



*Managed by Rio Tinto Coal Australia*

Mount Thorley Warkworth

Monthly Meaningful Summary

**Environment Protection Licence 1376**

**Environment Protection Licence 1976**

**Environment Protection Licence 24**

January 2017

**Coal & Allied Operations Pty Ltd**

ABN 16 000 023 656

Lemington Road, Ravensworth via Singleton NSW 2330 Australia

PO Box 315 Singleton NSW 2330 Australia

Telephone +61 2 6570 0300 Facsimile +61 2 6570 0399

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## **1.0 INTRODUCTION**

This report has been compiled to provide a summary of environmental monitoring results for Mount Thorley Warkworth in accordance with Environment Protection Licences 1376, 1976 and 24. This report includes all monitoring data collected in accordance with the aforementioned licences for the period 1<sup>st</sup> January – 31<sup>st</sup> January 2017.

Monitoring in this report includes:

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

## 2.0 AIR QUALITY

To monitor regional air quality, MTW operates and maintains a network of 5 Particulate Matter <10µm (PM10) Monitors (DustTrak II) on mine owned land surrounding the mining operations. The location of these monitors can be found in Appendix A – MTW Monitoring Location Plan.

### 2.1 Particulate Matter <10µm (PM10) Monitoring

#### 2.1.1 PM10 Results

Results of Particulates (PM<sub>10</sub>) monitoring (EPA Monitoring Points 9, 10, 11, 12 and 13) are shown in Table 3. 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 31<sup>st</sup> January 2017; the data was obtained on the 1<sup>st</sup> February 2017.

- 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 (PM10) monitoring (EPA Monitoring Points 9, 10, 11, 12 and 13) are shown in Table 1.

**Table 1: Particulate Matter <10µm Monitoring**

Date	Unit of Measure	Monitoring Frequency	Monitoring Point				
		Continuous	Warkworth North	MTO Boundary	Dragline Crossing	Heavy Vehicle Bridge	MTIE
1/01/2017	µg/m <sup>3</sup>		31.2	#	30.7	31.4	25.5
2/01/2017	µg/m <sup>3</sup>		21.7	#	24.2	23.2	17.3
3/01/2017	µg/m <sup>3</sup>		14.9	#	13.8	15.2	10.6
4/01/2017	µg/m <sup>3</sup>		8.0	#	7.7	10.4	4.8
5/01/2017	µg/m <sup>3</sup>		10.1	#	8.9	11.3	5.7
6/01/2017	µg/m <sup>3</sup>		12.5	#	9.2	16.4	5.4

7/01/2017	µg/m <sup>3</sup>
8/01/2017	µg/m <sup>3</sup>
9/01/2017	µg/m <sup>3</sup>
10/01/2017	µg/m <sup>3</sup>
11/01/2017	µg/m <sup>3</sup>
12/01/2017	µg/m <sup>3</sup>
13/01/2017	µg/m <sup>3</sup>
14/01/2017	µg/m <sup>3</sup>
15/01/2017	µg/m <sup>3</sup>
16/01/2017	µg/m <sup>3</sup>
17/01/2017	µg/m <sup>3</sup>
18/01/2017	µg/m <sup>3</sup>
19/01/2017	µg/m <sup>3</sup>
20/01/2017	µg/m <sup>3</sup>
21/01/2017	µg/m <sup>3</sup>
22/01/2017	µg/m <sup>3</sup>
23/01/2017	µg/m <sup>3</sup>
24/01/2017	µg/m <sup>3</sup>
25/01/2017	µg/m <sup>3</sup>
26/01/2017	µg/m <sup>3</sup>
27/01/2017	µg/m <sup>3</sup>
28/01/2017	µg/m <sup>3</sup>
29/01/2017	µg/m <sup>3</sup>
30/01/2017	µg/m <sup>3</sup>
31/01/2017	µg/m <sup>3</sup>

10.4	#	6.9	14.2	4.7
12.8	#	14.4	12.0	7.9
17.4	#	28.5	21.6	14.9
17.8	#	24.8	17.6	14.3
16.6	#	40.2	26.5	7.9
25.9	#	27.7	29.7	9.5*
15.9	#	31.6	20.6	5.4
15.1	#	30.8	20.8	4.1
26.5	#	28.6	27.0	4.3
22.2	#	21.9	21.8	3.8
14.3	#	34.3	18.7	4.5
12.9	#	28.1	15.9	3.3
19.3	#	18.0	16.0	2.4
13.0	#	23.6	14.9	4.5
16.4	#	17.6	16.0	5.5
17.0	#	16.4	13.2	3.4
17.0	#	26.5	13.3	4.5
13.4	#	39.8	17.9	6.0
17.2	#	16.5	14.2	3.4
32.6	#	32.5	28.5	10.9
18.5	#	16.5	16.4	4.8
14.6	#	19.5	15.2	4.3
20.7	#	27.9	26.0	10.3
24.5*	#	47.3*	27.4*	11.5*
15.7	#	37.7	20.5	7.5

\*24hr average has been calculated with the exclusion of 1 or more 10 minute average values due to equipment or communications issue

# Data unavailable due to equipment or communications issue

## 3.0 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**

### 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**

The location of these sampling points can be found in Appendix A – MTW Monitoring Locations Plan.

Result of monitoring undertaken from W5 – Loders Creek is detailed in Table 2.

**Table 2: Hunter River Tributaries Monitoring**

	Pollutant	unit of measure	No. of samples required by licence	No. of samples you collected and analysed	Lowest sample value	Mean of sample	Highest sample value	Median
Loders Creek / EPL Point 3	Conductivity	microsiemens per centimetre	1	1	11750	11750	11750	11750
	pH	pH	1	1	7.6	7.6	7.6	7.6
	Total Suspended Solids	milligrams per litre	1	1	26	26	26	26

## 4.0 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; and**
- EPA Identification Number 8 (WML 1376) and Number 9 (MTO 1976) respectively – **Putty Road MTIE**

The location of these monitors can be found in Appendix A – Mount Thorley Warkworth Environmental Monitoring Locations.

Blast monitoring results are detailed in Table 3.

Compliance Summary:

During the reporting period no blasts exceeded the 115 dB(L) threshold for airblast overpressure or the 5mm/s threshold for ground vibration. Detailed blast results may be viewed in Obtained Data Report for January 2017.

**Table 3: Blast Monitoring**

	<b>Pollutant</b>	<b>Unit of Measure</b>	<b>No. of samples required by licence</b>	<b>No. of samples collected and analysed</b>	<b>lowest sample value</b>	<b>mean of sample</b>	<b>highest sample value</b>	<b>Median</b>
<b>Bulga Village</b>		dB(L)	36	36	83.6	96.0	107.2	96.3
<b>Wambo Road</b>		dB(L)	36	36	84.4	99.1	111.3	98.8
<b>Putty Rd MTIE</b>		dB(L)	36	36	87.1	102.9	113.9	103.3
<b>Warkworth</b>		dB(L)	36	36	81.7	96.1	112.9	95.5
<b>Wollemi Peak Road</b>		dB(L)	36	36	84.8	100.9	114.0	100.2
<b>Bulga Village</b>		mm/s	36	36	0.02	0.41	2.66	0.20
<b>Wambo Road</b>		mm/s	36	36	0.02	0.32	1.83	0.15
<b>Putty Rd MTIE</b>		mm/s	36	36	0.03	0.13	0.58	0.08
<b>Warkworth</b>		mm/s	36	36	0.05	0.29	1.77	0.21
<b>Wollemi Peak Road</b>		mm/s	36	36	0.03	0.39	2.15	0.17



## **Appendix A: Mount Thorley Warkworth Monitoring Location Plans**



# Mount Thorley Warkworth

## Environmental Monitoring Locations

Date: 161116  
Plan By: DF  
Version: 3.0

### Legend

- ★ Blast Monitoring Point
- Discharge Release/Sampling Point
- ▲ Dust Trak - PM10
- ▭ EPL Boundary



RTCA - NSW Environmental Services

Figure 1: Mount Thorley Warkworth Environmental Monitoring Locations