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# Hunter Valley Operations

## Monthly Obtained Data Summary

**Environment Protection Licence 640**

June 2017

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

Licensee:

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Premises:

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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 1<sup>st</sup> June – 30<sup>th</sup> June 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<sub>10</sub> Results

In accordance with the requirements of Condition M2.2 (EPL 640), Hunter Valley Operations maintains a network of five PM<sub>10</sub> 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 30<sup>th</sup> June 2017; the data was obtained on the 3<sup>rd</sup> July 2017.

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

Date	Unit of Measure	Monitoring Frequency	Monitoring Point				
			Howick	HC1	Wandewoi	Knodlers	Golden Highway
		<b>Continuous</b>					
1/06/2017	µg/m <sup>3</sup>		18.2	74.1	7.6	22.0	35.6
2/06/2017	µg/m <sup>3</sup>		24.4	#	8.3	17.2	23.1
3/06/2017	µg/m <sup>3</sup>		24.0	42.3	8.6	18.7	32.4

4/06/2017	µg/m <sup>3</sup>
5/06/2017	µg/m <sup>3</sup>
6/06/2017	µg/m <sup>3</sup>
7/06/2017	µg/m <sup>3</sup>
8/06/2017	µg/m <sup>3</sup>
9/06/2017	µg/m <sup>3</sup>
10/06/2017	µg/m <sup>3</sup>
11/06/2017	µg/m <sup>3</sup>
12/06/2017	µg/m <sup>3</sup>
13/06/2017	µg/m <sup>3</sup>
14/06/2017	µg/m <sup>3</sup>
15/06/2017	µg/m <sup>3</sup>
16/06/2017	µg/m <sup>3</sup>
17/06/2017	µg/m <sup>3</sup>
18/06/2017	µg/m <sup>3</sup>
19/06/2017	µg/m <sup>3</sup>
20/06/2017	µg/m <sup>3</sup>
21/06/2017	µg/m <sup>3</sup>
22/06/2017	µg/m <sup>3</sup>
23/06/2017	µg/m <sup>3</sup>
24/06/2017	µg/m <sup>3</sup>
25/06/2017	µg/m <sup>3</sup>
26/06/2017	µg/m <sup>3</sup>
27/06/2017	µg/m <sup>3</sup>
28/06/2017	µg/m <sup>3</sup>
29/06/2017	µg/m <sup>3</sup>
30/06/2017	µg/m <sup>3</sup>

#	#	15.6	12.2	32.3
19.8	49.9	7.2	12.5	24.1
15.3	32.9	4.9	23.6	14.1
9.3	18.7	3.8	6.7	10.8
7.4	15.0	4.5	9.7	13.7
13.3	18.2	6.2	9.5	14.3
12.9	9.9	4.8	5.2	11.6
16.7	12.7	10.0	8.4	19.1
21.1	24.9	10.8	11.5	32.7
18.6	16.0	7.0	13.9	22.3
17.2	17.3	7.3	12.1	21.0
15.9	28.5	16.9	10.3	23.8
22.2	52.0	12.6	#	29.5
26.7	38.0	14.4	21.6	32.8
23.0	21.1	10.3	18.3	32.4
28.3	21.7	10.5	13.7	33.0
23.6	#	7.5	10.6	31.8
32.1	17.9	9.2	11.1	20.3
25.4	#	14.1	12.5	31.7
18.2	57.2	43.4	#	17.4
16.1	72.5	30.1	29.2	17.4
17.0	80.4	34.6	29.6	23.5
23.2	50.1	#	20.9	28.9
37.6	#	#	23.1	42.0
18.0	#	3.8	22.4	24.6
6.3	14.1	1.0	6.8	13.0
10.4	20.2	5.8	7.9	15.5

# 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 30<sup>th</sup> June 2017. The data was obtained on the 7<sup>th</sup> July.

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
WW27LPG02A	1/06/2017 11:40	dB(L)	115	120	83.1	95.5	84.3	89.2
P205WK607A	2/06/2017 13:03	dB(L)	115	120	97.9	100.6	106.9	106.1
P203P04A	3/06/2017 14:31	dB(L)	115	120	97.8	86.1	103.2	99.6
P121M0601B	5/06/2017 16:29	dB(L)	115	120	88.7	83.3	96.8	97.9
RW22BFA01A RW23BFP01A	6/06/2017 12:10	dB(L)	115	120	96.2	110.7	113.7	106.4
P116BAC02A, P116BAC03A	8/06/2017 14:03	dB(L)	115	120	99.5	100.1	107.4	100.6
WN43UPG08A	9/06/2017 13:00	dB(L)	115	120	97.6	98.1	79.1	87.9
P201R6P01A	13/06/2017 16:17	dB(L)	115	120	103.6	94.8	99.2	93.9
P203P0601A	13/06/2017 16:20	dB(L)	115	120	96.8	97.7	87.1	91.1
P204M0110A	14/06/2017 11:34	dB(L)	115	120	99.3	96.3	102.3	94.2
P121M0601C, P201R6P01B	14/06/2017 14:22	dB(L)	115	120	96.9	96.0	87.1	87.2
WW27UAP01B, WW27UAA02A	16/06/2017 16:03	dB(L)	115	120	88.9	96.5	86.1	87.5
WS43BAY10A	19/06/2017 13:19	dB(L)	115	120	95.8	104.2	101.9	89.2
WS39ULD01A, WN41ULDC2A	19/06/2017 13:19	dB(L)	115	120	100.0	104.2	106.2	86.0
WN43UPG08B, WN43UPP02A	20/06/2017 13:07	dB(L)	115	120	92.1	101.7	94.7	95.1
P203P0402B	21/06/2017 15:38	dB(L)	115	120	82.9	82.3	96.4	96.1
P204M0111A, P204M1P06A	21/06/2017 15:40	dB(L)	115	120	91.0	89.7	103.0	94.6
P116BAC04A	23/06/2017 15:44	dB(L)	115	120	100.4	95.6	97.9	97.7

P117R0606A	23/06/2017 15:47	dB(L)	115	120	88.9	87.1	99.1	104.5
WW27UAA03A	26/06/2017 12:38	dB(L)	115	120	90.8	93.6	108.5	88.8
P204M0112A	27/06/2017 12:12	dB(L)	115	120	99.7	103.6	108.3	99.1
RW22BFA02A, RW23BFP01B	28/06/2017 13:00	dB(L)	115	120	104.2	96.9	97.3	98.0
WN44BAY05A, WN43LEC01A	29/06/2017 12:03	dB(L)	115	120	93.1	94.7	102.9	95.5
P119R0106A	30/06/2017 15:07	dB(L)	115	120	90.4	93.1	95.8	97.4

**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
WW27LPG02A	1/06/2017 11:40	mm/s	5	10	0.08	0.07	0.05	0.07
P205WK607A	2/06/2017 13:03	mm/s	5	10	0.16	0.16	0.47	1.07
P203P04A	3/06/2017 14:31	mm/s	5	10	0.03	0.02	0.07	0.10
P121M0601B	5/06/2017 16:29	mm/s	5	10	0.22	0.07	0.23	0.58
RW22BFA01A RW23BFP01A	6/06/2017 12:10	mm/s	5	10	0.37	0.15	0.10	0.40
P116BAC02A, P116BAC03A	8/06/2017 14:03	mm/s	5	10	0.14	0.06	0.34	0.40
WN43UPG08A	9/06/2017 13:00	mm/s	5	10	0.05	0.07	0.05	0.06
P201R6P01A	13/06/2017 16:17	mm/s	5	10	0.08	0.08	0.45	0.24
P203P0601A	13/06/2017 16:20	mm/s	5	10	0.05	0.08	0.17	0.28
P204M0110A	14/06/2017 11:34	mm/s	5	10	0.09	0.06	0.44	0.72
P121M0601C, P201R6P01B	14/06/2017 14:22	mm/s	5	10	0.07	0.03	0.05	0.47
WW27UAP01B, WW27UAA02A	16/06/2017 16:03	mm/s	5	10	0.19	0.10	0.08	0.07
WS43BAY10A	19/06/2017 13:19	mm/s	5	10	0.26	0.15	0.09	0.11
WS39ULD01A, WN41ULDC2A	19/06/2017 13:19	mm/s	5	10	0.26	0.15	0.09	0.10

WN43UPG08B, WN43UPP02A	20/06/2017 13:07	mm/s	5	10	0.06	0.06	0.07	0.07
P203P0402B	21/06/2017 15:38	mm/s	5	10	0.02	0.02	0.02	0.52
P204M0111A, P204M1P06A	21/06/2017 15:40	mm/s	5	10	0.23	0.12	0.86	1.71
P116BAC04A	23/06/2017 15:44	mm/s	5	10	0.09	0.07	0.14	0.23
P117R0606A	23/06/2017 15:47	mm/s	5	10	0.27	0.11	0.57	0.73
WW27UAA03A	26/06/2017 12:38	mm/s	5	10	0.15	0.12	0.06	0.29
P204M0112A	27/06/2017 12:12	mm/s	5	10	0.14	0.08	0.53	0.67
RW22BFA02A, RW23BFP01B	28/06/2017 13:00	mm/s	5	10	0.66	0.14	0.07	0.24
WN44BAY05A, WN43LECO1A	29/06/2017 12:03	mm/s	5	10	0.07	0.10	0.04	0.08
P119R0106A	30/06/2017 15:07	mm/s	5	10	0.11	0.06	0.22	0.35

## **Appendix A: Hunter Valley Operations Monitoring Locations Plan**

# Hunter Valley Operations Environmental Monitoring Locations

Date: 161213

Plan By: DF

Version: 2.1

**Legend**

- ★ Blast Monitoring Point
- Discharge Release / Sampling Point
- ▲ Tapered Element Oscillating Microbalance - PM10
- EPL Boundary



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Figure 1 Hunter Valley Operations Environmental Monitoring Locations