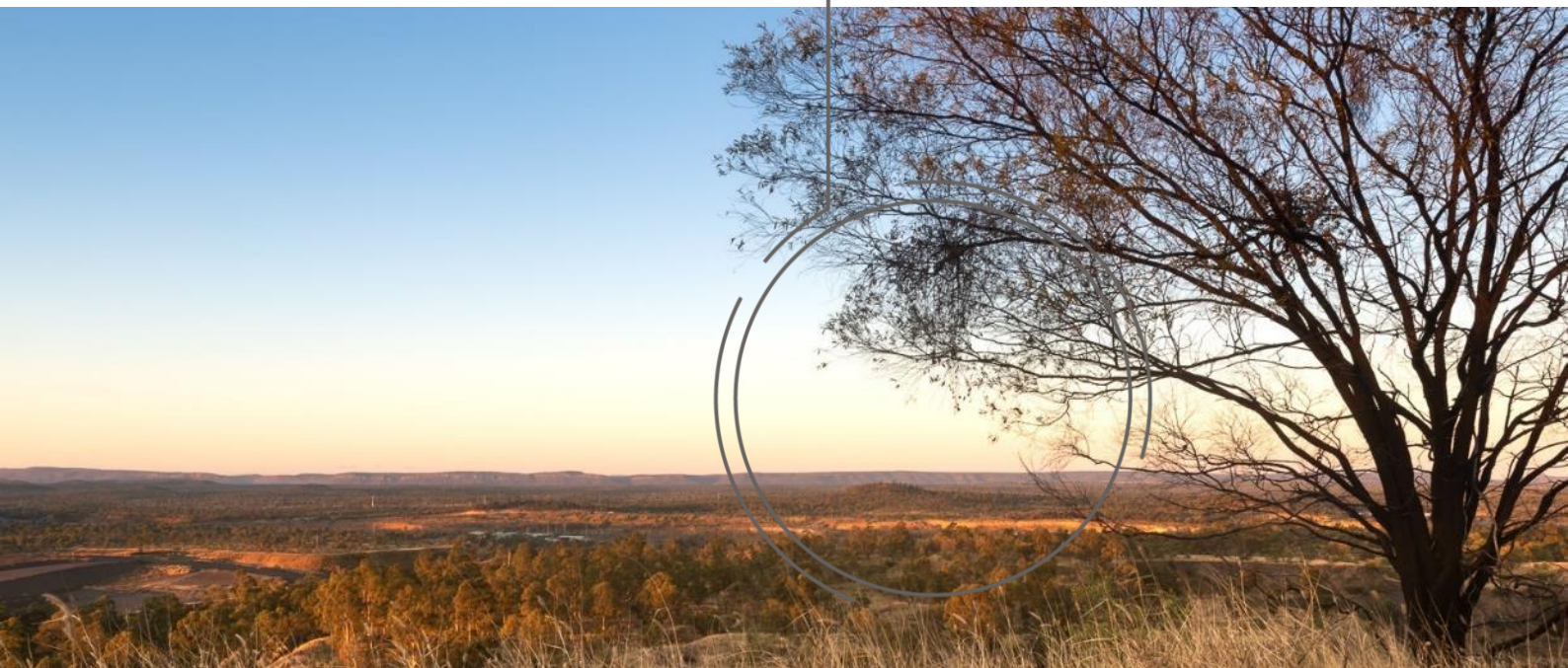


# HUNTER VALLEY OPERATIONS



## **Environment Protection Licence 640 Monitoring Data – November 2022 Report**



---

# Table of Contents

---

1.	Overview.....	2
2.	Definitions.....	2
3.	Air Quality.....	5
4.	Surface Water Monitoring Data .....	7
5.	Blast Monitoring Data .....	8
6.	Sewage Treatment Plant Monitoring Data .....	13
7.	Noise Monitoring Data .....	14

---

**Number:** HVOOC-1797567310-4473

**Status:** Approved

**Effective:** 23/12/2022

**Owner:** Environment and Community Officer

**Version:** 1.0

**Review:** [Planned  
Review Date]

# 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

Number: HVOOC-1797567310-4473

Status: Approved

Effective: 23/12/2022

Owner: Environment and Community Officer

Version: 1.0

Review: [Planned  
Review Date]

---

TSS	Total Suspended Solids
t	tonnes
YTD	Year To Date - rolling 12 month average

---

**Number:** HVOOC-1797567310-4473

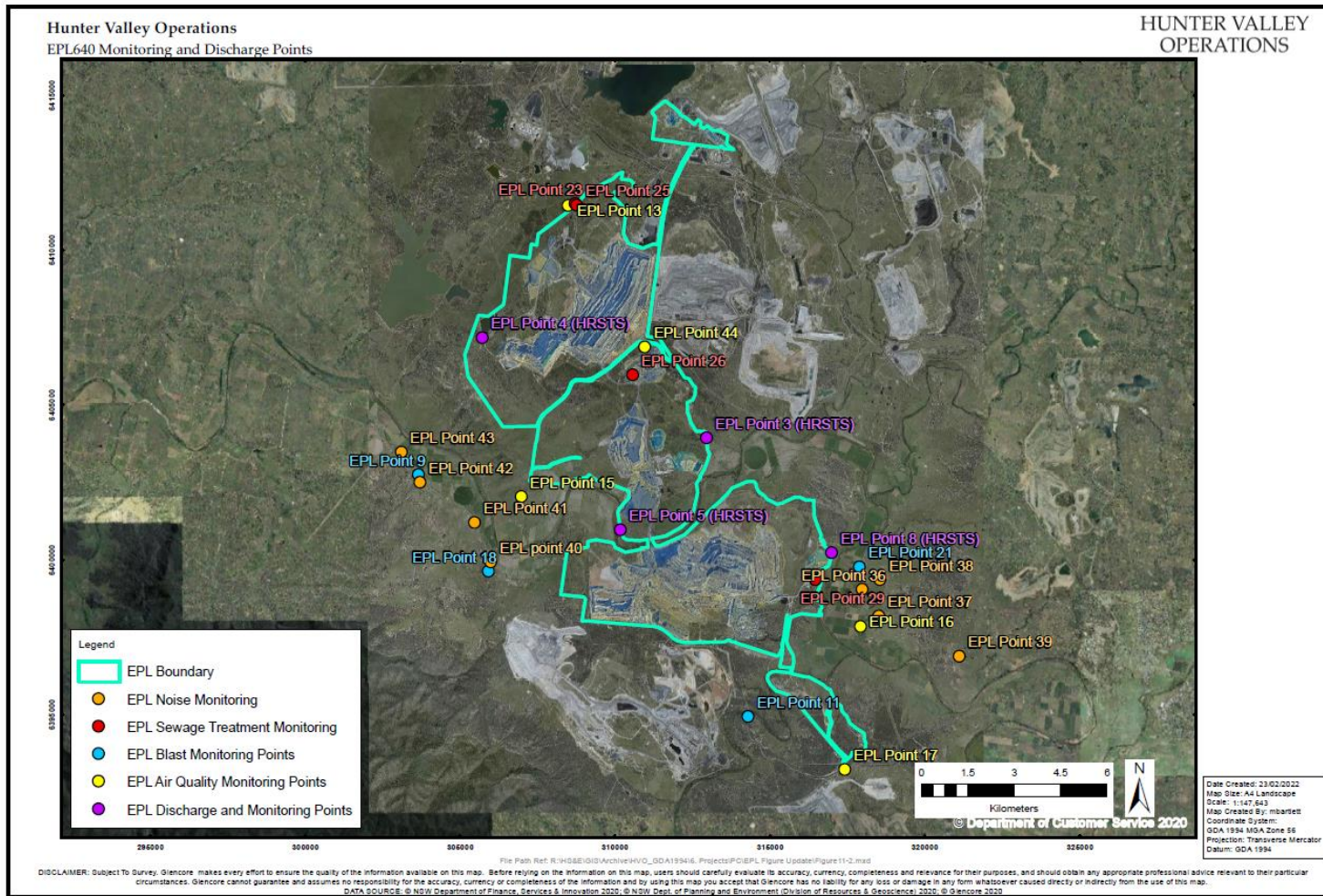
**Status:** Approved

**Effective:** 23/12/2022

**Owner:** Environment and Community Officer

**Version:** 1.0

**Review:** [Planned  
Review Date]



Number: HVOOC-1797567310-4473

Status: Approved

Effective: 23/12/2022

Owner: Environment and Community Officer

Version: 1.0

Review: [Planned  
Review Date]

### 3. Air Quality

**Date Last Sampled:** 30/11/2022

**Date Obtained:** 1/12/2022

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)
1/11/2022	µg/m <sup>3</sup>	Continuous	6.0	7.0	9.4	13.0	14.8
2/11/2022	µg/m <sup>3</sup>		7.3	7.0	12.6	12.2	22.3
3/11/2022	µg/m <sup>3</sup>		5.9	12.4	10.0	12.8	20.3
4/11/2022	µg/m <sup>3</sup>		23.7	26.0	9.6	14.7	17.2
5/11/2022	µg/m <sup>3</sup>		23.5	20.5	8.7	14.1	17.4
6/11/2022	µg/m <sup>3</sup>		27.1	16.8	9.7	19.4	23.9
7/11/2022	µg/m <sup>3</sup>		26.9	15.6	9.3	17.6	20.9
8/11/2022	µg/m <sup>3</sup>		25.3	15.9	8.6	15.2	14.4
9/11/2022	µg/m <sup>3</sup>		33.0	19.0	9.8	15.2	16.9
10/11/2022	µg/m <sup>3</sup>		24.8	19.0	10.9	11.7	16.6
11/11/2022	µg/m <sup>3</sup>		21.7	19.0	11.7	8.1	48.7
12/11/2022	µg/m <sup>3</sup>		21.4	16.7	15.2	21.6	45.1
13/11/2022	µg/m <sup>3</sup>		18.3	16.2	11.7	18.9	23.9
14/11/2022	µg/m <sup>3</sup>		11.2	9.8	15.3	12.8	27.6
15/11/2022	µg/m <sup>3</sup>		10.2	10.7	11.7	11.8	22.7
16/11/2022	µg/m <sup>3</sup>		9.8	13.1	13.0	19.0	28.9
17/11/2022	µg/m <sup>3</sup>		16.9	14.5	12.8	24.7	22.6
18/11/2022	µg/m <sup>3</sup>		51.2	24.7	14.8	27.6	28.3
19/11/2022	µg/m <sup>3</sup>		23.2	22.5	20.1	23.6	51.0
20/11/2022	µg/m <sup>3</sup>		19.5	18.7	37.3	30.7	59.5

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)
21/11/2022	µg/m <sup>3</sup>		20.0	14.5	48.0	23.7	69.0
22/11/2022	µg/m <sup>3</sup>		11.1	10.7	25.7	14.2	34.3
23/11/2022	µg/m <sup>3</sup>		19.7	11.2	30.9	15.7	45.2
24/11/2022	µg/m <sup>3</sup>		25.7	18.5	23.5	22.7	46.8
25/11/2022	µg/m <sup>3</sup>		25.4	20.6	28.4	27.7	36.9
26/11/2022	µg/m <sup>3</sup>		33.8	26.2	25.5	23.8	30.6
27/11/2022	µg/m <sup>3</sup>		29.5	24.3	30.8	33.1	57.6
28/11/2022	µg/m <sup>3</sup>		23.2	22.1	20.8	20.1	26.9
29/11/2022	µg/m <sup>3</sup>		34.8	24.9	23.7	29.3	30.2
30/11/2022	µg/m <sup>3</sup>		36.3	29.7	26.4	24.8	25.2
<b>Monthly Meaningful Data</b>							
November	µg/m <sup>3</sup>	Minimum	7.3	7.0	8.6	8.1	14.4
	µg/m <sup>3</sup>	Mean	23.4	18.1	18.5	19.5	31.5
	µg/m <sup>3</sup>	Maximum	51.2	29.7	48.0	33.1	69.0
	µg/m <sup>3</sup>	Median	23.4	18.6	14.8	19.0	27.2

\* - Less than 75% data

## 4. Surface Water Monitoring Data

**Date Sampled:**

EPL ID 3: 23/11/2022

EPL ID 4: 2/11/2022, 4/11/2022, 7/11/2022, 8/11/2022, 21/11/2022, 22/11/2022, 28/11/2022, 29/11/2022, 30/11/2022

EPL ID 8: 9/11/2022, 10/11/2022, 11/11/2022, 12/11/2022, 15/11/2022, 16/11/2022, 17/11/2022, 18/11/2022, 24/11/2022, 25/11/2022

**Date Obtained:**

EPL ID 3: 24/11/2022

EPL ID 4: 3/11/2022, 7/11/2022, 8/11/2022, 9/11/2022, 22/11/2022, 23/11/2022, 30/11/2022, 30/11/2022, 1/12/2022

EPL ID 8: 11/11/2022, 11/11/2022, 14/11/2022, 14/11/2022, 17/11/2022, 17/11/2022, 18/11/2022, 21/11/2022, 28/11/2022, 28/11/2022

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	1	1
	Total Suspended Solids	Milligrams per Litre	120	1	1
EPL ID 4 (Dam 9W)	pH	pH	6.5-9.5	9	9
	Total Suspended Solids	Milligrams per Litre	120	9	9
EPL ID 8 (Dam 15S)	pH	pH	6.5-9.5	10	10
	Total Suspended Solids	Milligrams per Litre	120	10	10



## 5. Blast Monitoring Data

Date Last Sampled: 30/11/2022

Date Obtained: 1/12/2022

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
P208BR303A	3/11/2022 9:48	dB(L)	All blasts 100%	115	120	97.52	106.12	101.3	100.33
P21045P01A	3/11/2022 9:49	dB(L)		115	120	94.86	100.74	101.3	100.7
WN49ARC03B_WN49ARC04A	3/11/2022 16:34	dB(L)		115	120	93.83	108	95.62	90.14
RW37WHA08A	4/11/2022 13:05	dB(L)		115	120	98.71	102.22	100.7	89.54
WN47LEB03A	5/11/2022 13:02	dB(L)		115	120	95.07	99.03	101.3	85.6
WN45BAR04A	5/11/2022 13:02	dB(L)		115	120	88.14	99.03	101.3	85.6
M1T212502A	7/11/2022 10:58	dB(L)		115	120	93.23	102.61	89.04	87.92

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
WS46ULD01A	7/11/2022 13:01	dB(L)	All blasts 100%	115	120	88.79	98.19	89.39	92.35
WN45LLD06A	8/11/2022 13:07	dB(L)		115	120	91.62	96.15	99.59	91.18
P208BR304A	12/11/2022 10:02	dB(L)		115	120	84.35	86.78	96.19	96.14
WS4912002A	12/11/2022 12:57	dB(L)		115	120	95.02	86.47	86.18	87.59
P125WK503A	16/11/2022 12:57	dB(L)		115	120	91.37	94.13	89.44	97.52
P208BR801A	17/11/2022 13:03	dB(L)		115	120	79.65	98.88	94.52	84.05
P20900901_N5P01A	18/11/2022 13:29	dB(L)		115	120	90.88	87.04	92.76	93.18
WN45LLD07_08_BAR05A	22/11/2022 13:09	dB(L)		115	120	100.23	105.9	104.9	96.58
P208BR304A_P20900901B	24/11/2022 15:03	dB(L)		115	120	89.14	95.55	96.23	97.27
WN49ARC05A_WN49ARC06A	25/11/2022 13:12	dB(L)		115	120	90.91	96.03	96.74	105.71

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
WN45LLD09_47LLD01_BAP01	29/11/2022 13:09	dB(L)		115	120	93.58	94.63	84.81	79.81
WS46ULD01B	30/11/2022 13:15	dB(L)		115	120	109.26	108.07	95.98	97.93
Monthly Meaningful Data									
November		dB(L)	Minimum	115	120	79.65	86.47	84.81	79.81
		dB(L)	Mean	115	120	92.96	98.19	95.65	92.59
		dB(L)	Maximum	115	120	109.26	108.07	104.90	105.71
		dB(L)	Median	115	120	93.23	98.88	96.19	92.35

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
P208BR303A	3/11/2022 9:48	mm/s	All Blasts 100%	5	10	0.21	0.06	0.58	0.58
P21045P01A	3/11/2022 9:49	mm/s		5	10	0.14	0.04	0.24	0.46
WN49ARC03B_WN49ARC04A	3/11/2022 16:34	mm/s		5	10	0.12	0.07	0.05	0.19
RW37WHA08A	4/11/2022 13:05	mm/s		5	10	0.21	0.05	0.06	0.29
WN47LEB03A	5/11/2022 13:02	mm/s		5	10	0.14	0.07	0.06	0.37
WN45BAR04A	5/11/2022 13:02	mm/s		5	10	0.14	0.07	0.06	0.37
M1T212502A	7/11/2022 10:58	mm/s		5	10	0.14	0.08	0.04	0.18
WS46ULD01A	7/11/2022 13:01	mm/s		5	10	0.21	0.12	0.09	0.46
WN45LLD06A	8/11/2022 13:07	mm/s		5	10	0.13	0.09	0.04	0.66
P208BR304A	12/11/2022 10:02	mm/s		5	10	0.2	0.08	0.38	0.84
WS4912002A	12/11/2022 12:57	mm/s		5	10	0.13	0.06	0.04	0.15
P125WK503A	16/11/2022 12:57	mm/s		5	10	0.1	0.02	0.03	0.26
P208BR801A	17/11/2022 13:03	mm/s		5	10	0.1	0.03	0.04	0.12

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
P20900901_N5P01A	18/11/2022 13:29	mm/s		5	10	0.17	0.07	0.23	0.83
WN45LLD07_08_BAR05A	22/11/2022 13:09	mm/s		5	10	0.15	0.15	0.06	0.19
P208BR304A_P20900901B	24/11/2022 15:03	mm/s		5	10	0.3	0.09	0.46	1.12
WN49ARC05A_WN49ARC06A	25/11/2022 13:12	mm/s		5	10	0.13	0.06	0.04	0.39
WN45LLD09_47LLD01_BAP01	29/11/2022 13:09	mm/s		5	10	0.17	0.17	0.05	0.16
WS46ULD01B	30/11/2022 13:15	mm/s		5	10	0.21	0.17	0.12	0.27

**Monthly Meaningful Data**

Monthly Meaningful Data									
<b>November</b>	mm/s	Minimum	5	10	0.10	0.02	0.03	0.12	
	mm/s	Mean	5	10	0.16	0.08	0.14	0.42	
	mm/s	Maximum	5	10	0.30	0.17	0.58	1.12	
	mm/s	Median	5	10	0.14	0.07	0.06	0.37	

## 6. Sewage Treatment Plant Monitoring Data

**Date Sampled:** 22 November 2022

**Date Obtained:** 13 December 2022

*Table 4 Sewage Treatment Plant Monitoring*

Monitoring Site	Date & Time	Pollutant	Unit of Measure	Monitoring Result
EPA ID 23	4/10/2022 8:10:00 AM	Faecal Coliforms	Colony forming units/100ml	2400000
		pH	pH	6.94
EPA ID 25	4/10/2022 8:20:00 AM	Faecal Coliforms	Colony forming units/100ml	44000
		pH	pH	6.91
EPA ID 26	4/10/2022 10:10:00 AM	Faecal Coliforms	Colony forming units/100ml	1600000
		pH	pH	7.50
EPA ID 29	04/10/2022 11:30:00	Faecal Coliforms	Colony forming units/100ml	300
		pH	pH	9.83

## 7. Noise Monitoring Data

**Date Sampled:** 3/11/2022

**Date Obtained:** 13/12/2022

*Table 5 Night  $L_{Aeq,15minute}$  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 $L_{Aeq}$ dB <sup>3,4</sup>	Exceedance dB <sup>4,5</sup>
EPA ID 36	3/11/2022 21:48	3.3	E	40	No	IA	NA
EPA ID 37	3/11/2022 21:25	3.2	E	39	No	IA	NA
EPA ID 38	3/11/2022 22:40	3.2	E	37	No	IA	NA
EPA ID 39	3/11/2022 23:18	3.2	E	39	No	35	NA
EPA ID 40	3/11/2022 22:57	2.9	E	39	Yes	<30	Nil
EPA ID 41	3/11/2022 21:23	3.2	E	40	No	<30	NA
EPA ID 42	3/11/2022 21:02	3.7	E	40	No	<30	NA
EPA ID 43	3/11/2022 21:48	3.3	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  $L_{Aeq,15minute}$  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  $L_{A1, 1 \text{ minute}}$  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 $L_{Aeq}$ dB <sup>3,4</sup>	Exceedance dB <sup>4,5</sup>
EPA ID 36	3/11/2022 21:00	3.7	E	46	No	IA	NA
EPA ID 37	3/11/2022 21:48	3.3	E	46	No	IA	NA
EPA ID 38	3/11/2022 21:25	3.2	E	46	No	IA	NA
EPA ID 39	3/11/2022 22:40	3.2	E	46	No	IA	NA
EPA ID 40	3/11/2022 23:18	3.2	E	46	No	35	NA
EPA ID 41	3/11/2022 22:57	2.9	E	46	Yes	35	Nil
EPA ID 42	3/11/2022 21:23	3.2	E	46	No	40	NA
EPA ID 43	3/11/2022 21:02	3.7	E	46	No	<30	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  $L_{A1, 1 \text{ minute}}$  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.