



Bengalla Mining Company Pty Limited
A.B.N. 32 053 909 470

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MANAGED BY
**COAL
&
ALLIED**
A Rio Tinto Group Company

Bengalla Mine

Environment Protection Licence 6538 Monthly Monitoring Data Summary

June 2015

Operator, for and on behalf of the Bengalla Joint Venture, an unincorporated joint venture between:

CNA Bengalla Investments Pty Limited, Wesfarmers Bengalla Limited, Taipower Bengalla Pty Limited and Mitsui Bengalla Investments Pty Ltd.

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1. INTRODUCTION

This document has been prepared to satisfy the requirements of Bengalla Mining Company Pty Limited's (BMC) Environment Protection Licence (EPL) 6538. The licence details are as follows:

| | |
|-----------------------|---|
| License Holder: | Bengalla Mining Company Pty Limited |
| Licence Number: | 6538 |
| Premises: | Bengalla Mine Bengalla Road via Muswellbrook NSW 2333 |
| Access to Licence: | http://www.epa.nsw.gov.au/prpoeoapp/Detail.aspx?instid=6538&id=6538&option=licence&searchrange=licence&range=POEOlicence&prp=no&status=Issued |
| Monitoring Locations: | See main text and Appendix A |

This document provides a summary of environmental monitoring data sampled as prescribed by EPL 6538 for June 2015 (reporting period). Monitoring data provided is as follows:

- Air quality, including total suspended particulates (TSP), particulate matter less than 10 microns (PM₁₀) and deposited dust matter;
- Surface water, including mine water discharge; and
- Blast vibration and overpressure.

2. AIR QUALITY

In accordance with Condition M2.2 of EPL 6538 and to monitor regional air quality, Bengalla Mine operates and maintains a network of five high volume air samplers (HVAS) measuring TSP, three HVAS measuring PM₁₀ and 14 depositional dust gauges on land representative of private receivers surrounding its operations. Additional PM₁₀ data is also sourced from Mt Arthur Coal through an information sharing agreement. The air quality monitoring network, as described, is shown in **Appendix A**.

2.1. Total Suspended Particulates

| | |
|--|---|
| Pollutant | TSP |
| Unit of measure: | Micrograms per cubic metre (µg/m ³) |
| Monitoring location: | See Table 1 and Appendix A |
| Monitoring frequency required by licence: | Every 6 days (24 hours) |
| Sampled: | 29/05/15, 04/06/15, 10/06/15, 16/06/15, 22/06/15 External contractor sampling and reporting results for 29/05/2015 to be presented in this summary due to sample schedule. |
| Obtained: | 10 July 2015 |
| Published: | 24 July 2015 |
| Development consent limit: | Annual average 90 µg/m ³ |

In accordance with Condition M2.2 of EPL 6538, TSP data (EPA Monitoring Point 3) for the reporting period is provided in **Table 1**.

Table 1: Total Suspended Particulates Monitoring Summary

| Sampling point | | No. of samples required by licence | No. of samples collected and analysed* | Minimum sample value | Maximum sample value | Monthly mean of samples | Annual rolling average |
|----------------|-------------------------------------|------------------------------------|--|----------------------|----------------------|-------------------------|------------------------|
| HV01 | Wybong Road (East), Muswellbrook | 5 | 5 | 12.4 | 25.9 | 21.1 | 53.0 |
| HV02 | Racecourse Road, Muswellbrook | 5 | 5 | 25.5 | 36.4 | 30.4 | 61.6 |
| HV03 | Logues Lane, Muswellbrook | 5 | 5 | 12.6 | 25.8 | 20.0 | 44.3 |
| HV04 | St James School, Muswellbrook | 5 | 5 | 14.7 | 33.9 | 27.3 | 54.2 |
| HV06 | Wybong Road (West), Muswellbrook | 5 | 5 | 7.6 | 83.1 | 38.1 | 74.6 |

* External contractor sampling and reporting results for 29/05/2015 to be presented in this summary due to sample schedule.

For the reporting period, annual average TSP data were below the annual average Development Consent limit of 90 µg/m³.

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2.2. Particulate Matter less than 10 Microns

| | |
|--|---|
| Pollutant | PM ₁₀ |
| Unit of measure: | Micrograms per cubic metre (µg/m ³) |
| Monitoring location: | See Table 2 and Appendix A |
| Monitoring frequency required by licence: | Every 6 days (24 hours) |
| Sampled: | 29/05/15, 04/06/15, 10/06/15, 16/06/15, 22/06/15 External contractor sampling and reporting results for 29/05/2015 to be presented in this summary due to sample schedule. |
| Obtained: | 10 July 2015 |
| Published: | 24 July 2015 |
| Development consent limit: | Annual average 30 µg/m ³ 24-hour average 50 µg/m ³ |

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In accordance with Condition M2.2 of EPL 6538, PM₁₀ data (EPA Monitoring Point 4) for the reporting period is provided in **Table 2**.

Table 2: PM₁₀ Monitoring Summary

| Sampling point | | No. of samples required by licence | No. of samples collected and analysed* | Minimum sample value | Maximum sample value | Monthly mean of sample | Annual rolling average |
|----------------------|--|------------------------------------|--|----------------------|----------------------|------------------------|------------------------|
| PM ₁₀ - 1 | Racecourse Road, Muswellbrook | 5 | 5 | 8.2 | 28.0 | 8.7 | 22.4 |
| PM ₁₀ - 2 | St James School, Muswellbrook | 5 | 5 | 8.7 | 19.6 | 16.1 | 21.6 |
| PM ₁₀ - 3 | Mt Arthur Coal Residence, Muswellbrook † | 5 | 5 | 2.0 | 13.0 | 7.2 | 21.7 |
| PM ₁₀ - 4 | Wybong Road (West), Muswellbrook | 5 | 5 | 4.6 | 32.8 | 16.8 | 24.2 |

* External contractor sampling and reporting results for 29/05/2015 to be presented in this summary due to sample schedule.

† Data sourced from Mt Arthur Coal

For the reporting period, annual average PM₁₀ data were below the Development Consent limit of 30 µg/m³.

2.3. Dust Deposition

| | |
|--|--|
| Pollutant | Particulates – deposited matter |
| Unit of measure: | Grams per square metre per month (g/m ² /month) |
| Monitoring location: | See Table 3 and Appendix A |
| Monitoring frequency required by licence: | Once a month (minimum of 4 weeks) |
| Sampling period: | 25 May 2015 – 24 June 2015 |
| Obtained: | 10 July 2015 |
| Published: | 24 July 2015 |
| Development consent limit: | Annual average 4 g/m ² /month |

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In accordance with Condition M2.2 of EPL 6538, dust deposition data (EPA Monitoring Point 5) is provided in **Table 3**.

Table 3: Dust Deposition Monitoring Summary

| Sampling point | | No. of samples required by licence | No. of samples collected and analysed | Measured value | Observations | Annual rolling average |
|----------------|---|------------------------------------|---------------------------------------|----------------|--|------------------------|
| D01 | Queen Street, Muswellbrook | 1 | 1 | 0.3 | | 1.1 |
| D02 | King Street, Muswellbrook | 1 | 1 | 0.5 | | 1.5 |
| D04A | Industrial Estate, Muswellbrook | 1 | 1 | 1.4 | | 2.4 |
| D05 | Intersection Kayuga and Wybong Road, Muswellbrook | 1 | 1 | 0.8 | | 1.4 |
| D06 | Logues Lane, Muswellbrook | 1 | 1 | 0.5 | | 2.6 |
| D07A | St James School, Muswellbrook | 1 | 1 | 1.0 | | 1.8 |
| D08 | Denman Road, Muswellbrook | 1 | 1 | 0.8 | | 1.6 |
| D09 | Wybong Road, Muswellbrook | 1 | 1 | 0.8 | | 1.4 |
| D10 | Racecourse Road, Muswellbrook | 1 | 1 | 0.8 | | 2.4 |
| D20 | Wyndams Arms R.O.W., Muswellbrook | 1 | 1 | 1.5 | | 3.7 |
| D23B | Logues Lane, Muswellbrook | 1 | 1 | 6.6c | Light brown & slightly turbid. Contains insects and bird droppings. Low ash ratio 38%. Insoluble solids result higher than ARA. Deemed contaminated. | 1.9 |
| D25 | Roxburgh Road, Muswellbrook | 1 | 1 | 1.4 | | 3.2 |
| D26 | Wybong Road, Muswellbrook | 1 | 1 | 1.0 | | 2.1 |

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| Sampling point | | No. of samples required by licence | No. of samples collected and analysed | Measured value | Observations | Annual rolling average |
|----------------|-----------------------------|------------------------------------|---------------------------------------|----------------|---|------------------------|
| DA | Roxburgh Road, Muswellbrook | 1 | 1 | 4.8c | Brown & Slightly turbid. Contains bird droppings & insects. Insoluble solids result higher than ARA. Deemed contaminated. | 3.8 |

(c) Sample contaminated. Results for contaminated gauges are not included in the calculation of the annual averages. Note: D22 awaiting relocation.

- Sample unable to be collected.

Dust deposition samples can be contaminated by a variety of means, notably by the presence of insects and bird droppings. Results for contaminated gauges are not included in the calculation of the annual averages for the reporting period.

The Australian Standard does not provide criteria for the determination of contamination of a dust deposition sample. In this regard, a dust deposition sample is determined to be contaminated if it meets at least three of the following criteria:

1. Contents – gauge contains organic matter or bird droppings;
2. Water colour/turbidity – gauge water is coloured and turbid;
3. Ash to insoluble ratio – <50% or <70% for gauges within close proximity to mining operations; or
4. ARA comparison – insoluble result is higher than the annual rolling average.

For the reporting period, annual average dust deposition data were below the annual average Development Consent limit of 4 g/m²/month.

3. SURFACE WATER

3.1. Mine Water Discharge

Bengalla Mine participates in the Hunter River Salinity Trading Scheme (HRSTS). In accordance with Condition P1, M2.3 and M7 of EPL6538, Bengalla Mine maintains two monitoring locations to measure concentration, volume and mass of mine water discharges.

The location of these monitoring points is provided in **Appendix A**.

| | |
|--|---|
| Pollutant | Mine water |
| Unit of measure: | Megalitres per day (ML/day) |
| Volume/mass limit: (Condition L3) | 200 ML/day |
| Monitoring location: | EPA Monitoring Identification Point 1 (EPA01) – Outlet pipe from 280ML HRSTS storage dam See Appendix A |
| Monitoring frequency required by licence: | Continuous during all discharge events |
| Sampling period: | Not applicable. During the reporting period, Bengalla Mine did not discharge any mine water under the HRSTS. |
| Obtained: | Not applicable |
| Published: | 24 July 2015 |

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| | |
|--|---|
| Pollutant | Conductivity |
| Unit of measure: | Microsiemens per centimetre ($\mu\text{S}/\text{cm}$) |
| Monitoring location: | EPA Monitoring Identification Point 1 (EPA01) – Outlet pipe from 280ML HRSTS storage dam EPA Monitoring Identification Point 2 (EPA02) – Downstream of Discharge Point 1 in Dry Creek See Appendix A |
| Monitoring frequency required by licence: | Continuous during all discharge events |
| Sampling period: | Not applicable. During the reporting period, Bengalla Mine did not discharge any mine water under the HRSTS. |
| Obtained: | Not applicable |
| Published: | 24 July 2015 |

| | |
|--|---|
| Pollutant | pH |
| Unit of measure: | pH |
| pH limit: (Condition L2) | 6.5 – 9.5 (100 th percentile) |
| Monitoring location: | EPA Monitoring Identification Point 1 (EPA01) – Outlet pipe from 280ML HRSTS storage dam EPA Monitoring Identification Point 2 (EPA02) – Downstream of Discharge Point 1 in Dry Creek See Appendix A |
| Monitoring frequency required by licence: | Daily during all discharge events |
| Sampling period: | Not applicable. During the reporting period, Bengalla Mine did not discharge any mine water under the HRSTS. |
| Obtained: | Not applicable |
| Published: | 24 July 2015 |

| | |
|---|---|
| Pollutant | Total suspended solids (TSS) |
| Unit of measure: | Milligrams per litre (mg/L) |
| Total suspended solids limit: (Condition L2) | 120 mg/L (100 th percentile) |
| Monitoring location: | EPA Monitoring Identification Point 1 (EPA01) – Outlet pipe from 280ML HRSTS storage dam EPA Monitoring Identification Point 2 (EPA02) – Downstream of Discharge Point 1 in Dry Creek See Appendix A |
| Monitoring frequency required by licence: | Daily during all discharge events |
| Sampling period: | Not applicable. During the reporting period, Bengalla Mine did not discharge any mine water under the HRSTS. |
| Obtained: | Not applicable |
| Published: | 24 July 2015 |

4. BLASTING

In accordance with the requirements of Condition M8 of EPL 6538, Bengalla Mine maintains a network of three blast monitors on private (non-mine owned) land to measure air-blast overpressure and ground vibration for all blasts events undertaken by the operation. The location of these monitors is provided in **Appendix A**.

Overpressure limits:
(Condition L4)

- a) 115 linear decibels (dB(L)) for more than 5% of the total number of blasts carried out on the premises within the 12 months annual reporting period; and
- b) 120 dB(L) at any time

Ground vibration limits:
(Condition L4)

- a) exceed 5 millimetres/second (mm/s) for more than 5% of the total number of blasts carried out on the premises within the 12 months annual reporting period; and
- b) 10mm/s at any time

Sampled: 1 – 30 June 2015

Obtained: 1 – 30 June 2015

Published: 24 July 2015

In accordance with Condition M8 of EPL 6538, overpressure and ground vibration data is provided in **Table 4**.

Table 4: Blast Monitoring Summary

| Sampling point | Pollutant | Unit of measure | No. of samples required by licence | No. of samples collected and analysed | Minimum value | Maximum value | Mean of samples |
|-----------------|------------------|-----------------|------------------------------------|---------------------------------------|---------------|---------------|-----------------|
| Blake | Overpressure | dB(L) | All blast events | 12 | 85.40 | 97.70 | 91.58 |
| | Ground vibration | mm/s | All blast events | 12 | 0.04 | 0.45 | 0.16 |
| St James School | Overpressure | dB(L) | All blast events | 12 | 85.40 | 100.40 | 92.55 |
| | Ground vibration | mm/s | All blast events | 12 | 0.02 | 1.44 | 0.24 |
| Moore | Overpressure | dB(L) | All blast events | 12 | 84.60 | 109.90 | 97.03 |
| | Ground vibration | mm/s | All blast events | 12 | 0.02 | 1.56 | 0.65 |

For the reporting period, overpressure and ground vibration data were below the maximum limit and within the 5% allowance limit specified in Condition L4 of EPL 6538.

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Appendix A

EPL 6538 Monitoring Locations

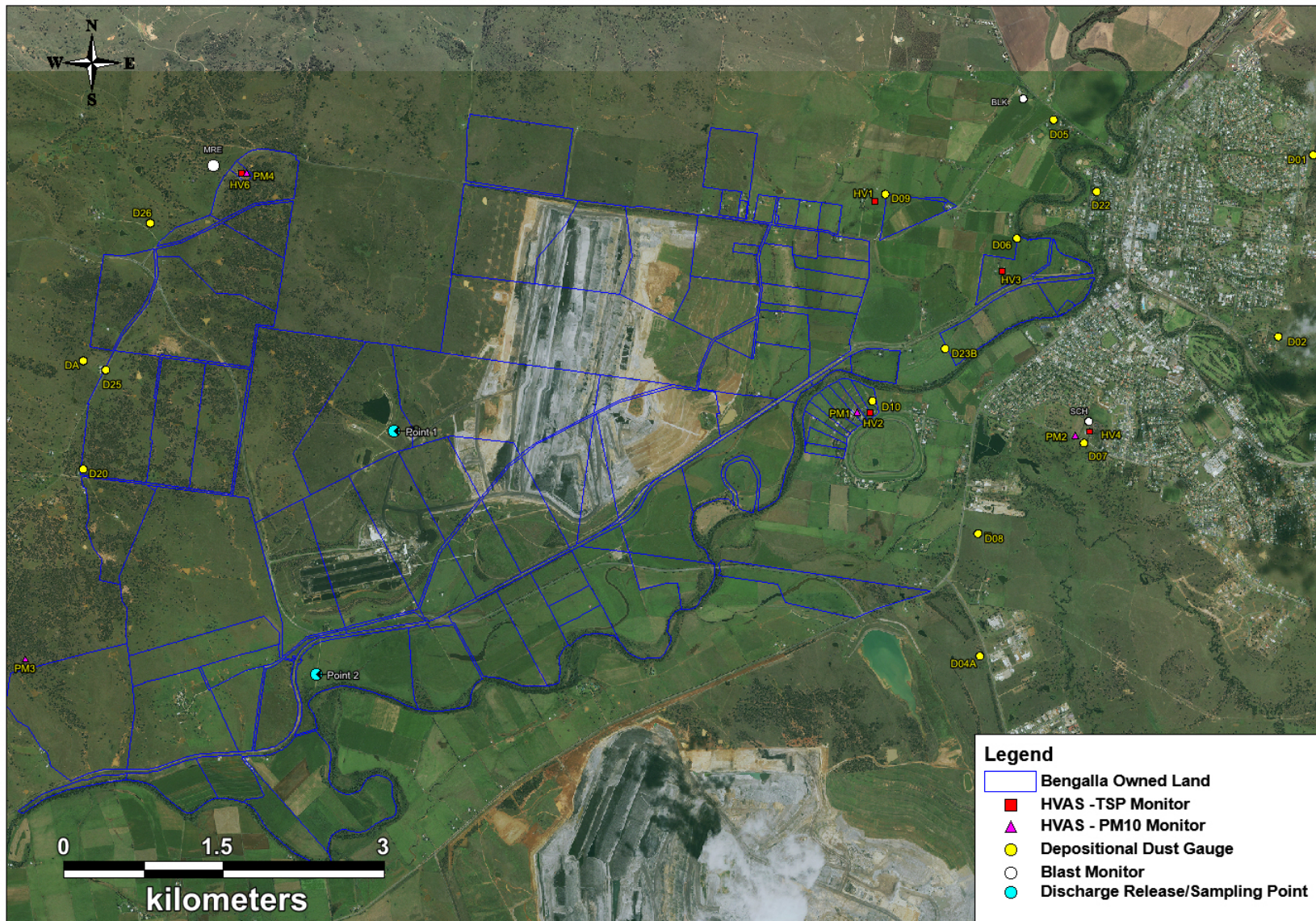


Figure 1: EPL 6538 Monitoring Locations

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