

# HUNTER VALLEY OPERATIONS



---

## Environment Protection Licence 640 Monitoring Data – April 2022 Published

**Document Number:** HVOOC-1797567310-4018

**Status:** Approved

**Version:** 1.0

**Effective:** 07/06/2022

**Owner:** Environment and Community Officer

---

## Table of Contents

1	Overview .....	3
2	Definitions .....	3
3	Air Quality .....	5
4	Surface Water Monitoring Data.....	7
5	Blast Monitoring Data .....	8
6	Sewage Treatment Plant Monitoring Data .....	14
7	Noise Monitoring Data .....	15

# 1 Overview

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

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 <sup>2</sup> /month	Grams per Metre Square per Month
µg/m <sup>3</sup>	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

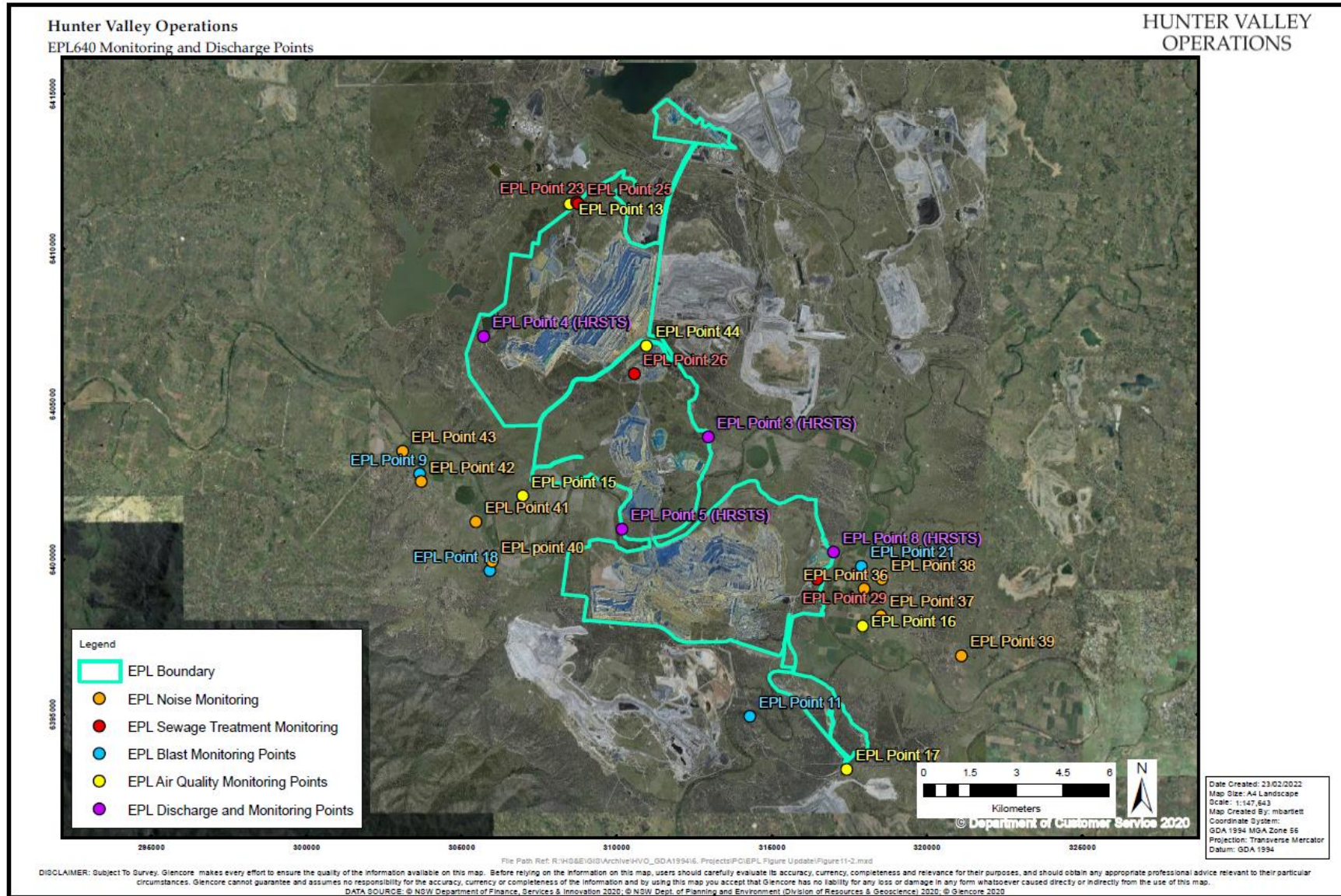


Figure 1 - EPL 640 Monitoring Locations

### 3 Air Quality

Date Last Sampled: 30/04/2022

Date Obtained: 1/05/2022

Table 1- Particulate Matter Monitoring (<10µm)

Date	Unit of Measure	Monitoring Frequency & Capture	Monitoring Point				
			EPL ID 13 (Howick)	EPL ID 15 (Wandewoi)	EPL ID 16 (Knodlers Lane)	EPL ID 17 (Golden Highway)	EPL ID 44 (North CHPP)
1/04/2022	µg/m <sup>3</sup>	Continuous	8.8	8.1	8.1	14.5	12.5
2/04/2022	µg/m <sup>3</sup>		8.9	9.9	11.2	16.8	24.7
3/04/2022	µg/m <sup>3</sup>		15.4	11.0	19.8	19.2	48.8
4/04/2022	µg/m <sup>3</sup>		15.9	11.5	16.5	20.0	43.0
5/04/2022	µg/m <sup>3</sup>		30.6	20.5	21.1	37.2	37.9
6/04/2022	µg/m <sup>3</sup>		29.8	20.3	15.3	20.7	25.9
7/04/2022	µg/m <sup>3</sup>		15.1	9.3	9.7	16.5	16.3
8/04/2022	µg/m <sup>3</sup>		12.5	12.7	9.2	12.3	10.4
9/04/2022	µg/m <sup>3</sup>		19.8	13.8	8.7	14.4	10.8
10/04/2022	µg/m <sup>3</sup>		24.5	16.1	10.2	14.7	21.8
11/04/2022	µg/m <sup>3</sup>		26.5	18.0	14.3	23.6	32.6
12/04/2022	µg/m <sup>3</sup>		31.2	18.0	16.4	27.1	26.8
13/04/2022	µg/m <sup>3</sup>		16.1	11.3	11.2	20.9	19.6
14/04/2022	µg/m <sup>3</sup>		19.2	13.7	8.8	41.9	16.8
15/04/2022	µg/m <sup>3</sup>		20.5	17.1	11.0	21.3	37.3
16/04/2022	µg/m <sup>3</sup>		25.2	15.2	12.0	31.0	46.3
17/04/2022	µg/m <sup>3</sup>		25.6	18.6	12.3	24.0	58.9
18/04/2022	µg/m <sup>3</sup>		31.1	15.3	16.3	42.2	28.7
19/04/2022	µg/m <sup>3</sup>		23.4	19.8	19.5	32.9	64.0
20/04/2022	µg/m <sup>3</sup>		8.3	6.5	8.4	10.0	24.5
21/04/2022	µg/m <sup>3</sup>		33.3	12.5	11.7	52.1	23.8
22/04/2022	µg/m <sup>3</sup>		15.3	10.0	10.4	34.3	13.3

Date	Unit of Measure	Monitoring Frequency & Capture	Monitoring Point				
			EPL ID 13 (Howick)	EPL ID 15 (Wandewoi)	EPL ID 16 (Knodlers Lane)	EPL ID 17 (Golden Highway)	EPL ID 44 (North CHPP)
23/04/2022	µg/m <sup>3</sup>		18.6	11.9	7.3	12.0	10.2
24/04/2022	µg/m <sup>3</sup>		20.5	11.9	6.5	13.3	10.4
25/04/2022	µg/m <sup>3</sup>		35.2	16.6	8.6	19.2	17.7
26/04/2022	µg/m <sup>3</sup>		21.0	14.9	7.5	13.9	9.4
27/04/2022	µg/m <sup>3</sup>		14.8	11.0	9.0	14.0	12.6
28/04/2022	µg/m <sup>3</sup>		17.6	10.9	11.7	17.1	18.2
29/04/2022	µg/m <sup>3</sup>		16.8	10.4	11.1	22.4	20.9
30/04/2022	µg/m <sup>3</sup>		11.2	9.6	11.6	16.4	22.2
Monthly Meaningful Data							
April	µg/m <sup>3</sup>	Minimum	8.3	6.5	6.5	10.0	9.4
	µg/m <sup>3</sup>	Mean	20.4	13.6	11.9	22.5	26.2
	µg/m <sup>3</sup>	Maximum	35.2	20.5	21.1	52.1	64.0
	µg/m <sup>3</sup>	Median	19.5	12.6	11.1	19.6	23.0

## 4 Surface Water Monitoring Data

**Date Sampled:** EPL ID 3 – 14/4/2022

EPL ID 4 – 12/04/2022, 13/04/2022

EPL ID 8 – 11/4/2022, 12/04/2022, 14/04/2022, 20/04/2022, 21/04/2022, 22/04/2022, 26/04/2022 and 27/04/2022

**Date Obtained:** EPL ID 3 – 19/04/2022

EPL ID 4 – 13/4/2022, 14/04/2022

EPL ID 8 – 12/4/2022, 13/4/2022, 19/04/2022, 21/04/2022, 22/04/2022, 26/04/2022, 27/04/2022, 28/04/2022

**Table 2 – Mine Water 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	1	1
	Total Suspended Solids	Milligrams per Litre	120	1	1
EPL ID 4 (Dam 9W)	pH	pH	6.5-9.5	2	2
	Total Suspended Solids	Milligrams per Litre	120	2	2
EPL ID 8 (Dam 15S)	pH	pH	6.5-9.5	8	8
	Total Suspended Solids	Milligrams per Litre	120	8	8

# 5 Blast Monitoring Data

Date Last Sampled: 30/4/2022

Date Obtained: 1/05/2022

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
P208MA310A_P208V3P03A	2/04/2022 13:19	dB(L)	All blasts 100%	115	120	90.94	95.34	93.06	87.69
P12400902A	5/04/2022 12:57	dB(L)		115	120	89.14	100	94.31	94.77
P208BR301D	7/04/2022 12:22	dB(L)		115	120	93.73	91.01	92.76	88.91
RW3712002A	7/04/2022 14:39	dB(L)		115	120	102.33	96.65	87.37	97.37
P20905505A_P20935P01A	11/04/2022 13:19	dB(L)		115	120	82.49	98.46	91.53	88.14
P208PF105A	11/04/2022 13:21	dB(L)		115	120	93.19	72.09	96.39	97.03
P208BR301E	12/04/2022 13:59	dB(L)		115	120	86.79	86.82	88.75	86.57



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
P208MA301B	13/04/2022 13:05	dB(L)	All blasts 100%	115	120	90.24	101.32	102.05	84.52
WN45ULD08A	13/04/2022 13:09	dB(L)		115	120	94.66	102.38	87.96	92.45
WS45LLD05A_WS46ULP02A	13/04/2022 13:13	dB(L)		115	120	86.54	106.06	90.49	88.02
WN47UAA01A_WN47UAP02A	14/04/2022 12:58	dB(L)		115	120	81.54	85.98	81.05	83.64
P208PF302A	14/04/2022 13:27	dB(L)		115	120	90.47	88.1	97.56	90.64
P208PF302B	19/04/2022 12:08	dB(L)		115	120	85.95	90.98	90.78	90.74
WN47UAA02A_WN47UAP02B	19/04/2022 13:19	dB(L)		115	120	100.12	105.71	87.1	93.75
P20903504A_P209W6P02A	20/04/2022 13:15	dB(L)		115	120	94.76	104.87	97.49	104.35
WS44BAR01A	21/04/2022 13:16	dB(L)		115	120	94.87	103.64	90.48	90.5
P208PF106A_P20945P02A	23/04/2022 13:14	dB(L)		115	120	91.94	106.38	90.68	86.63

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
P20907001A	23/04/2022 13:15	dB(L)		115	120	93.12	109.45	94.09	94.31
WN47UAA02B_WN47UAP02C	26/04/2022 13:11	dB(L)		115	120	94.54	105.05	92.69	96.19
WN49BAY06A	27/04/2022 13:12	dB(L)		115	120	81.66	82.44	84.75	79.59
WS44BAR02A_WS44BAP01A	30/04/2022 12:57	dB(L)		115	120	82.03	99.82	89.35	87.08
Monthly Meaningful Data									
April		dB(L)	Minimum	115	120	81.54	72.09	81.05	79.59
		dB(L)	Mean	115	120	90.53	96.79	91.46	90.61
		dB(L)	Maximum	115	120	102.33	109.45	102.05	104.35
		dB(L)	Median	115	120	90.94	99.82	90.78	90.50

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
P208MA310A_P208V3P03A	2/04/2022 13:19	mm/s	All Blasts 100%	5	10	0.14	0.05	0.14	0.21
P12400902A	5/04/2022 12:57	mm/s		5	10	0.3	0.08	0.24	2
P208BR301D	7/04/2022 12:22	mm/s		5	10	0.17	0.06	0.55	1.02
RW3712002A	7/04/2022 14:39	mm/s		5	10	0.16	0.02	0.07	0.24
P20905505A_P20935P01A	11/04/2022 13:19	mm/s		5	10	0.1	0.03	0.07	0.17
P208PF105A	11/04/2022 13:21	mm/s		5	10	0.15	0.03	0.17	0.69
P208BR301E	12/04/2022 13:59	mm/s		5	10	0.14	0.04	0.31	0.51
P208MA301B	13/04/2022 13:05	mm/s		5	10	0.1	0.02	0.06	0.22
WN45ULD08A	13/04/2022 13:09	mm/s		5	10	0.14	0.12	0.09	0.61
WS45LLD05A_WS46ULP02A	13/04/2022 13:13	mm/s		5	10	0.2	0.14	0.08	0.2
WN47UAA01A_WN47UAP02A	14/04/2022 12:58	mm/s		5	10	0.2	0.21	0.1	0.14

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
P208PF302A	14/04/2022 13:27	mm/s		5	10	0.1	0.02	0.06	0.59
P208PF302B	19/04/2022 12:08	mm/s		5	10	0.1	0.03	0.06	0.22
WN47UAA02A_WN47UAP02B	19/04/2022 13:19	mm/s		5	10	0.2	0.2	0.11	0.61
P20903504A_P209W6P02A	20/04/2022 13:15	mm/s		5	10	0.15	0.05	0.17	0.62
WS44BAR01A	21/04/2022 13:16	mm/s		5	10	0.3	0.13	0.16	0.5
P208PF106A_P20945P02A	23/04/2022 13:14	mm/s		5	10	0.1	0.03	0.08	0.17
P20907001A	23/04/2022 13:15	mm/s		5	10	0.17	0.06	0.29	0.89
WN47UAA02B_WN47UAP02C	26/04/2022 13:11	mm/s		5	10	0.16	0.11	0.11	0.91
WN49BAY06A	27/04/2022 13:12	mm/s		5	10	0.12	0.04	0.07	0.07
WS44BAR02A_WS44BAP01A	30/04/2022 12:57	mm/s		5	10	0.18	0.07	0.09	0.47

Monthly Meaningful Data

<b>April</b>	mm/s	Minimum	5	10	0.10	0.02	0.06	0.07
	mm/s	Mean	5	10	0.16	0.07	0.15	0.53
	mm/s	Maximum	5	10	0.30	0.21	0.55	2.00
	mm/s	Median	5	10	0.15	0.05	0.10	0.50

# 6 Sewage Treatment Plant Monitoring Data

Date Sampled: 4 April 2022

Date Obtained: 10 May 2022

*Table 4 Sewage Treatment Plant Monitoring*

Monitoring Site	Date & Time	Pollutant	Unit of Measure	Monitoring Result
EPA ID 23	04/04/2022 09:50:00	Faecal Coliforms	Colony forming units/100ml	1000000
		pH	pH	7.09
EPA ID 25	04/04/2022 10:00:00	Faecal Coliforms	Colony forming units/100ml	~<1000
		pH	pH	7.01
EPA ID 26	04/04/2022 12:35:00	Faecal Coliforms	Colony forming units/100ml	1900000
		pH	pH	7.59
EPA ID 29	04/04/2022 11:20:00	Faecal Coliforms	Colony forming units/100ml	~800
		pH	pH	7.62

# 7 Noise Monitoring Data

Date Sampled: 20/04/2022

Date Obtained: 13/05/2022

**Table 5 Night LAeq,15minute Generated by HVO Against EPL Criteria**

Location	Date & Time	Wind Speed (m/s) <sup>1</sup>	Stability Class <sup>1</sup>	Criterion dB	Criterion Applies? <sup>2</sup>	HVO LAeq dB <sup>3,4</sup>	Exceedance dB <sup>4,5</sup>
EPA ID 36	20/04/2022 21:00	3.9	E	41	No	36	NA
EPA ID 37	20/04/2022 21:54:00	3.9	E	40	No	32	NA
EPA ID 38	20/04/2022 21:26:00	3.5	D	39	No	35	NA
EPA ID 39	20/04/2022 21:00:00	3.9	E	37	No	<25	NA
EPA ID 40	20/04/2022 22:55:00	4.5	E	39	No	<30	NA
EPA ID 41	20/04/2022 21:35:00	3.5	D	39	No	IA	NA
EPA ID 42	20/04/2022 21:20:00	3.5	D	40	No	IA	NA
EPA ID 43	20/04/2022 21:00:00	3.9	E	40	No	IA	NA

**Notes:**

1. Atmospheric data is sourced from the HVO Cheshunt AWS using logged meteorological data;
2. Noise criteria apply under all meteorological conditions except during periods of rain or hail, wind speeds greater than 3 m/s measured at 10 metres above ground level, stability category F conditions and wind speeds greater than 2 m/s measured at 10m above ground level, or stability category G conditions;
3. Site-only LAeq,15minute attributed to HVO, including modifying factors if applicable;
4. Bold results in red indicate exceedance of criterion; and
5. NA in exceedance column means atmospheric conditions outside specified in approval, therefore criterion was not applicable.

**Table 6 Night LA1,1minute Generated by HVO Against EPL Criteria**

Location	Date & Time	Wind Speed (m/s) <sup>1</sup>	Stability Class <sup>1</sup>	Criterion dB	Criterion Applies? <sup>2</sup>	HVO LAeq dB <sup>3,4</sup>	Exceedance dB <sup>4,5</sup>
EPA ID 36	20/04/2022 21:00	3.9	E	46	No	39	NA
EPA ID 37	20/04/2022 21:54:00	3.9	E	46	No	38	NA
EPA ID 38	20/04/2022 21:26:00	3.5	D	46	No	38	NA
EPA ID 39	20/04/2022 21:00:00	3.9	E	46	No	<25	NA
EPA ID 40	20/04/2022 22:55:00	4.5	E	46	No	<30	NA
EPA ID 41	20/04/2022 21:35:00	3.5	D	46	No	IA	NA
EPA ID 42	20/04/2022 21:20:00	3.5	D	46	No	IA	NA
EPA ID 43	20/04/2022 21:00:00	3.9	E	46	No	IA	NA

**Notes:**

1. Atmospheric data is sourced from the HVO Cheshunt AWS using logged meteorological data;
2. Noise criteria apply under all meteorological conditions except during periods of rain or hail, wind speeds greater than 3 m/s measured at 10 metres above ground level, stability category F conditions and wind speeds greater than 2 m/s measured at 10m above ground level, or stability category G conditions;
3. Site-only LA1,1minute attributed to HVO;
4. Bold results in red indicate exceedance of criterion; and
5. NA in criterion column indicates no criterion is applicable at this location. NA in exceedance column means atmospheric conditions outside specified in approval, therefore criterion was not applicable.