

HUNTER VALLEY
OPERATIONS

**ENVIRONMENT
PROTECTION LICENCE 640
MONITORING DATA - MAY
2023**

DOCUMENT NUMBER

HVOOC-1797567310-4743

STATUS

Approved

VERSION

1.0

EFFECTIVE

21/08/2023

REVIEW

[Planned Review Date]

OWNER

Environment and Community Officer



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1 | OVERVIEW

Environmental Protection Licence Number:	640
Licence Holder:	HV Operations Pty Ltd (HVO)
Address of Premises:	Hunter Valley Operations, Lemington Road, Singleton, NSW, 2330
Licence Holder Postal Address:	PO Box 315, Singleton, NSW, 2330
EPA Public Register Link:	https://apps.epa.nsw.gov.au/prpoeoapp/Detail.aspx?instid=640&id=640&option=licence&searchrange=licence&range=POEO%20licence&prp=no&status=Issued

The locations of each sampling or monitoring point number identified in EPL 640 are displayed in **Figure 1**.

2 | DEFINITIONS

Abbreviation	Explanation
DNR	Data Not Received
mm/s	Millimetres per Second
dB	Decibels
g/m ² /month	Grams per Metre Square per Month
µg/m ³	Micrograms per Cubic Meter of Air
µS/cm	Microsiemens per Centimetre
pH	A measure of the acidity or alkalinity of a solution
mg/L	Milligrams per Litre
NTU	Nephelometric Turbidity Units
ML/day	Megalitres per Day (1ML = 1,000,000L)
KL/day	Kilolitres per Day
PM10	Particulate Matter of 10 Microns in diameter or smaller
HVAS	High Volume Air Sampler
TEOM	Tapered Element Oscillating Microbalance
TSP	Total Suspended Particles
TSS	Total Suspended Solids
t	tonnes
YTD	Year To Date - rolling 12 month average

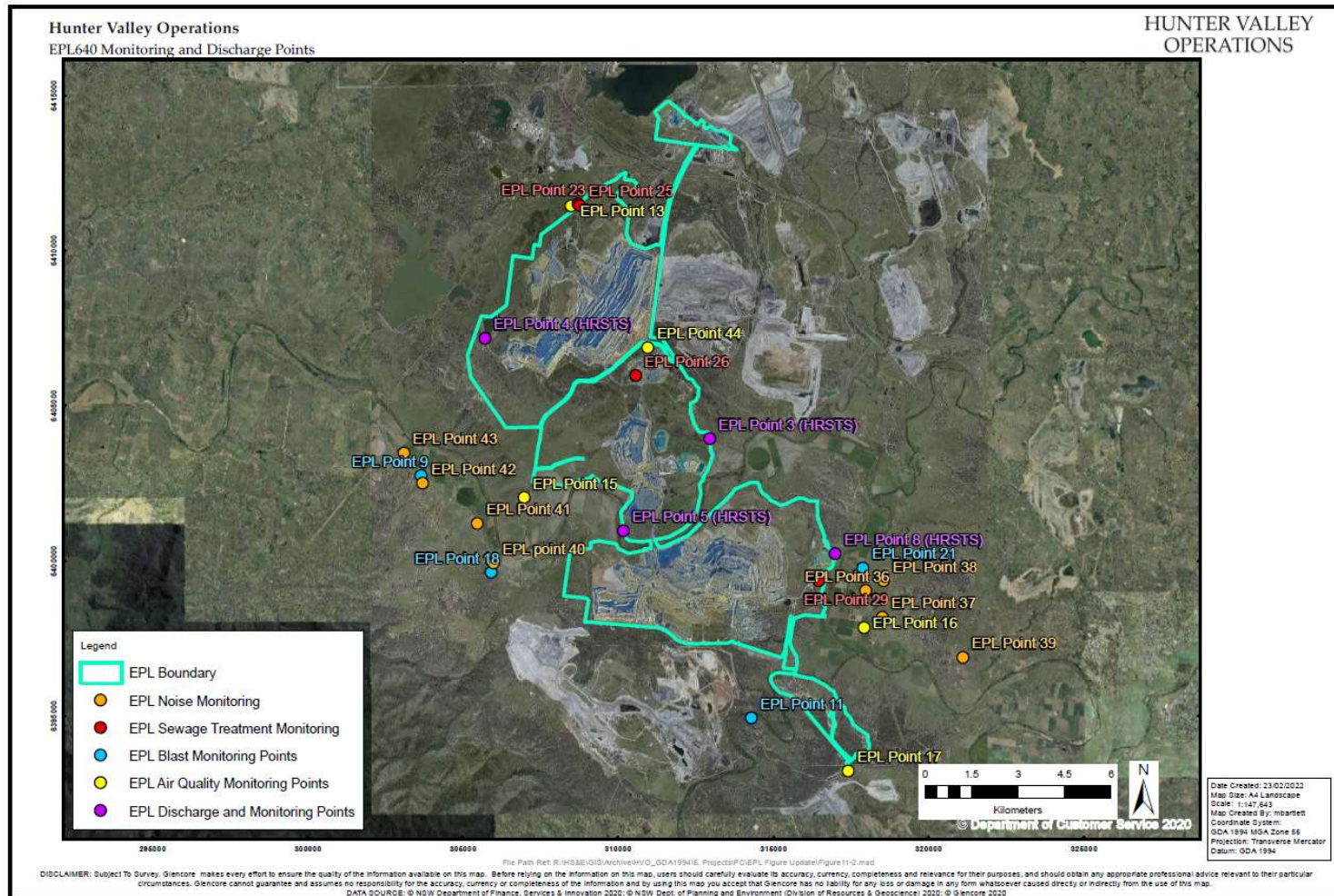


Figure 1 – EPL 640 Monitoring Location

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3 | AIR QUALITY

Date Last Sampled: 31/05/2023

Date Obtained: 05/07/2023

Table 1 - Particulate Matter Monitoring (<10µm)

Date	Unit of Measure	Monitoring Frequency & Capture	EPL ID 13 (Howick)	EPL ID 15 (Wandewoi)	EPL ID 16 (Knodlers Lane)	EPL ID 17 (Golden Highway)	EPL ID 44 (West Pit)
1/05/2023	µg/m ³	Continuous	8.4	6.2	11.0	10.9	18.8
2/05/2023	µg/m ³		12.1	8.4	14.6	16.8	34.1
3/05/2023	µg/m ³		13.3	11.1	22.4	27.2	45.3
4/05/2023	µg/m ³		25.6	17.5	18.1	34.1	38.4
5/05/2023	µg/m ³		37.8	16.6	23.4	41.5	95.9
6/05/2023	µg/m ³		27.4	14.6	19.9	42.3	71.0
7/05/2023	µg/m ³		20.6	9.7	19.3	25.1	63.6
8/05/2023	µg/m ³		16.0	6.6	11.6	19.9	69.4
9/05/2023	µg/m ³		26.0	15.4	23.8	*	59.2
10/05/2023	µg/m ³		35.4	19.4	19.1	*	81.8
11/05/2023	µg/m ³		29.4	21.1	18.0	31.2	62.7
12/05/2023	µg/m ³		24.9	20.7	18.0	30.8	67.7
13/05/2023	µg/m ³		38.1	28.7	18.2	36.5	98.8
14/05/2023	µg/m ³		22.7	25.9	15.9	19.0	44.1
15/05/2023	µg/m ³		21.5	16.1	10.9	20.9	34.5
16/05/2023	µg/m ³		31.1	17.7	16.6	56.7	45.4
17/05/2023	µg/m ³		26.1	11.6	16.4	38.1	76.0
18/05/2023	µg/m ³		16.5	8.2	13.9	20.3	67.2
19/05/2023	µg/m ³		24.5	6.8	14.3	15.8	*

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Date	Unit of Measure	Monitoring Frequency & Capture	EPL ID 13 (Howick)	EPL ID 15 (Wandewoi)	EPL ID 16 (Knodlers Lane)	EPL ID 17 (Golden Highway)	EPL ID 44 (West Pit)
20/05/2023	µg/m ³	Continuous	20.4	9.1	18.3	14.4	55.9
21/05/2023	µg/m ³		14.8	8.7	22.8	17.9	88.9
22/05/2023	µg/m ³		20.1	8.3	19.7	26.2	78.1
23/05/2023	µg/m ³		44.2	22.0	24.3	31.9	63.8
24/05/2023	µg/m ³		52.4	24.8	27.0	36.6	77.0
25/05/2023	µg/m ³		30.0	27.1	59.4	39.2	105.6
26/05/2023	µg/m ³		23.9	17.9	31.3	28.2	69.9
27/05/2023	µg/m ³		21.2	10.2	16.5	19.8	44.6
28/05/2023	µg/m ³		17.2	7.0	20.0	13.2	73.0
29/05/2023	µg/m ³		18.3	4.2	26.9	18.4	83.6
30/05/2023	µg/m ³		20.0	10.3	16.2	18.9	53.7
31/05/2023	µg/m ³		19.4	9.6	26.5	23.7	89.7
Monthly Meaningful Data							
May	µg/m ³	Minimum	8.4	4.2	10.9	10.9	18.8
	µg/m ³	Mean	24.5	14.2	20.4	26.7	65.3
	µg/m ³	Maximum	52.4	28.7	58.2	56.7	105.6
	µg/m ³	Median	22.7	11.6	18.3	25.1	67.4

* Less than 75% data capture

4 | SURFACE WATER MONITORING DATA

No discharges under the HRSTS occurred during May.

Table 2 - HRSTS Discharge Monitoring

Discharge Point	Pollutant	Unit of Measure	Licence Limits	No. Samples Required by Licence	No. Samples Collected and Analysed
EPL ID 3 (Dam 11N)	pH	pH	6.5-9.5	0	0
	Total Suspended Solids	Milligrams per Litre	120	0	0
EPL ID 4 (Dam 9W)	pH	pH	6.5-9.5	0	0
	Total Suspended Solids	Milligrams per Litre	120	0	0
EPL ID 8 (Dam 15S)	pH	pH	6.5-9.5	0	0
	Total Suspended Solids	Milligrams per Litre	120	0	0

5 | BLAST MONITORING DATA

Date Last Sampled: 31/05/2023
Date Obtained: 17/06/2023

Table 3 – Blast Monitoring (Air Blast Overpressure and Ground Vibration)

Blast ID	Date & Time	Unit of Measure	Monitoring Frequency & Capture	EPL Limits		Monitoring Point			
				95% of Blasts	100% of Blasts	Moses Crossing EPL ID 18	Jerrys Plains EPL ID 9	Maison Dieu EPL ID 21	Warkworth EPL ID 11
P209WK901A	1/05/2023 13:26	dB(L)	All blasts 100%	115	120	84.17	113.32	101.98	96.87
WS49ARC07A	2/05/2023 13:08	dB(L)		115	120	97.62	104.55	105.15	100.53
WS47LEC02B	4/05/2023 13:03	dB(L)		115	120	89.88	89.64	85.89	93.64
RW37AFA01A_RW37BFP01A	5/05/2023 13:05	dB(L)		115	120	92.43	84.20	90.04	92.74
M1T312503A_M1T312504A	5/05/2023 14:44	dB(L)		115	120	93.26	105.26	85.47	88.69
WS49LEA06	6/05/2023 14:32	dB(L)		115	120	93.30	94.62	98.25	95.29
P21004501A	9/05/2023 13:52	dB(L)		115	120	87.44	88.91	97.41	95.33



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Blast ID	Date & Time	Unit of Measure	Monitoring Frequency & Capture	EPL Limits			Monitoring Point		
				95% of Blasts	100% of Blasts	Moses Crossing EPL ID 18	Jerrys Plains EPL ID 9	Maison Dieu EPL ID 21	Warkworth EPL ID 11
WN49LEC02A	10/05/2023 13:30	dB(L)	All blasts 100%	115	120	86.56	92.62	80.98	98.73
WS49ARC08A	10/05/2023 13:33	dB(L)		115	120	90.12	93.11	93.11	83.22
P125WK204A	11/05/2023 12:56	dB(L)		115	120	102.09	96.02	84.78	89.93
WS49LEA05A_WS49LEA07A	13/05/2023 15:00	dB(L)		115	120	91.93	97.79	96.42	89.70
WN45BAF01A_WN47ULD05A	15/05/2023 13:24	dB(L)		115	120	92.20	88.66	79.85	95.89
WS49LEC01A_WS49LEA08A	15/05/2023 13:25	dB(L)		115	120	89.44	96.56	87.51	91.31
WS49BAY20A_WS49BAY21A	18/05/2023 13:19	dB(L)		115	120	85.44	88.21	88.43	82.38
WN45BAF01B	20/05/2023 13:05	dB(L)		115	120	98.82	103.75	97.60	104.09
P210WK903A_P209WK904A	20/05/2023 14:38	dB(L)		115	120	91.28	105.47	105.31	99.13
WS49LEA03B_WS49LEA09A	20/05/2023 15:58	dB(L)		115	120	84.51	93.99	98.31	91.27

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Blast ID	Date & Time	Unit of Measure	Monitoring Frequency & Capture	EPL Limits		Monitoring Point			
				95% of Blasts	100% of Blasts	Moses Crossing EPL ID 18	Jerrys Plains EPL ID 9	Maison Dieu EPL ID 21	Warkworth EPL ID 11
M1T312505A_M1T3BAP01A	24/05/2023 11:04	dB(L)	All Blasts 100%	115	120	97.11	97.67	96.00	89.61
P21004502A_P210WK305A	24/05/2023 13:18	dB(L)		115	120	93.84	97.14	101.71	109.83
WS49LEA05B	25/05/2023 13:10	dB(L)		115	120	96.00	97.67	96.60	94.34
WN47BAP02A	27/05/2023 16:04	dB(L)		115	120	83.94	96.38	95.96	91.59
P208BAY02A	30/05/2023 13:26	dB(L)		115	120	99.98	109.07	97.50	96.36
P21004503A	30/05/2023 13:28	dB(L)		115	120	91.43	106.51	97.08	100.22
RW37AFA02A_RW37BFP01B	31/05/2023 13:21	dB(L)		115	120	95.87	109.08	110.87	108.82
Monthly Meaningful Data									
May	dB(L)	Minimum	115	120	70.62	77.92	83.82	80.68	
	dB(L)	Mean	115	120	94.88	96.32	95.02	90.36	
	dB(L)	Maximum	115	120	110.94	113.37	109.22	102.04	
	dB(L)	Median	115	120	95.30	95.70	94.69	88.85	

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				95% of Blasts	100% of Blasts	Moses Crossing EPL ID 18	Jerrys Plains EPL ID 9	Maison Dieu EPL ID 21	Warkworth EPL ID 11
P209WK901A	1/05/2023 13:26	mm/s	All Blasts 100%	5	10	0.15	0.07	0.28	0.87
WS49ARC07A	2/05/2023 13:08	mm/s		5	10	0.12	0.07	0.08	0.67
WS47LEC02B	4/05/2023 13:03	mm/s		5	10	0.12	0.06	0.09	1.11
RW37AFA01A_RW37BFP01A	5/05/2023 13:05	mm/s		5	10	0.25	0.08	0.10	0.16
M1T312503A_M1T312504A	5/05/2023 14:44	mm/s		5	10	0.17	0.16	0.08	0.09
WS49LEA06	6/05/2023 14:32	mm/s		5	10	0.11	0.05	0.07	0.09
P21004501A	9/05/2023 13:52	mm/s		5	10	0.31	0.11	0.44	1.29

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Blast ID	Date & Time	Unit of Measure	Monitoring Frequency & Capture	EPL Limits			Monitoring Point		
				95% of Blasts	100% of Blasts	Moses Crossing EPL ID 18	Jerrys Plains EPL ID 9	Maison Dieu EPL ID 21	Warkworth EPL ID 11
WN49LEC02A	10/05/2023 13:30	mm/s		5	10	0.13	0.11	0.11	0.77
WS49ARC08A	10/05/2023 13:33	mm/s		5	10	0.13	0.10	0.09	0.12
P125WK204A	11/05/2023 12:56	mm/s		5	10	0.11	0.04	0.06	0.36
WS49LEA05A_WS49LEA07A	13/05/2023 15:00	mm/s		5	10	0.15	0.08	0.08	0.18
WN45BAF01A_WN47ULD05A	15/05/2023 13:24	mm/s		5	10	0.12	0.13	0.09	1.12
WS49LEC01A_WS49LEA08A	15/05/2023 13:25	mm/s		5	10	0.12	0.09	0.07	0.68
WS49BAY20A_WS49BAY21A	18/05/2023 13:19	mm/s		5	10	0.17	0.05	0.09	0.10
WN45BAF01B	20/05/2023 13:05	mm/s		5	10	0.10	0.04	0.05	0.18

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				95% of Blasts	100% of Blasts	Moses Crossing EPL ID 18	Jerrys Plains EPL ID 9	Maison Dieu EPL ID 21	Warkworth EPL ID 11
P210WK903A_P209WK904A	20/05/2023 14:38	mm/s	All Blasts 100%	5	10	0.15	0.05	0.41	0.98
WS49LEA03B_WS49LEA09A	20/05/2023 15:58	mm/s		5	10	0.10	0.04	0.05	0.11
M1T312505A_M1T3BAP01A	24/05/2023 11:04	mm/s		5	10	0.13	0.13	0.07	0.42
P21004502A_P210WK305A	24/05/2023 13:18	mm/s		5	10	0.16	0.07	0.38	0.66
WS49LEA05B	25/05/2023 13:10	mm/s		5	10	0.10	0.07	0.05	0.70
WN47BAP02A	27/05/2023 16:04	mm/s		5	10	0.16	0.21	0.09	0.11
P208BAY02A	30/05/2023 13:26	mm/s		5	10	0.08	0.03	0.15	0.88

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				95% of Blasts	100% of Blasts	Moses Crossing EPL ID 18	Jerrys Plains EPL ID 9	Maison Dieu EPL ID 21	Warkworth EPL ID 11
P21004503A	30/05/2023 13:28	mm/s		5	10	0.13	0.06	0.34	0.86
RW37AFA02A_RW37BFP01B	31/05/2023 13:21	mm/s		5	10	0.27	0.08	0.08	0.24
Monthly Meaningful Data									
May	mm/s	Minimum		5	10	0.10	0.02	0.02	0.08
	mm/s	Mean		5	10	0.19	0.09	0.15	0.35
	mm/s	Maximum		5	10	0.88	0.24	0.45	1.35
	mm/s	Median		5	10	0.15	0.07	0.08	0.29



6 | SEWAGE TREATMENT PLANT MONITORING DATA

Sewage treatment plant monitoring results are provided on a quarterly basis. Results will be provided in the June 2023 Monthly Environmental Monitoring Report.

7 | NOISE MONITORING DATA

Date Sampled: 17/05/2023

Date Obtained: 19/06/2023

Table 4 Night $L_{Aeq,15minute}$ and $L_{A1,1minute}$ Generated by HVO Against EPL Criteria

Location	Start date and time	Wind		Stability class	Very enhancing? ¹	EPL limits, dB ¹		HVO levels, dB		Exceedances, dB	
		Speed m/s	Direction ³			$L_{Aeq,15minute}$	$L_{A1,1min}$	$L_{Aeq,15minute}$ ²	$L_{A1,1min}$	$L_{Aeq,15minute}$	$L_{A1,1min}$
Shearers Lane	17/05/2023 21:06	3.3	144	D	Yes	46	51	<30	30	Nil	Nil
Knodlers Lane	17/05/2023 21:45	2.5	160	D	No	40	46	<25	30	Nil	Nil
Maison Dieu	17/05/2023 21:26	3.2	163	E	Yes	44	51	<30	35	Nil	Nil
Long Point (Dights Crossing)	17/05/2023 22:32	1.5	166	E	No	37	46	IA	IA	Nil	Nil
Kilburnie South	17/05/2023 23:20	0.8	149	F	No	39	46	IA	IA	Nil	Nil
Jerrys Plains East	17/05/2023 22:57	0.7	203	E	No	39	46	IA	IA	Nil	Nil
Jerrys Plains Village	17/05/2023 21:23	3.2	163	E	Yes	45	51	IA	IA	Nil	Nil
Jerrys Plains West	17/05/2023 21:00	3.3	144	D	Yes	45	51	IA	IA	Nil	Nil

Notes: 1. Noise limits are adjusted by +5 dB during 'very noise-enhancing meteorological conditions' in accordance with the NPfl.

2. Site-only $L_{Aeq,15minute}$, includes modifying factor penalties if applicable.

3. Degrees magnetic north, "-" indicates calm conditions.

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