



# Mt Thorley Warkworth EPL Monitoring Data

Published 17 October 2017  
FOR THE MONTH ENDING 30 September 2017

|                                |   |
|--------------------------------|---|
| <b>Name of Operation</b>       | <b>Mount Thorley Coal Loader</b>  |
| Environment Protection Licence | 24  |
| Licensee                       | Mount Thorley Coal Loading Ltd  |
| Premises                       | Mount Thorley Coal Loading Ltd<br>Mount Thorley Road, Mount Thorley<br>Via Singleton NSW 2330   |
| EPL Link                       | <a href="http://app.epa.nsw.gov.au/prpoeoapp/ViewPOEOLicence.aspx?DOCID=89660&amp;SYSUID=1&amp;LICID=24">http://app.epa.nsw.gov.au/prpoeoapp/ViewPOEOLicence.aspx?DOCID=89660&amp;SYSUID=1&amp;LICID=24</a>       |
| <b>Name of Operation</b>       | <b>Mount Thorley Operations</b>   |
| Environment Protection Licence | 1976  |
| Licensee                       | Mount Thorley Operation Pty Limited   |
| Premises                       | Mount Thorley Operations<br>Mount Thorley Road<br>Mount Thorley NSW 2330  |
| EPL Link                       | <a href="http://app.epa.nsw.gov.au/prpoeoapp/ViewPOEOLicence.aspx?DOCID=123990&amp;SYSUID=1&amp;LICID=1976">http://app.epa.nsw.gov.au/prpoeoapp/ViewPOEOLicence.aspx?DOCID=123990&amp;SYSUID=1&amp;LICID=1976</a> |
| <b>Name of Operation</b>       | <b>Warkworth Coal Mine</b>  |
| Environment Protection Licence | 1376  |
| Licensee                       | Warkworth Mining Ltd  |
| Premises                       | Warkworth Coal Mine<br>Putty Road<br>Mount Thorley NSW 2330   |
| EPL Link                       | <a href="http://app.epa.nsw.gov.au/prpoeoapp/ViewPOEOLicence.aspx?DOCID=121545&amp;SYSUID=1&amp;LICID=1376">http://app.epa.nsw.gov.au/prpoeoapp/ViewPOEOLicence.aspx?DOCID=121545&amp;SYSUID=1&amp;LICID=1376</a> |

## 1 INTRODUCTION

This report has been compiled to provide a summary of environmental monitoring results for Mt Thorley Warkworth in accordance with Environment Protection Licences 24, 1376 and 1976. This report includes all monitoring data collected in accordance with the aforementioned licences for the period 1st September – 30th September 2017.

Monitoring in this report includes:

- Air quality monitoring;
- Surface water monitoring including mine water discharge; and
- Blast monitoring.

Monitoring locations are shown in Figure 1.

## 2 AIR QUALITY

In accordance with the requirements of Condition M2.2 (WML 1376 and MTO 1976), Mount Thorley Warkworth maintains a network of five PM<sub>10</sub> monitors. The following monitoring locations (EPA Monitoring Points 9, 10, 11, 12 and 13) are listed on the licences for the purpose of monitoring:

- EPA Identification Number 9 (WML 1376) – Warkworth North
- EPA Identification Number 10 (WML 1376 & MTO 1976) – Dragline Crossing
- EPA Identification Number 11 (WML 1376 & MTO 1976) – Heavy Vehicle Bridge
- EPA Identification Number 12 (WML 1376 & MTO 1976) – MTIE
- EPA Identification Number 13 (MTO 1976) – MTO Boundary

Results of Particulates (PM<sub>10</sub>) monitoring (EPA Monitoring Points 9, 10, 11, 12 and 13) are shown in Table 1. Results reported represent the 24hr average PM<sub>10</sub>, derived from 10 minute PM<sub>10</sub> values for the period midnight to midnight, for each calendar date during the reporting period. The last sampling date was 30th September 2017; the data was obtained on the 2nd October 2017.

**TABLE 1: PARTICULATE MATTER <10µm MONITORING**

| Date       | Unit of Measure   | Monitoring Frequency & Capture | Monitoring Point |              |                   |                      |      |
|------------|-------------------|--------------------------------|------------------|--------------|-------------------|----------------------|------|
|            |                   |                                | Warkworth North  | MTO Boundary | Dragline Crossing | Heavy Vehicle Bridge | MTIE |
| 1/09/2017  | µg/m <sup>3</sup> | Continuous                     | #                | #            | #                 | #                    | #    |
| 2/09/2017  | µg/m <sup>3</sup> |                                | 13.8             | 16.7         | 25.0              | 16.4                 | 10.4 |
| 3/09/2017  | µg/m <sup>3</sup> |                                | 12.2             | 22.1         | 46.9              | 22.5                 | 17.0 |
| 4/09/2017  | µg/m <sup>3</sup> |                                | 5.4              | 10.6         | 33.0              | 11.0                 | 5.8  |
| 5/09/2017  | µg/m <sup>3</sup> |                                | 4.5              | 9.2          | 33.6              | 9.4                  | 4.0  |
| 6/09/2017  | µg/m <sup>3</sup> |                                | 3.6              | 14.5         | 27.6              | 7.5                  | 3.5  |
| 7/09/2017  | µg/m <sup>3</sup> |                                | 4.4              | 13.7         | 24.4              | 10.5                 | 5.1  |
| 8/09/2017  | µg/m <sup>3</sup> |                                | 2.8              | 17.0         | 22.2              | 8.7                  | 4.0  |
| 9/09/2017  | µg/m <sup>3</sup> |                                | 10.8             | 11.7         | 23.1              | 13.0                 | 5.4  |
| 10/09/2017 | µg/m <sup>3</sup> |                                | 24.1             | 27.4         | 30.8              | 23.9                 | 16.5 |
| 11/09/2017 | µg/m <sup>3</sup> |                                | 13.0             | 30.2         | 48.1              | 23.3                 | 16.2 |
| 12/09/2017 | µg/m <sup>3</sup> |                                | #                | #            | #                 | #                    | #    |
| 13/09/2017 | µg/m <sup>3</sup> |                                | 12.3             | 35.5         | 70.1              | 28.4                 | 13.4 |
| 14/09/2017 | µg/m <sup>3</sup> |                                | 2.5              | 3.9          | 17.6              | 5.3                  | #    |
| 15/09/2017 | µg/m <sup>3</sup> |                                | 4.6              | 6.5          | 30.5              | 12.5                 | 15.0 |
| 16/09/2017 | µg/m <sup>3</sup> |                                | 6.8              | 10.6         | 28.3              | 12.9                 | 5.2  |
| 17/09/2017 | µg/m <sup>3</sup> |                                | #                | #            | #                 | #                    | #    |
| 18/09/2017 | µg/m <sup>3</sup> |                                | 10.4             | 15.8         | 33.4              | 18.5                 | 12.1 |
| 19/09/2017 | µg/m <sup>3</sup> |                                | 12.3             | 17.3         | 38.2              | 21.1                 | 12.2 |
| 20/09/2017 | µg/m <sup>3</sup> |                                | 14.0             | 10.1         | 20.5              | 12.0                 | 7.5  |
| 21/09/2017 | µg/m <sup>3</sup> |                                | 11.7             | 20.5         | 46.8              | 23.6                 | 11.9 |

|                                |                         |                |       |       |       |       |       |
|--------------------------------|-------------------------|----------------|-------|-------|-------|-------|-------|
| 22/09/2017                     | µg/m <sup>3</sup>       |                | 13.4  | 32.8  | 66.0  | 35.2  | 21.5  |
| 23/09/2017                     | µg/m <sup>3</sup>       |                | 21.3  | 40.0  | #     | 47.4  | 33.5  |
| 24/09/2017                     | µg/m <sup>3</sup>       |                | 20.6  | 31.6  | 61.9  | 32.4  | 20.0  |
| 25/09/2017                     | µg/m <sup>3</sup>       |                | 15.5  | 16.0  | 51.9  | 23.5  | 14.9  |
| 26/09/2017                     | µg/m <sup>3</sup>       |                | 12.6  | 12.4  | 20.9  | 14.4  | 7.1   |
| 27/09/2017                     | µg/m <sup>3</sup>       |                | 39.6  | 39.0  | 42.0  | 39.4  | 30.2  |
| 28/09/2017                     | µg/m <sup>3</sup>       |                | 22.5  | 30.4  | 56.0  | 32.3  | 20.3  |
| 29/09/2017                     | µg/m <sup>3</sup>       |                | 3.9   | 16.7  | 44.8  | 22.9  | 9.3   |
| 30/09/2017                     | µg/m <sup>3</sup>       |                | 7.0   | #     | #     | 15.2  | 6.3   |
| <b>Monthly Meaningful Data</b> |                         |                |       |       |       |       |       |
| <b>September</b>               | <b>µg/m<sup>3</sup></b> | <b>Minimum</b> | 2.5*  | 3.9*  | 17.6* | 5.3*  | 3.5*  |
| <b>September</b>               | <b>µg/m<sup>3</sup></b> | <b>Mean</b>    | 12.1* | 19.7* | 37.7* | 20.1* | 12.6* |
| <b>September</b>               | <b>µg/m<sup>3</sup></b> | <b>Maximum</b> | 39.6* | 40.0* | 70.1* | 47.4* | 33.5* |
| <b>September</b>               | <b>µg/m<sup>3</sup></b> | <b>Median</b>  | 12.2* | 16.7* | 33.4* | 18.5* | 12.0* |

# 24 hour data unavailable due to equipment or communications issue causing one or more missing 10 minute values

\*Data calculated with missing values due to equipment or communication issue

### 3 SURFACE WATER

#### 3.1 Mine Water Discharge Monitoring

MTW participates in the Hunter River Salinity Trading Scheme (HRSTS), and maintains two monitoring locations associated with this scheme as follows:

- EPA Monitoring Point 1 (WML EPL 1376) – Dam 1N Discharge Point
- EPA Monitoring Point 4 (MTO EPL 1976) – The end of the discharge pipe from Dam 9

Mount Thorley Warkworth did not receive any discharge opportunities in the reporting period and no water was discharged. As such, no samples were collected at Monitoring Points 1 and 4 during the reporting period (shown in Table 2 below).

**TABLE 2: MINE WATER DISCHARGE MONITORING**

| Discharge Point                | Date | Pollutant               | unit of measure             | Licence Limits | No. of samples required by licence | No. of samples you collected and analysed |
|--------------------------------|------|-------------------------|-----------------------------|----------------|------------------------------------|---|
| Dam 1N Discharge / EPL Point 1 | N/A  | Electrical Conductivity | microsiemens per centimetre | -              | 0                                  | 0   |
|                                |      | pH                      | pH                          | 6.5 - 9.0      | 0                                  | 0   |
|                                |      | Total Suspended Solids  | milligrams per litre        | 120            | 0                                  | 0   |
| Dam 9S Discharge / EPL Point 4 | N/A  | Electrical Conductivity | microsiemens per centimetre | -              | 0                                  | 0   |
|                                |      | pH                      | pH                          | 6.5 - 9.0      | 0                                  | 0   |
|                                |      | Total Suspended Solids  | milligrams per litre        | 120            | 0                                  | 0   |

### 3.2 Hunter River Tributaries Monitoring

MTW undertakes routine monitoring in Loders Creek, in accordance with Condition M2.3, at the following location:

- EPA Monitoring Point 3 (MTO EPL 1976) – In Loders Creek, at the coal preparation plant access road bridge

Result of monitoring undertaken from W5 – Loders Creek is detailed in Table 3. Monthly sampling occurred on 13th September 2017, the data was obtained on 10th October 2017.

**TABLE 3: HUNTER WATER TRIBUTARIES MONITORING**

| Monitoring Location        | Pollutant               | unit of measure             | Monitoring frequency required by licence | No. of samples you collected and analysed | Value |
|----------------------------|-------------------------|-----------------------------|--|---|-------|
| Loders Creek / EPL Point 3 | Electrical Conductivity | microsiemens per centimetre | Once a month<br>(min. of 4 weeks)        | 1   | 13600 |
|                            | pH                      | pH units                    | Once a month<br>(min. of 4 weeks)        | 1   | 8.8   |
|                            | Total Suspended Solids  | milligrams per litre        | Once a month<br>(min. of 4 weeks)        | 1   | 22    |

#### 4 BLAST MONITORING

In accordance with the requirements of Conditions M7.1 (WML 1376) and M8.1 (MTO 1976), Mount Thorley Warkworth maintains a network of blast monitors to measure airblast overpressure and ground vibration for all blasts carried out at MTW. The following monitoring locations (EPA Monitoring Points 4/5, 5/6, 6/7, 7/8 and 8/9) are listed on the licences for the purpose of assessing compliance with the airblast overpressure and ground vibration criteria:

- EPA Identification Number 4 (WML 1376) and Number 5 (MTO 1976) respectively – Warkworth
- EPA Identification Number 5 (WML 1376) and Number 6 (MTO 1976) respectively – Wambo Road
- EPA Identification Number 6 (WML 1376) and Number 7 (MTO 1976) respectively – Bulga Village
- EPA Identification Number 7 (WML 1376) and Number 8 (MTO 1976) respectively – Wollemi Peak Road
- EPA Identification Number 8 (WML 1376) and Number 9 (MTO 1976) respectively – Putty Road MTIE

The last date sampled was on 28th September 2017. The data was obtained on the 11th October.

During the reporting period no blasts exceeded the 115 dB(L) or the 5mm/s threshold for airblast overpressure and ground vibration respectively.

Blast monitoring results are detailed in Tables 4 (Airblast Overpressure) and 5 (Ground Vibration).

**TABLE 4: BLAST MONITORING (AIRBLAST OVERPRESSURE)**

| Blast ID                   | Date and Time       | Unit of Measure | Monitoring Frequency & Capture | EPL Limits    |                | Monitoring Point |            |               |           |                   |
|----------------------------|---------------------|-----------------|--------------------------------|---------------|----------------|------------------|------------|---------------|-----------|-------------------|
|                            |                     |                 |                                | 95% of Blasts | 100% of Blasts | Bulga Village    | Wambo Road | Putty Rd MTIE | Warkworth | Wollemi Peak Road |
| l47-gma-md3                | 1/09/2017 10:27     | dB(L)           | All Blasts<br>100%             | 115           | 120            | 100.0            | 94.3       | 97.5          | 92.2      | 99.1              |
| w31-wnb-ps3                | 1/09/2017 12:00     | dB(L)           |                                | 115           | 120            | 90.4             | 94.8       | 96.4          | 97.3      | 94.8              |
| s22-maaj-co2               | 1/09/2017 12:26     | dB(L)           |                                | 115           | 120            | 90.3             | 97.1       | 93.9          | 88.8      | 97.6              |
| n37-blh-ptg1               | 4/09/2017 12:15     | dB(L)           |                                | 115           | 120            | 99.0             | 105.7      | 99.4          | 90.1      | 103.9             |
| w31-wnb-ps4                | 5/09/2017 12:34     | dB(L)           |                                | 115           | 120            | 97.3             | 105.9      | 113.9         | 88.1      | 106.3             |
| n30-bfbj-co3               | 5/09/2017 13:14     | dB(L)           |                                | 115           | 120            | 109.1            | 108.4      | 112.9         | 95.5      | 107.8             |
| l50-bla-pr4<br>l52-wba-ps4 | 6/09/2017 10:50     | dB(L)           |                                | 115           | 120            | 108.8            | 104.5      | 113.6         | 109.1     | 104.7             |
| n33-bfa-ps1                | 7/09/2017 12:39     | dB(L)           |                                | 115           | 120            | 88.9             | 103.1      | 106.5         | 110.2     | 101.4             |
| l47-gma-ps6                | 8/09/2017 10:46     | dB(L)           |                                | 115           | 120            | 113.8            | 103.6      | 113.3         | 97.0      | 93.7              |
| n37-blh-ptg2               | 8/09/2017 11:38     | dB(L)           |                                | 115           | 120            | 94.8             | 104.9      | 105.2         | 104.5     | 104.7             |
| n35-gmb-ps9                | 8/09/2017 11:48     | dB(L)           |                                | 115           | 120            | 89.9             | 109.7      | 112.8         | 87.9      | 106.8             |
| l52-wba-pr6<br>l47-gma-ps7 | 11/09/2017<br>12:01 | dB(L)           |                                | 115           | 120            | 99.6             | 102.8      | 97.4          | 94.1      | 104.8             |
| w31-wnb-ps5                | 11/09/2017<br>13:17 | dB(L)           |                                | 115           | 120            | 87.9             | 102.6      | 107.8         | 102.0     | 101.0             |



|                                |                     |              |  |     |     |       |       |        |       |       |
|--------------------------------|---------------------|--------------|--|-----|-----|-------|-------|--------|-------|-------|
| n37-blh-ptg3                   | 12/09/2017<br>13:16 | dB(L)        |  | 115 | 120 | 105.4 | 110.1 | 108.8  | 108.3 | 111.9 |
| l47-gmawhc-co1                 | 13/09/2017 9:51     | dB(L)        |  | 115 | 120 | 101.6 | 106.6 | 110.9  | 94.0  | 100.2 |
| l47-gma-md4                    | 14/09/2017<br>10:19 | dB(L)        |  | 115 | 120 | 94.9  | 106.7 | 112.8  | 100.5 | 92.9  |
| w31-wnb-ps6                    | 14/09/2017<br>13:08 | dB(L)        |  | 115 | 120 | 90.8  | 101.7 | 107.2  | 91.9  | 96.5  |
| n35-whf-pr2                    | 15/09/2017<br>11:21 | dB(L)        |  | 115 | 120 | 101.1 | 104.1 | 106.6  | 109.5 | 101.8 |
| w31-wnd-pr1                    | 15/09/2017<br>13:05 | dB(L)        |  | 115 | 120 | 102.6 | 96.8  | 107.50 | 107.4 | 107.0 |
| n37-blh-ptg4                   | 16/09/2017<br>12:20 | dB(L)        |  | 115 | 120 | 102.0 | 97.7  | 109.9  | 109.6 | 113.6 |
| w31-wnb-pr1                    | 20/09/2017 9:20     | dB(L)        |  | 115 | 120 | 95.3  | 94.1  | 89.0   | 90.2  | 88.8  |
| s22-floor3                     | 20/09/2017<br>11:14 | dB(L)        |  | 115 | 120 | 86.6  | 89.7  | 96.8   | 93.3  | 97.7  |
| n35-whf-pr3                    | 21/09/2017<br>12:58 | dB(L)        |  | 115 | 120 | 102.0 | 108.2 | 104.9  | 99.7  | 103.6 |
| l50-bla-pr5                    | 22/09/2017<br>11:06 | dB(L)        |  | 115 | 120 | 103.1 | 97.4  | 101.1  | 97.1  | 108.3 |
| s22-floor4                     | 27/09/2017<br>12:40 | dB(L)        |  | 115 | 120 | 95.7  | 93.3  | 92.2   | 90.5  | 75.5  |
| w31-wnb-pr2                    | 28/09/2017<br>10:48 | dB(L)        |  | 115 | 120 | 99.0  | 96.5  | 106.3  | 94.2  | 98.8  |
| wssd5-dam                      | 28/09/2017<br>12:45 | dB(L)        |  | 115 | 120 | 103.6 | 105.9 | 102.1  | 105.1 | 113.1 |
| <b>Monthly Meaningful Data</b> |                     |              |  |     |     |       |       |        |       |       |
| <b>Minimum</b>                 | <b>September</b>    | <b>dB(L)</b> |  | 115 | 120 | 86.6  | 89.7  | 89.0   | 87.9  | 75.5  |
| <b>Mean</b>                    | <b>September</b>    | <b>dB(L)</b> |  | 115 | 120 | 98.3  | 101.7 | 104.7  | 98.1  | 101.3 |
| <b>Maximum</b>                 | <b>September</b>    | <b>dB(L)</b> |  | 115 | 120 | 113.8 | 110.1 | 113.9  | 110.2 | 113.6 |

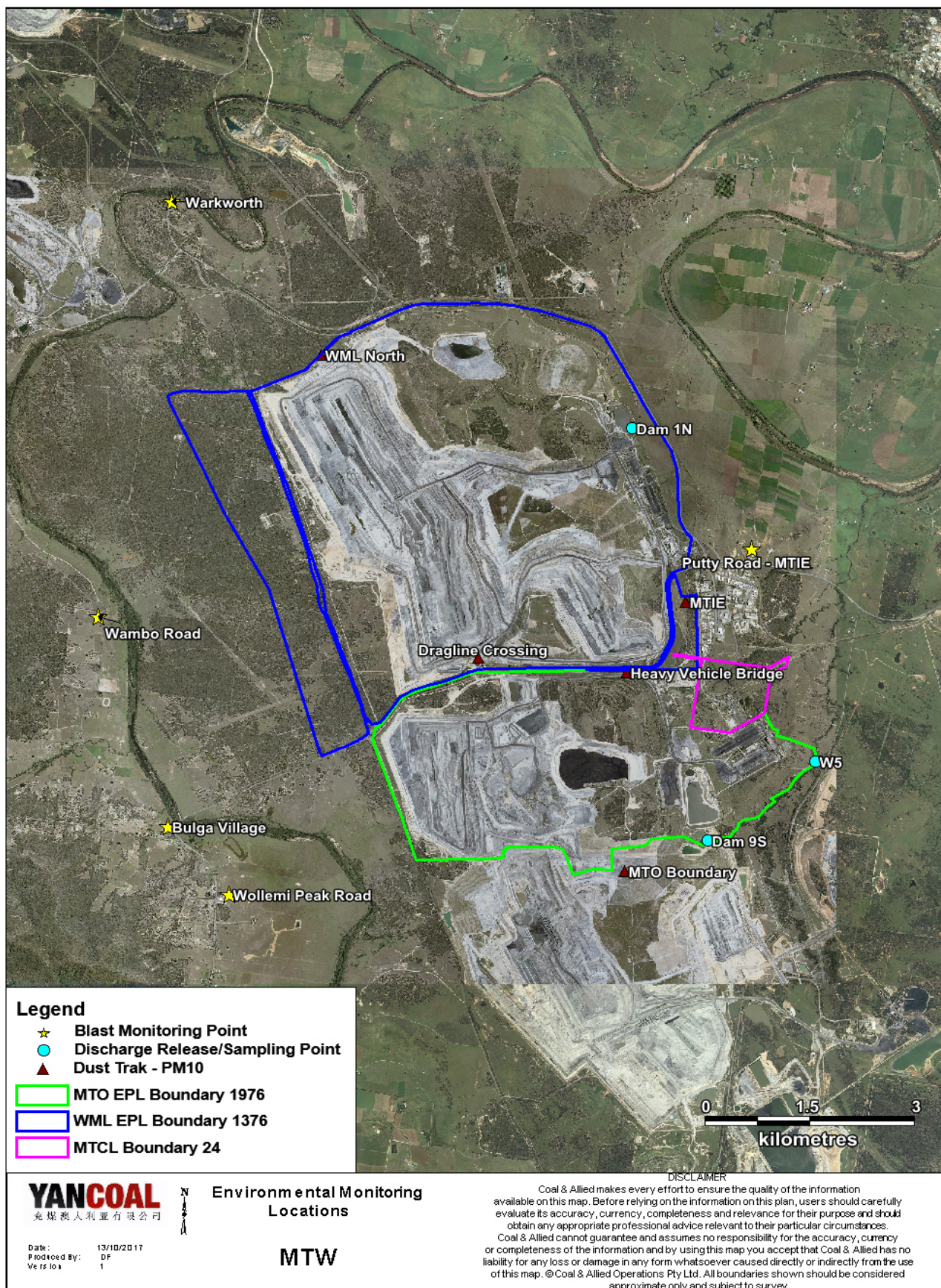
|               |                  |              |  |     |     |      |       |       |      |       |
|---------------|------------------|--------------|--|-----|-----|------|-------|-------|------|-------|
| <b>Median</b> | <b>September</b> | <b>dB(L)</b> |  | 115 | 120 | 99.0 | 103.1 | 106.5 | 97.0 | 101.8 |
|---------------|------------------|--------------|--|-----|-----|------|-------|-------|------|-------|

**TABLE 5: BLAST MONITORING (GROUND VIBRATION)**

| Blast ID                   | Date and Time   | Unit of Measure | Monitoring Frequency & Capture | EPL Limits    |                | Monitoring Point |            |               |           |                   |
|----------------------------|-----------------|-----------------|--------------------------------|---------------|----------------|------------------|------------|---------------|-----------|-------------------|
|                            |                 |                 |                                | 95% of Blasts | 100% of Blasts | Bulga Village    | Wambo Road | Putty Rd MTIE | Warkworth | Wollemi Peak Road |
| l47-gma-md3                | 1/09/2017 10:27 | mm/s            | All Blasts<br>100%             | 5             | 10             | 1.92             | 0.90       | 0.16          | 0.27      | 1.54              |
| w31-wnb-ps3                | 1/09/2017 12:00 | mm/s            |                                | 5             | 10             | 0.23             | 0.13       | 0.07          | 0.12      | 0.33              |
| s22-maaj-co2               | 1/09/2017 12:26 | mm/s            |                                | 5             | 10             | 0.05             | 0.04       | 0.08          | 0.17      | 0.05              |
| n37-blh-ptg1               | 4/09/2017 12:15 |                 |                                | 5             | 10             | 0.07             | 0.08       | 0.03          | 0.12      | 0.06              |
| w31-wnb-ps4                | 5/09/2017 12:34 | mm/s            |                                | 5             | 10             | 0.67             | 0.44       | 0.14          | 0.35      | 0.71              |
| n30-bfbj-co3               | 5/09/2017 13:14 | mm/s            |                                | 5             | 10             | 0.07             | 0.07       | 0.03          | 0.12      | 0.06              |
| l50-bla-pr4<br>l52-wba-ps4 | 6/09/2017 10:50 | mm/s            |                                | 5             | 10             | 3.02             | 1.50       | 0.20          | 0.39      | 2.35              |
| n33-bfa-ps1                | 7/09/2017 12:39 | mm/s            |                                | 5             | 10             | 0.81             | 0.58       | 0.11          | 0.89      | 0.66              |
| l47-gma-ps6                | 8/09/2017 10:46 | mm/s            |                                | 5             | 10             | 0.56             | 0.36       | 0.09          | 0.17      | 0.46              |
| n37-blh-ptg2               | 8/09/2017 11:38 | mm/s            |                                | 5             | 10             | 0.38             | 0.43       | 0.10          | 0.30      | 0.35              |
| n35-gmb-ps9                | 8/09/2017 11:48 | mm/s            |                                | 5             | 10             | 0.05             | 0.03       | 0.03          | 0.25      | 0.04              |
| l52-wba-pr6                | 11/09/2017      | mm/s            |                                | 5             | 10             | 0.50             | 0.35       | 0.08          | 0.26      | 0.55              |

|                |                     |      |  |   |    |      |      |      |      |      |
|----------------|---------------------|------|--|---|----|------|------|------|------|------|
| l47-gma-ps7    | 12:01               |      |  |   |    |      |      |      |      |      |
| w31-wnb-ps5    | 11/09/2017<br>13:17 | mm/s |  | 5 | 10 | 0.20 | 0.11 | 0.06 | 0.17 | 0.27 |
| n37-blh-ptg3   | 12/09/2017<br>13:16 | mm/s |  | 5 | 10 | 0.07 | 0.07 | 0.03 | 0.13 | 0.09 |
| l47-gmawhc-co1 | 13/09/2017 9:51     | mm/s |  | 5 | 10 | 0.09 | 0.06 | 0.03 | 0.18 | 0.10 |
| l47-gma-md4    | 14/09/2017<br>10:19 | mm/s |  | 5 | 10 | 1.64 | 0.49 | 0.12 | 0.23 | 1.26 |
| w31-wnb-ps6    | 14/09/2017<br>13:08 | mm/s |  | 5 | 10 | 0.37 | 0.30 | 0.07 | 0.18 | 0.31 |
| n35-whf-pr2    | 15/09/2017<br>11:21 | mm/s |  | 5 | 10 | 0.25 | 0.28 | 0.07 | 0.23 | 0.26 |
| w31-wnd-pr1    | 15/09/2017<br>13:05 | mm/s |  | 5 | 10 | 1.92 | 1.17 | 0.21 | 0.88 | 1.34 |
| n37-blh-ptg4   | 16/09/2017<br>12:20 | mm/s |  | 5 | 10 | 0.06 | 0.06 | 0.03 | 0.07 | 0.06 |
| w31-wnb-pr1    | 20/09/2017 9:20     | mm/s |  | 5 | 10 | 0.51 | 0.43 | 0.08 | 0.17 | 0.34 |
| s22-floor3     | 20/09/2017<br>11:14 | mm/s |  | 5 | 10 | 0.04 | 0.03 | 0.08 | 0.37 | 0.07 |
| n35-whf-pr3    | 21/09/2017<br>12:58 | mm/s |  | 5 | 10 | 0.25 | 0.31 | 0.08 | 0.32 | 0.26 |
| l50-bla-pr5    | 22/09/2017<br>11:06 | mm/s |  | 5 | 10 | 0.20 | 0.09 | 0.04 | 0.06 | 0.21 |
| s22-floor4     | 27/09/2017<br>12:40 | mm/s |  | 5 | 10 | 0.04 | 0.03 | 0.03 | 0.30 | 0.04 |
| w31-wnb-pr2    | 28/09/2017<br>10:48 | mm/s |  | 5 | 10 | 0.66 | 0.40 | 0.08 | 0.19 | 0.45 |
| wssd5-dam      | 28/09/2017<br>12:45 | mm/s |  | 5 | 10 | 0.09 | 0.07 | 0.02 | 0.04 | 0.11 |

| Monthly Meaningful Data |                  |             |  |   |    |      |      |      |      |      |
|-------------------------|------------------|-------------|--|---|----|------|------|------|------|------|
| <b>Minimum</b>          | <b>September</b> | <b>mm/s</b> |  | 5 | 10 | 0.04 | 0.03 | 0.02 | 0.04 | 0.04 |
| <b>Mean</b>             | <b>September</b> | <b>mm/s</b> |  | 5 | 10 | 0.55 | 0.33 | 0.08 | 0.26 | 0.46 |
| <b>Maximum</b>          | <b>September</b> | <b>mm/s</b> |  | 5 | 10 | 3.02 | 1.50 | 0.21 | 0.89 | 2.35 |
| <b>Median</b>           | <b>September</b> | <b>mm/s</b> |  | 5 | 10 | 0.25 | 0.28 | 0.08 | 0.19 | 0.27 |



**Figure 1 : Mount Thorley Warkworth Environmental Monitoring Locations**