

**HUNTER VALLEY
OPERATIONS**



Hunter Valley Operations EPL Monitoring Data

Published 12 November 2018

FOR THE MONTH ENDING 31 October 2018

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	https://apps.epa.nsw.gov.au/prpoeoap/ViewPOEOLicence.aspx?DOCID=149755&SYSUID=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 1 October – 31 October 2018.

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 licence 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 31 October 2018; the data was obtained on the 1 November 2018.

TABLE 1: PARTICULATE MATTER <10µM MONITORING

Date	Unit of Measure	Monitoring Frequency & Capture	Monitoring Point				
			Howick	HC1	Wandewoi	Knodlers	Golden Highway
1/10/2018	µg/m ³	Continuous	41.8	34.9	20.5	11.7	23.7
2/10/2018	µg/m ³		38.1	89.0	22.0	19.9	20.6
3/10/2018	µg/m ³		44.6	95.6	26.8	31.8	34.7
4/10/2018	µg/m ³		29.1	38.3	18.0	15.6	29.0
5/10/2018	µg/m ³		2.7	#	2.3	4.4	5.0
6/10/2018	µg/m ³		15.5	#	7.4	9.8	23.5
7/10/2018	µg/m ³		12.8	#	8.5	31.7	11.7
8/10/2018	µg/m ³		14.4	#	10.5	11.2	8.2
9/10/2018	µg/m ³		29.5	#	14.5	22.9	33.3
10/10/2018	µg/m ³		18.8	#	12.4	11.9	25.4
11/10/2018	µg/m ³		9.7	1.6	8.0	5.1	8.8
12/10/2018	µg/m ³		13.6	6.5	10.0	4.8	8.6
13/10/2018	µg/m ³		20.1	12.1	11.7	6.9	15.7
14/10/2018	µg/m ³		18.7	11.2	15.2	6.7	8.4
15/10/2018	µg/m ³		23.1	11.5	16.8	7.9	8.7
16/10/2018	µg/m ³		20.0	13.4	14.5	7.4	7.8
17/10/2018	µg/m ³		34.9	24.2	3.4	10.8	14.9
18/10/2018	µg/m ³		10.8	20.1	#	11.5	17.3
19/10/2018	µg/m ³		18.6	45.5	7.1	12.4	13.8
20/10/2018	µg/m ³		27.6	194.9	17.0	21.4	18.9
21/10/2018	µg/m ³		16.7	18.4	17.5	8.5	17.6

22/10/2018	µg/m ³		30.2	25.0	24.5	11.5	15.8
23/10/2018	µg/m ³		22.5	91.5	18.4	16.9	20.1
24/10/2018	µg/m ³		48.7	57.0	31.2	24.4	71.8
25/10/2018	µg/m ³		29.6	23.3	22.6	13.2	20.3
26/10/2018	µg/m ³		39.2	39.2	31.6	20.9	22.1
27/10/2018	µg/m ³		34.1	46.9	28.5	22.4	21.4
28/10/2018	µg/m ³		32.0	27.4	27.4	16.7	28.8
29/10/2018	µg/m ³		33.7	20.9	26.2	12.7	16.6
30/10/2018	µg/m ³		32.0	61.4	31.2	18.7	25.7
31/10/2018	µg/m ³		50.2	66.2	40.7	31.6	54.1
Monthly Meaningful Data							
October	µg/m³	Minimum*	2.7	1.6	2.3	4.4	5.0
October	µg/m³	Mean*	26.2	43.0	18.2	15.0	21.0
October	µg/m³	Maximum*	50.2	194.9	40.7	31.8	71.8
October	µg/m³	Median*	27.6	27.4	17.2	12.4	18.9

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 Figure 1.

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 – Jerrys Plains
- EPA Identification Number 18 – Moses Crossing
- EPA Identification Number 11 – Warkworth
- EPA Identification Number 12 – Maison Dieu

The location of these monitors can be found in Figure 1. The last date sampled was the 30th October 2018. The data was obtained on the 7th November 2018.

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
P204P0401A	2/10/2018 14:58	dB(L)	All Blasts 100%	115	120	93.3	90.8	95.8	96.1
WN40BAR02A	3/10/2018 12:01	dB(L)		115	120	90.4	107.3	101.8	90.0
P119R0602B	3/10/2018 15:10	dB(L)		115	120	99.2	98.9	101.4	99.5
P123M0801AP 123P6P01A	5/10/2018 15:26	dB(L)		115	120	102.9	100.0	103.9	98.4
CE11BAC01A	9/10/2018 10:08	dB(L)		115	120	96.1	92.8	88.4	88.3
P207WK603A	16/10/2018 15:11	dB(L)		115	120	103.4	104.2	107.9	98.3
CE11BAC02A	17/10/2018 15:36	dB(L)		115	120	103.2	104.3	86.3	88.1
P123M0605C	18/10/2018 16:02	dB(L)		115	120	94.9	88.9	110.1	99.8
RW26BFA01A	19/10/2018 16:42	dB(L)		115	120	95.8	87.8	91.2	98.4
WS44MPG04A	20/10/2018 12:50	dB(L)		115	120	94.9	113.7	101.7	100.4
P123M0605A	22/10/2018 16:49	dB(L)		115	120	99.5	95.6	97.8	95.3
P201R1001A	23/10/2018 13:12	dB(L)		115	120	94.2	88.7	101.6	86.2
WN40BAR02B	24/10/2018 10:04	dB(L)		115	120	104.6	103.5	100.5	95.1
P205P0301A	26/10/2018 16:10	dB(L)		115	120	100.1	99.4	111.5	88.6
WN43UAA11A	29/10/2018 13:16	dB(L)		115	120	99.2	108.8	107.3	89.3
P201BAC03A	30/10/2018 13:34	dB(L)	115	120	99.3	91.7	97.1	99.8	

P204P0401A	2/10/2018 14:58	dB(L)		115	120	93.3	90.8	95.8	96.1
Monthly Meaningful Data									
Minimum	October	dB(L)		115	120	90.4	87.8	86.3	86.2
Mean	October	dB(L)		115	120	98.2	98.5	100.3	94.5
Maximum	October	dB(L)		115	120	104.6	113.7	111.5	100.4
Median	October	dB(L)		115	120	99.2	99.2	101.5	95.7

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
P204P0401A	2/10/2018 14:58	mm/s	All Blasts 100%	5	10	0.03	0.03	0.07	0.10
WN40BAR02A	3/10/2018 12:01	mm/s		5	10	0.11	0.21	0.09	0.08
P119R0602B	3/10/2018 15:10	mm/s		5	10	0.10	0.05	0.22	0.26
P123M0801A P123P6P01A	5/10/2018 15:26	mm/s		5	10	0.08	0.06	0.08	0.14
CE11BAC01A	9/10/2018 10:08	mm/s		5	10	0.04	0.06	0.03	0.25
P207WK603A	16/10/2018 15:11	mm/s		5	10	0.42	0.17	0.70	1.63
CE11BAC02A	17/10/2018 15:36	mm/s		5	10	0.04	0.06	0.04	0.21
P123M0605C	18/10/2018 16:02	mm/s		5	10	0.14	0.07	0.26	0.41
RW26BFA01A	19/10/2018 16:42	mm/s		5	10	0.24	0.07	0.07	0.16
WS44MPG04A	20/10/2018 12:50	mm/s		5	10	0.03	0.03	0.03	0.10
P123M0605A	22/10/2018 16:49	mm/s		5	10	0.23	0.12	0.22	0.59
P201R1001A	23/10/2018 13:12	mm/s		5	10	0.02	0.03	0.06	0.05
WN40BAR02B	24/10/2018 10:04	mm/s		5	10	0.10	0.10	0.07	0.09
P205P0301A	26/10/2018 16:10	mm/s		5	10	0.02	0.03	0.06	0.11
WN43UAA11A	29/10/2018 13:16	mm/s		5	10	0.09	0.11	0.09	0.33
P201BAC03A	30/10/2018 13:34	mm/s		5	10	0.04	0.04	0.35	0.11

P204P0401A	2/10/2018 14:58	mm/s		5	10	0.03	0.03	0.07	0.10
Monthly Meaningful Data									
Minimum	October	mm/s		5	10	0.02	0.03	0.03	0.05
Mean	October	mm/s		5	10	0.11	0.08	0.15	0.29
Maximum	October	mm/s		5	10	0.42	0.21	0.70	1.63
Median	October	mm/s		5	10	0.09	0.06	0.08	0.15



Figure 1 : Hunter Valley Operations Environmental Monitoring Locations