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Hunter Valley Operations

Monthly Meaningful Summary

Environment Protection Licence 640

April 2017

Date Published: 18th May 2017

EPA public register: http://www.epa.nsw.gov.au/publicregister/

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1.0 INTRODUCTION

This report has been compiled to provide a summary of environmental monitoring results for Hunter Valley Operations (HVO) in accordance with Environment Protection Licence (EPL) 640. This report includes all monitoring data collected in accordance with EPL 640 for the period 1st April – 30th April 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, HVO operates and maintains a network of 5 Particulate Matter <10µm (PM10) Monitors (TEOM's) on private land surrounding the mining operations. The location of these monitors can be found in Appendix A – HVO Monitoring Locations Plan.

2.1 Particulate Matter <10µm (PM10) Monitoring

2.1.1 PM10 Results

Results of Particulates (PM_{10}) monitoring (EPA Monitoring Points 13, 14, 15, 16 and 17) are shown in Table 3. Results reported represent the 24hr average PM_{10}, derived from 10 minute average PM_{10} values for the period midnight to midnight, for each calendar date during the reporting period. The last sampling date was 30th April 2017; the data was obtained on the 1st May 2017.

- EPA Identification Number 13 **– Howick**
- EPA Identification Number 14 – **HC1**
- EPA Identification Number 15 – **Wandewoi**
- EPA Identification Number 16 – **Knodlers**
- EPA Identification Number 17 – **Golden Highway**

Results of Particulates (PM10) monitoring (EPA Monitoring Points 13, 14, 15, 16 and 17) are shown in Table 1.

Table 1: Particulate Matter <10µm Monitoring

Date	Unit of Measure	Monitoring Frequency	Monitoring Point				
		Continuous	Howick	HC1	Wandewoi	Knodlers	Golden Highway
1/04/2017	µg/m³		16.2	20.6	13.9	11.8	19.1
2/04/2017	µg/m³		17.2	18.8	10.2	11.4	22.3
3/04/2017	µg/m³		11.2	13.4	7.1	8.7	16.8
4/04/2017	µg/m³		12.9	12.2	6.9	8.6	17.7
5/04/2017	µg/m³		11.8	11.9	8.8	6.7	13.4
6/04/2017	µg/m³		13.6	17.6	8.1	9.0	20.3

7/04/2017	µg/m³		14.6	#	11.5	7.5	16.2
8/04/2017	µg/m³		20.9	37.5	11.5	8.8	14.8
9/04/2017	µg/m³		15.1	39.6	7.3	13.5	19.1
10/04/2017	µg/m³		41.5	67.8	34.4	39.8	38.4
11/04/2017	µg/m³		24.6	29.8	15.1	16.2	23.2
12/04/2017	µg/m³		21.1	24.3	8.7	12.4	27.7
13/04/2017	µg/m³		20.0	15.6	10.1	10.7	20.6
14/04/2017	µg/m³		27.9	52.3	15.0	14.2	23.9
15/04/2017	µg/m³		29.1	#	15.4	21.0	31.6
16/04/2017	µg/m³		35.1	64.4	20.2	21.9	33.0
17/04/2017	µg/m³		40.5	61.5	25.6	21.6	40.2
18/04/2017	µg/m³		33.0	#	21.2	15.5	26.5
19/04/2017	µg/m³		31.2	#	17.4	14.1	26.6
20/04/2017	µg/m³		19.0	23.1	12.4	9.6	19.8
21/04/2017	µg/m³		30.3	80.3	14.8	18.2	25.0
22/04/2017	µg/m³		22.2	52.2	11.1	14.0	27.3
23/04/2017	µg/m³		25.9	33.9	9.5	14.0	24.2
24/04/2017	µg/m³		#	#	#	#	#
25/04/2017	µg/m³		22.7	57.8	11.4	17.8	21.3
26/04/2017	µg/m³		3.5	46.8	3.4	8.6	5.1
27/04/2017	µg/m³		5.8	17.5	3.1	9.7	10.2
28/04/2017	µg/m³		19.8	24.1	12.3	9.1	22.1
29/04/2017	µg/m³		18.8	55.5	10.1	14.0	17.6
30/04/2017	µg/m³		22.7	62.3	16.0	13.2	32.3

Data unavailable due to equipment or communications issue

3.0 SURFACE WATER

3.1 Mine Water Discharge Monitoring

HVO participates in the Hunter River Salinity Trading Scheme (HRSTS), and maintains six monitoring locations associated with this scheme (EPA Monitoring Points 3, 4, 5, 6, 7 and 8, Condition M2.3) as follows:

- EPA Identification Number 3 **– Discharge Pipe from Dam 11N**
- EPA Identification Number 4 – **Discharge end of outlet pipe on Parnell's Dam**
- EPA Identification Number 5 – **At the discharge end of the alluvial lands discharge pipeline**
- EPA Identification Number 6 – **In Farrell's Creek within 100m, and upstream of the confluence of flow from POINT 3**
- EPA Identification Number 7 – **In Farrell's Creek within 100m, and downstream of the confluence of flow from POINT 3**
- EPA Identification Number 8 – **Outlet of discharge pipe from Lake James storage dam**

The location of these sampling points can be found in Appendix A –HVO Monitoring Location Plan

Hunter Valley Operations did not receive any discharge opportunities in the reporting period and no water was discharged. As such, no samples were collected at Monitoring Points 3, 4, 5, 6, 7 and 8 during the reporting period (shown in Table 2 below).

Table 2: Mine Water Discharge Monitoring

	Pollutant	Unit of measure	Licence Limits	No. of samples required by licence	No. of samples you collected and analysed	Lowest sample value	Mean of sample	Highest sample value	Median
Dam 11N Discharge / EPL Point 3	Conductivity	microsiemens per centimetre		0	0	-	-	-	-
	pH	pH	6.5 - 9.5	0	0	-	-	-	-
	Total Suspended Solids	milligrams per litre	120	0	0	-	-	-	-
Parnell's Dam Discharge / EPL Point 4	Conductivity	microsiemens per centimetre		0	0	-	-	-	-
	pH	pH	6.5 - 9.5	0	0	-	-	-	-
	Total Suspended Solids	milligrams per litre	120	0	0	-	-	-	-
Alluvial Lands Discharge / EPL	Conductivity	microsiemens per centimetre	400	0	0	-	-	-	-
	pH	pH		0	0	-	-	-	-

Point 5									
	Total Suspended Solids	milligrams per litre		0	0	-	-	-	-
Farrell's Creek Upstream / EPL Point 6	Conductivity	microsiemens per centimetre		0	0	-	-	-	-
	pH	pH		0	0	-	-	-	-
	Total Suspended Solids	milligrams per litre		0	0	-	-	-	-
Farrell's Creek Downstream / EPL Point 7	Conductivity	microsiemens per centimetre		0	0	-	-	-	-
	pH	pH		0	0	-	-	-	-
	Total Suspended Solids	milligrams per litre		0	0	-	-	-	-
Lake James Discharge / EPL Point 8	Conductivity	microsiemens per centimetre		0	0	-	-	-	-
	pH	pH	6.5 - 9.5	0	0	-	-	-	-
	Total Suspended Solids	milligrams per litre	120	0	0	-	-	-	-

4.0 BLAST MONITORING

4.1 Blast Monitoring

In accordance with the requirements of Condition M8.1, Hunter Valley Operations maintains a network of blast monitors to measure airblast overpressure and ground vibration for all blasts carried out at HVO. The following monitoring locations (EPA Monitoring Points 9, 10, 11 and 12) are listed on the licence for the purpose of assessing compliance with the airblast overpressure and ground vibration criteria:

- EPA Identification Number 9 **– Jerry's Plains**
- EPA Identification Number 10 – **Moses Crossing**
- EPA Identification Number 11 – **Warkworth**
- EPA Identification Number 12 – **Maison Dieu**

The location of these monitors can be found in Appendix A – Hunter Valley Operations Monitoring Locations. The last date sampled was the 30th April 2017. The data was obtained on the 5th May.

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.

During the reporting period no blasts exceeded the 5.0mm/s threshold ground vibration. Detailed blast results may be viewed in Obtained Data Report for April 2017.

Table 3: Blast Monitoring

	Pollutant	Unit of Measure	No. of samples required by licence	No. of samples collected and analysed	lowest sample value	mean of sample	highest sample value	Median
Moses Crossing	**Airblast Overpressure**	dB(L)	22	22	83.38	97.37	110.10	96.58
Jerrys Plains		dB(L)	22	22	84.94	93.95	103.36	93.95
Maison Dieu		dB(L)	22	22	80.98	96.58	113.51	97.65
Warkworth		dB(L)	22	22	86.70	94.84	106.79	92.15
Moses Crossing	**Ground Vibration**	mm/s	22	22	0.03	0.17	0.42	0.15
Jerrys Plains		mm/s	22	22	0.02	0.08	0.15	0.09
Maison Dieu		mm/s	22	22	0.04	0.22	0.93	0.10
Warkworth		mm/s	22	22	0.07	0.40	1.76	0.20

Appendix A: Hunter Valley Operations Monitoring Location Plans

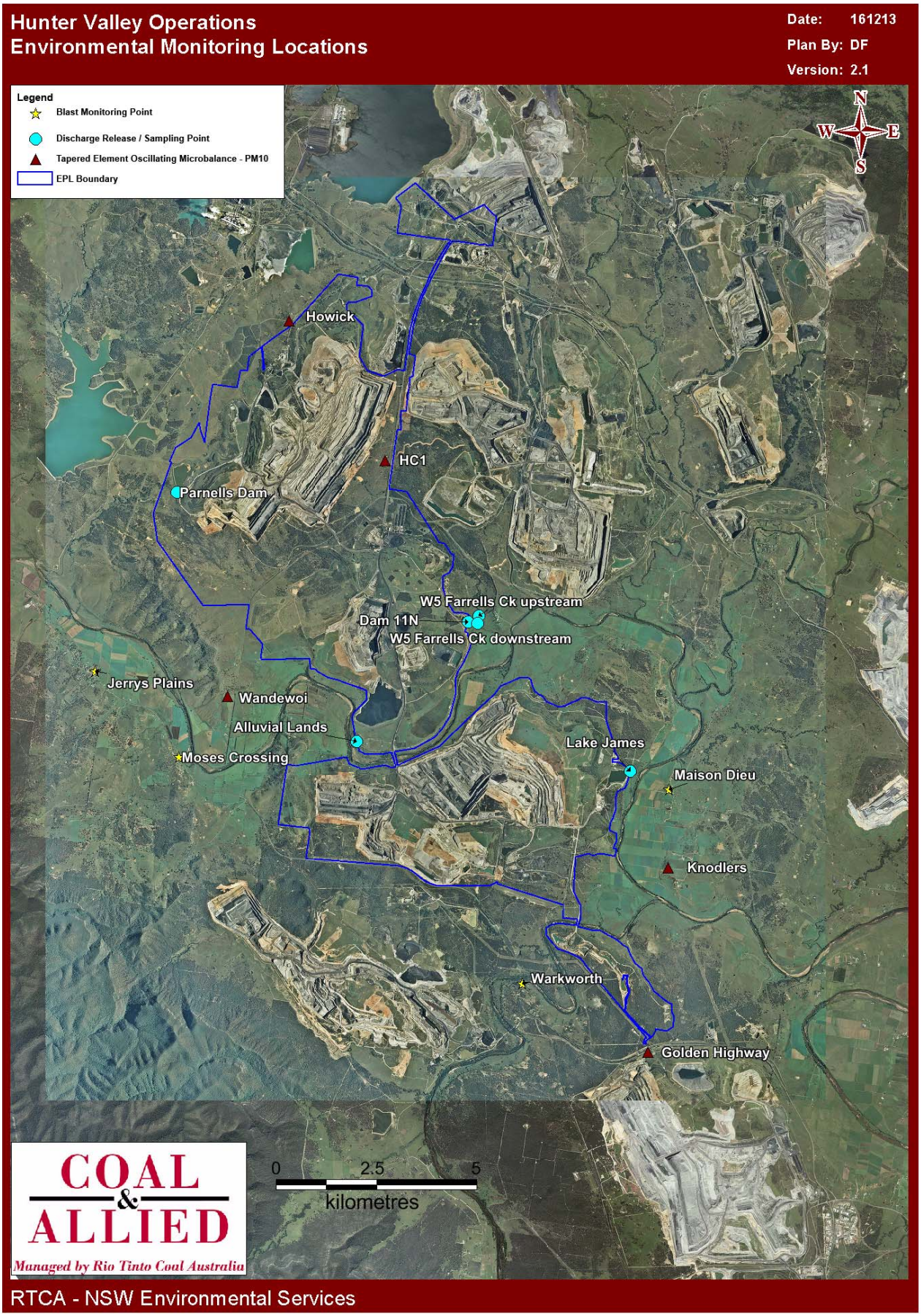

Figure 1 Hunter Valley Operations Environmental Monitoring Locations