

**HUNTER VALLEY
OPERATIONS**



Hunter Valley Operations EPL Monitoring Data

Published 6 March 2019

FOR THE MONTH ENDING 28 February 2019

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 February – 28 February 2019.

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 28 February 2019; the data was obtained on the 1 March 2019.

TABLE 1: PARTICULATE MATTER <10µM MONITORING

Date	Unit of Measure	Monitoring Frequency & Capture	Monitoring Point				
			Howick	HC1	Wandewoi	Knodlers	Golden Highway
1/02/2019	µg/m ³	Continuous	21.5	24.6	12.3	11.4	37.2
2/02/2019	µg/m ³		15.1	19.7	11.2	6.1	12.0
3/02/2019	µg/m ³		31.4	19.1	23.9	9.2	17.8
4/02/2019	µg/m ³		38.1	50.9	32.8	19.1	44.5
5/02/2019	µg/m ³		41.1	27.1	35.6	16.0	30.0
6/02/2019	µg/m ³		28.3	15.9	20.8	11.3	12.7
7/02/2019	µg/m ³		19.7	16.7	20.4	8.9	10.5
8/02/2019	µg/m ³		29.7	59.4	32.6	23.4	29.3
9/02/2019	µg/m ³		14.5	43.3	13.5	15.5	5.5*
10/02/2019	µg/m ³		50.9	76.7	50.5	32.5	#
11/02/2019	µg/m ³		32.4	62.2	24.3	23.7	#
12/02/2019	µg/m ³		57.6	146.4	33.1	48.4	55.2
13/02/2019	µg/m ³		89.1	107.3	74.7	49.9	69.1
14/02/2019	µg/m ³		43.3	28.2	29.6	15.7	21.7
15/02/2019	µg/m ³		41.0	20.8	23.7	12.5	15.7
16/02/2019	µg/m ³		25.3	17.5	18.2	12.1	16.8
17/02/2019	µg/m ³		36.3	60.6	25.1	13.9	24.6
18/02/2019	µg/m ³		42.4	78.0	31.1	18.8	26.9
19/02/2019	µg/m ³		65.6	176.8	60.8	52.7	67.7
20/02/2019	µg/m ³		25.3	28.5	12.4	16.0	32.0
21/02/2019	µg/m ³		17.8	13.8	10.7	10.4	19.9

22/02/2019	µg/m ³		19.8	21.2	14.8	10.8	30.0
23/02/2019	µg/m ³		13.3	15.8	9.6	7.9	21.4
24/02/2019	µg/m ³		23.2	23.0	18.7	9.6	27.7
25/02/2019	µg/m ³		30.7	21.6	26.1	8.6	30.8
26/02/2019	µg/m ³		28.7	28.2*	28.4	9.3	21.1
27/02/2019	µg/m ³		37.8	#	38.1	8.5	28.8
28/02/2019	µg/m ³		24.8	#	19.5	12.4	12.0
Monthly Meaningful Data							
February	µg/m³	Minimum*	13.3	13.8	9.6	6.1	5.1
February	µg/m³	Mean*	33.7	46.3	26.9	17.7	26.9
February	µg/m³	Maximum*	89.1	176.8	74.7	52.7	69.1
February	µg/m³	Median*	30.2	27.6	24.1	12.4	24.6

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 26th February 2019. The data was obtained on the 5th March 2019.

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
WS43UAA10A WS43LAP01B	1/02/2019 13:48	dB(L)	All Blasts 100%	115	120	102.1	102.1	105.3	97.0
WS45LED02A	1/02/2019 13:59	dB(L)		115	120	109.7	97.1	100.4	91.7
RW27AFA01A_ RW27BFP01A	5/02/2019 13:02	dB(L)		115	120	103.4	106.2	107.6	89.3
P206M0103A	7/02/2019 12:20	dB(L)		115	120	95.3	98.8	100.4	94.7
P123P0601A	9/02/2019 9:50	dB(L)		115	120	92.7	106.7	107.9	106.4
P204R0101A	11/02/2019 13:03	dB(L)		115	120	95.4	90.2	101.7	88.8
WN43UAA13A	13/02/2019 13:54	dB(L)		115	120	89.3	90.1	100.7	94.4
P204R6P02A	14/02/2019 14:13	dB(L)		115	120	104.2	113.7	111.1	91.9
RW27AFA03A_ RW27BFP01B	14/02/2019 15:10	dB(L)		115	120	98.8	107.6	107.1	100.7
WS43LAP02A	16/02/2019 15:05	dB(L)		115	120	102.0	106.2	99.8	96.5
P206M0104A	20/02/2019 13:17	dB(L)		115	120	108.9	100.5	103.7	95.8
WS43MPG06A	21/02/2019 9:40	dB(L)		115	120	98.1	98.6	101.5	89.9
P121R0601A	21/02/2019 13:12	dB(L)		115	120	99.0	99.0	102.6	96.5
WS43UAA10B	25/02/2019 12:03	dB(L)		115	120	100.9	111.1	104.2	92.2
P204R0102A	25/02/2019 13:12	dB(L)		115	120	93.9	106.0	97.6	93.5
WN45LPP02A	26/02/2019 12:53	dB(L)		115	120	94.1	97.3	93.7	81.5

Monthly Meaningful Data									
Minimum	February	dB(L)		115	120	89.3	90.1	93.7	81.5
Mean	February	dB(L)		115	120	99.2	102.0	102.8	93.8
Maximum	February	dB(L)		115	120	109.7	113.7	111.1	106.4
Median	February	dB(L)		115	120	98.9	101.3	102.1	93.9

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
WS43UAA10A WS43LAP01B	1/02/2019 13:48	mm/s	All Blasts 100%	5	10	0.26	0.22	0.28	0.33
WS45LED02A	1/02/2019 13:59	mm/s		5	10	0.21	0.10	0.13	0.20
RW27AFA01A_ RW27BFP01A	5/02/2019 13:02	mm/s		5	10	0.17	0.07	0.07	0.14
P206M0103A	7/02/2019 12:20	mm/s		5	10	0.10	0.07	0.55	0.57
P123P0601A	9/02/2019 9:50	mm/s		5	10	0.27	0.15	0.14	0.23
P204R0101A	11/02/2019 13:03	mm/s		5	10	0.03	0.06	0.07	0.09
WN43UAA13A	13/02/2019 13:54	mm/s		5	10	0.15	0.16	0.12	0.42
P204R6P02A	14/02/2019 14:13	mm/s		5	10	0.09	0.08	0.79	0.49
RW27AFA03A_ RW27BFP01B	14/02/2019 15:10	mm/s		5	10	0.16	0.06	0.09	0.17
WS43LAP02A	16/02/2019 15:05	mm/s		5	10	0.18	0.12	0.12	0.15
P206M0104A	20/02/2019 13:17	mm/s		5	10	0.22	0.10	1.16	1.40
WS43MPG06A	21/02/2019 9:40	mm/s		5	10	0.04	0.03	0.03	0.18
P121R0601A	21/02/2019 13:12	mm/s		5	10	0.22	0.09	0.26	0.42
WS43UAA10B	25/02/2019 12:03	mm/s		5	10	0.22	0.20	0.16	0.20
P204R0102A	25/02/2019 13:12	mm/s		5	10	0.06	0.04	0.44	0.36
WN45LPP02A	26/02/2019 12:53	mm/s		5	10	0.06	0.06	0.07	0.10

Monthly Meaningful Data									
Minimum	February	mm/s		5	10	0.03	0.03	0.03	0.09
Mean	February	mm/s		5	10	0.15	0.10	0.28	0.34
Maximum	February	mm/s		5	10	0.27	0.22	1.16	1.40
Median	February	mm/s		5	10	0.17	0.09	0.14	0.22



Figure 1 : Hunter Valley Operations Environmental Monitoring Locations