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Hunter Valley Operations

Monthly Obtained Data Summary

Environment Protection Licence 640

July 2017

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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 July – 31st July 2017. The Environmental Protection Licence 640 can be viewed in full at the following address:

http://www.epa.nsw.gov.au/prpoeoapp/ViewPOEOLicence.aspx?DOCID=112656&SYSUID=1&LICID=640

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) 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 PM_{10} Results

In accordance with the requirements of Condition M2.2 (EPL 640), Hunter Valley Operations maintains a network of five PM_{10} monitors. The following monitoring locations (EPA Monitoring Points 13, 14, 15, 16 and 17) are listed on the licences for the purpose of monitoring:

- 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. Results reported represent the 24hr average PM10, derived from 10 minute average PM10 values for the period midnight to midnight, for each calendar date during the reporting period. The last sampling date was 31st July 2017; the data was obtained on the 1st August 2017.

Table 1: Particulate Matter <10µm Monitoring

Date	Unit of Measure	Monitoring Frequency	Monitoring Point				
			Howick	HC1	Wandewoi	Knodlers	Golden Highway
1/07/2017	µg/m³	Continuous	19.4	#	13.1	12.5	28.3
2/07/2017	µg/m³		20.6	47.8	6.3	10.0	21.2
3/07/2017	µg/m³		18.4	42.3	7.2	11.4	19.8
4/07/2017	µg/m³		13.5	#	4.0	25.4	13.2
5/07/2017	µg/m³		17.7	29.3	2.6	43.4	11.2

6/07/2017	µg/m³	13.0	33.6	2.6	24.2	14.2
7/07/2017	µg/m³	17.8	40.2	2.5	24.6	12.2
8/07/2017	µg/m³	17.8	42.9	4.0	30.9	10.1
9/07/2017	µg/m³	11.9	44.8	3.7	29.1	14.6
10/07/2017	µg/m³	21.0	41.8	3.4	16.0	18.8
11/07/2017	µg/m³	33.4	21.7	9.0	14.7	29.4
12/07/2017	µg/m³	26.4	#	15.7	19.4	35.4
13/07/2017	µg/m³	23.1	#	26.9	10.1	#
14/07/2017	µg/m³	#	#	#	#	#
15/07/2017	µg/m³	13.0	24.5	4.1	11.0	13.8
16/07/2017	µg/m³	21.9	62.6	12.3	10.9	35.2
17/07/2017	µg/m³	24.5	65.5	8.1	12.4	29.6
18/07/2017	µg/m³	16.2	#	6.0	18.8	24.6
19/07/2017	µg/m³	13.3	#	4.5	22.4	9.5
20/07/2017	µg/m³	9.3	#	5.1	17.3	9.9
21/07/2017	µg/m³	22.6	#	11.7	18.4	29.7
22/07/2017	µg/m³	21.1	#	9.1	23.1	19.8
23/07/2017	µg/m³	18.0	67.1	10.5	30.3	21.3
24/07/2017	µg/m³	14.8	47.9	5.1	39.0	15.8
25/07/2017	µg/m³	#	#	#	#	#
26/07/2017	µg/m³	21.7	#	11.0	#	21.8
27/07/2017	µg/m³	29.8	#	19.1	19.8	23.6
28/07/2017	µg/m³	16.2	#	17.5	31.5	18.8
29/07/2017	µg/m³	14.7	#	7.3	41.0	21.1
30/07/2017	µg/m³	28.0	#	8.4	73.1	31.7
31/07/2017	µg/m³	36.9	#	47.2	33.3	70.0

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 viewed 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: 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 11N Discharge / EPL Point 3	N/A	Electrical 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	N/A	Electrical 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 Point 5	N/A	Electrical Conductivity	microsiemens per centimetre	400	0	0
		pH	pH	-	0	0
		Total Suspended Solids	milligrams per litre	-	0	0
Farrell's Creek Upstream / EPL Point 6	N/A	Electrical 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	N/A	Electrical Conductivity	microsiemens per centimetre	-	0	0
		pH	pH	-	0	0
		Total Suspended Solids	milligrams per litre	-	0	0
Lake James Discharge / EPL Point 8	N/A	Electrical 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 as follows:

- 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 29th July 2017. The data was obtained on the 4th August.

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

Blast monitoring results are detailed in Table 3 (Airblast Overpressure) and Table 4 (Ground Vibration).

Table 3: Blast Monitoring – Airblast Overpressure

Blast ID	Date and Time	Unit of Measure	EPL Limits		Monitoring Point			
			Only 5% of blasts can exceed 115db(L) during the reporting period	Blasts can not exceed 120dB(L)	Moses Crossing	Jerrys Plains	Maison Dieu	Warkworth
P203P0601B	1/07/2017 16:01	dB(L)	115	120	88.8	85.7	97.2	94.6
P203P0601C	5/07/2017 10:20	dB(L)	115	120	94.2	90.2	104.0	98.8
P204M0113A	5/07/2017 10:26	dB(L)	115	120	88.6	102.6	106.3	104.3
WN43UPG11A	5/07/2017 13:09	dB(L)	115	120	88.2	98.8	107.0	88.2
P121M0801A, P119SUMP01A	6/07/2017 13:08	dB(L)	115	120	89.3	110.4	110.6	104.5
P203M0113B	10/07/2017 14:16	dB(L)	115	120	93.7	103.7	103.5	96.2
P119R0107A	11/07/2017 13:04	dB(L)	115	120	87.1	75.6	82.0	84.2
RW23AFA01A	12/07/2017 11:08	dB(L)	115	120	95.3	85.9	92.9	89.3
P118R8P01A	14/07/2017 16:07	dB(L)	115	120	88.9	109.3	106.9	109.2
P119R6P02A	14/07/2017 16:07	dB(L)	115	120	101.9	108.1	106.9	109.2
WN39BAR01A	15/07/2017 13:02	dB(L)	115	120	91.4	85.8	96.6	89.6
WN43UPG09A	19/07/2017 10:18	dB(L)	115	120	93.2	105.1	98.6	91.5
P207WK601A	20/07/2017 9:16	dB(L)	115	120	86.0	102.8	104.1	99.8
P118R0801A	21/07/2017 12:10	dB(L)	115	120	96.9	90.7	104.4	95.9
P123H3001A	25/07/2017 14:27	dB(L)	115	120	96.4	94.6	101.6	95.5
P203P0603A	27/07/2017 12:08	dB(L)	115	120	91.4	89.2	100.6	96.6
RW23AFA01B	28/07/2017 13:19	dB(L)	115	120	95.8	107.0	114.5	101.6
RW24WHG02A	28/07/2017 13:33	dB(L)	115	120	101.9	96.9	109.1	102.8
RW30PRE01A	28/07/2017 13:33	dB(L)	115	120	103.1	100.1	110.7	100.8
P121M0802A	29/07/2017 13:07	dB(L)	115	120	90.8	107.3	112.6	102.9

Table 4: Blast Monitoring – Ground Vibration

Blast ID	Date and Time	Unit of Measure	EPL Limits		Monitoring Point			
			Only 5% of blasts may exceed 5 mm/s during the reporting period	Blasts may not exceed 10 mm/s	Moses Crossing	Jerrys Plains	Maison Dieu	Warkworth
P203P0601B	1/07/2017 16:01	mm/s	5	10	0.04	0.03	0.30	0.20
P203P0601C	5/07/2017 10:20	mm/s	5	10	0.04	0.02	0.18	0.11
P204M0113A	5/07/2017 10:26	mm/s	5	10	0.15	0.14	0.55	0.92
WN43UPG11A	5/07/2017 13:09	mm/s	5	10	0.13	0.08	0.09	0.09
P121M0801A, P119SUMP01A	6/07/2017 13:08	mm/s	5	10	0.08	0.04	0.08	0.17
P203M0113B	10/07/2017 14:16	mm/s	5	10	0.15	0.08	0.50	0.76
P119R0107A	11/07/2017 13:04	mm/s	5	10	0.06	0.05	0.07	0.06
RW23AFA01A	12/07/2017 11:08	mm/s	5	10	0.09	0.03	0.03	0.11
P118R8P01A	14/07/2017 16:07	mm/s	5	10	0.15	0.07	0.21	0.33
P119R6P02A	14/07/2017 16:07	mm/s	5	10	0.09	0.06	0.15	0.18
WN39BAR01A	15/07/2017 13:02	mm/s	5	10	0.19	0.19	0.12	0.09
WN43UPG09A	19/07/2017 10:18	mm/s	5	10	0.09	0.08	0.08	0.63
P207WK601A	20/07/2017 9:16	mm/s	5	10	0.06	0.03	0.25	0.32
P118R0801A	21/07/2017 12:10	mm/s	5	10	0.27	0.13	0.28	0.49
P123H3001A	25/07/2017 14:27	mm/s	5	10	0.18	0.08	0.21	0.55
P203P0603A	27/07/2017 12:08	mm/s	5	10	0.04	0.04	0.21	0.28
RW23AFA01B	28/07/2017 13:19	mm/s	5	10	0.09	0.05	0.04	0.10
RW24WHG02A	28/07/2017 13:33	mm/s	5	10	0.40	0.13	0.11	0.33
RW30PRE01A	28/07/2017 13:33	mm/s	5	10	0.40	0.09	0.16	0.51
P121M0802A	29/07/2017 13:07	mm/s	5	10	0.08	0.04	0.15	0.25

Appendix A: Hunter Valley Operations Monitoring Locations Plan

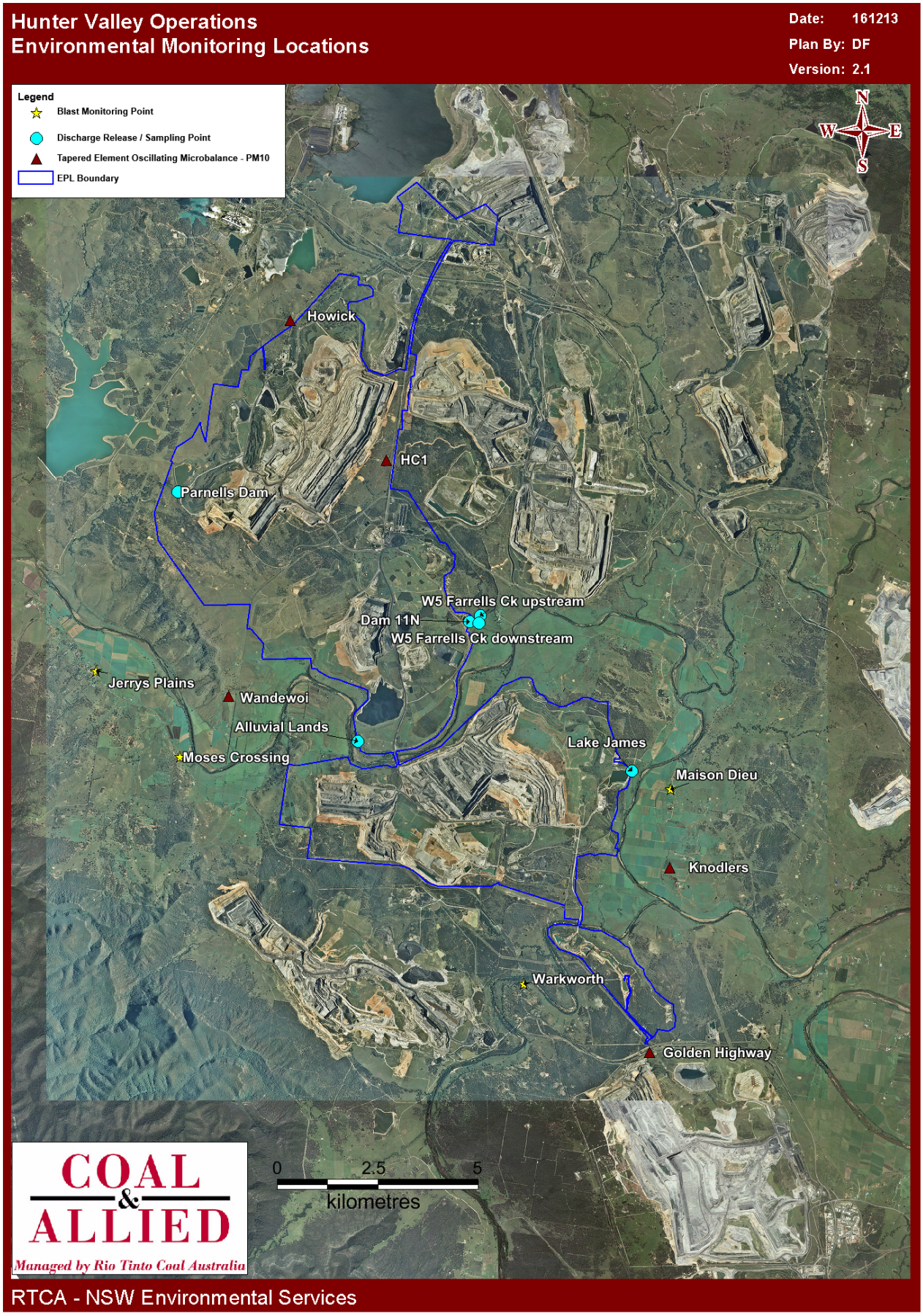

Figure 1 Hunter Valley Operations Environmental Monitoring Locations