



Bengalla Mining Company Pty. Limited

Bengalla Road, (Locked Mailbag 5)

Muswellbrook NSW 2333 Australia

A.B.N. 32 053 909 470

Bengalla Mine

Environment Protection Licence 6538 Monthly Monitoring Data Summary

January 2018

Operator, for and on behalf of Bengalla Joint Venture, an unincorporated joint venture between:
Harcove Pty Ltd, Wesfarmers Bengalla Limited, Taipower Bengalla Pty Limited & Mitsui Bengalla Investment Pty Limited.

www.bengalla.com.au



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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 January 2018 (Reporting Period). Monitoring data provided is as follows:

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

Monitoring Data Obtained: 13 February 2018

Monitoring Data Published: 26 February 2018



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:	01/01/2018 – 31/01/2018



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	4,464	4,273	0	106	12
EPA23	Wybong Road (East), Muswellbrook	4,464	4,394	0	145	15
EPA24	Wybong Road (West), Muswellbrook	4,464	4,431	0	72	13



3. SURFACE WATER

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 Mine Water

Pollutant:	Mine water
Unit of measure:	Mega litres per day (ML/day)
Monitoring location:	EPA01 – Outlet pipe from 280 ML HRSTS storage dam.
Monitoring frequency required by licence:	Continuous during all discharge events.
Volume/mass limit:	200 ML/day
Sampled:	Not applicable. During the Reporting Period, Bengalla did not discharge any mine water under the HRSTS.

3.2 Conductivity

Pollutant:	Conductivity
Unit of measure:	Microsiemens per centimetre (µS/cm)
Monitoring location:	EPA1 – Outlet pipe from 280 ML HRSTS storage dam. EPA2 – Tributary monitoring point in Dry Creek downstream of EPA1.
Monitoring frequency required by licence:	Continuous during all discharge events (EPA01); Two times daily during discharge (EPA02).
Sampled:	Not applicable. During the Reporting Period, Bengalla did not discharge any mine water under the HRSTS.



3.3 Total suspended solids and pH

Pollutants:	pH and Total suspended solids (TSS)
Unit of measure:	pH and Milligrams per litre (mg/L)
Monitoring location:	EPA01 – Outlet pipe from 280 ML HRSTS storage dam.
Monitoring frequency required by licence:	Daily during all discharge events
pH limit:	6.5 – 9.5 (100 th percentile)
TSS limit:	120 (100 th percentile)
Sampled:	Not applicable. During the Reporting Period, BMC did not discharge any mine water under the HRSTS.



1. 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 2**.

Pollutant:	Noise – Bengalla Only
Unit of measure:	LAeq (15 minute)
Monitoring locations:	See Table 2 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:	24 January 2018



Table 2. 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	24/01/18	22:37	23
EPA08/AN03	1	1	24/01/18	23:12	<30
EPA09/AN04	1	1	24/01/18	23:40	<25

Note:

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

For the Reporting Period noise data were compliant with the EPL 6538 limits.



5. BLASTING

In accordance with EPL 6538, BMC 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 at Bengalla.

Overpressure and ground vibration data for the Reporting Period is provided in Error! Reference source not found. 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 3 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:	1 – 31 January 2018



Table 3. 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	17	84.80	111.10	97.96
SCH (EPA19)	Overpressure	dB(L)	All blast events	17	83.60	107.70	93.27
MRE (EPA12)	Overpressure	dB(L)	All blast events	17	92.30	112.10	101.93

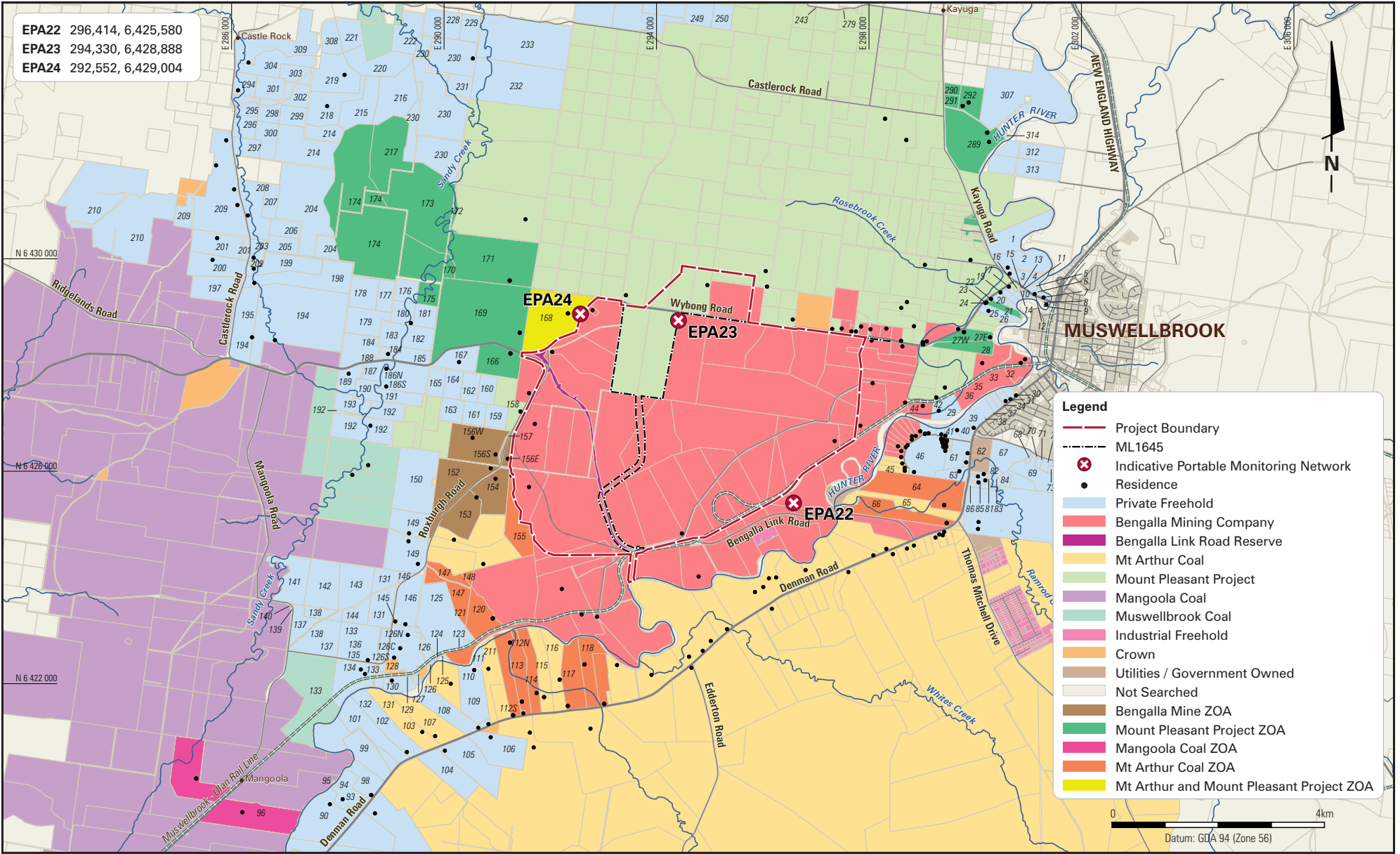
Table 4. Blast Vibration Monitoring Summary

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	17	0.05	0.74	0.21
SCH (EPA19)	Ground vibration	mm/s	All blast events	17	0.01	0.24	0.09
MRE (EPA12)	Ground vibration	mm/s	All blast events	17	0.11	3.28	1.16

For the Reporting Period, overpressure and ground vibration data were below the maximum limit and within the 5% allowance limit.

Appendix A

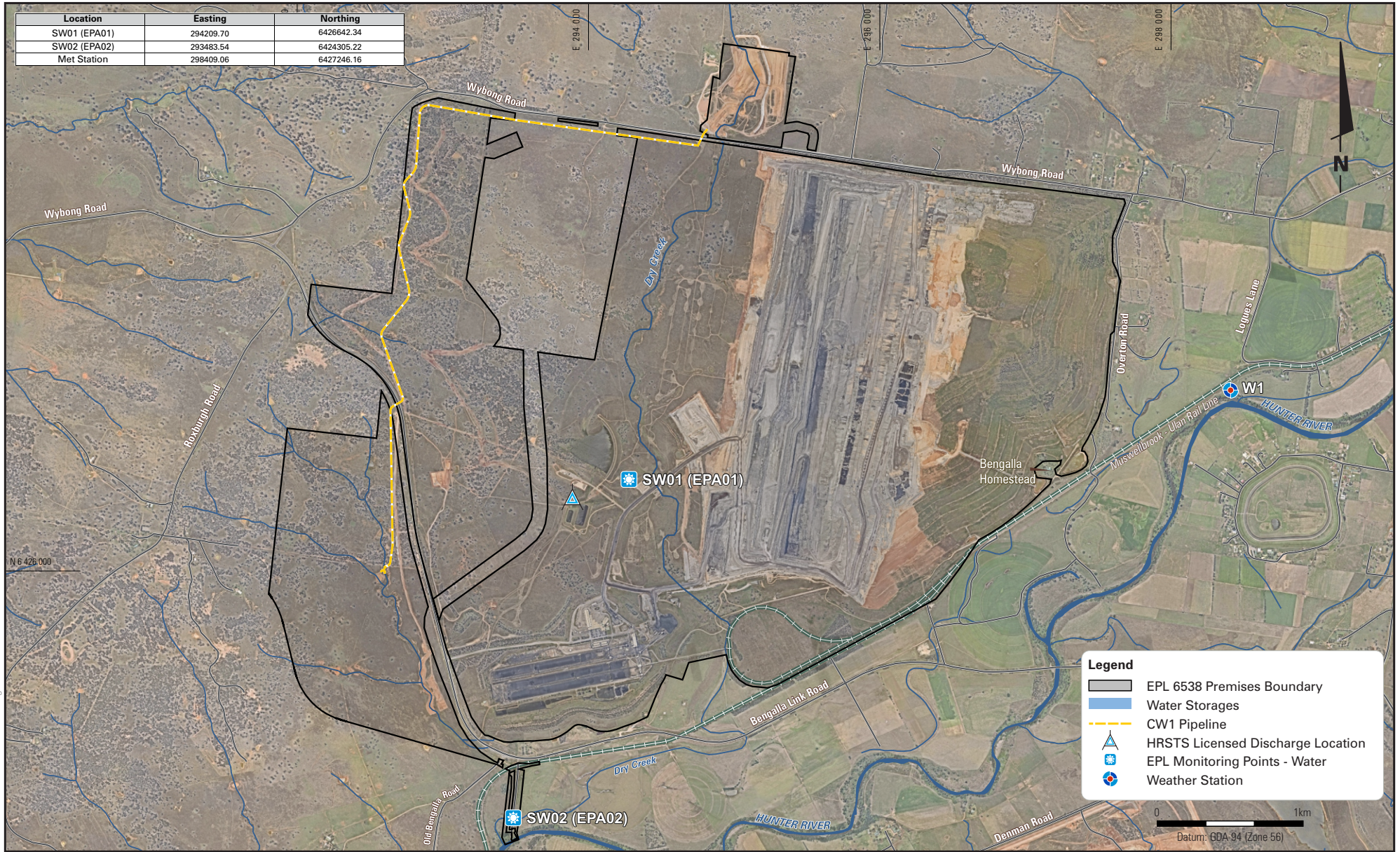
EPL 6538 Particulate Matter Monitoring Locations



Appendix B

EPL 6538 Surface Water Monitoring Locations

Location	Easting	Northing
SW01 (EPA01)	294209.70	6426642.34
SW02 (EPA02)	293483.54	6424305.22
Met Station	298409.06	6427246.16



HB BENGALLA 1642 F1 EPL Monitoring Points - Water 21 06 2017 Rev E



HansenBailey
ENVIRONMENTAL CONSULTANTS

BENGALLA MINE

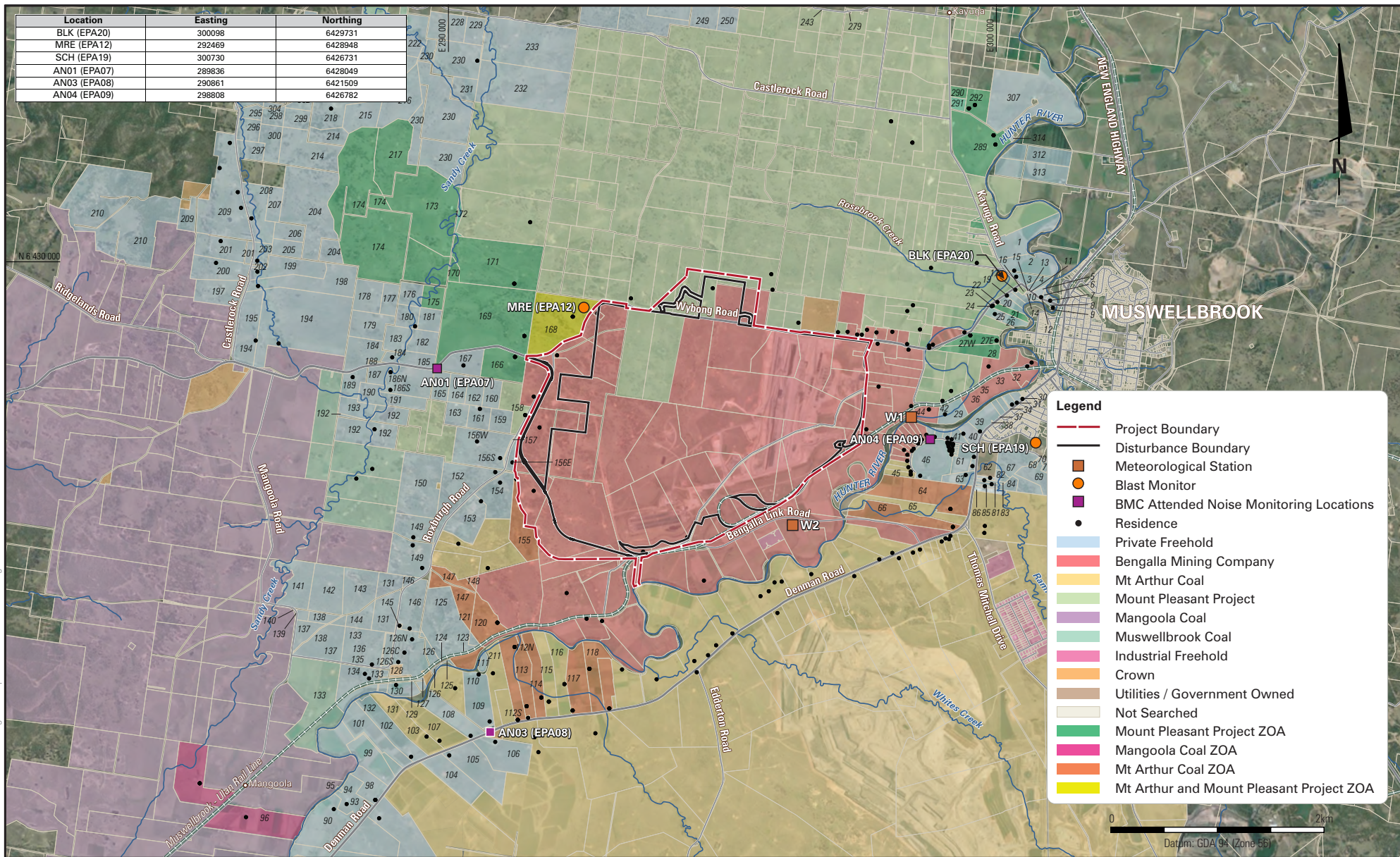
EPL Monitoring Points - Water

Appendix C

EPL 6538 Noise and Blast Monitoring Locations

Location	Easting	Northing
BLK (EPA20)	300098	6429731
MRE (EPA12)	292469	6428948
SCH (EPA19)	300730	6426731
AN01 (EPA07)	289836	6428049
AN03 (EPA08)	290861	6421509
AN04 (EPA09)	298808	6426782

HB BENGALLA EPL 1428 F1 Bengalla Compliance Acoustic Monitoring Network - Aerial Version 09 09 2016



BENGALLA MINE



Bengalla Compliance Acoustic Monitoring Network

FIGURE 1