Bengalla Mining Company Pty Limited
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Bengalla Mine

Environment Protection Licence 6538
Monthly Monitoring Data Summary

August 2022

BENGALLA

NEW HOPE GROUP

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Contents

1. INTRODUCTION 3

2. AIR QUALITY 4

3. SURFACE WATER 6

4. NOISE 9

5. BLASTING 11

Tables

Table 1. PM10 Monitoring Summary 5
Table 2: Electrical Conductivity Summary for EPA26 (1/8/2022 – 31/8/2022) 7
Table 3: Total Suspended Solids Summary – EPA26 (1/8/2022 – 31/8/2022) 8
Table 4: pH Summary – EPA26 (1/8/2022 – 31/8/2022) 8
Table 5 Noise – Bengalla Only[1] LAeq (15 minute) Monitoring Summary 10
Table 6: Blast Overpressure Monitoring Summary 12
Table 7: Blast Vibration Monitoring Summary 12

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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=POEO licence&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 August 2022 (Reporting Period). Monitoring data provided is as follows:

- Air quality, particulate matter less than 10 microns (PM_{10});
- 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 PM_{10} concentration at EPA Monitoring Points 22, 23 and 24 at intervals of 10 minutes. As per Condition M2.2, BMC commenced monitoring at these EPA Monitoring Points on 31 August 2017.

PM_{10} 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/m3)
Monitoring location:	See **Table 1** and **Appendix A.**
Monitoring frequency required by licence:	10-minute intervals
Sampled:	01/08/2022 – 31/08/2022

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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	50.5	8.51
EPA23	Wybong Road (East), Muswellbrook	*The equipment at EPA23 was removed at 9:50am on 27/10/2021 due to impending blasting operations on 29/10/2021. This monitor is in the direct path of mining and will not be reinstated at this location. BMC will remove this monitoring point when the next Variation for EPL 6538 is lodged with the NSW Environment Protection Authority.*				
EPA24	Wybong Road (West), Muswellbrook	4464	4462	0	69.4	6.19

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

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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 141.7ML of mine water under the HRSTS. 22ML was discharged during Block No 215 (4:00am 1st August 2022 to 4:00am 2nd August 2022); 24.7 ML was discharged during Block No 216 (4:00am 2nd August 2022 to 4:00am 3rd August 2022)2022); 12.4 ML was discharged during Block No 217 (4:00am 3rd August 2022 to 4:00am 4th August 2022); 5.9 ML was discharged during Block No 218 (4:00am 4th August 2022 to 4:00am 5th August 2022); 34.9 ML was discharged during Block No 224 (4:00am 10th August 2022 to 4:00am 11th August 2022); 31.7ML was discharged during Block No 225 (4:00am 11th August 2022 to 4:00am 12th August 2022); 9.7 ML was discharged during Block No 226 (4:00am 12th August 2022 to 4:00am 13th August 2022); 0.5 ML was discharged during Block No 230

(4:00am 16th August 2022 to 4:00am 17th August 2022);

3.1.2 Conductivity

Pollutant: Conductivity

Unit of measure: Microsiemens per centimetre (**µS/cm**)

Monitoring location: EPA26 – Outlet pipe from 700 ML HRSTS storage dam.

Monitoring frequency required by licence: Continuous during all discharge events (EPA26)

Sampled: See Table 2

Table 2: Electrical Conductivity Summary for EPA26 (1/8/2022 – 31/8/2022)

Discharge Block Number	No. of records
215(1)	1349
216(1)	1367
217(1)	1366
218(1)	950
224(1)	1089
225(1)	1305
226(1)	816
230(1)	21

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: 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 (100th percentile)

120 (100th percentile)

TSS limit:

Sampled: See Tables 3 & 4

Table 3: Total Suspended Solids Summary – EPA26 (1/8/2022 – 31/8/2022)

Block Number	No of Samples collected and analysed	Sample value mg/L
215(1)	2	<5 , <5
216(1)	2	<5 , 6
217(1)	2	<5 , 6
218(1)	1	<5
224(1)	2	21 , 8
225(1)	2	9 , 15
226(1)	1	12
230(1)	1	9510[#1]

(Monitored daily during discharge via grab sample as per EPL 6538 Condition M2.3)

[#1] Total Suspended Solids reading was reported to the NSWEPA, Department of Planning and Environment and Department of Climate Change, Energy, The Environment and Water

Table 4: pH Summary – EPA26 (1/8/2022 – 31/8/2022)

Block Number	No of Samples collected and analysed	Sample value pH
215(1)	1	9.03
216(1)	1	9.01
217(1)	1	9.10
218(1)	1	8.86
224(1)	1	8.95
225(1)	1	9.05
226(1)	1	8.98
230(1)	1	8.87

(Monitored daily during discharge via grab sample as per EPL 6538 Condition M2.3)

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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
Monitoring location:	EPA25 – See **Appendix B**.
Monitoring frequency required by licence:	Quarterly
Sampled:	Not applicable to August

4. NOISE

In accordance with EPL 6538, BMC undertakes compliance attended noise monitoring for 15minutes 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 2**.

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:	27 August 2022

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Table 5 Noise – Bengalla Only[1] 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	27/8/2022	00:01 – 00:16	30
EPA08/AN03	1	1	27/8/2022	00:38 – 00:53	IA
EPA09/AN04	1	1	27/8/2022	01:10 – 01:25	IA

Note:

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

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

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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.

The blast overpressure and ground vibration data for the Reporting Period is provided in **Tables 6 and 7**.

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:	01/08/2022 – 31/08/2022

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Table 6: Blast Overpressure Monitoring Summary

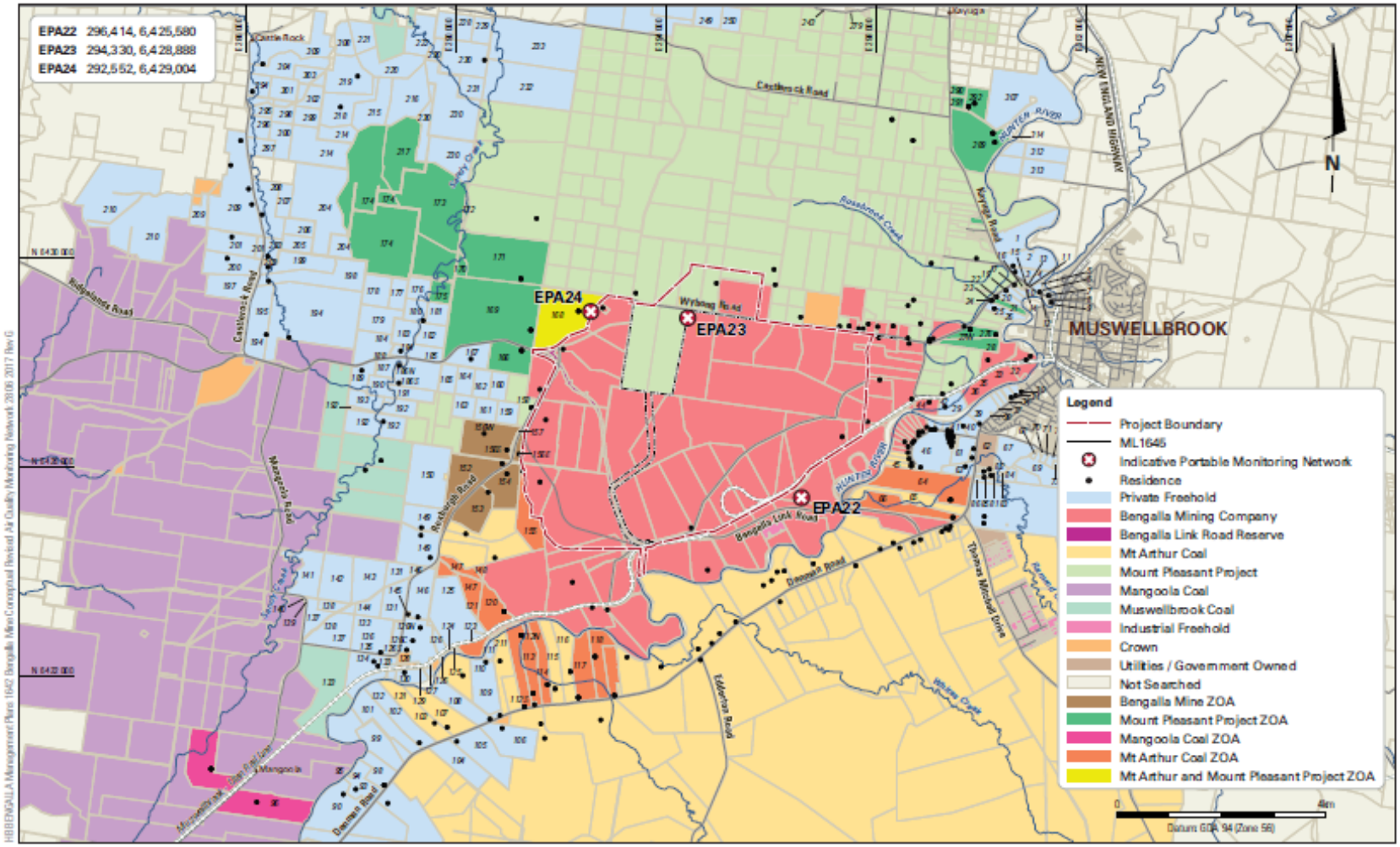
Sampling point	Pollutant	Unit of measure	No. of samples required by licence	No. of samples collected and analysed	Minimum value	Maximum value	Mean of samples
BLK (EPA20)	Overpressure	dB(L)	All blast events	11	90.2	113.6	98.36
SCH (EPA19)	Overpressure	dB(L)	All blast events	11	85.4	108.6	95.36
MRE (EPA12)	Overpressure	dB(L)	All blast events	11	93.8	106.5	100.16

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	11	0.05	0.45	0.17
SCH (EPA19)	Ground vibration	mm/s	All blast events	11	0.02	0.14	0.07
MRE (EPA12)	Ground vibration	mm/s	All blast events	11	0.29	2.99	1.37

Appendix A

EPL 6538 Particulate Matter Monitoring Locations

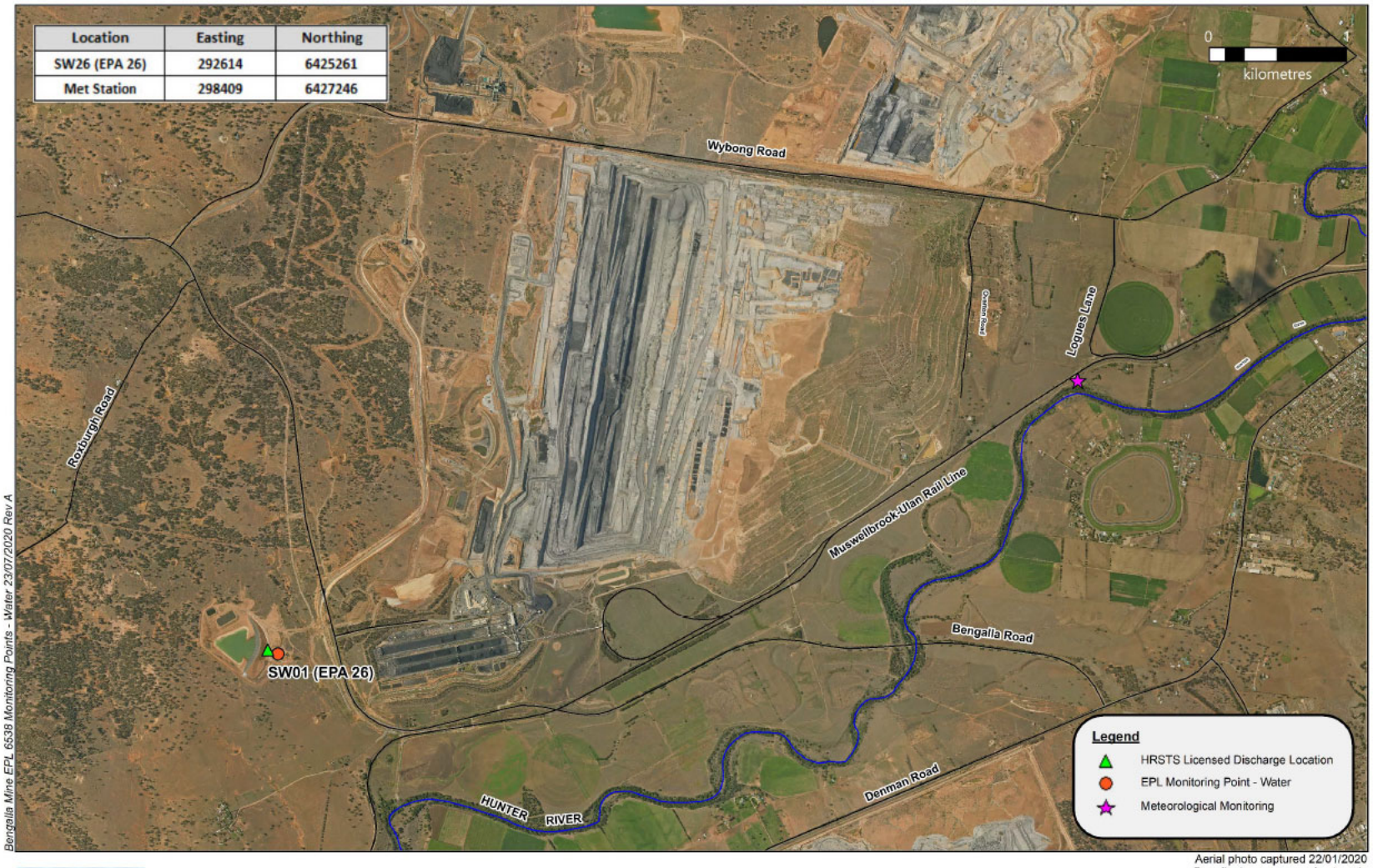


BENGALLA MINE

EPL 6538 PM10 Monitoring Locations

Appendix B

EPL 6538 Surface Water Monitoring Locations



Bengalla Mine EPL 6538 Monitoring Points - Water 23/07/2020 Rev A

Aerial photo captured 22/01/2020
Coordinates are approximate only
Coordinate system MGA zone 56 GDA 94

Bengalla Mine

EPL 6538 Monitoring Points - Water

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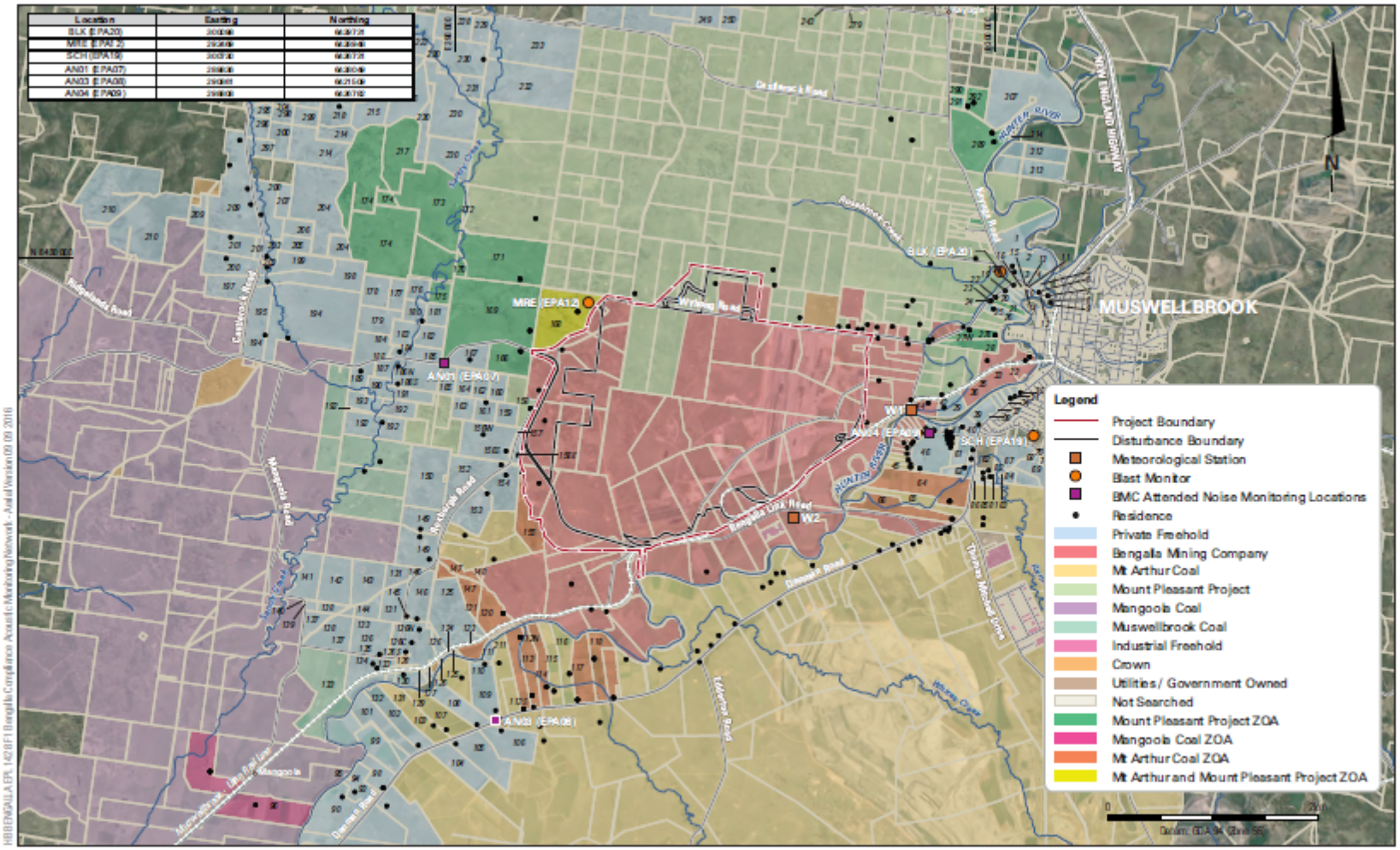
EPL 6538 Effluent Quality Monitoring Location

Appendix C

EPL 6538 Noise and Blast Monitoring Locations



H:\BENGALLA EPL 1428\F1 Bengalla Compliance Acoustic Monitoring Network - Aerial Version (09 09 2016)

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EPL 6538 Noise & Blast Monitoring Locations