



Bengalla Mining Company Pty Limited

Bengalla Road (Locked Mailbag 5)
Muswellbrook NSW 2333 Australia

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Bengalla Mine

Environment Protection Licence 6538 Monthly Monitoring Data Summary

July 2020



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1. INTRODUCTION

Environmental Protection Licence (EPL) holders are required under the *Protection of the Environment Operations Act 1997* to make publicly available their monitoring results for those parameters specified in the EPL. This document has been prepared to satisfy this requirement.

Bengalla Mining Company Pty Limited's (BMC) operations are conducted in accordance with 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 July 2020 (Reporting Period). Monitoring data provided is as follows:

- Air quality, particulate matter less than 10 microns (PM₁₀);
- Surface water, including discharge mine water and effluent water;
- Noise; and
- Blast vibration and overpressure.



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2. AIR QUALITY

Under EPL 6538 BMC is required to continuously record the average PM₁₀ concentration at EPA Monitoring Points 22, 23 and 24 at intervals of 10 minutes. As per Condition E1.1, BMC commenced monitoring at these EPA Monitoring Points on 31 August 2017.

PM₁₀ data for the Reporting Period is provided in **Table 1**.

2.1 Particulate Matter less than 10 Microns

Pollutant:	PM ₁₀
Unit of measure:	Micrograms per cubic metre (µg/m ³)
Monitoring location:	See Table 1 and Appendix A .
Monitoring frequency required by licence:	10-minute intervals
Sampled:	01/07/2020 – 31/07/2020

Table 1. 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
EPA22	Lumeah Dairy, Bengalla Road, Muswellbrook	4464	4462	0	75.7	9.66
EPA23	Wybong Road (East), Muswellbrook	4464	4459	0	198.7	17.32
EPA24	Wybong Road (West), Muswellbrook	4464	4433	0	109.5	8.59

(Table 1 represents total impact (ie incremental increase in concentration due to the development plus background concentrations due to other sources))

3. SURFACE WATER

3.1 Discharge Monitoring

BMC participates in the Hunter River Salinity Trading Scheme (**HRSTS**). In accordance with EPL 6538, BMC maintains two monitoring locations to measure concentration, volume and mass of mine water discharges (see **Appendix B**).

3.1.1 Volume

Pollutant:	Mine water
Unit of measure:	Mega litres per day (ML/day)
Monitoring location:	EPA26 – Outlet pipe from 700 ML HRSTS storage dam.
Monitoring frequency required by licence:	Continuous during all discharge events.
Volume/mass limit:	200 ML/day

Sampled: During the Reporting Period, Bengalla discharged 95ML of mine water under a HRSTS discharge event.

35 ML was discharged during Block No 213 (4:00am 29th July 2020 to 4:00am 30th July 2020); and

60ML was discharge during Block No 214 (4:00am 30th July 2020 to 4:00am 31st July 2020)

3.1.2 Conductivity

Pollutant: Conductivity

Unit of measure: Microsiemens per centimetre ($\mu\text{S/cm}$)

Monitoring location: **See Table 2**
EPA26 – Outlet pipe from 700 ML HRSTS storage dam.
EPA2 – Tributary monitoring point in Dry Creek downstream of EPA26.

Monitoring frequency required by licence: Continuous during all discharge events (EPA26); Two times daily during discharge (EPA02).

Sampled: See **Table 2.**

Table 2. Electrical Conductivity Summary (29/7/20 – 30/7/2020)

Sampling point	No. of samples collected and analysed	Minimum sample value $\mu\text{S/cm}$	Maximum sample value $\mu\text{S/cm}$	Average sample value $\mu\text{S/cm}$
EPA26	1,065	2,603	2,707	3,926
EPA02	4	1,070	1,666	1,879

3.1.3 Total suspended solids and pH

Pollutants: pH and Total Suspended Solids (**TSS**)

Unit of measure: pH and Milligrams per litre (**mg/L**)

Monitoring location:	See Tables 3 & 4 EPA26 – Outlet pipe from 700 ML HRSTS storage dam.
Monitoring frequency required by licence:	Daily during all discharge events
pH limit:	6.5 – 9.5 (100 th percentile) (Applies to EPA26 only)
TSS limit:	120 (100 th percentile) (Applies to EPA26 only)
Sampled:	See Tables 3 & 4

Table 3. Total Suspended Solids Summary (29/7/20 – 30/7/2020)

Sampling point	No. of samples collected and analysed	Minimum sample value mg/L	Maximum sample value mg/L	Average sample value mg/L
EPA26	4	5	21.8	53

Table 4. pH Summary (29/7/20 – 30/7/2020)

Sampling point	No. of samples collected and analysed	Minimum sample value	Maximum sample value	Average sample value
EPA26	4	8.80	8.80	8.80

3.2 Effluent Quality Monitoring

Under EPL 6538 BMC is required to take quarterly grab samples from effluent quality monitoring point EPA25.

Pollutants:	Faecal Coliforms and pH
Unit of measure:	Colony Forming Units (CFU) per 100 millilitres (CFU/100mL) and pH



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Monitoring location:

EPA25 – See **Appendix B**.

Monitoring frequency required by licence:

Quarterly

Sampled:

Not applicable. BMC was not required to undertake effluent quality monitoring during the Reporting Period.



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4. NOISE

In accordance with EPL 6538, BMC undertakes compliance attended noise monitoring for 15 minutes once per calendar month during the night period (10 pm to 7 am) at three locations representative of the nearest private receivers.

Noise monitoring data for the Reporting Period is provided in **Table 5**.

Pollutant:	Noise – Bengalla Only
Unit of measure:	LAeq (15 minute)
Monitoring locations:	See Table 5 and Appendix C .
Monitoring frequency required by licence:	Monthly
EPA7/AN01 limit:	35 dB(A)
EPA9/AN04 limit:	35 dB(A)
EPA8/AN03 limit:	40 dB(A)
Sampled:	23 July 2020



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Table 5. Noise – Bengalla Only¹ LAeq (15 minute) Monitoring Summary

Sampling point	No. of samples required by licence	No. of samples taken and analysed	Sample Date	Sample Time	Measured value
EPA07/AN01	1	1	23/7/20	03:49 – 04:04	31
EPA08/AN03	1	1	23/7/20	02:53 – 03:08	<32
EPA09/AN04	1	1	23/7/20	02:14 – 02:29	Est 34

Note:

1. LAeq,15minute operational noise levels for Bengalla in the absence of all other noise sources.

IA - Inaudible. When there was no noise from the source of interest (Bengalla Mine) audible at the monitoring location.



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5. BLASTING

In accordance with EPL 6538, BMC maintains three blast monitors on private (non-mine owned) land to measure air-blast overpressure and ground vibration for all blast events undertaken at Bengalla.

Overpressure and ground vibration data for the Reporting Period is provided in **Tables 3 and 4**.

Pollutant:	Air blast overpressure & ground vibration peak particle velocity
Unit of measure:	dB (Lin Peak) and millimetres per second (mm/s)
Monitoring locations:	See Table 6 , Table 7 and Appendix C .
Monitoring frequency required by licence:	All blasts
Overpressure limits:	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:	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:	01/07/2020 – 31/07/2020



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Table 6. Blast Overpressure 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
BLK (EPA20)	Overpressure	dB(L)	All blast events	14	83.0	102.6	94.1
SCH (EPA19)	Overpressure	dB(L)	All blast events	14	81.4	106.6	94.8
MRE (EPA12)	Overpressure	dB(L)	All blast events	14	92.5	113.3	104.5

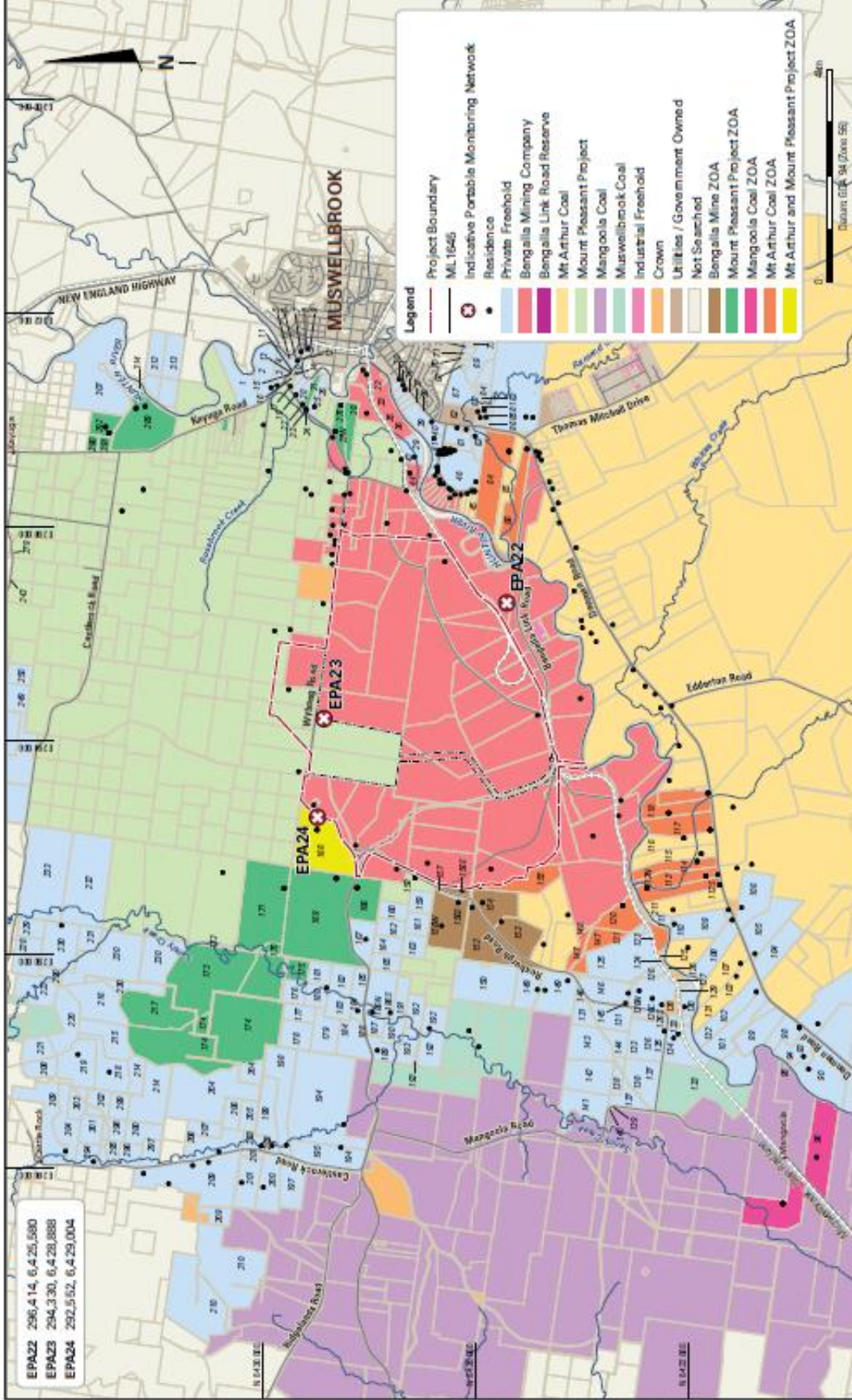
Table 7. Blast Vibration Monitoring Summary

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
BLK (EPA20)	Ground vibration	mm/s	All blast events	14	0.02	0.52	0.16
SCH (EPA19)	Ground vibration	mm/s	All blast events	14	0.01	0.16	0.07
MRE (EPA12)	Ground vibration	mm/s	All blast events	14	0.09	2.92	1.06

Operator, for and on behalf of Bengalla Joint Venture, an unincorporated joint venture between:
New Hope Bengalla Pty Ltd, Taipower Bengalla Pty Limited.

Appendix A

EPL 6538 Particulate Matter Monitoring Locations



BENGALLA MINE

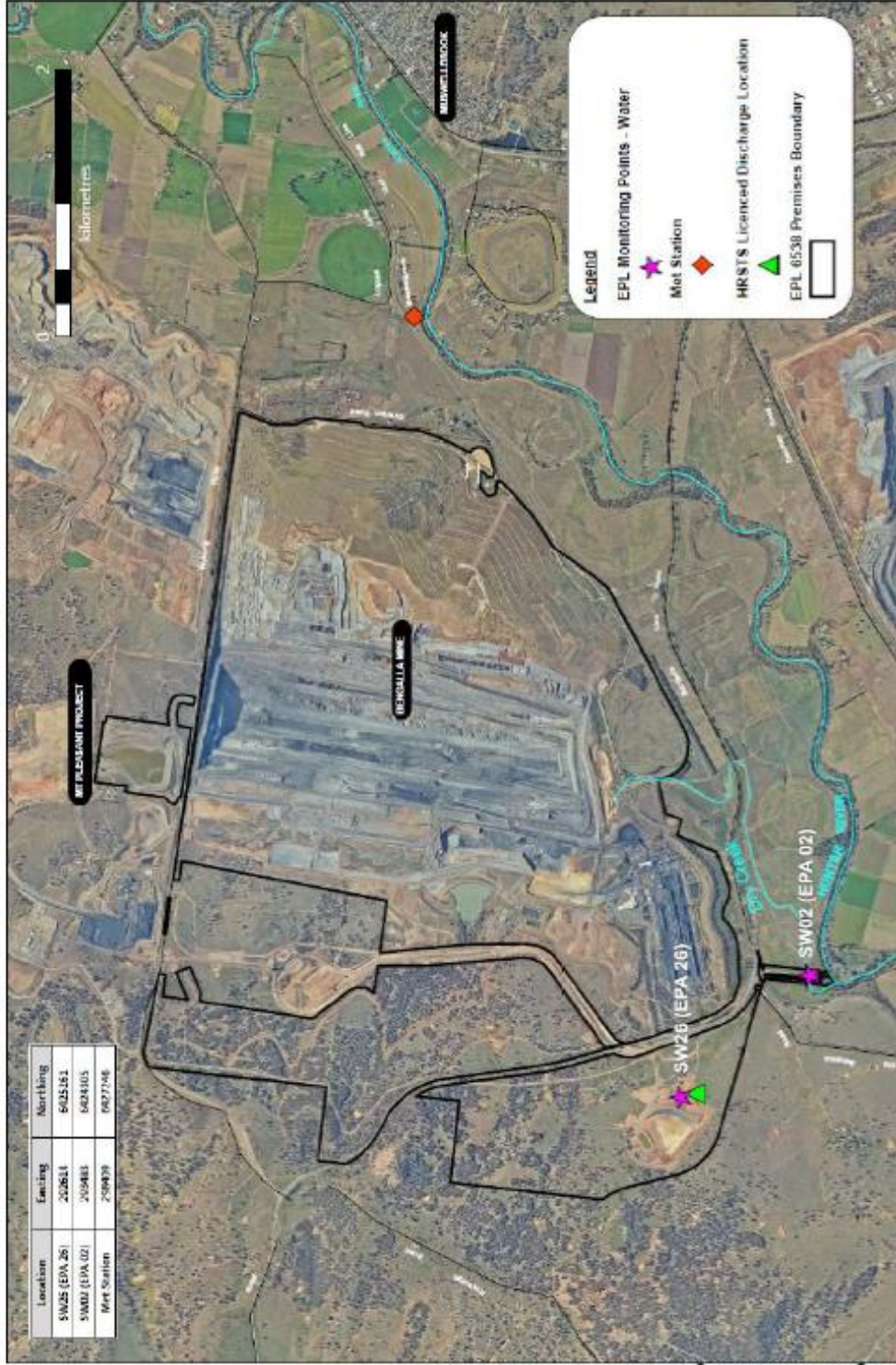
EPL 6538 PM10 Monitoring Locations

EPA22 296,414, 6,425,580
 EPA23 294,330, 6,429,888
 EPA24 292,552, 6,429,004



Appendix B

EPL 6538 Surface Water Monitoring Locations



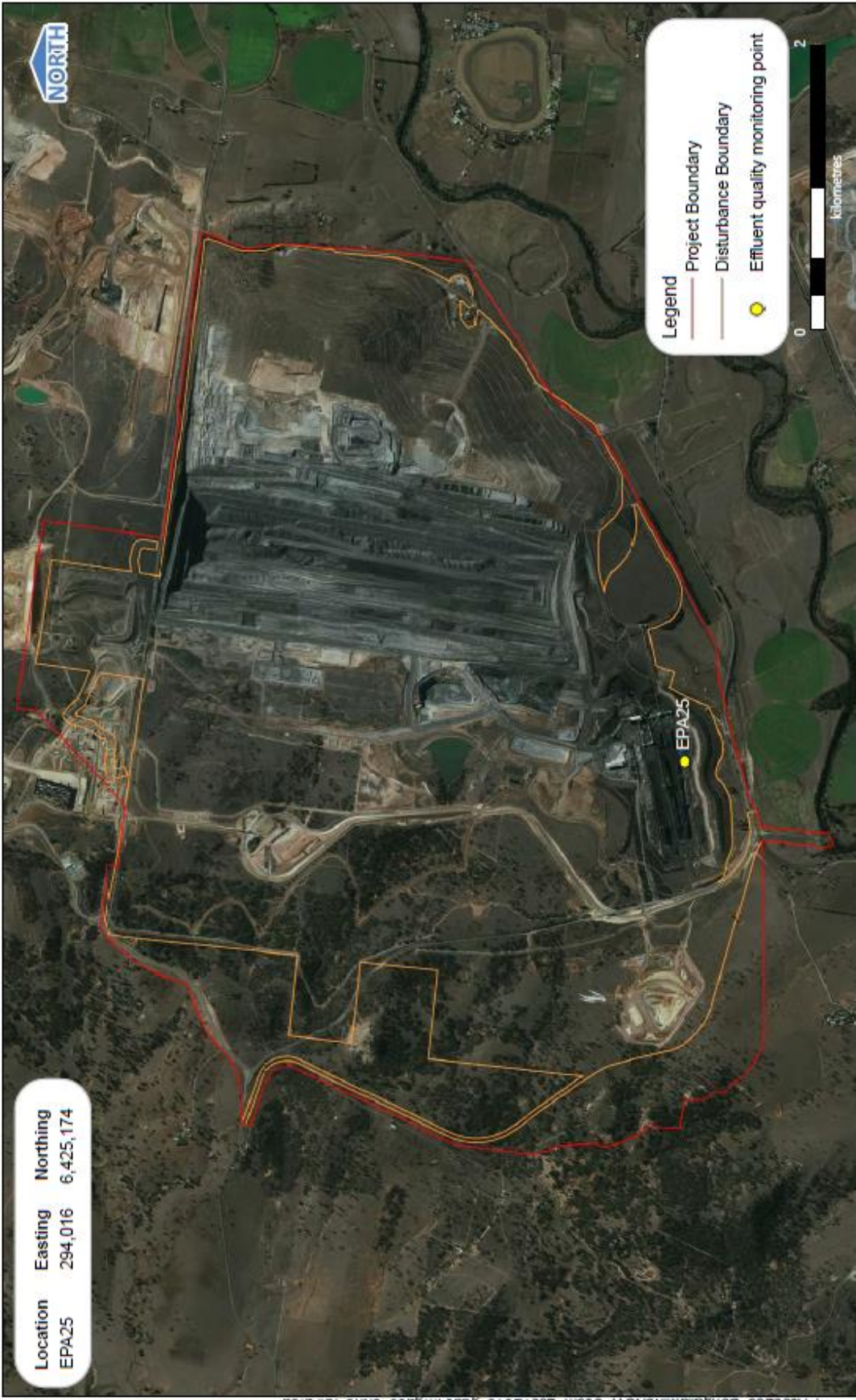
Bengalla EPL Monitoring Points - Water 17 09 2019 Rev B

Note: Coordinates are approximate only
Coordinate system: GDA94 (zone 56)

BENGALLA MINE

EPL Monitoring Points - Water



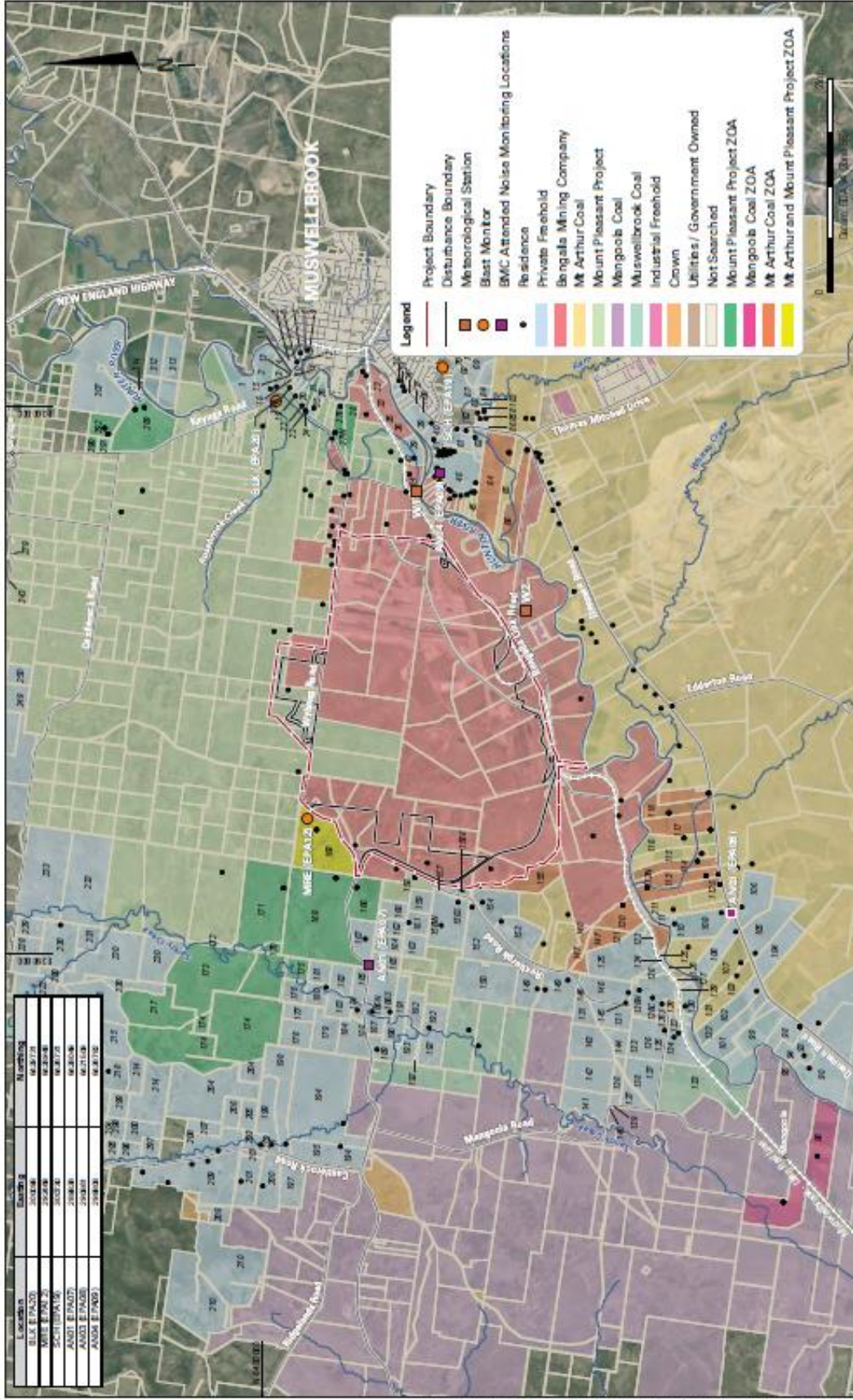


BENGALLA MINE

EPL 6538 Effluent Quality Monitoring Location

Appendix C

EPL 6538 Noise and Blast Monitoring Locations



BENGALLA MINE

EPL 6538 Noise & Blast Monitoring Locations