

Hunter Valley Operations EPL Monitoring Data

Published 20 November 2017
 FOR THE MONTH ENDING 31 October 2017

Name of Operation	Hunter Valley Operations
Environment Protection Licence	640
Licensee	HV Operations Pty Ltd
Premises	Hunter Valley Operations Lemington Road, Singleton NSW 2330 Australia
EPL Link	http://www.epa.nsw.gov.au/prpoeoapp/V iewPOEOLicence.aspx?DOCID=121534&SY UID=1&LICID=640

1 INTRODUCTION

This report has been compiled to provide a summary of environmental monitoring results for Hunter Valley Operations in accordance with Environment Protection Licence 640. This report includes all monitoring data collected in accordance with the aforementioned licence for the period 1st October – 31st October 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 (EPL 640), Hunter Valley Operations maintains a network of five PM₁₀ 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 October 2017; the data was obtained on the 1st November 2017.

TABLE 1: PARTICULATE MATTER <10µM MONITORING

Date	Unit of Measure	Monitoring Frequency & Capture	Monitoring Point				
			Howick	HC1	Wandewoi	Knodlers	Golden Highway
1/10/2017	µg/m ³	Continuous	23.6	#	29.7	22.3	43.2
2/10/2017	µg/m ³		38.1	93.2	41.5	25.6	56.0
3/10/2017	µg/m ³		17.8	29.9	15.5	13.9	22.2
4/10/2017	µg/m ³		25.1	43.2	21.4	19.0	37.9
5/10/2017	µg/m ³		10.8	#	13.2	21.2	35.7
6/10/2017	µg/m ³		22.1	#	22.0	39.9	107.0
7/10/2017	µg/m ³		18.3	20.4	21.7	16.1	36.0
8/10/2017	µg/m ³		22.1	48.1	18.4	17.5	57.1
9/10/2017	µg/m ³		7.8	184.6	9.4	25.6	19.2
10/10/2017	µg/m ³		23.2	#	23.8	15.9	28.8
11/10/2017	µg/m ³		23.8	46.0	19.9	18.3	34.1
12/10/2017	µg/m ³		7.7	73.9	8.1	25.5	16.8
13/10/2017	µg/m ³		24.4	45.5	28.2	20.1	42.6
14/10/2017	µg/m ³		16.2	#	10.0	18.6	59.8
15/10/2017	µg/m ³		10.9	10.5	8.2	6.2	14.1
16/10/2017	µg/m ³		7.9	#	11.1	8.6	23.4
17/10/2017	µg/m ³		22.4	23.0	17.9	10.9	20.1
18/10/2017	µg/m ³		19.8	5.0	11.3	8.7	14.8
19/10/2017	µg/m ³		32.1	92.4	18.1	24.9	#
20/10/2017	µg/m ³		13.6	67.4	7.1	14.3	5.9

21/10/2017	µg/m ³		19.6	18.8	12.4	14.9	#
22/10/2017	µg/m ³		21.8	38.6	12.7	16.4	34.6
23/10/2017	µg/m ³		14.7	11.2	5.8	7.5	13.4
24/10/2017	µg/m ³		20.2	124.0	6.6	25.9	39.0
25/10/2017	µg/m ³		23.5	184.2	6.7	30.6	20.8
26/10/2017	µg/m ³		41.6	59.1	26.4	21.2	44.0
27/10/2017	µg/m ³		#	#	#	#	#
28/10/2017	µg/m ³		19.4	#	16.6	15.1	31.5
29/10/2017	µg/m ³		20.6	110.6	10.6	24.9	22.9
30/10/2017	µg/m ³		26.0	170.0	15.2	43.0	53.6
31/10/2017	µg/m ³		17.0	32.0	9.3	10.7	29.1
Monthly Meaningful Data							
October	µg/m ³	Minimum*	7.7	5.0	5.8	6.2	5.9
October	µg/m ³	Mean*	20.2	62.6	15.7	19.1	32.9
October	µg/m ³	Maximum*	41.6	184.6	41.5	43.0	107.0
October	µg/m ³	Median*	20.2	46.0	13.2	18.3	29.1

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

*Data calculated with missing 10 minute values due to equipment or communication issue

3 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: 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 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 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 31st October 2017. The data was obtained on the 14th November.

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	Monitoring Frequency & Capture	EPL Limits		Monitoring Point			
				95% of Blasts	100% of Blasts	Moses Crossing	Jerrys Plains	Maison Dieu	Warkworth
WS44LEB02A	3/10/2017 13:08	dB(L)	All Blasts 100%	115	120	100.2	98.2	102.5	89.1
WS45BAY03A	3/10/2017 13:41	dB(L)		115	120	93.4	90.1	95.2	89.5
P203P0704A	3/10/2017 16:12	dB(L)		115	120	91.6	93.8	95.2	93.0
P20607005A	4/10/2017 11:14	dB(L)		115	120	93.8	88.3	101.2	102.6
P202R0104A	6/10/2017 16:12	dB(L)		115	120	87.6	91.3	104.8	99.4
P204FCL11A	6/10/2017 16:13	dB(L)		115	120	82.0	83.8	103.4	84.4
P201R6P01E	7/10/2017 13:16	dB(L)		115	120	96.0	103.1	97.1	90.8
WN43LEC03A	9/10/2017 13:06	dB(L)		115	120	102.1	105.7	100.3	94.1
P202R0105A	10/10/2017 14:15	dB(L)		115	120	107.6	99.5	106.1	98.5
P20607004A	10/10/2017 14:25	dB(L)		115	120	100.2	104.4	106.0	86.1
P204FCL11B	13/10/2017 9:15	dB(L)		115	120	91.4	87.8	92.0	94.1
P21070P01A	13/10/2017 9:15	dB(L)		115	120	91.0	87.8	90.6	94.1
RW24AFA01A, RW24BFP01A	14/10/2017 12:10	dB(L)		115	120	113.1	105.4	111.4	101.2
P121P0601A	16/10/2017 13:14	dB(L)		115	120	103.2	101.3	105.9	92.4
P206HOZ04A	17/10/2017 13:22	dB(L)		115	120	102.4	105.3	108.8	91.9
WN43UPG12B	18/10/2017 13:05	dB(L)		115	120	95.9	106.6	105.9	97.7

WN43LECO3B	18/10/2017 13:06	dB(L)		115	120	103.3	108.6	105.5	94.1
WS39BAP01B	20/10/2017 12:21	dB(L)		115	120	96.5	92.3	97.1	99.3
WN40ULP01A	20/10/2017 12:22	dB(L)		115	120	96.5	90.0	97.1	99.3
WS44LEP02A	20/10/2017 12:22	dB(L)		115	120	96.1	90.1	96.5	94.0
P204M3501A	24/10/2017 15:33	dB(L)		115	120	94.2	105.9	107.3	94.4
P202R6P01C	24/10/2017 15:34	dB(L)		115	120	87.5	109.4	103.2	98.8
P20607004B	24/10/2017 15:36	dB(L)		115	120	101.9	104.7	110.2	103.6
P20607004B - re-fire	24/10/2017 16:20	dB(L)		115	120	86.2	100.4	94.9	97.2
WN40ULP01B	25/10/2017 15:32	dB(L)		115	120	101.2	83.3	104.6	82.5
P202R0105B	28/10/2017 12:35	dB(L)		115	120	107.5	98.8	100.3	96.0
WS39LLD02A	31/10/2017 13:15	dB(L)		115	120	85.8	92.0	99.7	91.2
P20607004C	31/10/2017 15:20	dB(L)		115	120	99.5	102.0	103.2	106.3
P201R6P01F	31/10/2017 15:20	dB(L)		115	120	86.4	102.0	97.0	83.8
Monthly Meaningful Data									
Minimum	October	dB(L)		115	120	82.0	83.3	90.6	82.5
Mean	October	dB(L)		115	120	96.3	97.6	101.5	94.4
Maximum	October	dB(L)		115	120	113.1	109.4	111.4	106.3
Median	October	dB(L)		115	120	96.1	99.5	102.5	94.1

TABLE 4: 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	Moses Crossing	Jerrys Plains	Maison Dieu	Warkworth
WS44LEB02A	3/10/2017 13:08	mm/s	All Blasts 100%	5	10	0.13	0.12	0.07	0.09
WS45BAY03A	3/10/2017 13:41	mm/s		5	10	0.10	0.06	0.06	0.08
P203P0704A	3/10/2017 16:12	mm/s		5	10	0.04	0.04	0.07	0.09
P20607005A	4/10/2017 11:14	mm/s		5	10	0.05	0.04	0.11	0.30
P202R0104A	6/10/2017 16:12	mm/s		5	10	0.07	0.04	0.87	0.35
P204FCL11A	6/10/2017 16:13	mm/s		5	10	0.02	0.02	0.04	0.08
P201R6P01E	7/10/2017 13:16	mm/s		5	10	0.05	0.04	0.15	0.25
WN43LECO3A	9/10/2017 13:06	mm/s		5	10	0.16	0.14	0.13	0.12
P202R0105A	10/10/2017 14:15	mm/s		5	10	0.13	0.07	0.46	0.84
P20607004A	10/10/2017 14:25	mm/s		5	10	0.02	0.02	0.02	0.10
P204FCL11B	13/10/2017 9:15	mm/s		5	10	0.08	0.05	0.13	0.35
P21070P01A	13/10/2017 9:15	mm/s		5	10	0.08	0.05	0.13	0.35
RW24AFA01A, RW24BFP01A	14/10/2017 12:10	mm/s		5	10	0.21	0.07	0.05	0.14
P121P0601A	16/10/2017 13:14	mm/s		5	10	0.07	0.05	0.13	0.22
P206HOZ04A	17/10/2017 13:22	mm/s		5	10	0.28	0.14	0.72	1.45
WN43UPG12B	18/10/2017 13:05	mm/s		5	10	0.03	0.04	0.03	0.32

WN43LECO3B	18/10/2017 13:06	mm/s		5	10	0.31	0.11	0.10	0.10
WS39BAP01B	20/10/2017 12:21	mm/s		5	10	0.16	0.23	0.10	0.10
WN40ULP01A	20/10/2017 12:22	mm/s		5	10	0.20	0.23	0.10	0.06
WS44LEP02A	20/10/2017 12:22	mm/s		5	10	0.20	0.21	0.05	0.11
P204M3501A	24/10/2017 15:33	mm/s		5	10	0.03	0.04	0.06	0.09
P202R6P01C	24/10/2017 15:34	mm/s		5	10	0.06	0.04	0.23	0.11
P20607004B	24/10/2017 15:36	mm/s		5	10	0.17	0.10	0.45	0.86
P20607004B - re-fire	24/10/2017 16:20	mm/s		5	10	0.07	0.05	0.15	0.39
WN40ULP01B	25/10/2017 15:32	mm/s		5	10	0.15	0.17	0.09	0.45
P202R0105B	28/10/2017 12:35	mm/s		5	10	0.07	0.05	0.90	0.35
WS39LLD02A	31/10/2017 13:15	mm/s		5	10	0.09	0.09	0.06	0.09
P20607004C	31/10/2017 15:20	mm/s		5	10	0.28	0.13	0.55	1.19
P201R6P01F	31/10/2017 15:20	mm/s		5	10	0.07	0.04	0.20	0.35
Monthly Meaningful Data									
Minimum	October	mm/s		5	10	0.02	0.02	0.02	0.06
Mean	October	mm/s		5	10	0.12	0.09	0.21	0.32
Maximum	October	mm/s		5	10	0.31	0.23	0.90	1.45
Median	October	mm/s		5	10	0.08	0.05	0.11	0.22

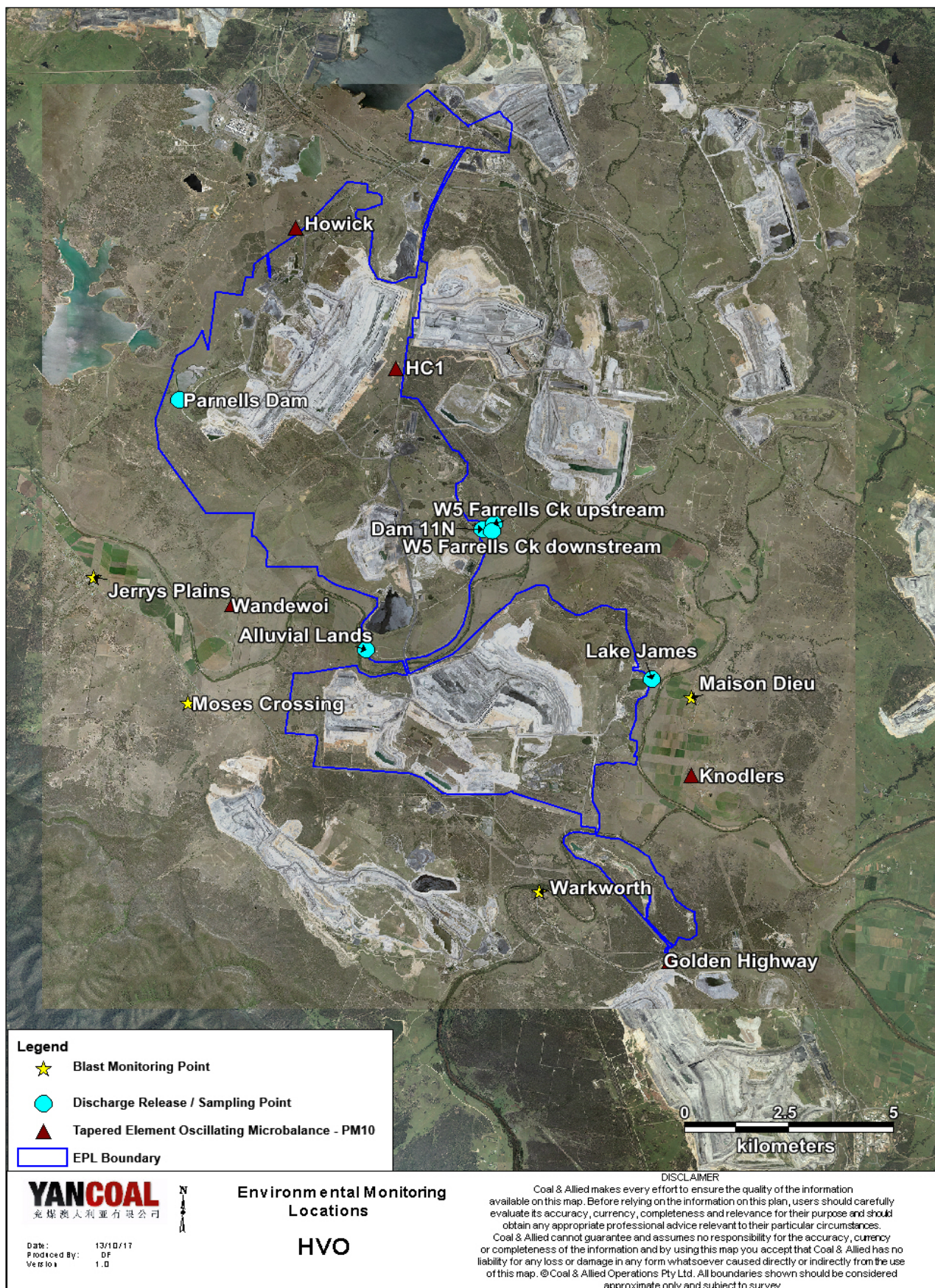


Figure 1 : Hunter Valley Operations Environmental Monitoring Locations