to be determined using the sigma-theta method described in Appendix E of the Industrial Noise Policy (EPA 2000).</td>
<td>Bridges Acoustics</td>
<td>Noise Management Plan
Noise monitoring reports</td>
<td>Noise monitoring reports state meteorological data are obtained from the MPO automatic weather station (AWS). Site personnel advise weather data from the southern M-WM2 weather station are usually provided, which is the most appropriate for the majority of noise monitoring locations.

Section 8.5 of the Noise Management Plan states inversions are estimated according to the sigma-theta method. Noise monitoring reports state the stability category is determined by this method.</td>
<td>Compliant</td>
<td></td>
</tr>
<tr><td colspan="7">L4 - Blasting</td></tr>
<tr>
<td>L4.1</td>
<td>Blasting in or on the premises must only be carried out between 0900 hours and 1700 hours, Monday to Saturday. Blasting in or on the premises must not take place on Sundays or Public Holidays without the prior approval of the EPA.</td>
<td>Bridges Acoustics</td>
<td>Blast data
Annual Returns for 2020, 2021 and 2022.</td>
<td>A detailed review of raw blasting data indicate two blast events outside these hours, however these were confirmed by site personnel to be false trigger events. All blast events complied with this condition.</td>
<td>Compliant</td>
<td></td>
</tr>
<tr>
<td>L4.2</td>
<td>The airblast overpressure level from blasting operations in or on the premises must not exceed 115 dB (Lin Peak) for more than 5% of the total number of blasts during each reporting period at any blast monitoring location specified in this licence.</td>
<td>Bridges Acoustics</td>
<td>Blast data
Annual Returns for 2020, 2021 and 2022.</td>
<td>A detailed review of blasting data indicates overpressure levels at all residential locations comply with this condition.</td>
<td>Compliant</td>
<td></td>
</tr>
<tr>
<td>L4.3</td>
<td>The airblast overpressure level from blasting operations in or on the premises must not exceed 120 dB (Lin Peak) at any time at any blast monitoring location specified in this licence.</td>
<td>Bridges Acoustics</td>
<td>Blast data
Annual Returns for 2020, 2021 and 2022.</td>
<td>A detailed review of blasting data indicates overpressure levels at all <u>residential</u> locations comply with this condition.
Non-compliance as per 2022 Annual Return - A production blast resulted in an overpressure reading in excess of 120dBL registering at monitor B-VOA (EPA ID 12). Table 31 in the Annual Review notes no residences are located near this monitor and subsequent revision of the EPL has removed the requirement for a monitor at this location.

<u>Recommendation (REC 14):</u> Ensure the blast monitoring locations are regularly reviewed and represent closest privately owned receivers.</td>
<td>Non-compliant</td>
<td>NC8</td>
</tr>
<tr>
<td>L4.4</td>
<td>Ground vibration peak particle velocity from blasting operations in or on the premises must not exceed 5 mm/second for more than 5% of the total number of blasts during each reporting period at any blast monitoring location specified in this licence.</td>
<td>Bridges Acoustics</td>
<td>Blast data
Annual Returns for 2020, 2021 and 2022.</td>
<td>A detailed review of blasting data indicates overpressure levels at all residential locations comply with this condition.</td>
<td>Compliant</td>
<td></td>
</tr>
<tr>
<td>L4.5</td>
<td>Ground vibration peak particle velocity from blasting operations in or on the premises must not exceed 10 mm/second at any time at any blast monitoring location specified in this licence.</td>
<td>Bridges Acoustics</td>
<td>Blast data
Annual Returns for 2020, 2021 and 2022.</td>
<td>A detailed review of blasting data indicates overpressure levels at all residential locations comply with this condition.</td>
<td>Compliant</td>
<td></td>
</tr>
</table>

L4.6	Offensive blast fume must not be emitted from the premises. *Definition:* *Offensive blast fume means post-blast gases from the detonation of explosives at the premises that by reason of their nature, duration, character or quality, or the time at which they are emitted, or any other circumstances:* *1. are harmful to (or likely to be harmful to) a person that is outside the premises from which it is emitted; or* *2. interferes unreasonably with (or is likely to interfere unreasonably with) the comfort or repose of a person who is outside the premises from which it is emitted.*	EMM Air quality team	Annual Reviews for 2020, 2021 and 2022. 2020, 2021 and 2020 complaints logs.	2020 * A blast fume complaint was received on 15 June 2020. * MACH Energy investigated this and found that emissions were likely to have left the boundary. Measures were put in place. 2021 * The 2021 Annual Review report reported no blast fume events in the reporting period however the 2021 complaints log mentions two blast fume complaints on 30/03/2021 and 26/05/2021. These were investigated by MACH Energy. * The investigation of blasts on 30/03/2021 and 26/05/2021 found that the blast fume rating was zero and no post blast emissions left the EPL or DA boundary. 2022 * 2022 complaints log did not report any blast fume complaints in regard to AQ or odour. 2023 *No complaints for Jan, Feb, Mar 2023. **Recommendation (REC 15):** Review measures in the Blast Management Plan and the AQGHGMP for effectiveness and ensure these are being implemented on site.	Non-compliant	NC9
L5 - Potentially offensive odour						
L5.1	No condition of this licence identifies a potentially offensive odour for the purposes of Section 129 of the *Protection of the Environment Operations Act 1997* . *Note: Section 129 of the Protection of the Environment Operations Act 1997, provides that the licensee must not cause or permit the emission of any offensive odour from the premises but provides a defence if the emission is identified in the relevant environment protection licence as a potentially offensive odour and the odour was emitted in accordance with the conditions of a licence directed at minimising odour.*	EMM Air quality team	Annual Reviews for 2020, 2021 and 2022. 2020, 2021 and 2020 complaints logs.	12 odour complaints received in the audit period: * 21/05/2020 - MACH Energy investigated and could not identify odour. * 05/08/2020 - MACH Energy investigated and found that smoke was coming from the Pit E RL185 dump and therefore a capping task was completed. * 27/04/2021 - MACH Energy investigated and could not identify odour or heated material. * 14/05/2021 - Meteorological data recorded and notes that a prescribed burn had taken place on the same day. Inconclusive. * 04/07/2021 - MACH Energy investigated and found a small amount of heated material present in Pit D. * 11/07/2021 - MACH Energy investigated and found a small amount of heated material on the pit dump in areas of Pit A, D, & E. Capping was undertaken. * 15/08/2021 - MACH Energy investigated and found no areas of concern. * 15/08/2021 - MACH Energy investigated and found no heated materials in Pit C, D, R, F dumps. * 15/08/2021 - MACH Energy investigated and found no heated materials in Pit C, D, R, F dumps. * 15/07/2022 - MACH Energy investigated and found a small amount of smoke in the Northern Pit which did not reoccur the following day. Inspections were carried out on 15 and 16 July and odour was not detected. * 2022 Annual Review states that 3 odour complaints were made in 2022 and details the one above however, these are not identified as odour-related complaints in the 2022 complaints register (most likely spon com). Some MACH Energy responses imply that the odour complaints may have been due to heated materials. Heated materials = spon com. **Recommendations:** * **REC 2** - Complaints registers and annual reports should be consistent in stating odour complaints (e.g. 2022 Annual Report mentions 3 odour complaints but these are not listed as 'odour' in the 2022 complaints register but rather, refer to spontaneous combustion and the 'nature of complaint' is 'other'). * **REC 16** - Use 'Consultation Manager' internal system to track all complaints and manage follow up.	Non-compliant	NC10
4 - Operating Conditions						
O1 - Activities must be carried out in a competent manner						
O1.1	Licensed activities must be carried out in a competent manner. This includes: a) the processing, handling, movement and storage of materials and substances used to carry out the activity; and b) the treatment, storage, processing, reprocessing, transport and disposal of waste generated by the activity.	EMM general audit team	Site inspection.	Non-compliant in the storage of materials and substances. The workshop area contained unbunded chemicals in storage areas. All waste was disposed of and stored in appropriately labelled bins. **Recommendation (REC 8):** Ensure all chemicals/hydrocarbons are appropriately stored in bunded areas.	Non-compliant	NC11
O2 - Maintenance of plant and equipment						
O2.1	All plant and equipment installed at the premises or used in connection with the licensed activity: a) must be maintained in a proper and efficient condition; and b) must be operated in a proper and efficient manner.	EMM general audit team	Sewage treatment plant weekly servicing reports (Booth Contracting). Sewage treatment plant monthly maintenance reports (Ozzi Kleen). Waste water treatment plant annual maintenance reports (Mak Water). Plant maintenance schedule. Thiess Plan Maintenance Procedure.	EMM reviewed the plant maintenance schedule. All new equipment coming to site is sound power level tested. Servicing is based on hours run/used. The sewage/waste water system has been serviced appropriately and therefore maintained in a proper and efficient condition. Thiess operate a Computerised Maintenance Management Systems (CMMS) to manage maintenance planning.	Compliant	
O2.2	**Sewage Treatment System** The sewage treatment system at the premises must be serviced by a suitably qualified and experienced wastewater technician at least once in each quarterly period and a minimum of four times per year.	EMM general audit team	Sewage treatment plant weekly servicing reports (Booth Contracting). Sewage treatment plant monthly maintenance reports (Ozzi Kleen). Waste water treatment plant annual maintenance reports (Mak Water).	The sewage treatment plant is serviced on a weekly and monthly basis. EMM reviewed evidence of servicing records and deem this condition compliant.	Compliant	
O2.3	The licensee must record each inspection and any actions required or recommended by the technician including date, time, and all results of tests performed on the sewage treatment system by the technician.	EMM general audit team	Sewage treatment plant weekly servicing reports (Booth Contracting). Sewage treatment plant monthly maintenance reports (Ozzi Kleen). Waste water treatment plant annual maintenance reports (Mak Water). Plant maintenance schedule.	EMM reviewed the plant maintenance schedule. All new equipment coming to site is sound power level tested. Servicing is based on hours run/used. The sewage/waste water system has been serviced appropriately and therefore maintained in a proper and efficient condition. Thiess operate a Computerised Maintenance Management Systems (CMMS) to manage maintenance planning.	Compliant	
O3 - Dust						
O3.1	The premises must be maintained in a condition which minimises or prevents the emission of dust from the premises.	EMM Air quality team	Complaints records.	Management measures are detailed in the AQGHGMP and Annual Review reports. Site tour observations: - Water sprays were sighted in use during site inspection. Measures were put in place following sighting of visual dust. - Evidence of dust during tipping - see Photograph F.8 and F.9 in Appendix F of the Audit Report. **Recommendation (REC 17)**: - Site personnel to ensure that water sprays on materials/when loading or unloading materials are being applied per the AQGHGMP to minimise dust during tipping as far as possible. The measures in the AQGHGMP relating to this should be reviewed for effectiveness.	Non-compliant	NC12
O3.2	Activities occurring in or on the premises must be carried out in a manner that will minimise the generation, or emission from the premises, of wind-blown or traffic generated dust.	EMM Air quality team	AQGHGMP. Annual Reviews for 2020, 2021 and 2022.	Management measures are detailed in the AQGHGMP and Annual Review reports. Site tour observations: - Evidence of dust during tipping - see Photograph F.8 and F.9 in Appendix F of the Audit Report. - Measures were put in place following sighting of visual dust.	Non-compliant	NC13
O3.3	All trafficable areas, coal storage areas and vehicle manoeuvring areas in or on the premises must be maintained, at all times, in a condition that will minimise the generation, or emission from the premises, of wind-blown or traffic generated dust.	EMM Air quality team	AQGHGMP. Annual Reviews for 2020, 2021 and 2022.	Site tour observations: - Evidence of dust during tipping - see Photograph F.8 and F.9 in Appendix F of the Audit Report. - Measures were put in place following sighting of visual dust.	Non-compliant	NC14

O3.4	The licensee must cease all dust generating activities during adverse conditions being the occurrence of both: i) the adverse wind conditions set out in Condition O3.5 (b), and ii) the adverse PM_{10} concentrations set out in Condition O3.5 (c).	EMM Air quality team	AQGHGMP. Annual Reviews for 2020, 2021 and 2022.	Ceasing of operations in accordance with O3.4/O3.5 was detailed in the 2020 and 2022 Annual Review reports: - 85 hours in 2020 - 53 minutes in 2022 All appropriate steps to reduce dust generation were undertaken in accordance with the MPO AQGHGMP, consistent with Condition 23, Schedule 3 of Development Consent DA 92/97. There is an automated dust management system which sends alerts via text message. Managed by Thiess. Check DA tab for more information. Shutdowns occur until levels come back down. Or wind direction changes.	Compliant	
O3.5	For the purpose of Condition O3.4 the following definitions apply: (a) 'dust generating activities' means drilling, blasting, earthworks, construction activities, all hauling activities on unsealed haul roads, all overburden and coal extraction operations including loading and dumping activities and grader, loader, dozer and dragline operations. (b) 'adverse wind conditions' means the 1-hour average wind direction between 250 degrees and 340 degrees (inclusive) measured at the Muswellbrook NW Upper Hunter Air Quality Monitoring Network monitor. Australian Standard AS3580.14-2014 is to be used to calculate the 1 hour average wind direction. (c) 'adverse PM10 concentrations' means a rolling 24-hour average PM_{10} concentration of equal to or greater than 44 micrograms per cubic metre measured at the Muswellbrook NW Upper Hunter Air Quality Monitoring Network monitoring station. (d) Operation of watercarts is permitted at all times. (e) Activities within the Coal Handling and Preparation Plant and Materials Handling Area, including run-of-mine (ROM) coal, product coal handling (including dozer/loader operations) and train loading operations as identified in blue on plan titled 'Mt Pleasant Coal Mine Materials Handling Area Dust Exclusion Zone General Arrangement' drawing number MP001-0000-GEN-DRG-0026 (EPA ref Doc19/282883) are not included as dust generating activities provided all automated dust suppression spray systems at the ROM hopper, conveyor transfer points and product stockpiles are in use, at least one water cart is in use on the ROM stockpile and an adjustable hood is lowered onto rail wagons loadings.	EMM Air quality team	Noted	Noted	Compliant	
O3.6	Shutdown of dust generating activities required by Condition O3.4 must be completed within 1 hour of receiving data that triggers action required by Condition O3.4.	EMM Air quality team	AQGHGMP. Annual Reviews for 2020, 2021 and 2022. Dust shutdown occurred in afternoon of site inspection on 8/3/23.	Ceasing of operations due to dust events is detailed in the 2020, 2021, and 2022 Annual Review reports. During the site inspection (8/3/2023), a dust shutdown occurred. EMM sighted MPO shutdown within 1 hour of receiving the alert.	Compliant	
O3.7	The licensee may resume dust generating activities at the premises when: (a) adverse wind conditions as defined in Condition O3.5(b); or (b) adverse PM10 concentrations as defined in Condition O3.5(c) are not measured for a minimum time period of 1 hour from the time that cessation of dust generation activities is completed.	EMM Air quality team	AQGHGMP. Annual Reviews for 2020, 2021 and 2022.	Per Annual Review reports = all appropriate steps to reduce dust generation were undertaken in accordance with the MPO AQGGMP, consistent with Condition 23, Schedule 3 of Development Consent DA 92/97.	Compliant	
O3.8	At any time when there is no access to the meteorological data or PM10 data from the Muswellbrook NW Upper Hunter Air Quality Monitoring Network monitoring station, definitions of 'adverse wind conditions' and 'adverse PM10 concentrations' in condition O3.5 are replaced with: - 'adverse wind conditions' means a 1-hour average wind direction between 245 and 345 degrees (inclusive) measured at EPA Monitoring Point 11, identified in condition P1.3 - 'adverse PM10 concentrations' means a rolling 24-hour average PM10 concentration of equal to or greater than 44 micrograms per cubic metre measured at the EPA Monitoring Point 1, identified in condition P1.3 *Note: If at any time, there is no access to the Muswellbrook NW Upper Hunter Air Quality Monitoring Network monitoring station and to either 1-hour average wind direction data from monitoring point 11 or PM 10 data from monitoring point 1 the licensee must cease dust generating activities at the premises.*	EMM Air quality team	Noted	Noted	Compliant	
O3.9	For the purpose of condition O3.5 (e), dust suppression systems must be operated in a manner to ensure that there is no visible dust emissions emitted from the premises.	EMM Air quality team	Site inspection.	Dust suppressors (water sprays) sighted around CHPP area/rail area in use during site inspection. Evidence of visible dust in tipping - see Photograph F.8 and F.9 in Appendix F of the Audit Report. It is noted that measures were put in place to reduce/stop the visible dust. **Recommendation (REC 17):** Site personnel to ensure that water sprays on materials/when loading or unloading materials are being applied per the AQGHGMP to minimise dust during tipping as far as possible. The measures in the AQGHGMP relating to this should be reviewed for effectiveness.	Non-compliant	NC15
O4 - Effluent application to land						
O4.1	The licensee must ensure that the effluent discharge utilisation area perimeter is fenced, signposted and controlled in a manner to ensure exclusion of persons from that area.	EMM general audit team	N/A	There was no effluent application to land during the audit period.	Compliant	
O4.2	The licensee must ensure that sprays or mists from irrigation do not drift beyond the boundary of the effluent discharge utilisation area and that no ponding occurs.	EMM general audit team	N/A	There was no effluent application to land during the audit period.	Compliant	
O4.3	Application of wastewaters must only be applied at a rate that can be assimilated by the effluent discharge utilisation area and its evapotranspiration capacity.	EMM general audit team	N/A	There was no effluent application to land during the audit period.	Compliant	
O5 - Emergency response						
	Note: The licensee must prepare a Pollution Incident Response Management Plan (PIRMP) as per section 153A of the *Protection of the Environment Operations Act 2021* . The PIRMP must: 1. Include the information detailed in section 153A of the *Protection of the Environment Operations Act 2021* , and to be in the form required by clause 98B in the Protection of the Environment Operations (General) Regulation 2021. 2. Be kept at the premises to which the licence relates; and 3. Be tested in accordance with clause 98E of the Protection of the Environment Operations (General) Regulation.	EMM general audit team	Sighted PIRMP (rev 05) during inspection. A copy of the PIRMP is available on MPO website. Review of the Protection of the Environment Operations (General) Regulation 2022.	A copy of the PIRMP was sighted in the office during inspection. A copy of the PIRMP is available on MPO website. As stated in the PIRMP, the most recent testing of the PIRNP was in January 2023. Prior to this, the PIRMP was tested in October 2021. This exceeds 12 months between tests. Clause 75 (2022 version) of the regulation states the PIRMP must be tested routinely at least once every 12 months. Therefore, this condition is non-compliant. **Recommendation (REC 18):** MPO to test PIRMP at least once prior to January 2024 and annually thereafter.	Non-compliant	NC16
O6 - Waste management						
O6.1	The licensee is authorised to dispose of heavy plant waste tyres generated on the premises, in the pit. The licensee must: a) ensure heavy plant waste tyres are reused on the premises as much as practical; b) ensure that any surplus waste tyres can be emplaced by being spread out on the pit floor and be buried as deep as is reasonably practical; c) ensure buried waste tyres are covered by at least 20 m of inert material beneath any final rehabilitated surfaces; d) place the waste tyres at least 10 m away from coarse reject material or tailings emplacement areas; e) not place waste tyres near heated material; and	EMM general audit team	Annual Reviews for 2020, 2021 and 2022. Annual Returns for 2020, 2021 and 2022. Thiess Mount Pleasant Handling and Disposal of Waste Procedure.	Based on the reporting of the Annual Reviews and the Annual Returns, EMM deem this condition compliant. Thiess dispose of tyres in accordance with the Handling and Disposal of Waste Procedure, however, there is no mention of the waste management requirements of this condition. **Recommendation (REC 19):** Include the waste management requirements of EPL 20850 Condition O6.1 in the Thiess Mount Pleasant Handling and Disposal of Waste Procedure.	Compliant	
5 - Monitoring and Recording Conditions						
M1 - Monitoring records						
M1.1	The results of any monitoring required to be conducted by this licence or a load calculation protocol must be recorded and retained as set out in this condition.	EMM general audit team	Monitoring records and reports.	All monitoring reports are retained by MPO.	Compliant	
M1.2	All records required to be kept by this licence must be: a) in a legible form, or in a form that can readily be reduced to a legible form; b) kept for at least 4 years after the monitoring or event to which they relate took place; and c) produced in a legible form to any authorised officer of the EPA who asks to see them.	EMM general audit team	Monitoring records and reports.	a) Monthly environmental monitoring reports provides monthly monitoring data in a legible form. b) Monthly environmental monitoring reports are available on company website from May 2018 to Dec 2022. c) Data requested following complaints ie dust, noise, met records. These have been provided to the EPA as requested.	Compliant	
M1.3	The following records must be kept in respect of any samples required to be collected for the purposes of this licence: a) the date(s) on which the sample was taken; b) the time(s) at which the sample was collected; c) the point at which the sample was taken; and d) the name of the person who collected the sample.	EMM general audit team	Monitoring records and reports.	a) dates of sampling are presented in monthly reports. b) times are reported for all monitoring. c) sample points are recorded. d) appended to monthly reports provided by consultants. Sighted during site inspection.	Compliant	
M2 - Requirement to monitor concentration of pollutants discharged						

<table>
<tr><td>M2.1</td><td>For each monitoring/discharge point or utilisation area specified below (by a point number), the licensee must monitor (by sampling and obtaining results by analysis) the concentration of each pollutant specified in Column 1. The licensee must use the sampling method, units of measure, and sample at the frequency, specified opposite in the other columns:</td><td>EMM Air quality team</td><td>AQGHGMP.
Annual Review for 2020, 2021 and 2022.
Annual Returns for 2020, 2021 and 2022.
Site inspection.</td><td>Details of monitors are provided in the AQGHGMP and Annual Review reports.

Non-compliance per 2020 Annual Review report - Incomplete data capture. No action required as data capture was high (at least 95% or 347 days) during the period. No action or comment required. Continue to capture data and monitor.

Non-compliances in Annual Returns:
- 2019-2020: PM_{10} was not monitored continuously at EPL Point 1 (98.1%) and EPL Point 2 (92.7%) during the reporting period.
- 2020-2021: PM_{10} was not monitored continuously at EPL Point 1 (98.1%) and EPL Point 2 (92.7%) during the reporting period.
- 2021-2022: PM_{10} was not monitored continuously at EPL ID 1 (97.8%) and EPL ID 2 (52.6%) during the reporting period.</td><td>Non-compliant</td><td>NC17</td></tr>
<tr><td>M2.2</td><td>Air Monitoring Requirements
POINT 1,2
<table><tr><th>Pollutant</th><th>Units of measure</th><th>Frequency</th><th>Sampling Method</th></tr><tr><td>PM10</td><td>milligrams per cubic metre</td><td>Continuous</td><td>Special Method 1</td></tr></table>
Note: Special Method 1 requires the licensee to undertake the monitoring of PM10 concentrations in strict accordance with the manufacturer's operating manual supplied with the continuous monitoring equipment, or any updated versions as published by the manufacturer.</td><td>EMM Air quality team</td><td>AQGHGMP.
Annual Review for 2020, 2021 and 2022.
Annual Returns for 2020, 2021 and 2022.
Site inspection.</td><td>As above.</td><td>Non-compliant</td><td>NC18</td></tr>
<tr><td>M2.3</td><td>Water and/ or Land Monitoring Requirements
POINT 14,15
<table><tr><th>Pollutant</th><th>Units of measure</th><th>Frequency</th><th>Sampling Method</th></tr><tr><td>Faecal Coliforms</td><td>colony forming units per 100 millilitres</td><td>Quarterly</td><td>Grab sample</td></tr><tr><td>pH</td><td>pH</td><td>Quarterly</td><td>Grab sample</td></tr></table></td><td>EMM general audit team</td><td>Surface water pH results are presented in monthly reports
Annual Returns for 2020, 2021 and 2022.</td><td>The 2020-2021 Annual Return only completed 3 samples during the annual return period. As stated in the condition, samples are required quarterly.

<u>Recommendation (REC 20):</u> Complete quarterly faecal and pH monitoring in line with the obligations of the EPL Condition M2.3.</td><td>Non-compliant</td><td>NC19</td></tr>
<tr><td colspan="7">M3 - Testing methods - concentration limits</td></tr>
<tr><td>M3.1</td><td>Monitoring for the concentration of a pollutant emitted to the air required to be conducted by this licence must be done in accordance with:
a) any methodology which is required by or under the Act to be used for the testing of the concentration of the pollutant; or
b) if no such requirement is imposed by or under the Act, any methodology which a condition of this licence requires to be used for that testing; or
c) if no such requirement is imposed by or under the Act or by a condition of this licence, any methodology approved in writing by the EPA for the purposes of that testing prior to the testing taking place.
Note: The Protection of the Environment Operations (Clean Air) Regulation 2021 requires testing for certain purposes to be conducted in accordance with test methods contained in the publication "Approved Methods for the Sampling and Analysis of Air Pollutants in NSW".</td><td>EMM Air quality team</td><td>AQGHGMP.
Annual Review for 2020, 2021 and 2022.
Annual Returns for 2020, 2021 and 2022.</td><td>Details of monitors are provided in the AQGHGMP and Annual Review reports.

EPL 20850 describes monitoring points 1 and 2 (A-PF2 and A-PF5 respectively) as TEOMs.
The equipment used on site are Palas Fidas dust monitors which are not TEOMs, are not Aus Standard.

2020 IEA report recommended that: the calibration factor used with the Palas Fidas particulate monitors be based on a dataset that covers seasonal variations (rather than the single month the current calibration factors are based on) as changes in particulate loads, temperature, humidity, etc. can affect the instrument's readings.

Even though the monitors are not TEOMs as stated in the EPL, the AQGHGMP was approved by DPE.</td><td>Compliant</td><td></td></tr>
<tr><td>M3.2</td><td>Subject to any express provision to the contrary in this licence, monitoring for the concentration of a pollutant discharged to waters or applied to a utilisation area must be done in accordance with the Approved Methods Publication unless another method has been approved by the EPA in writing before any tests are conducted.</td><td>EMM general audit team</td><td>Surface water monitoring records.
Site visit.</td><td>Based on the surface water monitoring records and the site inspection. EMM deem this condition compliant.</td><td>Compliant</td><td></td></tr>
<tr><td colspan="7">M4 - Weather monitoring</td></tr>
<tr><td>M4.1</td><td>At the point(s) identified below, the licensee must monitor (by sampling and obtaining results by analysis) the parameters specified in Column 1 of the table below, using the corresponding sampling method, units of measure, averaging period and sampling frequency, specified opposite in the Columns 2, 3, 4 and 5 respectively.
POINT 11
<table><tr><th>Parameter</th><th>Sampling method</th><th>Units of measure</th><th>Averaging period</th><th>Frequency</th></tr><tr><td>Wind Speed at 10 metres</td><td>AM-2 & AM-4</td><td>metres per second</td><td>10 minutes</td><td>Continuous</td></tr><tr><td>Wind Direction at 10 metres</td><td>AM-2 & AM-4</td><td>Degrees</td><td>10 minutes</td><td>Continuous</td></tr></table>POINT 4
<table><tr><th>Parameter</th><th>Sampling method</th><th>Units of measure</th><th>Averaging period</th><th>Frequency</th></tr><tr><td>Wind Speed at 10 metres</td><td>AM-2 & AM-4</td><td>metres per second</td><td>10 minutes</td><td>Continuous</td></tr><tr><td>Temperature at 2 metres</td><td>AM-4</td><td>degrees Celsius</td><td>10 minutes</td><td>Continuous</td></tr><tr><td>Sigma Theta</td><td>AM-2 & AM-4</td><td>degrees Celsius</td><td>10 minutes</td><td>Continuous</td></tr><tr><td>Rainfall</td><td>AM-4</td><td>millimetres per hour</td><td>1 hour</td><td>Continuous</td></tr><tr><td>Relative humidity</td><td>AM-4</td><td>percent</td><td>1 hour</td><td>Continuous</td></tr><tr><td>Siting</td><td>AM-1</td><td>None</td><td>-</td><td>-</td></tr><tr><td>Temperature at 10 metres</td><td>AM-4</td><td>degrees Celsius</td><td>10 minutes</td><td>Continuous</td></tr><tr><td>Total Solar Radiation</td><td>AM-4</td><td>Watts per square metre</td><td>10 minutes</td><td>Continuous</td></tr></table></td><td>EMM general audit team</td><td>Annual Returns for 2020, 2021 and 2022.</td><td>The 2022 Annual Return reported a non-compliance against this condition stating: "Meteorological data at EPA ID 4 and 11 was not captured continuously (uninterrupted) during the reporting period."

Compliance with this condition was achieved during 2020 and 2021.</td><td>Non-compliant</td><td>NC20</td></tr>
<tr><td>M4.2</td><td>All methods specified in conditions M4.1 are specified in the Approved Methods for the Sampling and Analysis of Air Pollutants in New South Wales ('Approved Methods') and all monitoring must be conducted strictly in accordance with the requirements outlined the Approved Methods.</td><td>EMM general audit team</td><td>Monitoring reports.
Annual Returns for 2020, 2021 and 2022.</td><td>All monitoring was completed in accordance with the Approved Methods.</td><td>Compliant</td><td></td></tr>
<tr><td colspan="7">M5 - Recording of pollution complaints</td></tr>
<tr><td>M5.1</td><td>The licensee must keep a legible record of all complaints made to the licensee or any employee or agent of the licensee in relation to pollution arising from any activity to which this licence applies.</td><td>EMM general audit team</td><td>Complaints records.</td><td>Annual complaints summaries for 2020, 2021 and 2022 are available on the MPO website.</td><td>Compliant</td><td></td></tr>
<tr><td>M5.2</td><td>The record must include details of the following:
a) the date and time of the complaint;
b) the method by which the complaint was made;
c) any personal details of the complainant which were provided by the complainant or, if no such details were provided, a note to that effect;
d) the nature of the complaint;
e) the action taken by the licensee in relation to the complaint, including any follow-up contact with the complainant; and
f) if no action was taken by the licensee, the reasons why no action was taken.</td><td>EMM general audit team</td><td>Complaints records.</td><td>Annual complaints summaries for 2020, 2021 and 2022 are available on the MPO website.</td><td>Compliant</td><td></td></tr>
<tr><td>M5.3</td><td>The record of a complaint must be kept for at least 4 years after the complaint was made.</td><td>EMM general audit team</td><td>Complaints records.</td><td>Site have confirmed they do not delete records of complaints. Annual complaints summaries for 2020, 2021 and 2022 are available on the MPO website.</td><td>Compliant</td><td></td></tr>
<tr><td>M5.4</td><td>The record must be produced to any authorised officer of the EPA who asks to see them.</td><td>EMM general audit team</td><td>Complaints records.</td><td>All records of complaints have been provided to the EPA following a complaint.</td><td>Compliant</td><td></td></tr>
<tr><td colspan="7">M6 - Telephone complaints line</td></tr>
<tr><td>M6.1</td><td>The licensee must operate during its operating hours a telephone complaints line for the purpose of receiving any complaints from members of the public in relation to activities conducted at the premises or by the vehicle or mobile plant, unless otherwise specified in the licence.</td><td>EMM general audit team</td><td>MPO website.</td><td>The MPO website displays the community hotline, blasting hotline and general enquiries phone numbers on the home page. Ads were also included in the local paper during the MPOD 4 Rail 2 project.</td><td>Compliant</td><td></td></tr>
<tr><td>M6.2</td><td>The licensee must notify the public of the complaints line telephone number and the fact that it is a complaints line so that the impacted community knows how to make a complaint.</td><td>EMM general audit team</td><td>MPO website.</td><td>The MPO website displays the community hotline, blasting hotline and general enquiries phone numbers on the home page. Ads were also included in the local paper during the MPOD 4 Rail 2 project.</td><td>Compliant</td><td></td></tr>
<tr><td>M6.3</td><td>The preceding two conditions do not apply until two weeks from the date of the issue of this licence.</td><td>EMM general audit team</td><td>Noted.</td><td>Noted.</td><td>Compliant</td><td></td></tr>
<tr><td colspan="7">M7 - Blasting</td></tr>
</table>

<table>
<tr><td>M7.1</td><td>To determine compliance with the blast limits specified in this licence:
a) Airblast overpressure and ground vibration levels must be measured and electronically recorded for Monitoring Points 3, 12 and 13 for the parameters specified in column 1 of the table below; and
b) The licensee must use the units of measure, sampling method and sample at the frequency specified opposite in the other columns.
<table><tr><th>Parameter</th><th>Units of Measure</th><th>Frequency</th><th>Sampling Method</th></tr><tr><td>Airblast Overpressure</td><td>Decibels (Linear Peak)</td><td>All blasts</td><td>Australian Standard AS 2187.2-2006</td></tr><tr><td>Ground Vibration Peak Particle Velocity</td><td>millimetres/second</td><td>All blasts</td><td>Australian Standard AS 2187.2-2006</td></tr></table></td><td>Bridges Acoustics</td><td>Blast Management Plan.
Blast monitoring data.</td><td>The Blast Management Plan includes monitoring points 3, 12 and 13.
Blast monitoring data for the audit period include these points.</td><td>Compliant</td><td></td></tr>
<tr><td colspan="7">M8 - Other monitoring and recording conditions</td></tr>
<tr><td>M8.1</td><td>Requirement to Monitor Particulate Matter
The licensee must record the average PM10 concentration at Monitoring Points 1 and 2 at intervals of 10 minutes. This data must be made available upon request by any authorised officer of the EPA who asks to see them.
POINT 11<table><tr><th>Parameter</th><th>Sampling method</th><th>Units of measure</th><th>Averaging period</th><th>Frequency</th></tr><tr><td>Wind Speed at 10 metres</td><td>AM-2 & AM-4</td><td>metres per second</td><td>10 minutes</td><td>Continuous</td></tr><tr><td>Wind Direction at 10 metres</td><td>AM-2 & AM-4</td><td>Degrees</td><td>10 minutes</td><td>Continuous</td></tr></table>POINT 4<table><tr><th>Parameter</th><th>Sampling method</th><th>Units of measure</th><th>Averaging period</th><th>Frequency</th></tr><tr><td>Wind Speed at 10 metres</td><td>AM-2 & AM-4</td><td>metres per second</td><td>10 minutes</td><td>Continuous</td></tr><tr><td>Temperature at 2 metres</td><td>AM-4</td><td>degrees Celsius</td><td>10 minutes</td><td>Continuous</td></tr><tr><td>Sigma Theta</td><td>AM-2 & AM-4</td><td>degrees Celsius</td><td>10 minutes</td><td>Continuous</td></tr><tr><td>Rainfall</td><td>AM-4</td><td>millimetres per hour</td><td>1 hour</td><td>Continuous</td></tr><tr><td>Relative humidity</td><td>AM-4</td><td>percent</td><td>1 hour</td><td>Continuous</td></tr><tr><td>Siting</td><td>AM-1</td><td>None</td><td>-</td><td>-</td></tr><tr><td>Temperature at 10 metres</td><td>AM-4</td><td>degrees Celsius</td><td>10 minutes</td><td>Continuous</td></tr><tr><td>Total Solar Radiation</td><td>AM-4</td><td>Watts per square metre</td><td>10 minutes</td><td>Continuous</td></tr></table></td><td>EMM Air quality team</td><td>AQGHGMP.
Annual Review for 2020, 2021 and 2022.
Annual Returns for 2020, 2021 and 2022
Monitoring data spreadsheets.</td><td>10 min PM_{10} data provided in spreadsheets:
- Air Quality Data Jan - Dec 2020.xlsx
- Annual Air Quality Compiled Data 2021.xlsx
- 2022_Air Quality Compiled Data.xlsx

The 2021 data spreadsheet includes a column listed as 'PM_{10} TEOM' in the A-PF5 tab however, the Annual Review reports do not state that there is a TEOM at the site. This is not in the 2020 or 2022 spreadsheets.

<u>Recommendation (REC 21):</u> The 2021 met data spreadsheet should be amended if there is not actually a TEOM on-site. The monitoring equipment should be clear in all spreadsheets going forward.</td><td>Compliant</td><td></td></tr>
<tr><td colspan="7">M9 - Noise monitoring</td></tr>
<tr><td>M9.1</td><td>To assess compliance with the noise limits specified within this licence, the licensee must undertake operator attended noise monitoring at each specified noise monitoring point in accordance with the table below.
POINT 5,6,7,8,9,10<table><tr><th>Assessment period</th><th>Minimum frequency in a reporting period</th><th>Minimum duration within assessment period</th><th>Minimum number of assessment period</th></tr><tr><td>Night</td><td>Monthly</td><td>15 minutes</td><td>1 operation day</td></tr></table></td><td>Bridges Acoustics</td><td>Noise Management Plan.
Noise monitoring reports.</td><td>The Noise Management Plan requires noise monitoring for one 15 minute period per month at night as required by this condition.
Noise monitoring reports include monthly noise data complying with this condition.</td><td>Compliant</td><td></td></tr>
<tr><td>M9.2</td><td>To assess compliance with the noise limits specified within the licence, operator attended noise monitoring must be undertaken in accordance with Conditions L3.2 to L3.4:
a) at the noise monitoring locations specified in condition P1.3; and
b) occur every calendar month in a reporting period; and
c) occur during one night time period as defined in the Industrial Noise Policy (EPA 2000) for a minimum of 15 minutes at each location from a).</td><td>Bridges Acoustics</td><td>Noise Management Plan.
Noise monitoring reports.</td><td>The Noise Management Plan requires noise monitoring at locations N-AT1 to N-AT6 each month at night for a 15 minute period as required by this condition.
Noise monitoring reports include noise measurement data complying with this condition.</td><td>Compliant</td><td></td></tr>
<tr><td>M9.3</td><td>For the purposes of compliance monitoring and determining the noise generated at the premises the modification factors in Fact Sheet C of the Noise Policy for Industry (EPA 2017) must be applied, as appropriate, to the noise levels measured by noise monitoring equipment.</td><td>Bridges Acoustics</td><td>Noise Management Plan.
Noise monitoring reports.</td><td>Section 9.2.3 of the Noise Management Plan requires an assessment of modifying factors as required by this condition.
Noise monitoring reports include an assessment of modifying factors including tonality and dominant low frequency for each 15 minute measurement period, and apply corrections to measured noise levels as required.</td><td>Compliant</td><td></td></tr>
<tr><td>M9.4</td><td>Where required in writing by the EPA, the licensee must carry out attended noise monitoring at sensitive receivers in addition to the monitoring required by Condition M9.2.</td><td>Bridges Acoustics</td><td>Noise Management Plan.
Noise monitoring reports.</td><td>Additional noise monitoring was completed after non-compliances were reported in April 2020, July 2020 and August 2021. Additional noise monitoring is being carried out after a reported non-compliance in November 2022, however relevant reports are not yet available.</td><td>Compliant</td><td></td></tr>
<tr><td colspan="7">6 - Reporting Conditions</td></tr>
<tr><td colspan="7">R1 - Annual return documents</td></tr>
<tr><td>R1.1</td><td>The licensee must complete and supply to the EPA an Annual Return in the approved form comprising:
1. a Statement of Compliance,
2. a Monitoring and Complaints Summary,
3. a Statement of Compliance - Licence Conditions,
4. a Statement of Compliance - Load based Fee,
5. a Statement of Compliance - Requirement to Prepare Pollution Incident Response Management Plan,
6. a Statement of Compliance - Requirement to Publish Pollution Monitoring Data; and
7. a Statement of Compliance - Environmental Management Systems and Practices.
At the end of each reporting period, the EPA will provide to the licensee notification that the Annual Return is due.</td><td>EMM general audit team</td><td>Annual Returns for 2020, 2021 and 2022.</td><td>All Annual Returns have been submitted to the EPA via the portal and satisfy this condition.</td><td>Compliant</td><td></td></tr>
<tr><td>R1.2</td><td>An Annual Return must be prepared in respect of each reporting period, except as provided below.
Note: The term "reporting period" is defined in the dictionary at the end of this licence. Do not complete the Annual Return until after the end of the reporting period.</td><td>EMM general audit team</td><td>Annual Returns for 2020, 2021 and 2022.</td><td>All Annual Returns have been submitted to the EPA via the portal and satisfy this condition.</td><td>Compliant</td><td></td></tr>
<tr><td>R1.3</td><td>Where this licence is transferred from the licensee to a new licensee:
a) the transferring licensee must prepare an Annual Return for the period commencing on the first day of the reporting period and ending on the date the application for the transfer of the licence to the new licensee is granted; and
b) the new licensee must prepare an Annual Return for the period commencing on the date the application for the transfer of the licence is granted and ending on the last day of the reporting period.
Note: An application to transfer a licence must be made in the approved form for this purpose.</td><td>EMM general audit team</td><td>N/A</td><td>There have been no licence transfers during the audit period.</td><td>Not triggered</td><td></td></tr>
<tr><td>R1.4</td><td>Where this licence is surrendered by the licensee or revoked by the EPA or Minister, the licensee must prepare an Annual Return in respect of the period commencing on the first day of the reporting period and ending on:
a) in relation to the surrender of a licence - the date when notice in writing of approval of the surrender is given; or
b) in relation to the revocation of the licence - the date from which notice revoking the licence operates.</td><td>EMM general audit team</td><td>N/A</td><td>There have been no licence surrenders during the audit period.</td><td>Not triggered</td><td></td></tr>
<tr><td>R1.5</td><td>The Annual Return for the reporting period must be supplied to the EPA via eConnect EPA or by registered post not later than 60 days after the end of each reporting period or in the case of a transferring licence not later than 60 days after the date the transfer was granted (the 'due date').</td><td>EMM general audit team</td><td>N/A</td><td>There have been no licence transfers during the audit period.</td><td>Not triggered</td><td></td></tr>
<tr><td>R1.6</td><td>The licensee must retain a copy of the Annual Return supplied to the EPA for a period of at least 4 years after the Annual Return was due to be supplied to the EPA.</td><td>EMM general audit team</td><td>Annual Returns for 2020, 2021 and 2022.</td><td>All Annual Returns are retained by site. EMM have sighted copies of the Annual Returns.</td><td>Compliant</td><td></td></tr>
<tr><td>R1.7</td><td>Within the Annual Return, the Statements of Compliance must be certified and the Monitoring and Complaints Summary must be signed by:
a) the licence holder; or
b) by a person approved in writing by the EPA to sign on behalf of the licence holder.</td><td>EMM general audit team</td><td>Annual Returns for 2020, 2021 and 2022.</td><td>All Annual Returns were signed by the MACH Energy Managing Director and the Company Secretary.</td><td>Compliant</td><td></td></tr>
<tr><td colspan="7">R2 - Notification of environmental harm</td></tr>
</table>

R2.1	Notifications must be made by telephoning the Environment Line service on 131 555. *Note: The licensee or its employees must notify all relevant authorities of incidents causing or threatening material harm to the environment immediately after the person becomes aware of the incident in accordance with the requirements of Part 5.7 of the Act.*	EMM general audit team	Site confirmed that the water discharge events were reported via the Environment Line service on 131 555.	Seven water discharge events occurred during the audit period following periods of heavy rain. These occurred on: * 8 March 2021 - failure of erosion and sediment controls resulted in run off leaving site. * 8 June 2021 - two separate discharges of sediment-laden water from MOD 4 construction area and into Wybong Road swale drains, where it ceased. * 12 November 2021 - discharge of sediment-laden water from the Rail 2 Project Area and into Wybong Road swale drains. * 8 December 2021 - discharge from four sediment basins (SD4, SD6, SD7 and ED2) offsite. * 9 December 2021 - discharge from four sediment basins (SD4, SD6, SD7 and ED2) offsite. * 8 March 2022 - discharge from five sediment basins (SD1, SD4, SD6, SD7 and TSB2) offsite. * 21 October 2022 - spillway discharge was observed from SD4. These were all reported via the Environment Line service on 131 555 immediately.	Compliant	
R2.2	The licensee must provide written details of the notification to the EPA within 7 days of the date on which they became aware of the incident.	EMM general audit team	Written notifications to EPA.	EMM sighted written notification of the incidents were provided to the EPA with in 7 days of the date on which they became aware of the incident.	Compliant	
R3 - Written report						
R3.1	Where an authorised officer of the EPA suspects on reasonable grounds that: a) where this licence applies to premises, an event has occurred at the premises; or b) where this licence applies to vehicles or mobile plant, an event has occurred in connection with the carrying out of the activities authorised by this licence, and the event has caused, is causing or is likely to cause material harm to the environment (whether the harm occurs on or off premises to which the licence applies), the authorised officer may request a written report of the event.	EMM general audit team	Written notifications to EPA.	Following an incident, MPO provided written notification to the EPA within 7 days of the even occurring. EMM has sighted evidence of the written notifications.	Compliant	
R3.2	The licensee must make all reasonable inquiries in relation to the event and supply the report to the EPA within such time as may be specified in the request.	EMM general audit team	Written notifications to EPA.	Following an incident, MPO provided written notification to the EPA within 7 days of the even occurring. EMM has sighted evidence of the written notifications.	Compliant	
R3.3	The request may require a report which includes any or all of the following information: a) the cause, time and duration of the event; b) the type, volume and concentration of every pollutant discharged as a result of the event; c) the name, address and business hours telephone number of employees or agents of the licensee, or a specified class of them, who witnessed the event; d) the name, address and business hours telephone number of every other person (of whom the licensee is aware) who witnessed the event, unless the licensee has been unable to obtain that information after making reasonable effort; e) action taken by the licensee in relation to the event, including any follow-up contact with any complainants; f) details of any measure taken or proposed to be taken to prevent or mitigate against a recurrence of such an event; and g) any other relevant matters.	EMM general audit team	Written notifications to EPA.	Following an incident, MPO provided written notification to the EPA within 7 days of the even occurring. EMM has sighted evidence of the written notifications. All notification included the information listed in the condition.	Compliant	
R3.4	The EPA may make a written request for further details in relation to any of the above matters if it is not satisfied with the report provided by the licensee. The licensee must provide such further details to the EPA within the time specified in the request.	EMM general audit team	Written notifications to EPA.	Following an incident, MPO provided written notification to the EPA within 7 days of the even occurring. EMM has sighted evidence of the written notifications. Where additional information was requested from MPO, MPO prepared an additional letter to EPA with the requested information.	Compliant	
R4 - Other notifications						
R4.1	**Blast Exceedance Notification** The licensee must report any exceedance of the blast limits specified in this licence to the EPA at info@epa.nsw.gov.au as soon as practicable after the exceedance becomes known to the licensee or to one of its employees or agents.	Bridges Acoustics	N/A	No exceedances of the blast limits (at monitors representing sensitive locations) occurred during the audit period	Not triggered	
R4.2	**Noise Exceedance Notification** The licensee must report any exceedance of noise limits specified in this licence to the EPA at info@epa.nsw.gov.au as soon as practicable after the exceedance becomes known to the licensee or to one of its employees or agents.	Bridges Acoustics	Annual Returns for 2020, 2021 and 2022.	The following exceedances of the noise limits occurred: 5 dBA above the LA1,1min limit at N-AT4 in April 2020. The April monitoring report stated this exceedance was reported to the EPA, and DPIE was notified on 29 April. 3 dBA above the LAeq,15min limit and 6 dBA above the LA1,1min limit at N-AT3 in July 2020. The July monitoring report stated these events were being investigated. The EPA was notified on 29 July. 2 dBA above the LA1,1min limit at N-AT3 in July 2021, followed by a second measurement showing compliance. As the result did not exceed 2 dBA above the limit and the second measurement indicated a sustained exceedance did not occur, no notification was required. 11 dBA above the LA1,1min limit at N-AT4, followed by a second measurement showing 3 dBA above the limit, in August 2021. EPA and DPIE were notified on 1 September. 13 dBA above the LA1,1min limit at N-AT4 followed by a second measurement showing 16 dBA above the limit, and 4 dBA above the limit at N-AT5, in November 2022. The EPA was notified on 17 November and DPIE on 24 November.	Compliant	
R4.3	**Dust Shutdown Notification** The licensee must report any exceedance of the 1 hour dust shutdown timeframe prescribed in condition O3.6 of this licence to the EPA at info@epa.nsw.gov.au as soon as practicable after the exceedance becomes known to the licensee or to one of its employees or agents.	EMM Air quality team	Annual Reviews for 2020, 2021 and 2022.	No exceedance of the dust shutdowns timeframe noted in Annual Review reports.	Compliant	
R4.4	**Notification of Pollutions of Waters** The licensee must notify the EPA by telephoning the Environment Line service on 131555 immediately after the licensee becomes aware of any contravention or potential contravention of Condition L1.1 of this licence.	EMM general audit team	Site confirmed that the water discharge events were reported via the Environment Line service on 131 555.	Seven water discharge events occurred during the audit period following periods of heavy rain. These occurred on: * 8 March 2021 - failure of erosion and sediment controls resulted in run off leaving site. * 8 June 2021 - two separate discharges of sediment-laden water from MOD 4 construction area and into Wybong Road swale drains, where it ceased. * 12 November 2021 - discharge of sediment-laden water from the Rail 2 Project Area and into Wybong Road swale drains. * 8 December 2021 - discharge from four sediment basins (SD4, SD6, SD7 and ED2) offsite. * 9 December 2021 - discharge from four sediment basins (SD4, SD6, SD7 and ED2) offsite. * 8 March 2022 - discharge from five sediment basins (SD1, SD4, SD6, SD7 and TSB2) offsite. * 21 October 2022 - spillway discharge was observed from SD4. These were all reported via the Environment Line service on 131 555 immediately.	Compliant	
R4.5	The licensee must provide written details of the notification to the EPA at info@epa.nsw.gov.au within 7 days of the date of the notification.	EMM general audit team	Written notifications to EPA.	EMM sighted written notification of the incidents were provided to the EPA with in 7 days of the date on which they became aware of the incident.	Compliant	
R5 - Other reporting conditions						
R5.1	**Reporting of Blast Monitoring** R5.1 For each Annual Return reporting period the licensee must submit a Blast Monitoring Report to the EPA for that period. The report must: a) include the results of the blast monitoring required by this licence; b) identify any exceedance of the blast limits in this licence; and c) describe management actions taken to address any exceedances.	Bridges Acoustics	Annual Returns for 2020, 2021 and 2022. Blast monitoring data.	The 2020, 2021 and 2022 Annual Reviews include a summary of blast monitoring results. No exceedances of the blast criteria occurred during these periods at any residence or other sensitive location.	Compliant	
R5.2	**Noise Monitoring Report** For each Annual Return reporting period the licensee must submit a Noise Compliance Assessment Report to the EPA for that period. The report must: a) be prepared by an appropriately qualified acoustic consultant and determine compliance with noise limits specified in this licence; b) include all routine attended monitoring undertaken throughout the year; c) include measurement and reporting of C-weighted noise levels; and d) outline management actions taken within the monitoring period to address any exceedances of the limits specified in this licence.	Bridges Acoustics	Annual Returns for 2020, 2021 and 2022. Noise Monitoring Reports. Noise monitoring data.	This condition requires a specific noise compliance assessment report prepared by an independent consultant for each Annual Return reporting period. While the contents of the report are also available to the EPA in the monthly monitoring reports and Annual Reviews, those reports were not prepared by an appropriately qualified acoustic consultant and do not satisfy this condition. **Recommendation (REC 22):** Noise Compliance Assessment Reports are to be prepared by an appropriately qualified acoustic consultant.	Non-compliant	NC21

R5.3	**Dust Monitoring Report** For each Annual Return reporting period the licensee must submit a Dust Monitoring Report to the EPA for that period. The report must include: a) details of times, wind speeds and wind direction during 'adverse conditions'; b) details of the date, time and duration when dust generating activities were ceased in accordance with condition O3.4; c) weather conditions monitored at Monitoring Point 4: i. during the period when dust generating activities were ceased; ii. for the 24 hour period immediately prior to dust generating activities being ceased; and iii. for the 24 hour period immediately after dust generating activities resumed. d) PM10 monitoring data measured at Monitoring Points 1 and 2: i. during the period when dust generating activities were ceased; ii. for the 24 hour period immediately prior to dust generating activities being ceased; and iii. for the 24 hour period immediately after dust generating activities resumed. e) details of the date and time dust generating activities were resumed; f) a list of days when the average 24 hour PM10 at the Muswellbrook Upper Hunter Air Quality Monitoring Network monitor exceeded 50 µg/m3. g) 10 minute wind speed and direction data at Monitoring Point 4 for days when the average 24 hour PM10 at the Muswellbrook Upper Hunter Air Quality Monitoring Network monitor exceeded 50 µg/m3. h) 10 minute PM10 data from Monitoring Points 1 and 2 for days when the average 24 hour PM10 at the Muswellbrook Upper Hunter Air Quality Monitoring Network monitor exceeded 50 µg/m3. *Note: This information is necessary for the EPA to review whether conditions O3.4 to O3.8 are achieving the objective of ensuring that activities carried on at the premises do not increase the number of days when average PM10 concentrations in Muswellbrook exceed 50ug/m3. The EPA may review these conditions if this objective is not being achieved.*	EMM Air quality team	Annual Returns for 2020, 2021 and 2022.	* 2019-2020 and 2020-2021 excel spreadsheets provided with Annual Returns include data requested. * 2021-2022 spreadsheet does not contain any data as there were no shutdowns.	Compliant	
R5.4	**Sewage Treatment Systems** For each Annual Return reporting period the licensee must submit a Sewage Treatment System Maintenance Report to the EPA for that period. The report must include: a) sewage system maintenance program including any logs; b) results of any water quality sampling undertaken; c) any system issues identified; and d) management response to any issues.	EMM general audit team	Annual Returns for 2020, 2021 and 2022.	All Annual Returns have been submitted to the EPA via the portal and satisfy this condition.	Compliant	
R5.5	The licensee must retain a copy of each report as required by Condition O2.5 for 3 years from the date each record is made.	EMM general audit team	Reports related to Condition R5.	All reports are kept on the MPO server for more than 3 years. Evidence of this was sighted during site visit.	Compliant	
R5.6	**Heavy Plant Tyre Disposal Report** For each Annual Return reporting period the licensee must submit a Heavy Plant Tyre Disposal Report to the EPA for that period. The report must include the following information for each waste tyre: a) the size and type; b) disposal date; c) cumulative tonnage of waste tyres disposed in each disposal area; d) GPS coordinates (easting and northing) of the disposal location; e) the Real Level (RL) in metres of the burial depth; and f) where reasonably available the purchase date, supplier and serial number.	EMM general audit team	Annual Returns for 2020, 2021 and 2022.	All Annual Returns have been submitted to the EPA via the portal and satisfy this condition.	Compliant	
7 - General Conditions						
G1 - Copy of licence kept at the premises or plant						
G1.1	A copy of this licence must be kept at the premises to which the licence applies.	EMM general audit team	EPL 20850 sighted in site office.	A copy of EPL 20850 was sighted in the site office during the site inspection.	Compliant	
G1.2	The licence must be produced to any authorised officer of the EPA who asks to see it.	EMM general audit team	N/A	A copy of EPL 20850 was not requested by the EPA during the audit period.	Not triggered	
G1.3	The licence must be available for inspection by any employee or agent of the licensee working at the premises.	EMM general audit team	Noted.	A copy of EPL 20850 is kept in the site office. This will be made available for any inspection or employee/agent, if required.	Not triggered	
G2 - Contact number for incidents and responsible employees						
G2.1	The licensee must operate 24-hour telephone contact lines for the purpose of enabling the EPA to directly contact one or more representatives of the licensee who can: a) respond at all times to incidents relating to the premises; and b) contact the licensee's senior employees or agents authorised at all times to: i) speak on behalf of the licensee; and ii) provide any information or document required under this licence.	EMM general audit team	MPO website. Emails to/from EPA/Andrew Reid.	The MPO website displays the community hotline, blasting hotline and general enquiries phone numbers on the home page. Andrew Reid (Environment Superintendent) is the primary contact for the EPA. The EPA have all contact details for Andrew and are in regular contact.	Compliant	
G2.2	The licensee is to inform the EPA in writing of the appointment of any subsequent contact persons, or changes to the person's contact details as soon as practicable and in any event within fourteen days of the appointment or change.	EMM general audit team	N/A	There has been no change to contact persons or changes to the person's details during the audit period.	Not triggered	

Table A.4 - Mining Leases

Section	Requirement	Evidence collected	Independent Audit Findings and Recommendations	Compliance status	Unique Identification Non-compliance
ML 1645, ML 1708, ML 1709, ML 1713, ML 1750, ML 1808 (2022)					
General conditions					
Notice to Landholders					
1	(a) Within 90 days from the date of grant or renewal of this mining lease, the lease holder must give each landholder notice in writing: (i) that this mining lease has been granted or renewed; and (ii) whether the lease includes the surface. The notice must include a plan identifying the lease area and each landholder and individual land parcel within the lease area. (b) If there are ten or more landholders to which notice must be given, the lease holder will be taken to have complied with condition 1(a) if a notice complying with condition 1(a) is published in a newspaper circulating in the region where the lease area is situated.	N/A	There have been no lease renewals during the audit period.	Not triggered	
Group Security					
2	The security deposit to be provided and maintained for this mining lease is part of a group security deposit. The lease holder is required to provide and maintain a security deposit to secure funding for the fulfilment of obligations under the mining leases covered by the group security deposit, including obligations under each mining lease that may arise in the future. The amount of the security deposit to be provided as a group security deposit has been assessed at $73,458,673. The leases covered by the group security include this ML 1645 (1992) and: **Lease type / Lease Number / Act Year** **ML 1708 1992** **ML 1709 1992** **ML 1713 1992** **ML 1750 1992** **ML 1808 1992**	Letter from DPE dated 4/11/22 confirming security deposit following review.	The condition is determined as being compliant following review of the letter provided by MPO.	Compliant	
Cooperation Agreement					
3	The lease holder must make every reasonable attempt, and be able to demonstrate its attempts to the satisfaction of the Secretary, to enter into a cooperation agreement with the holder(s) of any overlapping authorisations issued under the *Mining Act 1992* and petroleum titles issued under the *Petroleum (Onshore) Act 1991* . The cooperation agreement should address but not be limited to: • access arrangements • operational interaction procedures • dispute resolution • information exchange • well location • timing of drilling • potential resource extraction conflicts; and • rehabilitation issues.	N/A	No overlapping tenures identified.	Not triggered	
Assessable Prospecting Operations					
4	(a) The lease holder must not carry out any assessable prospecting operation on land over which this lease has been granted unless: (i) it is carried out in accordance with any necessary development consent; or (ii) if development consent is not required, the prior written approval of the Minister has been obtained. (b) The Minister may require the lease holder to provide such information as required to assist the Minister to consider an application for approval. (c) An approval granted by the Minister under this condition may be granted subject to terms. (d) The lease holder must comply with the approval granted to the holder under this condition.	N/A	There has been no evidence to determine this condition as non-complaint. No requests have been made by the Minister.	Compliant	
Special conditions					
Dams Safety – Mining Leases					
5a	The lease holder must not mine within any part of the lease area which is within the notification area of the Mount Pleasant Tailings Dam, Mount Pleasant Mine Water Dam, Mt Pleasant Environmental Dam 3, Bengalla Clean Water Dam 1, Mount Pleasant Tailings Dam Notification Area, Mount Pleasant Mine Water Dam Notification Area, Mount Pleasant Environmental Dam 3 Notification Area, and Bengalla Clean Water Dam 1 Notification Area without the prior written approval of the Minister and subject to any conditions the Minister may stipulate.	Letter from Resources Regulator dated 28/10/22 approving mining within Notification Area. Bi-Monthly Report to Dam Safety NSW Dam Safety NSW Standard Mining Conditions (Annexure D) Monitoring summary Declared Dams Audit	EMM reviewed evidence that MPO applied to Dams Safety NSW to mine within the Notification Area. This was supported by Bi-Monthly Reports to Dam Safety NSW and regular monitoring. A Declared Dams Audit was completed on 17/2/22 regarding the Mount Pleasant Tailings Storage Facility Stage 2 embankment raise project. The audit determined no regulatory non-compliances.	Compliant	
5b	Where the lease holder desires to mine within the notification area, the lease holder must: (i) at least twelve (12) months before mining is to commence or such lesser time as the Minister may permit, notify the Minister of the desire to do so. A plan of the mining system to be implemented must accompany the notice; and (ii) provide such information as the Minister may direct.	Letter from Resources Regulator dated 28/10/22 approving mining within Notification Area. Bi-Monthly Report to Dam Safety NSW Dam Safety NSW Standard Mining Conditions (Annexure D) Monitoring summary Declared Dams Audit	EMM reviewed evidence that MPO applied to Dams Safety NSW to mine within the Notification Area. This was supported by Bi-Monthly Reports to Dam Safety NSW and regular monitoring. A Declared Dams Audit was completed on 17/2/22 regarding the Mount Pleasant Tailings Storage Facility Stage 2 embankment raise project. The audit determined no regulatory non-compliances.	Compliant	
5c	The Minister must not, except in the circumstances set out in sub-paragraph (ii), grant approval unless sub-paragraph (i) of this paragraph has been complied with. (i) This sub-paragraph is complied with if: (a) Dams Safety NSW as constituted by section 6 of the *Dams Safety Act 2015* and the owner of the dam have been notified in writing of the desire to mine referred to in paragraph (b). (b) the notifications referred to in clause (a) are accompanied by a description or plan of the area to be mined. (c) the Secretary has complied with any reasonable request made by Dams Safety NSW or the owner of the dam for further information in connection with the mining proposal. (d) Dams Safety NSW has made its recommendations concerning the mining proposal or has informed the Minister in writing that it does not propose to make any such recommendations; and (e) where Dams Safety NSW has made recommendations the approval is in terms that are: - in accordance with those recommendations; or - where the Minister does not accept those recommendations or any of them - in accordance with a determination under sub-paragraph (ii) of this paragraph. (ii) Where the Minister does not accept the recommendations of Dams Safety NSW or where Dams Safety NSW has failed to make any recommendations and has not informed the Minister in writing that it does not propose to make any recommendations, the approval shall be in terms that are, in relation to matters dealing with the safety of the dam: - as determined by agreement between the Minister and the Minister administering the *Dams Safety Act 2015* ; or - in the event of failure to reach such agreement - as determined by the Premier.	Letter from Resources Regulator dated 28/10/22 approving mining within Notification Area. Bi-Monthly Report to Dam Safety NSW Dam Safety NSW Standard Mining Conditions (Annexure D) Monitoring summary Declared Dams Audit	EMM reviewed evidence that MPO applied to Dams Safety NSW to mine within the Notification Area. This was supported by Bi-Monthly Reports to Dam Safety NSW and regular monitoring. A Declared Dams Audit was completed on 17/2/22 regarding the Mount Pleasant Tailings Storage Facility Stage 2 embankment raise project. The audit determined no regulatory non-compliances.	Compliant	
5d	The Minister, on notice from Dams Safety NSW, may at any time or times: (i) cancel any approval given where a notice pursuant to section 19 of the *Dams Safety Act 2015* is given. (ii) suspend for a period of time, alter, omit from or add to any approval given or conditions imposed.	N/A	There were no approvals cancelled or suspended on notice from Dam Safety NSW during the audit period.	Not triggered	
ML 1645, ML 1708. ML 1709, ML 1713, ML 1750, ML 1808 (2013 as modified)					
Notice to Landholders					
1	(a) Within a period of three months from the date of grant/renewal of this mining lease, the lease holder must serve on each landholder a notice in writing indicating that this mining lease has been granted/renewed and whether the lease includes the surface. A plan identifying each landholder and individual land parcel subject to the lease area, and a description of the lease area must accompany the notice. (b) If there are ten or more landholders, the lease holder may serve the notice by publication in a newspaper circulating in the region where the lease area is situated. The notice must indicate that this mining lease has been granted/renewed; state whether the lease includes the surface and must contain a plan and description of the lease area. If a notice is made under condition 1(b), compliance with condition 1(a) is not required.	N/A	There have been no lease renewals during the audit period.	Not triggered	
Rehabilitation					
2	Any disturbance resulting from the activities carried out under this mining lease must be rehabilitated to the satisfaction of the Minister.	Site inspection. Annual Reviews for 2020, 2021 and 2022.	Rehabilitation was inspected during the site inspection. There have been no notifications from the Minister with regards to rehabilitation. No rehabilitation has been signed off or relinquished at MPO.	Compliant	

Mining Operations Plan and Annual Rehabilitation Report					
3	(a) The lease holder must comply with an approved Mining Operations Plan (MOP) in carrying out any significant surface disturbing activities, including mining operations, ancillary mining activities and prospecting. The lease holder must apply to the Minister for approval of a MOP. An approved MOP must be in place prior to commencing any significant surface disturbing activities, including mining operations, ancillary mining activities and prospecting. (b) The MOP must identify the post mining land use and set out a detailed rehabilitation strategy which: (i) identifies areas that will be disturbed; (ii) details the staging of specific mining operations, ancillary mining activities and prospecting; (iii) identifies how the mine will be managed and rehabilitated to achieve the post mining land use; (iv) identifies how mining operations, ancillary mining activities and prospecting will be carried out in order to prevent and or minimise harm to the environment; and (v) reflects the conditions of approval under: • the *Environmental Planning and Assessment Act 1979* ; • the *Protection of the Environment Operations Act 1997* ; and • any other approvals relevant to the development including the conditions of this mining lease. (c) The MOP must be prepared in accordance with the ESG3: Mining Operations Plan (MOP) Guidelines September 2013 published on the Department's website. (d) The lease holder may apply to the Minister to amend an approved MOP at any time. (e) It is not a breach of this condition if: (i) the operations which, but for this condition 3(e) would be a breach of condition 3(a), were necessary to comply with a lawful order or direction given under the *Environmental Planning and Assessment Act 1979* , the *Protection of the Environment Operations Act 1997* , the *Work Health and Safety (Mines and Petroleum Sites) Act 2013* and Work Health and Safety (Mines and Petroleum Sites) Regulation 2014 or the *Work Health and Safety Act 2011* ; and Work Health and Safety Regulation 2017. (ii) the Minister had been notified in writing of the terms of the order or direction prior to the operations constituting the breach being carried out.	Approved Mining Operation Plans and Rehabilitation Management Plan. Approval letters from Resources Regulator. Rehabilitation Information Release - Resources Regulator (August 2021). https://www.resourcesregulator.nsw.gov.au/sites/default/files/2021-08/RIR21-03-Geomorphic-landform-establishment-at-Mount-Pleasant-Operations.pdf	The RMP was reviewed and has satisfied the requirements of the condition. The RMP has been prepared in accordance with the Resources Regulator's *Form and Way – Rehabilitation Management Plan for Large Mines* (July 2021) which supersedes the *ESG3: Mining Operations Plan Guidelines* (September 2013). EMM sighted approval letters from the Resources Regulator that approve previous versions of the MOP. A Rehabilitation Information Release was prepared by the NSW Resources Regulator in August 2021. The release discusses the geomorphic landform establishment at MPO and includes information on the progress of rehabilitation at MPO including aerials figures and photos.	Compliant	
	(f) The lease holder must prepare a Rehabilitation Report to the satisfaction of the Minister. The report must: (i) provide a detailed review of the progress of rehabilitation against the performance measures and criteria established in the approved MOP; (ii) be submitted annually on the grant anniversary date (or at such other times as agreed by the Minister); and (iii) be prepared in accordance with any relevant annual reporting guidelines published on the Department's website. *Note: The Rehabilitation Report replaces the Annual Environmental Management Report.*	Annual Reviews for 2020, 2021 and 2022. Annual rehabilitation report and forward program.	A review of the progress of rehabilitation is provided in section 7 of the Annual Reviews. A copy of the Annual Reviews are provided to the Resources Regulator and the DPE for approval. The 2020 and 2021 Annual review have both been approved by DPE. At the time of the audit, the 2022 Annual Review was submitted but not yet approved by DPE. MPO also prepare the annual rehabilitation report and forward program in accordance with *Form and Way – Annual Rehabilitation Report and Forward Program for Large Mines* (Resources Regulator 2021).	Compliant	
Non-Compliance Reporting					
4	(a) The lease holder must notify the Department upon becoming aware of any breaches of the conditions of this mining lease or breaches of the Mining Act or Regulations; (b) Notifications under condition 4(a) must be provided in the form specified on the Department's website within seven (7) days of the mining lease holder becoming aware of the breach.	N/A	There have been no breaches of the conditions of the mining leases or breaches of the Mining Act or Regulations.	Not triggered	
Environmental Incident Report					
5	The lease holder must provide environmental incident notifications and reports to the Secretary no later than seven (7) days after those environmental incident notifications and reports are provided to the relevant authorities under the *Protection of the Environment Operations Act 1997* .	2020 Annual Review = 1 reportable incident: * 15/6/20 - blast fume event. 2021 Annual Review = 9 reportable incidents: * 21/1/21 - MOD 4 out of hours construction works. * 8/3/21 - Water discharge event. * 31/3/21 - MOD 4 out of hours construction works. * 9/6/21 - Water discharge event. * 11/6/21 - Elevated EC levels at surface water site W17 on three consecutive monitoring rounds. * 27/8/21 - Noise exceedance. * 12/11/21 - Water discharge event. * 8/12/21 - Water discharge event. * 9/12/21 - Water discharge event. 2022 Annual Review = 5 reportable incidents: * 8/3/22 - Water discharge event. * 6/5/22 - Spontaneous combustion event * 2/9/22 - Blast overpressure exceedance. * 21/10/22 - Water discharge event.	EMM sighted evidence of submission via the portal and written notification of the incidents to DPE with in 7 days of becoming aware of the incident.	Compliant	
Extraction Plan					
6	(a) In this condition (i) approved Extraction Plan means a plan, being: • an extraction plan or subsidence management plan approved in accordance with the conditions of a relevant development consent and provided to the Secretary; or • a subsidence management plan relating to the mining operations subject to this lease: o submitted to the Secretary on or before 31 December 2014; and o approved by the Secretary. (ii) relevant development consent means a development consent or project approval issued under the *Environmental Planning and Assessment Act 1979* relating to the mining operations subject to this lease. (b) The lease holder must not undertake any underground mining operations that may cause subsidence except in accordance with an approved Extraction Plan. (c) The lease holder must ensure that the approved Extraction Plan provides for the effective management of risks associated with any subsidence resulting from mining operations carried out under this lease. (d) The lease holder must notify the Secretary within 48 hours of any: (i) incident caused by subsidence which has a potential to expose any person to health and safety risks; (ii) significant deviation from the predicted nature, magnitude, distribution, timing and duration of subsidence effects, and of the potential impacts and consequences of those deviations on built features and the health and safety of any person; or (iii) significant failure or malfunction of a monitoring device or risk control measure set out in the approved Extraction Plan addressing: • built features; • public safety; or • subsidence monitoring.	N/A	There is no Extraction Plan in place for MPO as it is an open cut mine.	Not triggered	
Resource Recovery					
7	The lease holder must optimise recovery of the minerals that are the subject of this mining lease to the extent economically feasible.	Annual Reviews for 2020, 2021 and 2022. Rehabilitation management plan.	This condition is deemed complaint based on the resource recovery reported in the Annual Reviews.	Compliant	
Group Security					
8	The lease holder is required to provide and maintain a security deposit to secure funding for the fulfilment of obligations of all or any kind under the mining leases including obligations of all or any kind under the mining lease that may arise in the future. The amount of the security deposit to be provided as a group security has been assessed by the Minister at $52,073,000. The leases covered by the group security include: Mining Lease 1645, 1708, 1709, 1713 & 1750 (Act 1992)	Letter from DPE dated 4/11/22 confirming security deposit following review.	The condition is determined as being compliant following review of the letter provided by MPO.	Compliant	
Cooperation Agreement					

9	The lease holder must make every reasonable attempt, and be able to demonstrate its attempts, to enter into a cooperation agreement with the holder(s) of any overlapping title(s). The cooperation agreement should address but not be limited to issues such as: • access arrangements • operational interaction procedures • dispute resolution • information exchange • well location • timing of drilling • potential resource extraction conflicts; and • rehabilitation issues.	N/A	No overlapping tenures identified.	Not triggered	

Appendix B

Planning Secretary Audit Team Agreement

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Department of Planning and Environment

Thomas Frankham
Associate
EMM Consulting
Awabakal Country
Level 3 175 Scott Street
Newcastle NSW 2302

20/01/2023

Dear Mr Frankham

Mt Pleasant Coal (DA92/97) - Proposed Independent Audit Team

I refer to your request (DA92/97-PA-88) for the Secretary's approval of suitably qualified persons to prepare the 2022 Independent Environmental Audit (IEA) for the Mt Pleasant Operation (MPO) in accordance with Schedule 5 Condition 9 of development consent DA 92/97 as modified (the consent).

The Department of Planning and Environment (the department) has reviewed the nominations and information you have provided and is satisfied that these experts are suitably qualified and experienced. Consequently, I can advise that the Secretary approves the appointment of EMM Consulting Pty Limited to prepare the IEA.

In accordance with Schedule 5 Condition 9 of the approval, and the Independent Audit Guidelines (2015), the Secretary has agreed to the following audit team:

- Thomas Frankham, EMM Consulting - lead auditor
- Bret Jenkins, EMM Consulting – audit assistance
- Samantha Hayes, EMM Consulting – assisting auditor
- Mark Bridges, Bridges Acoustics – technical specialist in noise, blast and vibration
- Francine Manansala, EMM Consulting – technical specialist in air quality and greenhouse gas
- Scott Fishwick, EMM Consulting – technical specialist in air quality and greenhouse gas
- Nathan Garvey, EMM Consulting – biodiversity management and offsetting

Please ensure this correspondence is appended to the IEA Report.

The IEA must be prepared, undertaken and finalised in accordance with the relevant consent conditions and the departments Independent Audit Post Approval Requirements (2020). Failure to meet these requirements will require revision and resubmission.

I note that the Exemplar Global certification for Thomas Frankham will expire on 25 February 2023, and that this approval of the above audit team is conditional upon Thomas maintaining certification as a lead or principal auditor with a relevant industry body.

Should you wish to discuss the matter further, please contact Jennifer Sage, Senior Compliance Officer on 0400 245 170 or compliance@planning.nsw.gov.au

Yours sincerely

Heidi Watters
Team Leader Northern
Compliance

As nominee of the Planning Secretary

Appendix C
Consultation

EMM
creating opportunities

C.1 Department of Planning and Environment

From: no-reply@majorprojects.planning.nsw.gov.au <no-reply@majorprojects.planning.nsw.gov.au>
Sent: Tuesday, February 21, 2023 2:33 PM
To: Mariah Lane <Mariah.Lane@machenergy.com.au>
Cc: Mariah Lane <Mariah.Lane@machenergy.com.au>
Subject: Communication regarding IEA consultation - February 2023 DA92/97-PA-90

Dear Mariah ,

I refer to your correspondence dated 20 February 2023 requesting:
1. Confirmation of parties or agencies to be consulted for the upcoming Independent Environmental Audit (IEA)
2. Areas of compliance or environmental management for a particular focus within the scope of the IEA

The department's responses to the above queries are provided below.
1. The auditor should consult with the following parties or agencies in the development of the IEA scope:
• NSW Department of Regional NSW, Mining, Exploration and Geoscience
• NSW Department of Planning and Environment, Biodiversity Conservation Division
• NSW Department of Planning and Environment, Water Division
• NSW Environment Protection Authority
• NSW Resources Regulator
• Muswellbrook Shire Council
• Community Consultative Committee

2. The department requests that in addition to the requirements of Schedule 5 condition 9 of development consent DA92/97 and the Independent Audit Post Approval Requirements 2020, the following areas of environmental management for a particular focus within the scope of the IEA:
• Greenhouse Gas Emissions
o A comparison of the actual annual greenhouse gas emissions generated during the audit period against the predictions in the environmental assessment
o An assessment of the adequacy of the measures employed by the site during the audit period to reduce greenhouse gas emissions
• Noise Management
o Adequacy of noise monitoring locations and mitigation measures
• Surface Water Management
o Adequacy of measures undertaken to minimise the occurrence and impact of unplanned dirty water discharge

Regards
Heidi Watters
Team Leader – Compliance
Development Assessment
Department of Planning and Environment

To sign in to your account click here or visit the [www.planningportal.nsw.gov.au/major-projects/projects]Major Projects Website.

Please do not reply to this email.

Kind regards

The Department of Planning and Environment

NSW GOVERNMENT

C.2 Biodiversity Conservation Division

From: Robert Gibson <Robert.Gibson@environment.nsw.gov.au>
Sent: Thursday, 9 March 2023 2:25 PM
To: Thomas Frankham <tfrankham@emmconsulting.com.au>
Cc: Steven Crick <Steven.Crick@environment.nsw.gov.au>
Subject: RE: Mt Pleasant Operations independent environmental audit E220173 - Mt Pleasant IEA - BCD Consultation & input to the IEA

CAUTION: This email originated outside of the Organisation.

Dear Thomas,
Thank you for your e-mail dated 1 March 2023 in which EMM invited the Biodiversity and Conservation Division (BCD) of the Department of Planning and Environment for input into the upcoming MACH Energy – Mt Pleasant Operations independent environmental audit.

BCD has reviewed the conditions of consent for the project and the Annual Reviews from 2020 and 2021 and recommends that, in addition to the standard checks done as part of the Independent Environmental Audit (IEA) process that the next IEA includes the following:

- An assessment of what contingency measures are available to minimise impacts of actions under the current consent to *Delma vescolineata* animals and habitat, and recommended management actions for the 'Mount Pleasant Operation Biodiversity Management Plan' for when it is next revised. BCD notes that the current Biodiversity Management Plan is dated 31 October 2019 and that Delma impar was not considered for this project, but has since been found on site during the assessment for the adjacent Mount Pleasant Optimisation Project.

- An assessment of weed control works – is herbicide spraying and manual removal sufficient to control weed species 'to an appropriate level', particularly *Galenia pubescens*, Boxthorn, Mother of Millions, Prickly Pear and St Johns Wort which have been found on site (Section 5.5.2 of the 2020 and 2021 Annual Reviews). If not, what other weed control actions would EMM recommend? BCD notes that the establishment of such exotic species may hamper the realisation of some rehabilitation goals.

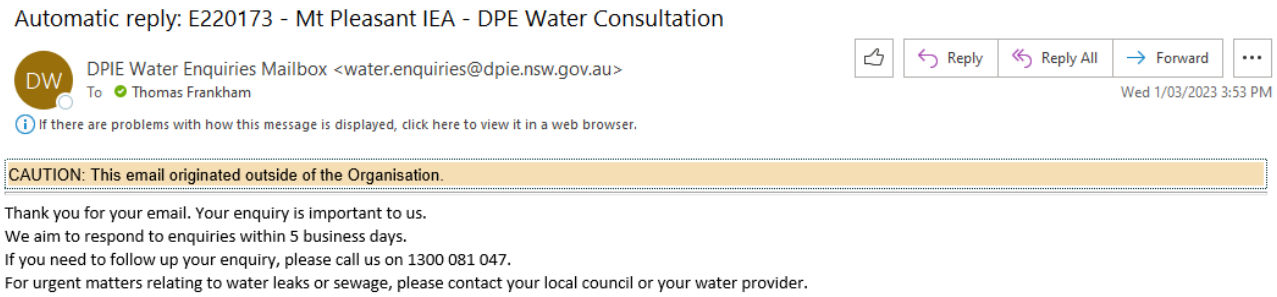
If you have any questions about this advice then please contact me on 4927 3154 or by e-mail at huntercentralcoast@environment.nsw.gov.au

Yours sincerely,
Robert

Robert Gibson
Senior Regional Biodiversity Conservation Officer, Hunter Central Coast Branch

Biodiversity and Conservation Division| Department of Planning and Environment
T 02 4927 3154 | **E** robert.gibson@environment.nsw.gov.au
6 Stewart Avenue NEWCASTLE NSW 2300
Locked Bag 1002 DANGAR NSW 2309
www.dpie.nsw.gov.au

C.3 DPE Water



Automatic reply: E220173 - Mt Pleasant IEA - DPE Water Consultation

DW

DPIE Water Enquiries Mailbox <water.enquiries@dpie.nsw.gov.au>

To Thomas Frankham

Reply | Reply All | Forward | ...

Wed 1/03/2023 3:53 PM

If there are problems with how this message is displayed, click here to view it in a web browser.

CAUTION: This email originated outside of the Organisation.

Thank you for your email. Your enquiry is important to us.
We aim to respond to enquiries within 5 business days.
If you need to follow up your enquiry, please call us on 1300 081 047.
For urgent matters relating to water leaks or sewage, please contact your local council or your water provider.

C.4 Environment Protection Authority

Thank you for your email. Your Reference Id is 01107899 (ref:_00D7F6iTix._5007F1McqQo:ref)

EL Environment Line <info@environment.nsw.gov.au>
To Thomas Frankham

Reply | Reply All | Forward | ...

Wed 1/03/2023 3:52 PM

If there are problems with how this message is displayed, click here to view it in a web browser.

CAUTION: This email originated outside of the Organisation.

NSW GOVERNMENT | Planning, Industry & Environment

nsw epa

Thank you for your enquiry. Environment Line will process your request within 5 working days. If your matter is urgent, please call Environment Line on 131555. For enquiries or requests that are more involved or technical, a longer response time may be necessary. If you have not already visited our websites and wish to do so, please go to www.environment.nsw.gov.au or www.epa.nsw.gov.au

If you are emailing to report an urgent pollution incident, please call 131 555 (press option 1).

Where the EPA or DPE is not the appropriate authority to manage your report, it will be forwarded to the appropriate authority. For example, commercial noise complaints for smaller factories, backyard workshops, smoke from residential backyard fires or chimneys or dumping in public areas are the responsibility of Local Councils; loud music or patron noise from public venues are the responsibility of Liquor & Gaming NSW, rubbish on major roads and highways is the responsibility of Transport for NSW. Any information provided regarding this type of pollution will be forwarded to those authorities for action.

If you do not consent to your report being forwarded, please reply to this email to advise that you would like to 'opt out' of any further action. You may also request that your details remain anonymous or confidential, however in certain circumstances this may limit our ability to deal with any complaint further. Details of our Privacy information can be found here.

When sending further emails about this topic (E220173 - Mt Pleasant IEA - BCD Consultation), please ensure the following extended Reference Id appears anywhere in the email subject or body:

ref:_00D7F6iTix._5007F1McqQo:ref

C.5 Department of Regional NSW – Mining, Exploration and Geoscience

FW: E220173 - Mt Pleasant IEA - MEG Consultation

DM Chris Berry <chris.berry@regional.nsw.gov.au> on behalf

To Resources Regulator
Cc Thomas Frankham

Reply | Reply All | Forward | ...

Thu 2/03/2023 7:45 AM

E220173 - Mt Pleasant IEA_Consult_MEG.pdf
.pdf File

CAUTION: This email originated outside of the Organisation.

Hi team Resources Regulator,

Please see request below from Thomas Frankham for comment from MEG regarding the Mount Pleasant independent environmental audit. Specifically this request seeks comment from MEG regarding compliance with mining leases and environmental performance.

As this topic sits entirely within the remit of the Resources Regulator I will pass this one on to you to review and respond to Thomas accordingly.

Thanks in advance,

Chris Berry
Senior Project Officer

Mining, Exploration and Geoscience | Regional NSW
T 02 4063 6600 | **E** titles@regional.nsw.gov.au
516 High Street, Maitland NSW 2320
regional.nsw.gov.au/meg

NSW GOVERNMENT | Regional NSW

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

C.6 Muswellbrook Shire Council

RE: E220173 - Mt Pleasant IEA - MSC Consultation

Reply | Reply All | Forward

TF Theresa Folpp <Theresa.Folpp@muswellb

To Thomas Frankham

Cc Sharon Pope; Bret Jenkins; Samantha Hayes

Thu 16/03/2023 9:05 AM

Follow up. Start by Tuesday, 28 March 2023. Due by Tuesday, 28 March 2023.

CAUTION: This email originated outside of the Organisation.

Hi Thomas,

Thank you for your email.

Comments are as follows, could the IEA please address the following:

1) Consider inclusion of "Risk Levels for Non-Compliances" in accordance with DPE's IEA Guidelines (2015)? This makes it easier for the community to interpret the outcomes of the IEA;
2) Provide a review and summary of the process for temporary rehabilitation for areas that are not going to be rehabilitated for some time (assumed to be six months);
3) DA 92/97 does not include the requirement to prepare a Historic Heritage Management Plan (other than for MOD4 construction works). However, the MTP EIS (1997) for DA 92/97 lists the following items to be impacted by blasting:
    - Rosedale Cottage, Kayuga;
    - Negoa Homestead;
    - Old Cemetery, Kayuga;
    - Kayuga 1827 homestead;
    - Bengalla homestead;
    - Overdene homestead.

    Section 10.5.2 of the EIS states that the following safeguards will be used to protect impacted items:
    - Surveying buildings to assess their condition and ability to withstand expected maximum levels of vibration and overpressure;
    - Subject to the above, temporary reinforcement of buildings to minimise damage induced by blasting;
    - Regular monitoring; and
    - Restoration of damage once impacts are within accepted standards.

    Please provide commentary on works being undertaken to address the above.
4) Review the adequacy of the automated dust suppression spray systems at the ROM hopper, conveyor transfer points and product stockpiles;
5) Clarify if there has been anytime when there has been no access to the meteorological data or PM10 data from the Muswellbrook NW Upper Hunter Air Quality Monitoring Network monitoring station. If so, clarify the frequency; and
6) Section 10.3.9 of the EIS (1997) proposes the following: "monitoring of demand for temporary accommodation". Please confirm whether MACH Energy are monitoring the demand for temporary accommodation.

Regards,
Theresa

Muswellbrook Shire Council | Theresa Folpp | Development Compliance Officer | Administration Building
T: (02) 6549 3700 **| E:** Theresa.Folpp@muswellbrook.nsw.gov.au **| W:** www.muswellbrook.nsw.gov.au

C.7 Department of Regional NSW – Resources Regulator

Regional NSW

AREQ0037866

Mr Tom Frankham
EMM Consulting
Level 3, 175 Scott Street
Newcastle NSW 2300
By email: tfrankham@emmconsulting.com.au

Dear Mr Frankham,

Subject: Mount Pleasant Coal Mine – Independent Environmental Audit

Thank you for your email and letter dated 1 March 2023 requesting consultation on the independent environmental audit to be undertaken of the Mount Pleasant Coal Mine which is covered by the following mining leases.

- ML1645 (1992)
- ML1708 (1992)
- ML1709 (1992)
- ML1713 (1992)
- ML1750 (1992)
- ML1808 (1992)

The independent environmental audit is required to assess compliance against the relevant environmental management conditions of the mining leases up to 1 July 2022, including implementation of the mining operations plan for the site.

From 2 July 2022, the independent environmental audit should provide an assessment of compliance with the requirements of Schedule 8A Standard conditions of mining leases, Part 2 Standard conditions, as set out in the Mining Regulation 2016. It is noted that the six mining leases that comprise Mount Pleasant Coal Mine have been approved by the Regulator to be treated as a single lease for the purposes of Part 2 of Schedule 8A.

The audit should note observations where rehabilitation procedures, practices and outcomes represent best industry practice.

It would be appreciated if a copy of the final audit report could be sent to the Regulator at nswresourcesregulator@service-now.com upon completion of the audit.

Yours sincerely

Jenny Ehmsen
Principal Compliance Auditor
3 March 2023

NSW Resources Regulator
516 High Street Maitland NSW 2320 | PO Box 344 HRMC NSW 2310 | Tel: 1300 814 609 |
resourcesregulator.nsw.gov.au

C.8 Community Consultative Committee

From: William Paradice <w.paradice@icloud.com>
Sent: Sunday, 5 March 2023 5:48 PM
To: Thomas Frankham <tfrankham@emmconsulting.com.au>
Subject: Fwd: MACH Energy Mount Pleasant Operation Independent Audit Consultation

CAUTION: This email originated outside of the Organisation.

Hi Thomas - back in communication - see message from Llewellyn, one of our CCC members.
Regards
Wej

Sent from my iPhone

Begin forwarded message:

> **From:** Llewellyn Bates <mllewbates@activ8.net.au>
> **Date:** 5 March 2023 at 11:23:15 am AEDT
> **To:** William Paradice <w.paradice@icloud.com>
> **Subject: MACH Energy Mount Pleasant Operation Independent Audit Consultation**
>
> Hello Wej,
>
> Having read the letter from EMM, and with reference to paragraph 2 - I would like the Fines Emplacement Area to be of particular focus and included within the IEA scope.
>
> Kind regards,
> Llewellyn

From: William Paradice <w.paradice@icloud.com>
Sent: Wednesday, 22 February 2023 10:45 AM
To: Thomas Frankham <tfrankham@emmconsulting.com.au>
Subject: Fwd: Mt Pleasant environment audit

CAUTION: This email originated outside of the Organisation.

Thomas
As indicated in my previous email please find attached a comment from Tony Lonergan, a member of the CCC.
Regards
Wej Paradice
Chair
Mt Pleasant CCC

Sent from my iPad

Begin forwarded message:

> **From:** anthony lonergan <adlonergan@gmail.com>
> **Date:** 22 February 2023 at 8:25:53 am AEDT
> **To:** William Paradice <w.paradice@icloud.com>
> **Subject: Mt Pleasant environment audit**
>
> Hi Wej. I would like the auditors to look at a couple of issues
> 1. I don't know the numbers but there has been a significant increase in the number of air quality alerts since it has become dryer. I think it deserves a look in relation to Muswellbrook
> 2 The erosion on the eastern emplacement area is not acceptable in my mind. The emplacement slope is very steep. On the CCC tour we were told it would be dealt with at some point, but has not been yet.
> 3 Weed management on site and in the adjacent land needs to be better managed
> Thanks, Tony

Appendix D

Independent Audit Declaration Form

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Table D.1 Independent Audit Report Declaration Form

Project name	Mount Pleasant Operation
Consent number	DA 92/97
Description of project	Construction and operation of the Mt Pleasant open cut coal mine and associated infrastructure
Project address	1100 Wybong Road, Muswellbrook NSW 2333
Proponent	MACH Energy Australia Pty Ltd
Title of Audit	Mount Pleasant Operations Independent Environmental Audit 2023
Date	5 May 2023

I declare that I have undertaken the Independent Audit and prepared the contents of the attached Independent Audit Report and to the best of my knowledge:

i. the audit has been undertaken in accordance with relevant condition(s) of consent and the *Independent Audit Compliance Requirements* (Department 2019)

ii. the findings of the audit are reported truthfully, accurately and completely

iii. I have exercised due diligence and professional judgement in conducting the audit

iv. I have acted professionally, objectively and in an unbiased manner

v. I am not related to any proponent, owner or operator of the project neither as an employer, business partner, employee, or by sharing a common employer, having a contractual arrangement outside the audit, or by relationship as spouse, partner, sibling, parent, or child

vi. I do not have any pecuniary interest in the audited project, including where there is a reasonable likelihood or expectation of financial gain or loss to me or spouse, partner, sibling, parent, or child

vii. neither I nor my employer have provided consultancy services for the audited project that were subject to this audit except as otherwise declared to the Department prior to the audit

viii. I have not accepted, nor intend to accept any inducement, commission, gift or any other benefit (apart from payment for auditing services) from any proponent, owner or operator of the project, their employees or any interested party. I have not knowingly allowed, nor intend to allow my colleagues to do so.

Note.

- Under Section 10.6 of the *Environmental Planning and Assessment Act 1979* a person must not include false or misleading information (or provide information for inclusion in) in a report of monitoring data or an audit report produced to the Minister in connection with an audit if the person knows that the information is false or misleading in a material respect. The proponent of an approved project must not fail to include information in (or provide information for inclusion in) a report of monitoring data or an audit report produced to the Minister in connection with an audit if the person knows that the information is materially relevant to the monitoring or audit. The maximum penalty is, in the case of a corporation, $1 million and for an individual, $250,000.
- The *Crimes Act 1900* contains other offences relating to false and misleading information: Section 307B (giving false or misleading information – maximum penalty 2 years imprisonment or 200 penalty units, or both).

Name of Auditor	Thomas Frankham
Signature	
Qualification	BEnvSc, Certified Lead Environmental Auditor (Exemplar Global - Certification No. 207528)
Company	EMM Consulting
Company address	Level 3, 175 Scott Street, Newcastle NSW 2300

Appendix E
Technical Specialists Reports

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BRIDGES ACOUSTICS

ABN: 73 254 053 305

78 Woodglen Close
P.O. Box 61
PATERSON NSW 2421

Phone: 02 4938 5866
Mobile: 0407 38 5866
E-mail: bridgesacoustics@bigpond.com

21 April 2023
Ref: J0266-01-L2

EMM Consulting Pty Limited
Level 3, 175 Scott Street
NEWCASTLE NSW 2300

Attn: Mr Thomas Frankham

Dear Tom,

RE: MOUNT PLEASANT OPERATIONS - INDEPENDENT ENVIRONMENTAL AUDIT

This report describes outcomes from a partial Independent Environmental Audit (IEA) of Mount Pleasant Operations (MPO) operated by Mach Energy Australia Pty Ltd (Mach Energy), with a focus on acoustics. This acoustic audit report was commissioned by EMM Consulting Pty Limited (EMM) to accompany and form part of a more complete IEA of MPO.

The acoustic audit was completed according to the Independent Audit, Post Approval Requirements (DPIE, 2022) and other requirements specified by EMM. The audit covers a three year period from 27 February 2020 to 8 March 2023.

AUDIT SCOPE

The acoustic audit described in this report included:

- A desktop review of various documents including:
  - Development consent 92/97;
  - Environment Protection License (EPL) 20850;
  - Noise Management Plan;
  - Blast Management Plan;
  - Noise monitoring data for the audit period, presented in monitoring reports prepared by independent consultants and monthly monitoring reports and Annual Reviews prepared by Mach Energy;
  - Blast monitoring data for the audit period, presented as raw data reports by independent consultants and monthly monitoring reports and Annual Reviews prepared by Mach Energy; and
  - Various other reports supplied by Mach Energy as required to address DA or EPL conditions.
- Identification of any non-compliances and investigation of any noise and vibration incidents and issues;
- Review of compliance with any directives or directions from regulators;
- Recommendation of any changes or updates to management procedures or management plans where appropriate; and
- Preparation of a table of responses related to compliance with acoustic related DA and EPL conditions identified by EMM. Any recommendations or other audit outcomes were also included in the table of responses.

A site visit was not included in the scope of the acoustic audit. EMM audit personnel visited the site to obtain relevant data, inspect noise and blasting management practises and mitigation measures and obtain any additional required information.

COMPLIANCE WITH PROJECT APPROVAL AND ENVIRONMENT PROTECTION LICENCE CONDITIONS

Outcomes from the acoustic audit indicated general compliance with DA 92/97 and EPL 20850 acoustic related conditions. The following sections present additional information regarding each non-compliance and recommendations regarding these conditions.

DA Schedule 3 Condition 3 Noise Criteria

EPL Condition L3.1 Noise Limits

MPO generally complied with the noise limits specified in the DA and EPL at all monitoring locations and at all sensitive residential locations, with the following exceptions:

- 50 LA1,1min at monitoring location N-AT4 in April 2020, 5 LA1,1min over the criterion;
- 44 LAeq,15min and 51 LA1,1min at monitoring location N-AT3 in July 2020, 3 LAeq,15min and 6 LA1,1min over the criteria at this location;
- 56 LA1,1min at monitoring location N-AT4 in August 2021, 11 LA1,1min over the criterion; and
- 61 LA1,1min at monitoring location N-AT4 in November 2022, 16 LA1,1min over the criterion.

N-AT3 is located to the north-east and N-AT4 is located to the south-east. The easterly quadrant is therefore the most critical direction for MPO in relation to noise.

Recommendation: operations personnel to be more vigilant in relation to noise management, particularly during light winds from the western quadrant.

Other issues were noted while determining compliance with this condition, all related to the independent noise consultant's monitoring procedures and reports:

- Incorrect sound level meter calibration procedure. A Class 2 calibrator was used on a Class 1 sound level meter in all noise surveys, contrary to relevant standards;
- An invalid sound level meter calibration certificate, as it was issued after the date of the noise survey, was included in the January 2021 noise monitoring report; and
- Instrument calibration certificates were not included in the April 2022 noise monitoring report.

These additional issues do not imply the noise levels reported by the consultant include significant errors or inaccuracies.

Recommendation: annually review the noise monitoring consultant's procedures to ensure consistency with all relevant standards.

DA Schedule 3 Condition 44H Construction Noise

The Construction Environmental Management Plan included an Out of Hours Work Protocol which incorrectly applied the approved daytime construction noise criteria to the evening and night periods. A construction noise survey in May 2021 included noise measurements at closest residences during the night, indicating noise levels up to 50 LAeq,15min. Monitoring reports concluded compliance with the incorrect night noise criteria. The construction work is now completed.

Recommendation: ensure an Out of Hours Work Protocol for any future construction work adopts the correct noise criteria, which are generally the Schedule 3 Condition 3 noise criteria for the evening and night periods unless alternative criteria are specifically approved.

EPL Condition L4.3 Blast Limits

The EPL specifies blast monitoring locations and requires compliance with vibration and overpressure limits at those locations. Monitoring at location B-VOA, representing monitoring point 12 defined in the EPL at that time, indicated an overpressure level of 122.7 dBL on 2 September 2022 which exceeded the limit of 120 dBL. Blast monitoring at residences confirmed compliance with the criteria for this event.

Monitoring point 12, location B-VOA was not close to any residence therefore no residents were impacted by this event. The event was not an exceedance of the relevant conditions of DA92/97, which requires compliance with the blast criteria at residences and other sensitive locations rather than at defined monitoring points.

A subsequent revision of the EPL has removed the requirement to monitor blast impacts at this location, therefore no recommendations are required.

EPL Condition R5.2 Noise Compliance Report

Condition R5.2 requires an annual report, prepared by a qualified acoustic consultant, to include monitoring data and other specified information and be submitted to the EPA. While the EPA has access to noise monitoring data in the monthly monitoring reports and Annual Reviews, those documents are not prepared by a qualified acoustic consultant and do not satisfy this condition.

Recommendation: commission a noise monitoring report annually to satisfy this condition.

REVIEW OF MANAGEMENT PLANS

A detailed review of the Noise Management Plan (NMP) and Blast Management Plan (BMP) have not resulted in any significant recommendations for amendment or improvement. Issues arising during the audit period, such as noise monitoring location N-AT3 not being located close to sensitive residences and blast monitoring location B-VOA not representing sensitive receptors, have already been addressed by a revision to each management plan. The plans are considered comprehensive and complete.

Current noise and blast monitoring locations have been reviewed and adequately represent closest and potentially most affected residences and other sensitive locations. Noise and blast monitoring procedures have been reviewed and are considered appropriate.

OUTCOMES AND RECOMMENDATIONS FROM THE 2020 IEA

There were no acoustic-related non-compliances or recommendations in the previous audit period.

COMMITMENTS

Two acoustic-related commitments, related to preparation of an appropriate Noise Management Plan and control of train noise from the Mod 4 rail infrastructure, have been satisfactorily met.

REPORTING

The acoustic audit included a comparison between the measured noise and blast levels from MPO in the consultant's noise and blast monitoring reports, the levels reported in the Monthly Environmental Monitoring Reports prepared by Mach Energy and the Annual Reviews also prepared by Mach Energy.

Some differences between the consultant's noise reports and the reported noise data in the monthly and annual reports prepared by Mach Energy were noted, generally due to transcription and/or copy/pasting errors.

Recommendation: additional care when preparing environmental monitoring reports and Annual Reviews to avoid transcription errors.

CONCLUSION

This acoustic audit, as part of the larger Independent Environmental Audit completed by EMM, has indicated general compliance with acoustic related DA and EPL conditions with occasional exceptions.

Significant non-compliances with acoustic conditions in DA 92/97 and EPL 20850 relate to occasional noise levels over relevant criteria at monitoring locations north-east and south-east of MPO and night construction work on rail infrastructure that was not assessed to the correct night noise criteria and would have exceeded the correct night criteria at closest residences.

Less significant non-compliances with acoustic conditions, in that no acoustic impact occurred to any residence or other sensitive location as a result of these non-compliances, relate to a blast overpressure level measured at a location that does not represent a sensitive location, failure to prepare and submit all required compliance reports to the EPA and failure of the noise monitoring consultant to implement and document instrument calibration procedures in relevant standards.

Management plans, including key issues such as noise and blast monitoring locations, are appropriate and consistent with current best practise. Previous acoustic related commitments have been met.

Overall, MPO has been operated and managed in a competent manner from an acoustic perspective. Increased vigilance in implementing noise management measures, particularly during light winds from the western quadrant which is believed to be the main cause of noise criteria exceedances during the audit period, has been recommended to reduce the risk of noise criteria exceedances in the next few years.

Yours faithfully,

BRIDGES ACOUSTICS

MARK BRIDGES BE (Mech) (Hons) MAAS
Principal Consultant

Appendix F
Site Inspection Photographs

EMM
creating opportunities

Photograph F.1 Active mining area

Photograph F.2 Active mining area

Photograph F.3 Active mining area

Photograph F.4 Active mining area

Photograph F.5 Highwall at active mining area

Photograph F.6 Highwall at active mining area

Photograph F.7 Active mining area

Photograph F.8 Dust in active mining area

Photograph F.9 Dust in active mining area

Photograph F.10 Steel recycling signage

Photograph F.11 Steel recycling

Photograph F.12 Timber recycling signage

Photograph F.13 Timber recycling

Photograph F.14 General waste

Photograph F.15 General waste signage

Photograph F.16 Laydown area

Photograph F.17 Inactive mining area

Photograph F.18 Inactive mining area

Photograph F.19 Inactive mining area

Photograph F.20 Inactive mining area

Photograph F.21 Pump SD3

Photograph F.22 Inactive mining area

Photograph F.23 SD3

Photograph F.24 New rehabilation behind ED2

Photograph F.25 SD3

Photograph F.26 Rehabilitation

Photograph F.27 **SD3**

Photograph F.28 **Eastern out of pit emplacement area**

Photograph F.29 **Surface water drainage to SD3**

Photograph F.30 Surface water drainage on eastern out of pit emplacement area

Photograph F.31 Surface water drainage on eastern out of pit emplacement area

Photograph F.32 Erosion and sediment run off trial

Photograph F.33 SD1

Photograph F.34 Meteorology station

Photograph F.35 Meteorology station

Photograph F.36 Water pump infrastructure

Photograph F.37 Stage 1 rail corridor

Photograph F.38 Aboriginal heritage item site

Photograph F.39 Aboriginal heritage item site

Photograph F.40 Fines emplacement area

Photograph F.41 Fines emplacement area

Photograph F.42 Fines emplacement area

Photograph F.43 Fines emplacement area

Photograph F.44 Fines emplacement area

Photograph F.45 Fines emplacement area

Photograph F.46 Erosion fencing

Photograph F.47 Fines emplacement area

Photograph F.48 Fines emplacement area

Photograph F.49 Fines emplacement area

Photograph F.50 Fines emplacement area

Photograph F.51 Erosion

Photograph F.52 Erosion fencing

Photograph F.53 ED2

Photograph F.54 Safety signage

Photograph F.55 Spill kit and fire extinguisher

Photograph F.56 Oil and fuel spill kit

Photograph F.57 Emergency eye wash

Photograph F.58 Hydraulic oil storage

Photograph F.59 Hydraulic oil storage

Photograph F.60 Hoses in oil storage area

Photograph F.61 CHPP area

Photograph F.62 SDS

Photograph F.63 Unbunded chemcials/hydrocarbons

Photograph F.64 Unbunded chemcials/hydrocarbons

Photograph F.65 Laydown area

Photograph F.66 Laydown area

Photograph F.67 Laydown area

Photograph F.68 Laydown area

Photograph F.69 CHPP

Photograph F.70 Coal conveyor

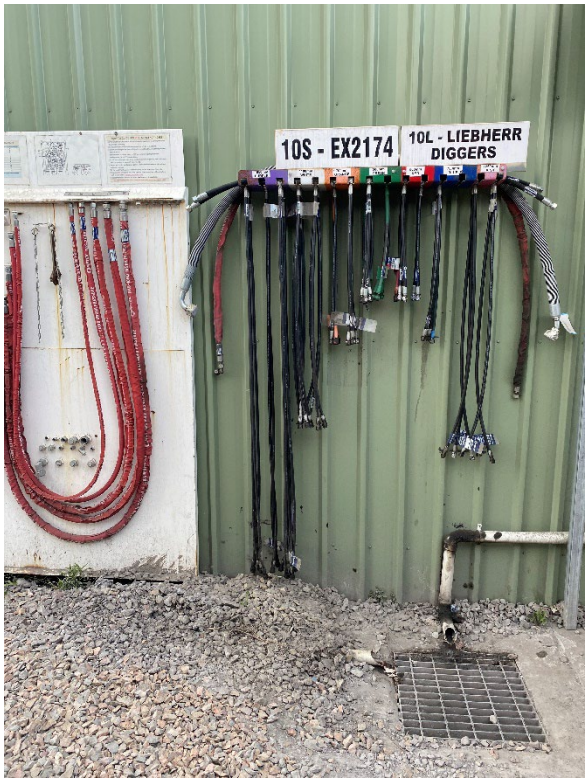
Photograph F.71 Coal conveyor

Photograph F.72 Coal conveyor

Photograph F.73 Sediment dam (CHPP area)

Photograph F.74 Sediment dam (CHPP area)

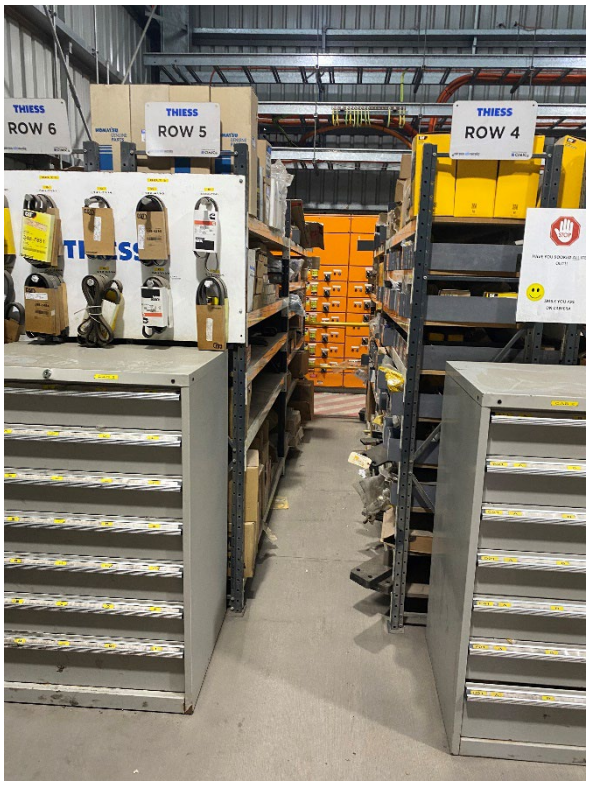
Photograph F.75 Sediment dam (CHPP area)



Photograph F.76 Mine infrastructure area

Photograph F.77 Mine infrastructure area

Photograph F.78 Mine infrastructure area



Photograph F.79 Mine infrastructure area

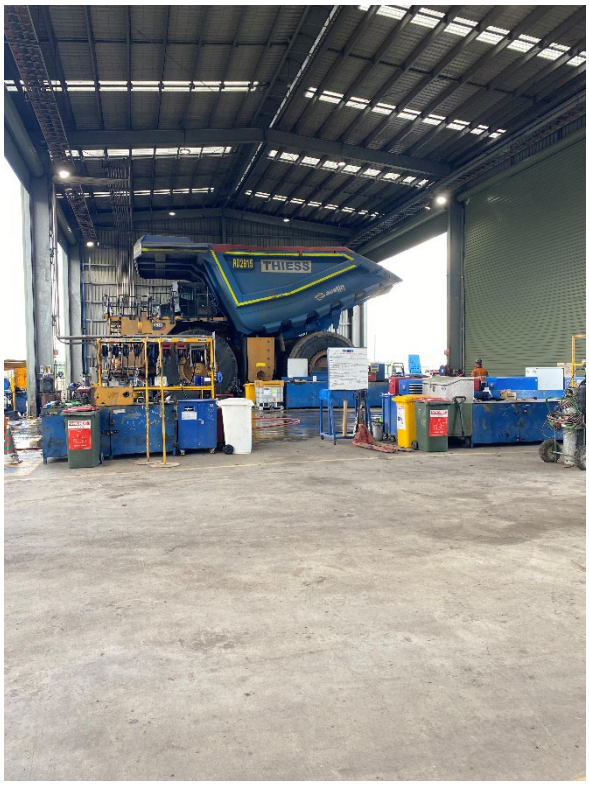
Photograph F.80 Mine infrastructure area

Photograph F.81 Mine infrastructure area

Photograph F.82 Spill kits and waste storage

Photograph F.83 Mine infrastructure area

Photograph F.84 Waste storage

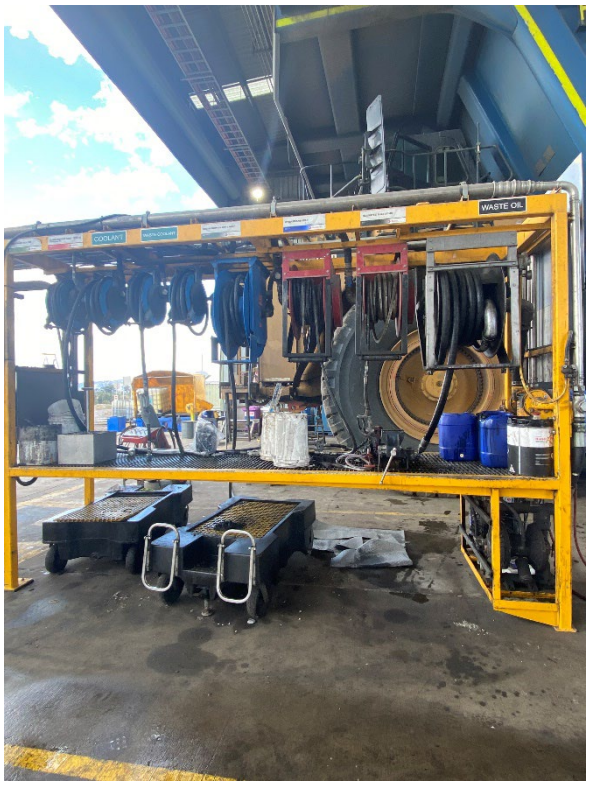


Photograph F.85 Mine infrastructure area

Photograph F.86 Mine infrastructure area

Photograph F.87 Waste storage

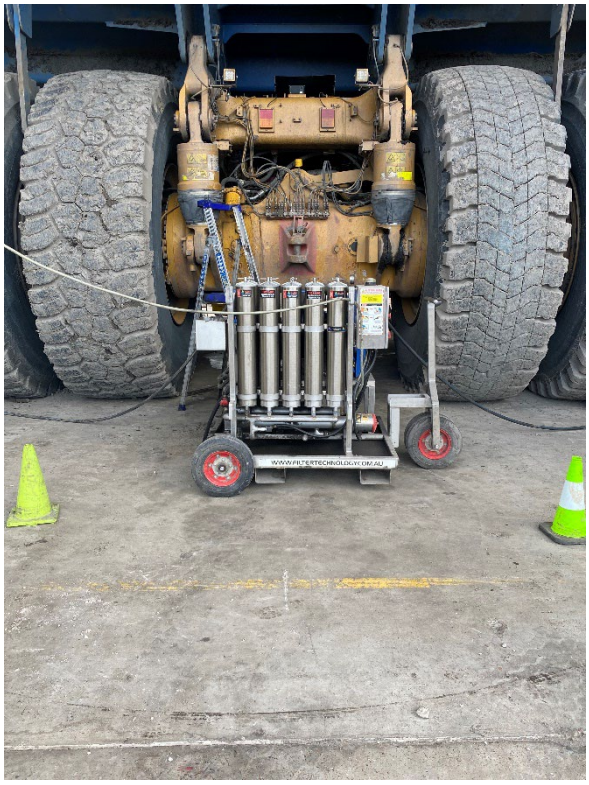
Photograph F.88 Unbunded chemicals/hydrocarbon



Photograph F.89 Mine infrastructure area

Photograph F.90 Mine infrastructure area

Photograph F.91 Mine infrastructure area



Photograph F.92 Mine infrastructure area

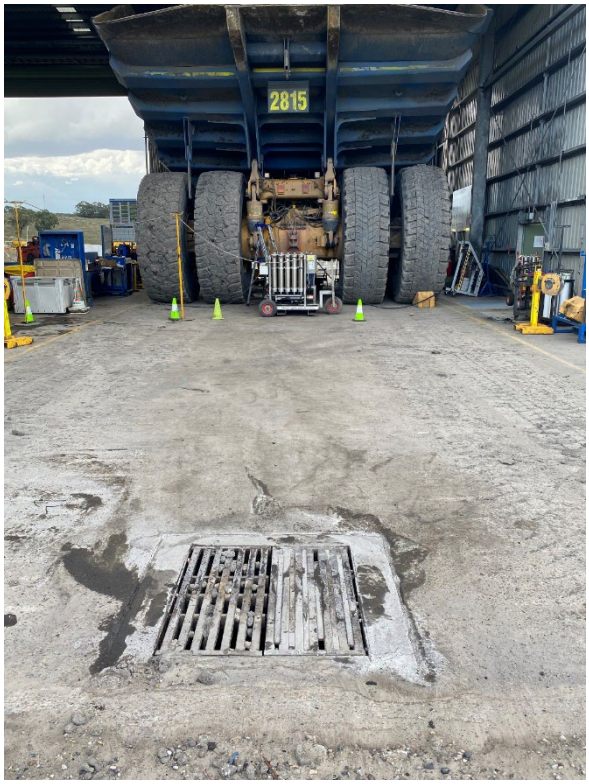
Photograph F.93 Mine infrastructure area

Photograph F.94 Hydraulic hose waste signage

Photograph F.95 Hydraulic hose waste

Photograph F.96 Mine infrastructure area

Photograph F.97 Waste storage



Photograph F.98 Mine infrastructure area

Photograph F.99 Mine infrastructure area

Photograph F.100 Mine infrastructure area

Photograph F.101 Mine infrastructure area

Photograph F.102 Oily water seperator

Photograph F.103 Oily water seperator

Photograph F.104 Oily water seperator

Photograph F.105 Water management system

Photograph F.106 Mine infrastructure area

Photograph F.107 Mine infrastructure area

Photograph F.108 Laydown area

Photograph F.109 Laydown area

Photograph F.110 Empty chemical containers for recycling

Photograph F.111 Empty chemical containers for recycling

Photograph F.112 Rubbish

Photograph F.113 Laydown area

Photograph F.114 Rubbish

Photograph F.115 Laydown area

Photograph F.116 Chemical storage

Photograph F.117 Chemical storage

Photograph F.118 Gas storage

Photograph F.119 Mine infrastructure area

Photograph F.120 Mine infrastructure area

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