

# HUNTER VALLEY OPERATIONS

## MONTHLY ENVIRONMENTAL MONITORING REPORT – JANUARY 2023

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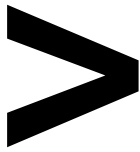
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1 | Introduction..... 4

2 | Air Quality..... 4

    2.1 | Meteorological Monitoring..... 4

        2.1.1 | Rainfall 4

        2.1.2 | Wind Speed and Direction 5

    2.2 | Depositional Dust..... 7

    2.3 | Suspended Particles ..... 8

        2.3.1 | HVAS PM<sub>10</sub> Results 8

        2.3.2 | HVAS PM<sub>2.5</sub> Results 10

        2.3.3 | TSP Results 12

        2.3.4 | Real Time PM<sub>10</sub> Results 13

        2.3.5 | Real Time Alarms for Air Quality 14

3 | Water Quality..... 15

    3.1 | Surface Water ..... 15

        3.1.1 | Surface Water Trigger Tracking 17

    3.2 | Site Water Use..... 17

    3.3 | HRSTS Discharge..... 17

    3.4 | Groundwater Monitoring Results ..... 17

        3.4.1 | Groundwater Trigger Tracking 19

4 | Blasting..... 20

    4.1 | Blast Monitoring Results ..... 21

5 | Noise ..... 24

    5.1 | Attended Noise Monitoring Results..... 24

    5.2 | Low Frequency Assessment..... 27

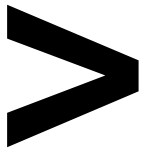
    5.3 | Real Time Noise Monitoring..... 29

6 | Operational Downtime..... 31

7 | Rehabilitation..... 32

8 | Complaints ..... 33

9 | Environmental Incidents ..... 34



Appendix A: Meteorological Data..... 35

Table of Figures

Figure 1 - Rainfall Summary 2023..... 4
Figure 2 – HVO Corporate Wind Rose for the Reporting Period ..... 5
Figure 3 – HVO Cheshunt Wind Rose for the Reporting Period..... 5
Figure 4 – Air Quality Monitoring Location Plan ..... 6
Figure 5 - Depositional Dust Results for the Reporting Period ..... 7
Figure 6 – Individual PM10 Results for the Reporting Period ..... 8
Figure 7 – Year to Date Average PM10 as at end of the Reporting Period ..... 9
Figure 8 - Results for the Reporting Period..... 10
Figure 9 - Year to Date Average PM2.5 as at end of the Reporting Period ..... 11
Figure 10 - Year to Date Average Total Suspended Particulates as at end of the Reporting Period ..... 12
Figure 11 – Real Time PM10 24hr for the Reporting Period ..... 13
Figure 12 – Real Time PM10 Annual Average for the Reporting Period..... 14
Figure 13 – HVO Surface Water Monitoring Locations ..... 16
Figure 14 - Groundwater Monitoring Locations at HVO ..... 18
Figure 15 - Blast Monitoring Location Plan ..... 23
Figure 16 - Noise Monitoring Location Plan ..... 30
Figure 17 - Operational Downtime by Equipment Type for the Reporting Period ..... 31
Figure 18 - Rehabilitation YTD January 2023..... 32
Table 1 - Rainfall data for the reporting period..... 4
Table 2 – Blasting Criteria ..... 20
Table 3 – Overpressure Blast Monitoring Results for the reporting period ..... 21
Table 4 – Ground Vibration Blast Monitoring Results for the reporting period..... 22
Table 5 - LAeq,15minute and 1minute HVO North Against Impact Assessment Criteria for the Reporting Period..... 25
Table 6 - LAeq,15minute and 1minute HVO South Against Impact Assessment Criteria for the Reporting Period..... 26
Table 7 - Modifying Factor Assessment HVO North for the Reporting Period ..... 27
Table 8 - Modifying Factor Assessment HVO South for the Reporting Period..... 28



# 1 | INTRODUCTION

This report has been compiled to provide a monthly summary of environmental monitoring results for Hunter Valley Operations (HVO). This report includes all monitoring data collected for the period 1st to 31<sup>st</sup> January 2023 (the 'Reporting Period').

# 2 | AIR QUALITY

## 2.1 | METEOROLOGICAL MONITORING

HVO maintains two meteorological stations: 'HVO Corporate' and 'Cheshunt' (refer to **Figure 4**).

### 2.1.1 | RAINFALL

Rainfall for the period is summarised in **Table 1**. The 2021, 2022 and 2023 trends are shown in **Figure 1**.

Table 1 - Rainfall data for the reporting period

2023	Monthly Rainfall (mm)	Cumulative Rainfall (mm)
January	45.8	45.8

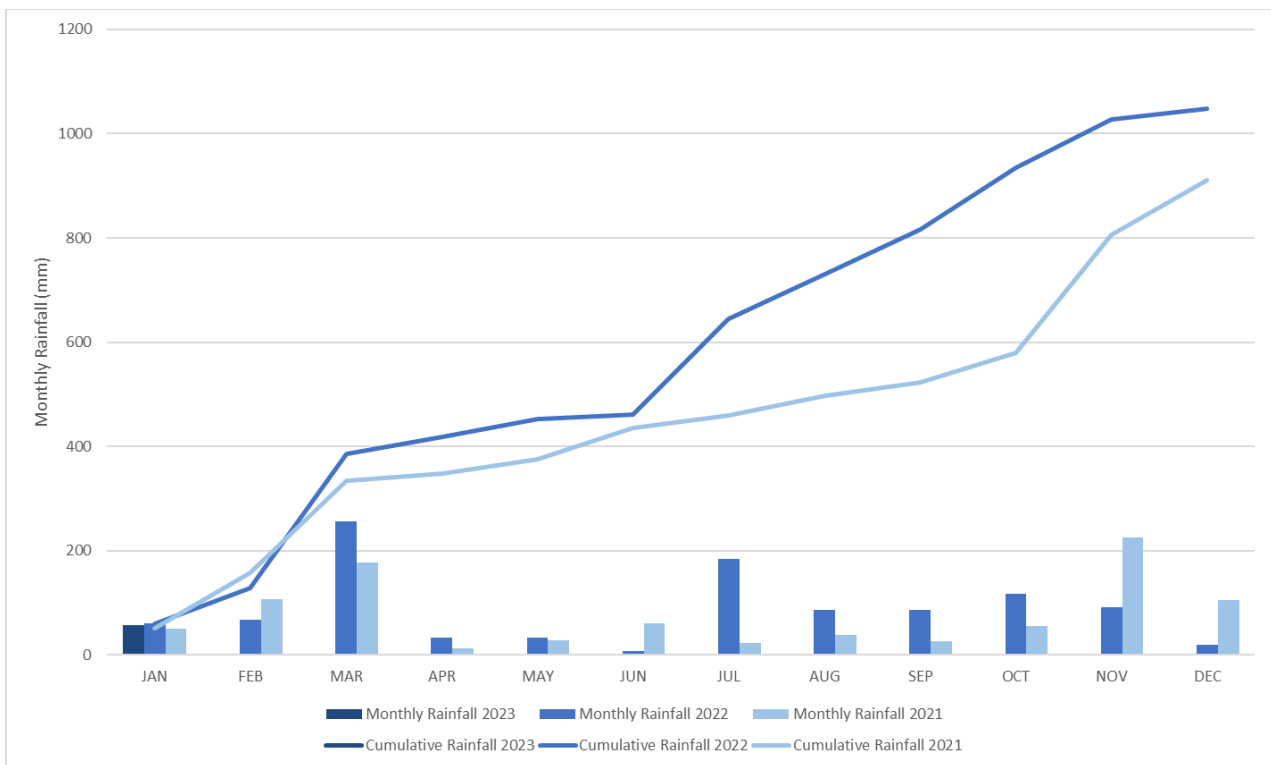


Figure 1 - Rainfall Summary 2023



2.1.2 | WIND SPEED AND DIRECTION

North-westerly winds were prevailing during the reporting period as shown in Figure 2 (HVO Corporate) and Figure 3 (HVO Cheshunt).

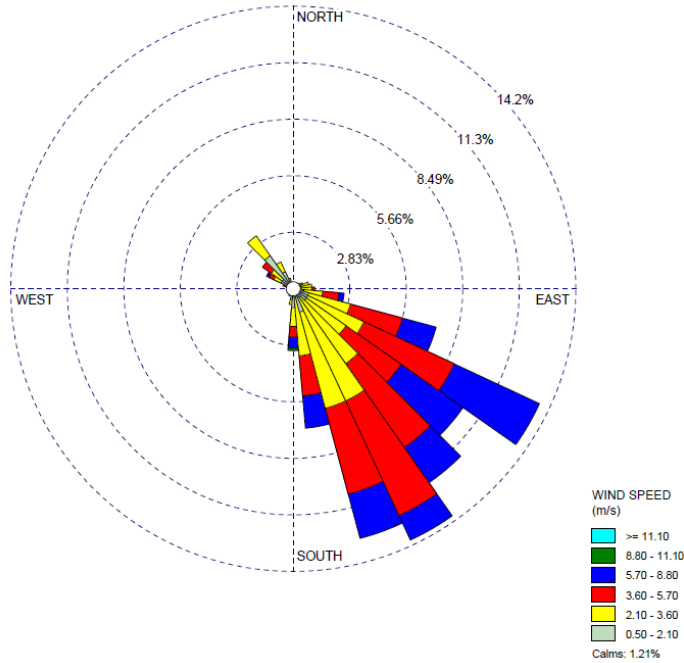


Figure 2 – HVO Corporate Wind Rose for the Reporting Period

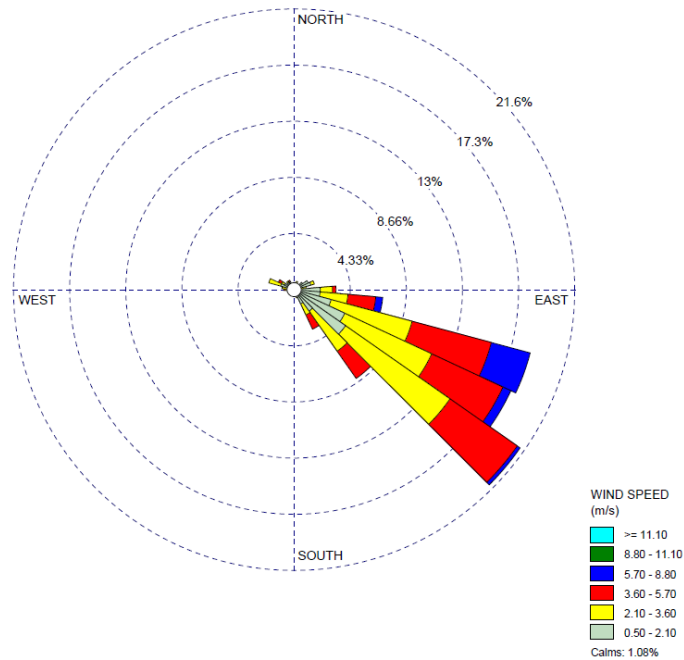


Figure 3 – HVO Cheshunt Wind Rose for the Reporting Period

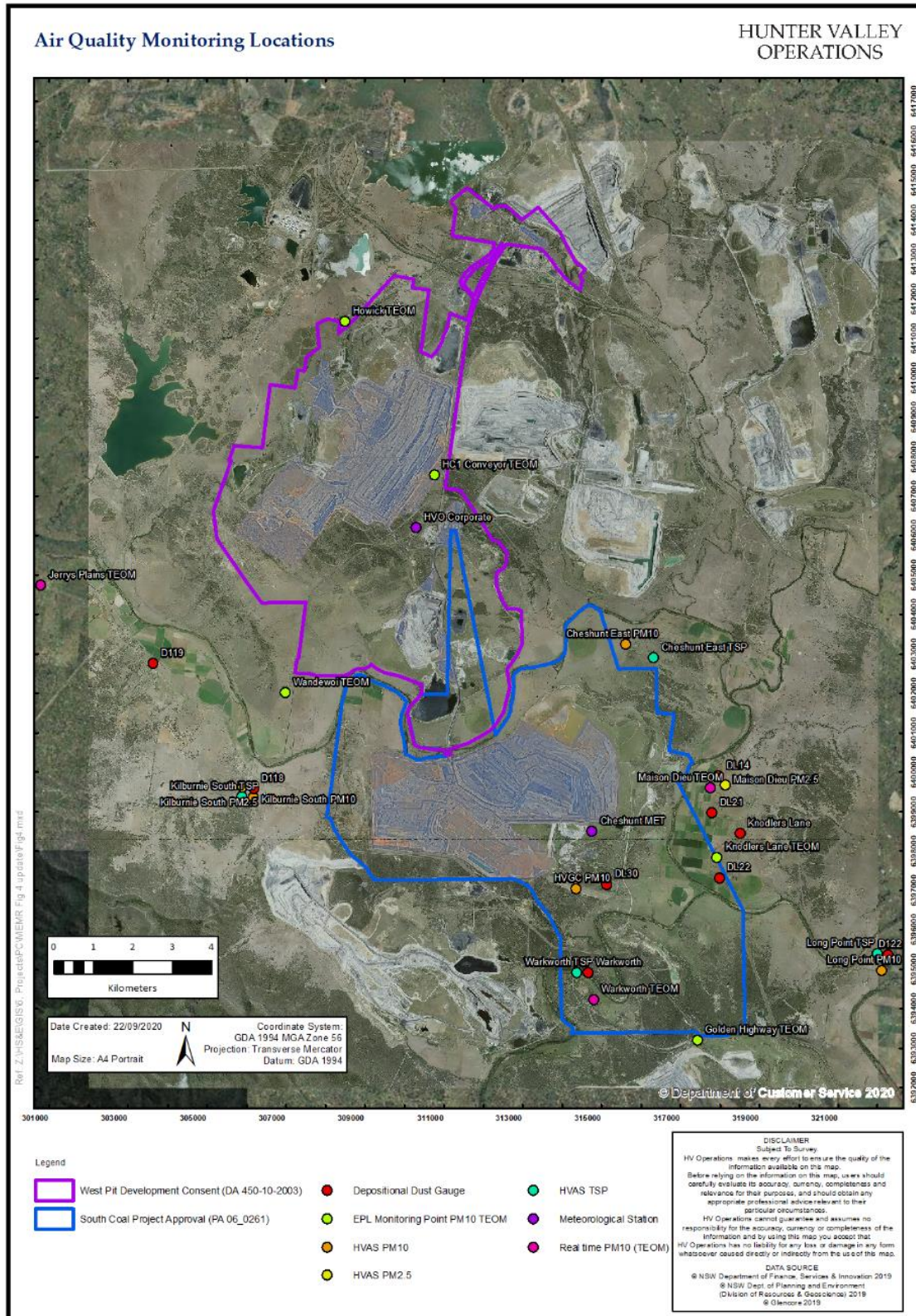
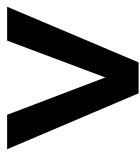


Figure 4 – Air Quality Monitoring Location Plan



2.2 | DEPOSITIONAL DUST

HVO operates and maintains a network of nine depositional dust gauges situated on private and mine owned land surrounding HVO to monitor regional air quality.

Figure 5 displays insoluble solids results from depositional dust gauges during the reporting period compared against the annual impact assessment criteria. Any monthly results deemed to be contaminated (due to presence of bird droppings, insects, etc.) are not displayed. An assessment of HVO’s contribution against the long-term impact assessment criteria will be provided in the 2023 Annual Review.

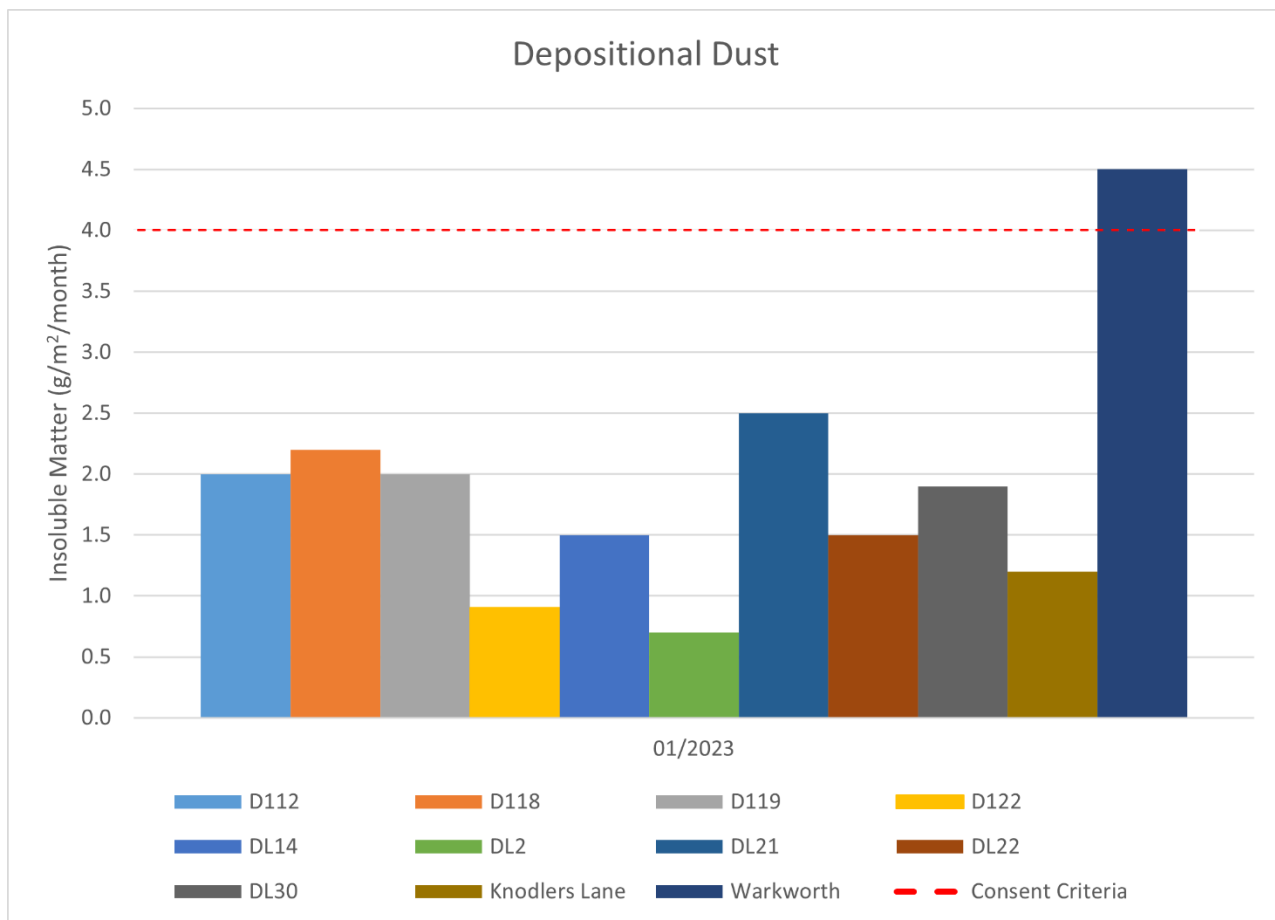
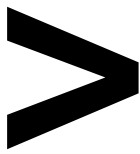


Figure 5 - Depositional Dust Results for the Reporting Period



2.3 | SUSPENDED PARTICLES

Suspended particles are measured by a network of High Volume Air Samplers (HVAS) measuring Total Suspended Particulates (TSP) and Particulate Matter <10µm (PM10). The Kilburnie South and Maison Dieu HVAS also monitor Particulate Matter <2.5µm (PM2.5). The location of these monitors is presented in Figure 4. Each HVAS runs for 24-hours on a six-day cycle.

2.3.1 | HVAS PM10 RESULTS

2.3.1.1 | PERFORMANCE AGAINST SHORT TERM IMPACT ASSESSMENT CRITERIA

Figure 6 shows individual PM10 results at each monitoring station against the short-term impact assessment criteria of 50µg/m³.

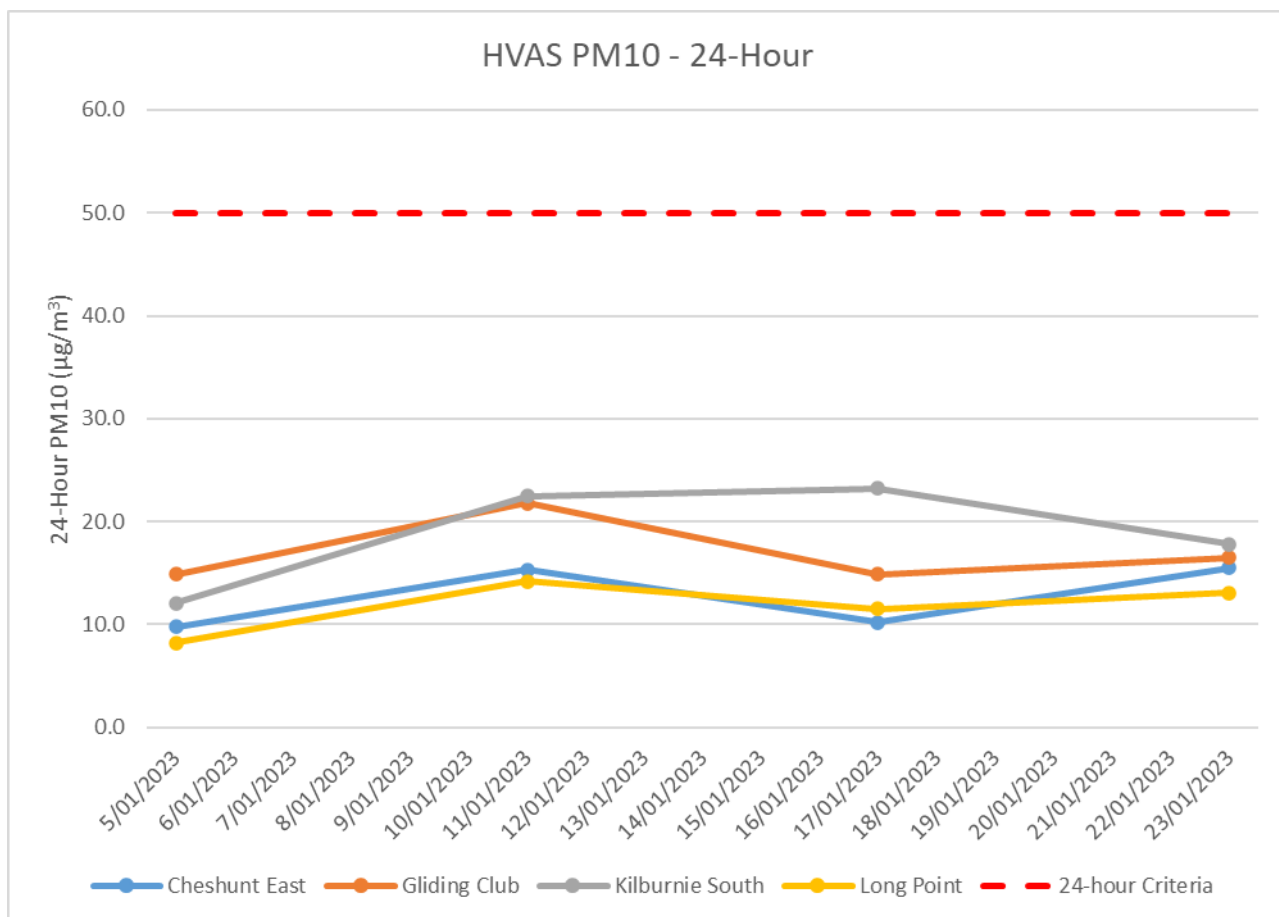
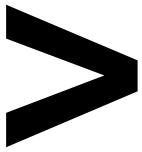


Figure 6 – Individual PM10 Results for the Reporting Period





### 2.3.1.2 | PERFORMANCE AGAINST LONG TERM IMPACT ASSESSMENT CRITERIA

Figure 7 shows the year-to-date annual average PM<sub>10</sub> results. All monitors were below the relevant long term impact assessment criteria during the reporting period. An assessment of HVO’s contribution against the long-term impact assessment criteria will be provided in the 2023 Annual Review.

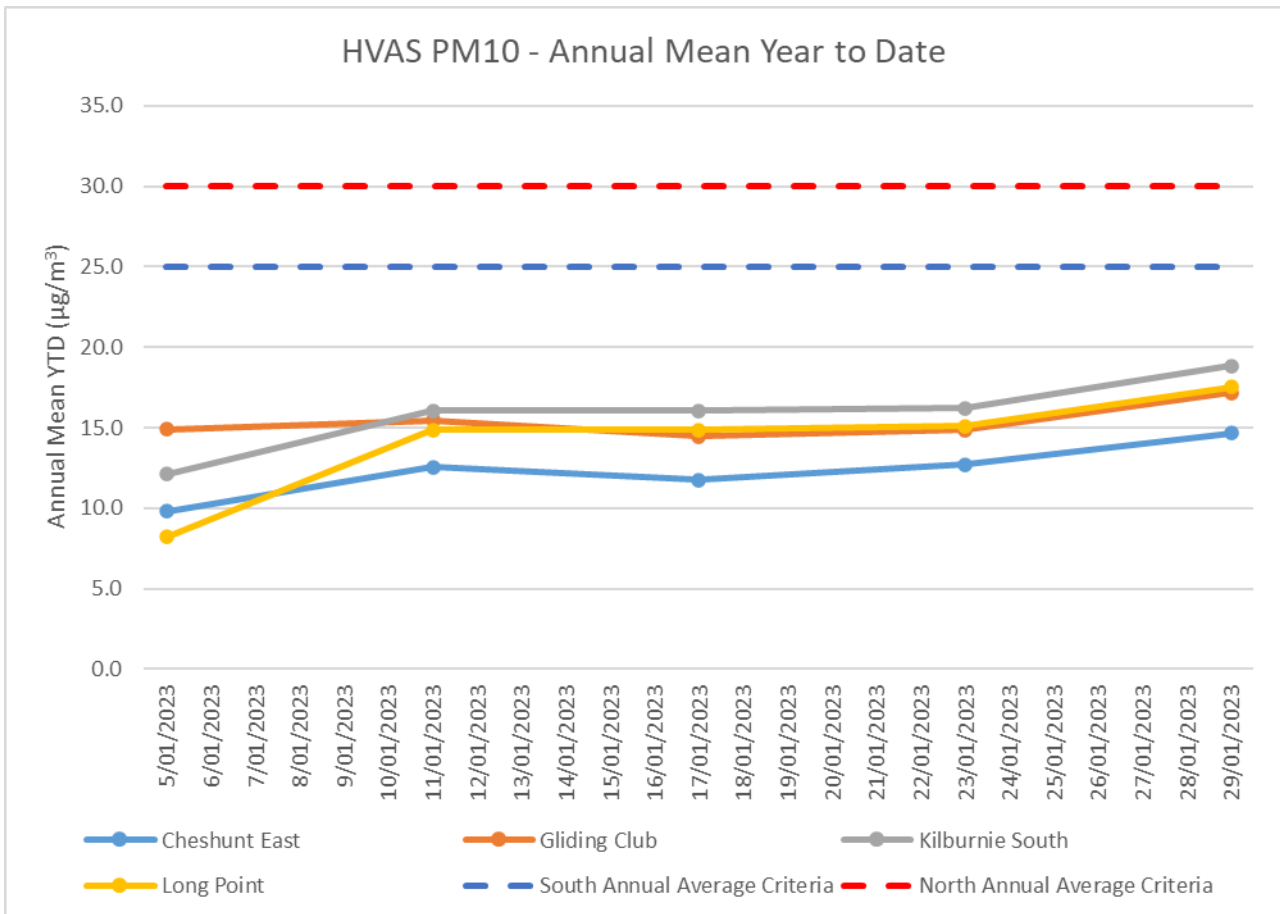
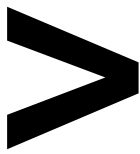


Figure 7 – Year to Date Average PM<sub>10</sub> as at end of the Reporting Period



2.3.2 | HVAS PM<sub>2.5</sub> RESULTS

HVO monitors PM<sub>2.5</sub> at two HVAS locations, Kilburnie South and Maison Dieu.

2.3.2.1 | HVAS PM<sub>2.5</sub> RESULTS

Figure 8 shows individual PM<sub>2.5</sub> results at each monitoring station against the HVO South short-term impact assessment criteria of 25µg/m<sup>3</sup>.

An exceedance was recorded on 17 January at the Kilburnie South monitor. This exceedance was investigated by an external consultant who confirmed that the HVO contribution was 11ug/m<sup>3</sup> or 38%.

All other monitors were below the relevant short-term impact assessment criteria during the reporting period.

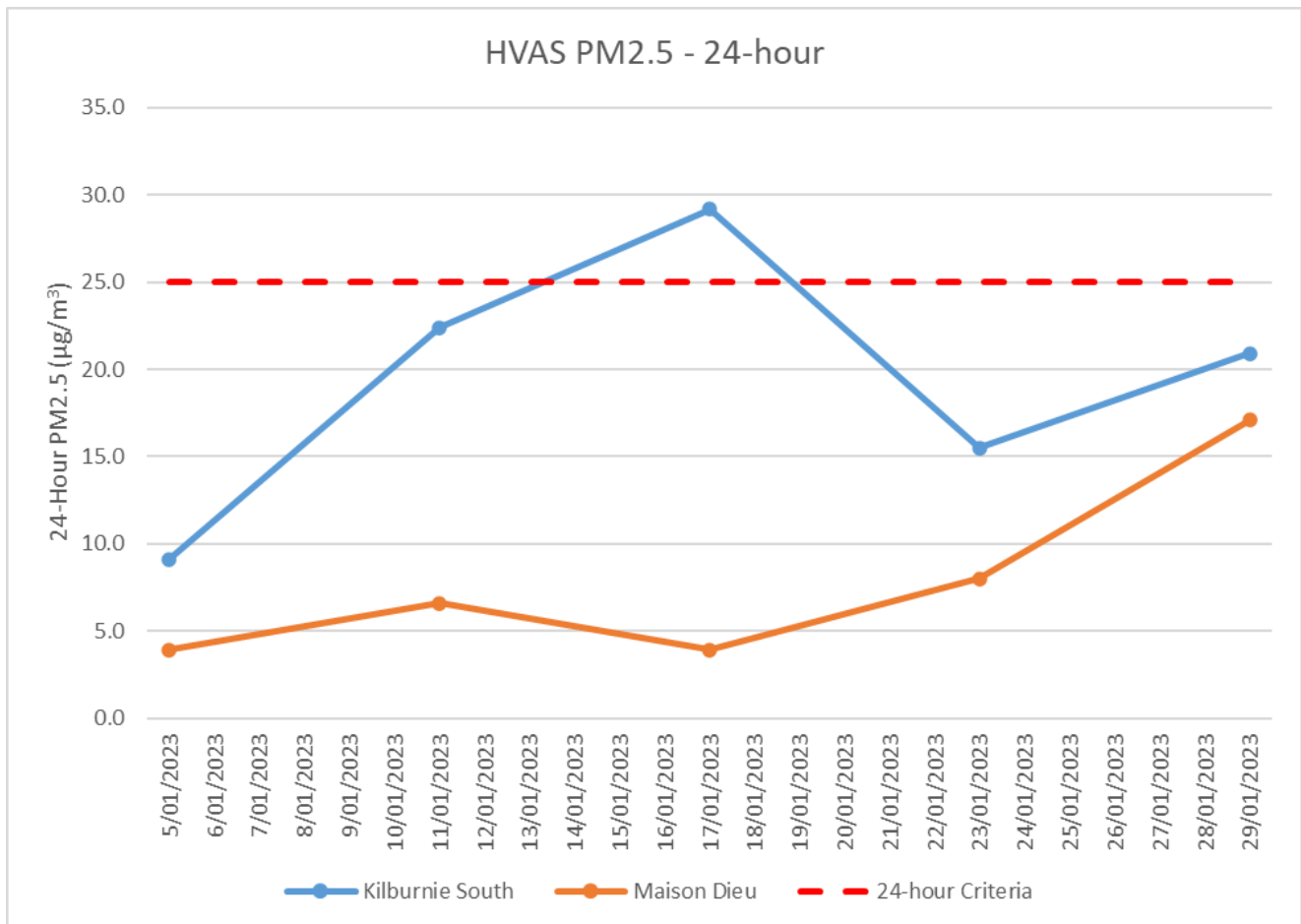


Figure 8 - Results for the Reporting Period



2.3.2.2 | PERFORMANCE AGAINST LONG TERM IMPACT ASSESSMENT CRITERIA

Figure 9 shows the year-to-date annual average PM<sub>2.5</sub> results. During the reporting period, the Maison Dieu monitor and Kilburnie South monitor annual average year to date were above the PM<sub>2.5</sub> Annual Rolling Mean criteria of 8µg/m<sup>3</sup>.

An assessment of HVO’s contribution against the long-term impact assessment criteria will be provided in the 2023 Annual Review.

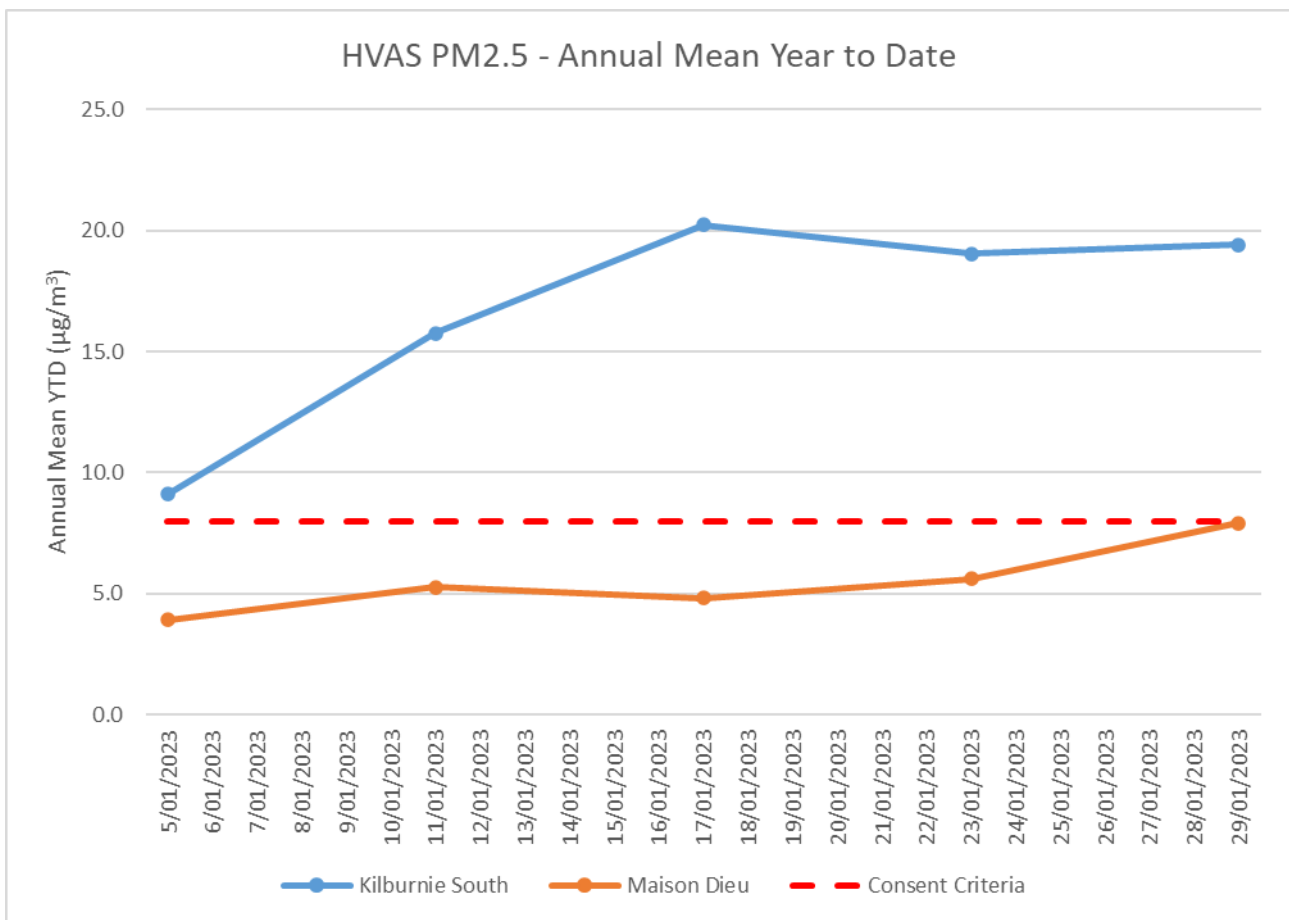
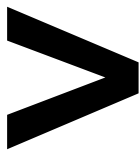


Figure 9 - Year to Date Average PM<sub>2.5</sub> as at end of the Reporting Period



2.3.3 | TSP RESULTS

2.3.3.1 | PERFORMANCE AGAINST LONG TERM IMPACT ASSESSMENT CRITERIA

Figure 10 shows the annual average TSP results compared against the long-term impact assessment criteria of 90µg/m3.

All monitors, except for Kilburnie South, were below the relevant long-term impact assessment criteria during the reporting period.

An assessment of HVO’s contribution against the long-term impact assessment criteria will be provided in the 2023 Annual Review.

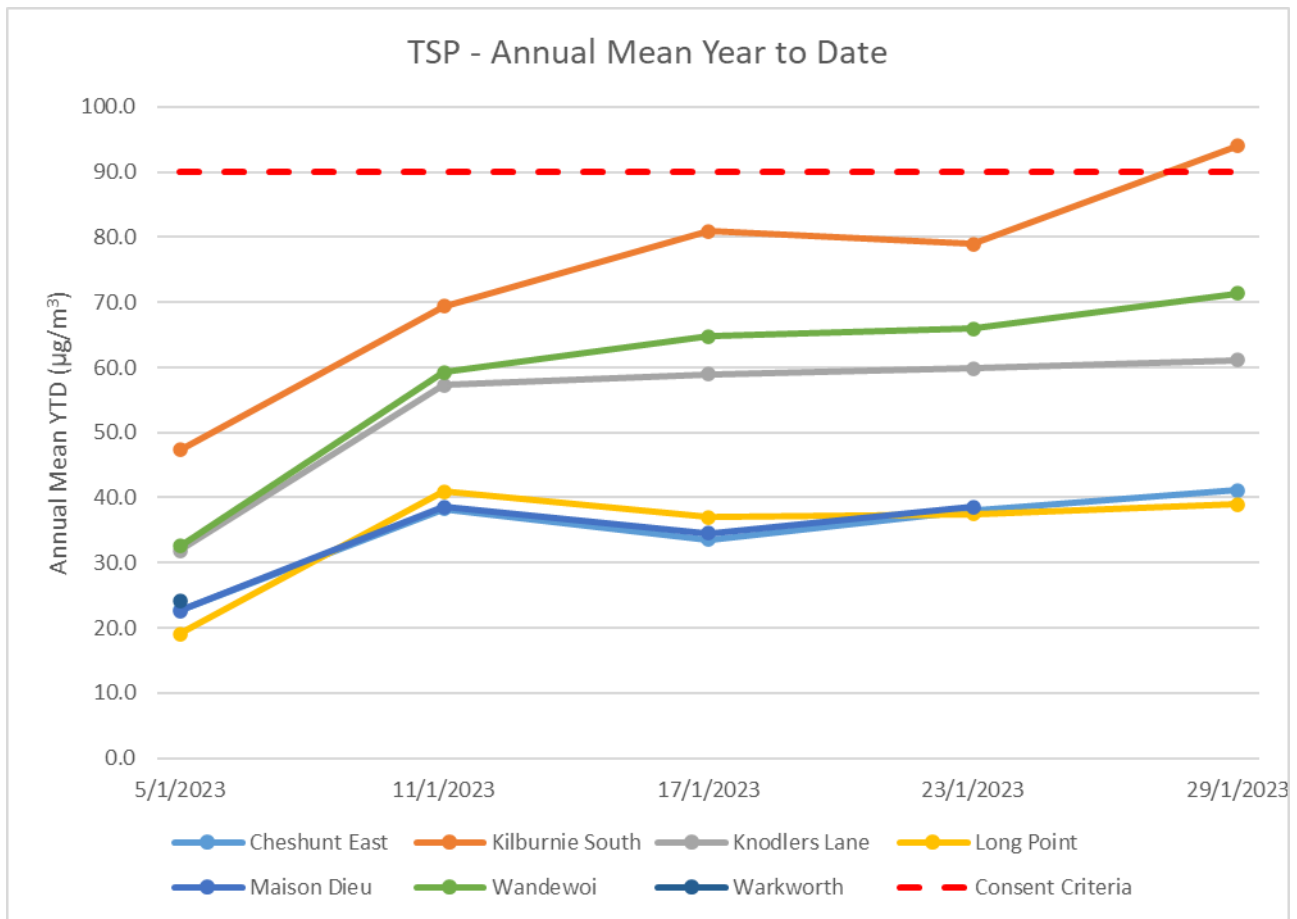
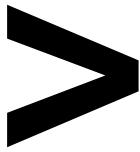


Figure 10 - Year to Date Average Total Suspended Particulates as at end of the Reporting Period



2.3.4 | REAL TIME PM<sub>10</sub> RESULTS

HVO maintains a network of real time PM<sub>10</sub> monitors. The real time air quality monitoring stations continuously record information and transmit data to a central database, generating alarms when particulate matter levels exceed internal trigger levels. Results from real time PM<sub>10</sub> monitoring are used as a reactive measure to guide mining operations to help achieve compliance with the relevant conditions of the project approval.

Figure 11 shows the daily 24-hour average PM<sub>10</sub> result from the real time monitoring sites which shows no exceedances reported for the period.

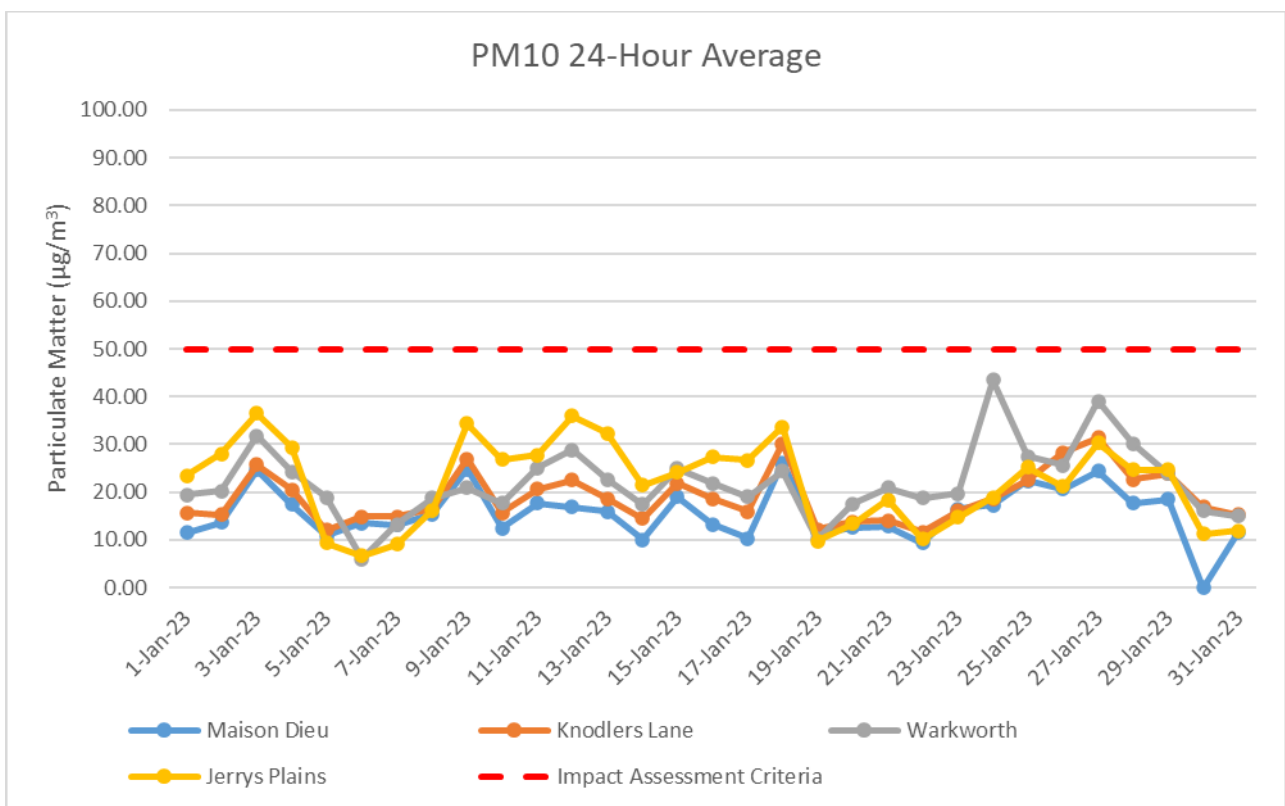


Figure 11 – Real Time PM<sub>10</sub> 24hr for the Reporting Period

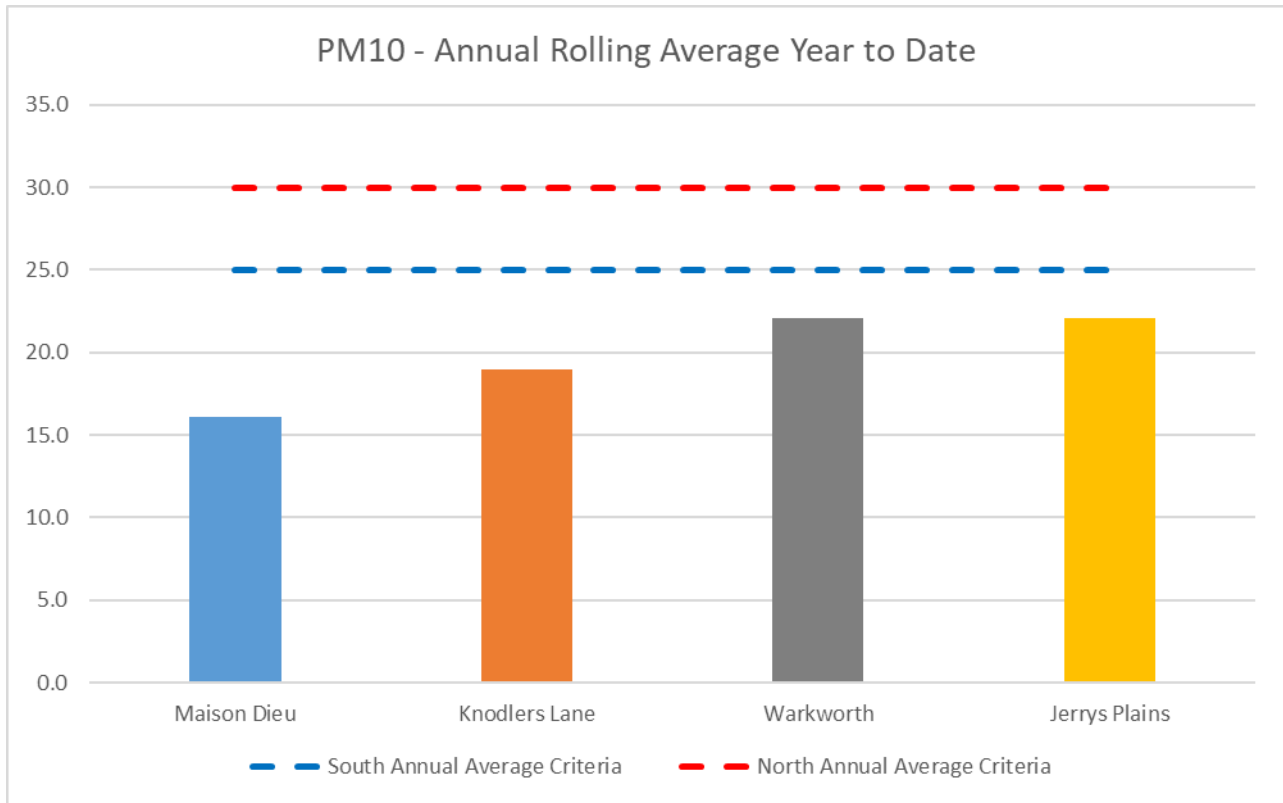


Figure 12 – Real Time PM<sub>10</sub> Annual Average for the Reporting Period.

### 2.3.5 | REAL TIME ALARMS FOR AIR QUALITY

The real time monitoring system generated 72 automated air quality related alarms during the reporting period. 53 alarms related to adverse weather conditions and 19 alarms related to dust conditions.



### 3 | WATER QUALITY

HVO maintains a network of surface water and groundwater monitoring sites.

#### 3.1 | SURFACE WATER

Surface watercourses are sampled on a quarterly sampling regime. Water quality is assessed through the parameters of pH, electrical conductivity (EC) and Total Suspended Solids (TSS). The location of surface water monitoring points across HVO is shown in **Figure 13**.

Results from monitoring on site dams, the Hunter River and other natural tributaries are provided on a quarterly basis. Results will be provided in the March 2023 Monthly Environmental Monitoring Report.

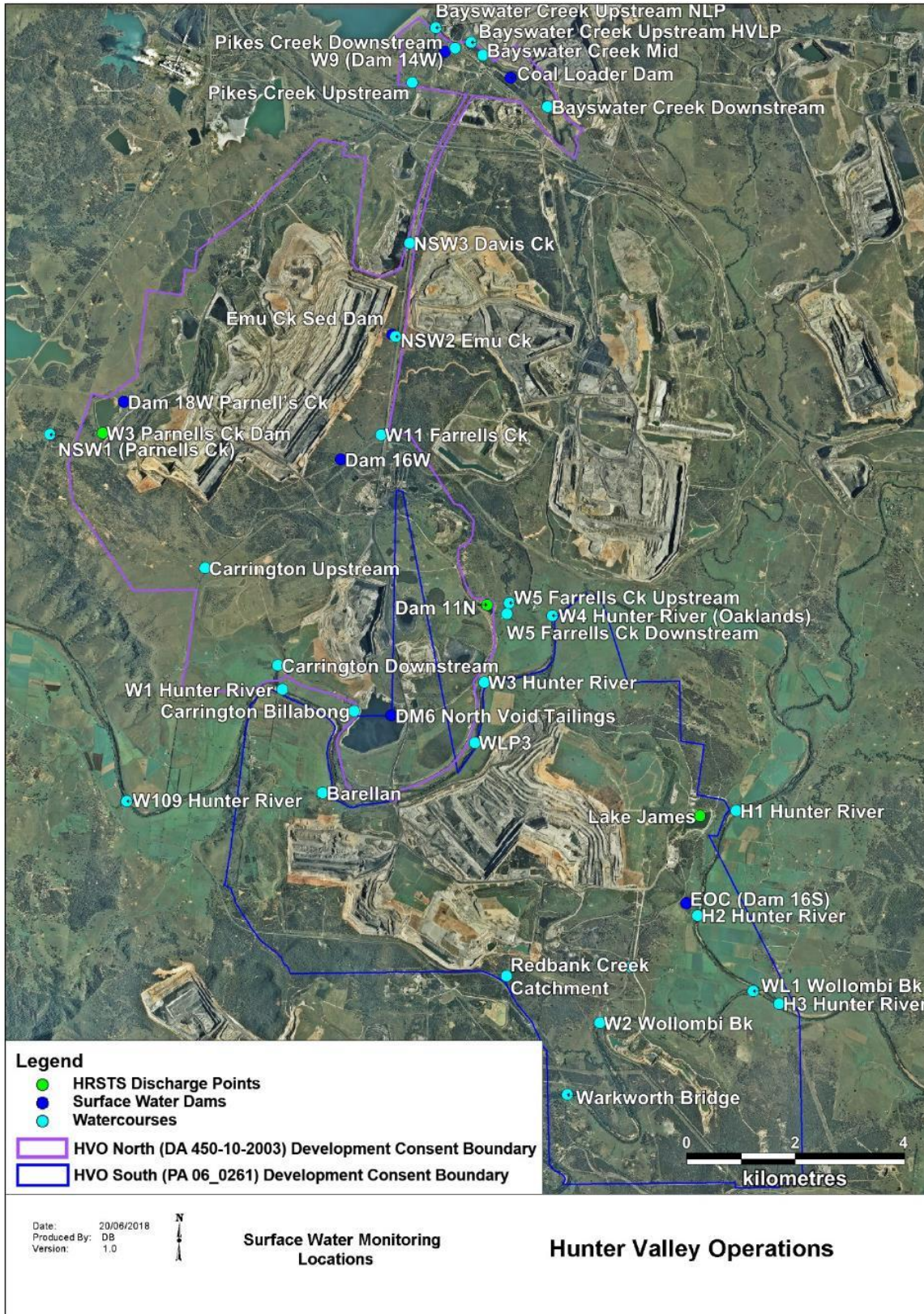
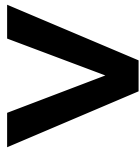
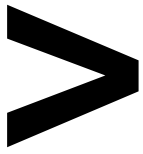


Figure 13 – HVO Surface Water Monitoring Locations





**3.1.1 | SURFACE WATER TRIGGER TRACKING**

Internal trigger limits have been developed to assess monitoring data on an on-going basis and to highlight potentially adverse surface water impacts. The process for evaluating monitoring results against the internal triggers and subsequent responses are outlined in the HVO Water Management Plan.

Surface water trigger tracking results are provided on a quarterly basis; results will appear in the March 2023 Monthly Environmental Monitoring Report.

**3.2 | SITE WATER USE**

HVO is permitted to extract water from the Hunter River under water allocation licenses issued by Water NSW.

HVO did not extract water from the Hunter River during the reporting period.

**3.3 | HRSTS DISCHARGE**

HVO participates in the Hunter River Salinity Trading Scheme (HRSTS), allowing discharge from licensed discharge points Dam 11N (to Farrell’s Creek), Lake James (to the Hunter River) and Parnell’s Dam (to Parnell’s Creek). Discharges can only take place subject to HRSTS regulations.

HVO did not undertake any HRSTS discharges during the reporting period.

**3.4 | GROUNDWATER MONITORING RESULTS**

Groundwater monitoring is undertaken on a quarterly basis in accordance with the HVO Water Management Plan and Groundwater Monitoring Program. The location of groundwater monitoring points across HVO are show in **Figure 14**.

Groundwater monitoring results are provided on a quarterly basis. Results will be provided in the March 2023 Monthly Environmental Monitoring Report.

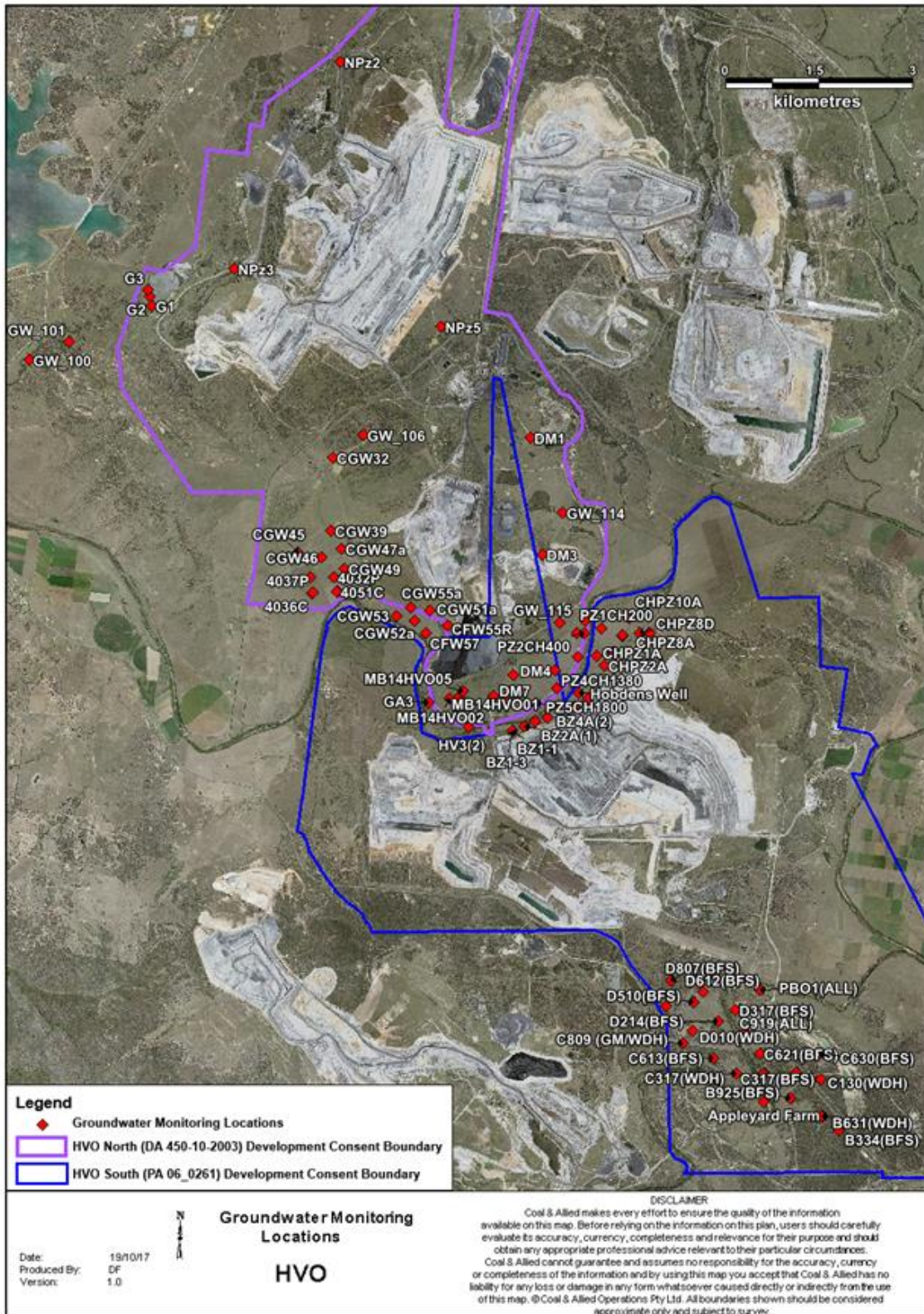
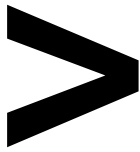
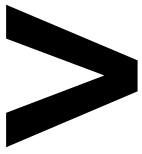


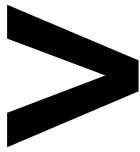
Figure 14 - Groundwater Monitoring Locations at HVO



3.4.1 | GROUNDWATER TRIGGER TRACKING

Internal trigger limits have been developed to assess monitoring data on an on-going basis and to highlight potentially adverse groundwater impacts. The process for evaluating monitoring results against the internal triggers and subsequent responses is outlined in the HVO Water Management Plan.

Groundwater trigger tracking results are provided on a quarterly basis. Results will be provided in the March 2023 Monthly Environmental Monitoring Report.



## 4 | BLASTING

HVO maintains a network of blast monitoring units located at nearby privately owned residences and function as regulatory compliance monitors. The location of these monitors can be found in **Figure 15**. Blasting criteria for HVO are summarised in **Table 2**.

*Table 2 – Blasting Criteria*

Airblast Overpressure (dBL)	Comments
115	5% of the total number of blasts in a 12-month period
120	0% of blasts
Ground Vibration (mm/s)	Comments
5	5% of the total number of blasts in a 12-month period
10	0% of blasts



**4.1 | BLAST MONITORING RESULTS**

Twenty-one (21) blasts were initiated at HVO during the reporting period. Blast monitoring results for the period are shown in **Table 3** and **Table 4**.

*Table 3 – Overpressure Blast Monitoring Results for the reporting period*

Date and Time	Moses Crossing (dBL)	Jerrys Plains Village (dBL)	Maison Dieu (dBL)	Warkworth (dBL)	Knodlers Lane (dBL)
3/01/2023 12:55	101.49	96.02	85.78	90.59	97.58
5/01/2023 13:08	108.85	102.63	105.9	88	108.39
6/01/2023 13:21	104.98	100.77	100.45	95.87	107.49
7/01/2023 13:02	101.67	95.22	106.07	93.52	109.92
7/01/2023 13:04	106.19	99.45	100.4	93.82	109.69
16/01/2023 13:07	106.92	104.38	97.32	99.25	102.98
17/01/2023 12:57	92.75	100.02	90.65	91.11	93.93
17/01/2023 12:59	95.32	97.93	85.45	83.46	110.1
18/01/2023 12:59	95.63	94.18	91.81	98.67	98.07
19/01/2023 11:11	97.39	93.02	102.16	102.54	99.95
21/01/2023 14:26	95.57	99.47	102.52	81.95	98.85
21/01/2023 14:28	104.81	92.11	100.58	91.07	105.27
21/01/2023 15:54	92.68	106.52	105.19	88.97	102.44
23/01/2023 13:03	92.82	90.31	91.45	95.35	89.57
23/01/2023 13:04	90.24	88.37	89.41	92.1	91.01
25/01/2023 12:54	92.86	89.85	100.96	99.59	96.5
27/01/2023 14:03	96.49	104.26	92.03	87.62	93.02
28/01/2023 13:11	88.48	104.12	88.23	88.79	94.86
28/01/2023 15:09	89.04	82.8	89.61	86.88	93.73
30/01/2023 15:14	95.7	97.78	86.86	85.45	84.88
30/01/2023 15:15	96.91	94.36	93.69	95.41	95.36



*Table 4 – Ground Vibration Blast Monitoring Results for the reporting period*

Date and Time	Moses Crossing (mm/s)	Jerrys Plains Village (mm/s)	Maison Dieu (mm/s)	Warkworth (mm/s)	Knodlers Lane (mm/s)
3/01/2023 12:55	0.13	0.1	0.03	0.13	0.09
5/01/2023 13:08	0.1	0.03	0.04	0.13	0.08
6/01/2023 13:21	0.59	0.21	0.23	0.77	0.2
7/01/2023 13:02	0.11	0.06	0.04	0.12	0.08
7/01/2023 13:04	0.11	0.04	0.03	0.14	0.08
16/01/2023 13:07	0.14	0.05	0.3	0.34	0.37
17/01/2023 12:57	0.16	0.06	0.08	0.14	0.09
17/01/2023 12:59	0.11	0.04	0.03	0.3	0.08
18/01/2023 12:59	0.09	0.04	0.02	1.28	0.08
19/01/2023 11:11	0.61	0.16	0.19	0.89	0.24
21/01/2023 14:26	0.23	0.14	0.14	0.17	0.11
21/01/2023 14:28	0.13	0.06	0.03	0.35	0.08
21/01/2023 15:54	0.2	0.29	0.04	0.14	0.11
23/01/2023 13:03	0.13	0.03	0.11	0.7	0.15
23/01/2023 13:04	0.15	0.04	0.29	0.83	0.43
25/01/2023 12:54	0.11	0.04	0.11	0.44	0.17
27/01/2023 14:03	0.16	0.08	0.07	0.13	0.09
28/01/2023 13:11	0.15	0.11	0.07	0.12	0.1
28/01/2023 15:09	0.2	0.03	0.06	0.15	0.13
30/01/2023 15:14	0.17	0.05	0.24	0.67	0.22
30/01/2023 15:15	0.16	0.06	0.22	0.67	0.22

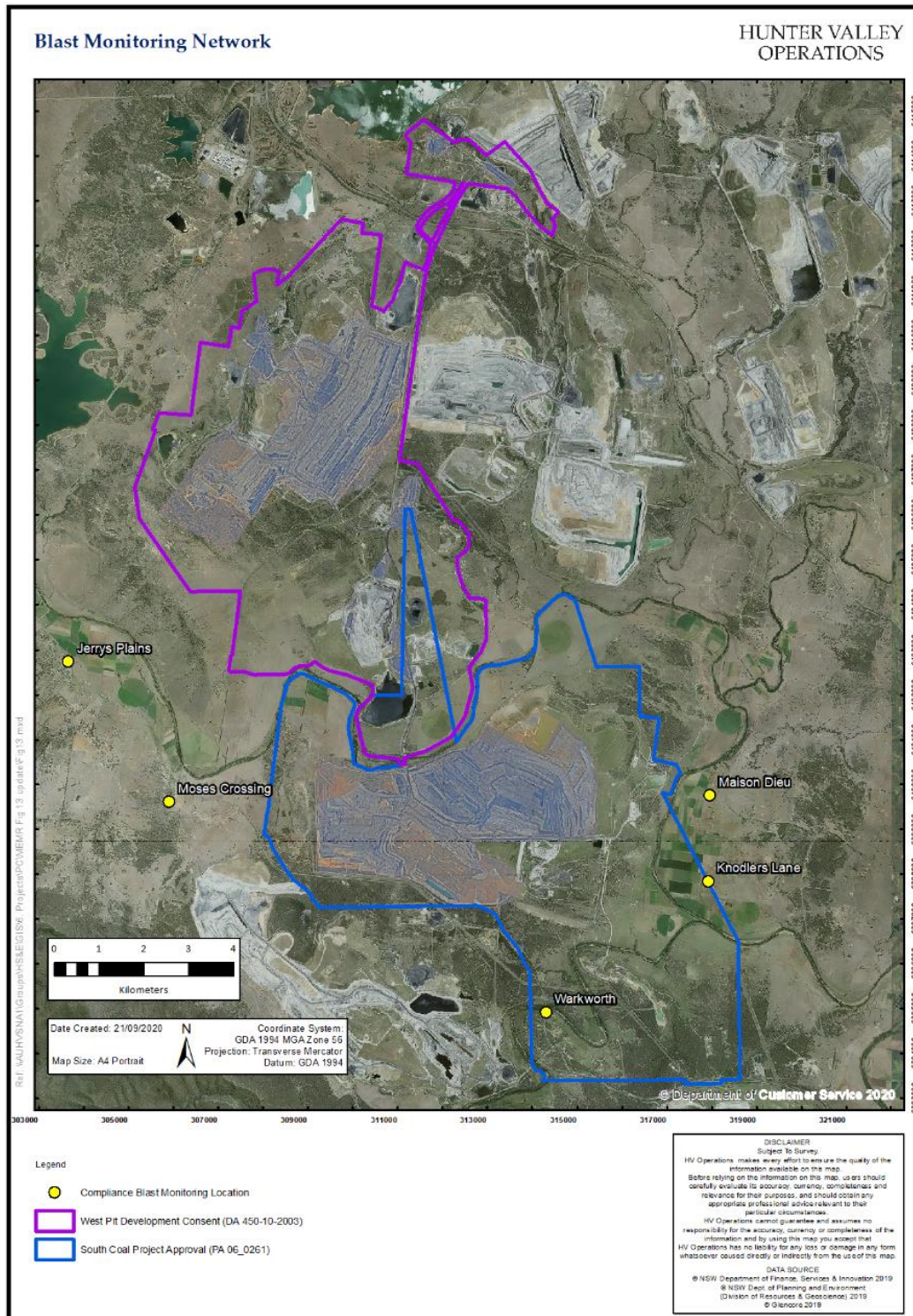
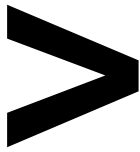


Figure 15 - Blast Monitoring Location Plan



## 5 | NOISE

Routine attended noise monitoring occurs at defined locations around HVO, as described in the HVO Noise Monitoring Program. The noise monitoring aims to quantify and describe the acoustic environment around the site and compare results with specified limits. The attended noise monitoring locations are displayed in **Figure 16**.

### 5.1 | ATTENDED NOISE MONITORING RESULTS

Attended monitoring was conducted at receiver locations around HVO during the night periods of the 11<sup>th</sup> and 25<sup>th</sup> of January 2023.

Compliance with the HVO noise impact limits ensures compliance with the land acquisition criteria. Therefore, since no noise impact exceedances occurred for the reporting period the land acquisition assessment has not been presented. These will only be reported in instances of noise impact exceedances.

Monitoring results are detailed in **Table 5** and **Table 6**.



# REPORT | MONTHLY ENVIRONMENTAL MONITORING REPORT – JANUARY 2023

*Table 5 - LAeq,15minute and 1minute HVO North Against Impact Assessment Criteria for the Reporting Period*

Location	Start date and time	Wind		Stability class	Very enhancing? <sup>1</sup>	HVO North limits, dB <sup>1</sup>		HVO North levels, dB		Exceedances, dB	
		Speed m/s	Direction <sup>3</sup>			L <sub>Aeq,15minute</sub>	L <sub>A1,1min</sub>	L <sub>Aeq,15minute</sub> <sup>2</sup>	L <sub>A1,1min</sub>	L <sub>Aeq,15minute</sub>	L <sub>A1,1min</sub>
Shearers Lane	25/01/2023 21:00	4.1	131	D	Yes	40	51	IA	IA	Nil	Nil
Knodlers Lane	25/01/2023 21:45	3.9	128	D	Yes	40	51	IA	IA	Nil	Nil
Maison Dieu	25/01/2023 21:22	3.9	130	D	Yes	40	51	IA	IA	Nil	Nil
Long Point (Dights Crossing)	25/01/2023 22:40	3.7	131	D	Yes	40	51	IA	IA	Nil	Nil
Kilburnie South	25/01/2023 23:29	2.7	124	D	No	39	46	33	35	Nil	Nil
Jerrys Plains East	25/01/2023 23:02	3.7	130	D	Yes	44	51	36	46	Nil	Nil
Jerrys Plains Village	25/01/2023 21:26	3.9	130	D	Yes	45	51	36	42	Nil	Nil
Jerrys Plains West	25/01/2023 21:00	4.1	131	D	Yes	45	51	33	40	Nil	Nil
HVGC	25/01/2023 23:56	2.2	119	E	No	NA	NA	IA	IA	Nil	Nil
Kilburnie South	11/01/2023 21:16	3.9	121	D	Yes	44	51	IA	IA	Nil	Nil
Jerrys Plains East	11/01/2023 21:37	3.8	121	D	Yes	44	51	IA	IA	Nil	Nil
Jerrys Plains Village	11/01/2023 22:06	3.9	122	D	Yes	45	51	29	31	Nil	Nil

1. Noise limits are adjusted by +5 dB during 'very noise-enhancing meteorological conditions' in accordance with the NPfI.
2. Site-only LAeq,15minute, includes modifying factor penalties if applicable.
3. Degrees magnetic north, "-" indicates calm conditions.

# REPORT | MONTHLY ENVIRONMENTAL MONITORING REPORT – JANUARY 2023

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Table 6 - LAeq,15minute and 1minute HVO South Against Impact Assessment Criteria for the Reporting Period

Location	Start date and time	Wind		Stability class	Very enhancing? <sup>1</sup>	HVO South limits, dB <sup>1</sup>		HVO South levels, dB		Exceedances, dB	
		Speed m/s	Direction <sup>3</sup>			L <sub>Aeq,15minute</sub>	L <sub>A1,1min</sub>	L <sub>Aeq,15minute</sub> <sup>2</sup>	L <sub>A1,1min</sub>	L <sub>Aeq,15minute</sub>	L <sub>A1,1min</sub>
Shearers Lane	25/01/2023 21:00	4.4	149	D	Yes	46	50	IA	IA	Nil	Nil
Knodlers Lane	25/01/2023 21:45	4.3	153	D	Yes	45	50	IA	IA	Nil	Nil
Maison Dieu	25/01/2023 21:22	4.0	152	E	Yes	44	50	IA	IA	Nil	Nil
Long Point (Dights Crossing)	25/01/2023 22:40	4.3	150	D	Yes	42	50	IA	IA	Nil	Nil
Kilburnie South	25/01/2023 23:29	4.2	147	E	Yes	44	50	IA	IA	Nil	Nil
Jerrys Plains East	25/01/2023 23:02	4.3	149	D	Yes	42	50	IA	IA	Nil	Nil
Jerrys Plains Village	25/01/2023 21:26	4.0	152	E	Yes	43	50	IA	IA	Nil	Nil
Jerrys Plains West	25/01/2023 21:00	4.4	149	D	Yes	40	50	IA	IA	Nil	Nil
HVGC	25/01/2023 23:56	3.8	139	E	Yes	60	NA	IA	IA	Nil	Nil

1. Noise limits are adjusted by +5 dB during 'very noise-enhancing meteorological conditions' in accordance with the NPfl.
2. Site-only L<sub>Aeq,15minute</sub>, includes modifying factor penalties if applicable.
3. Degrees magnetic north, "-" indicates calm conditions.



## 5.2 | LOW FREQUENCY ASSESSMENT

In accordance with the requirements of the EPA's Noise Policy for Industry (NPfI), the applicability of the low frequency modification penalty has been assessed. No penalties were applied for monitoring undertaken through the reporting period. The assessments for the low frequency noise are shown in **Table 7** and **Table 8**.

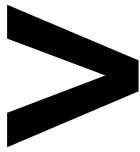
Table 7 - Modifying Factor Assessment HVO North for the Reporting Period

Location	Start date and time	Measured HVO South L <sub>Aeq</sub> dB	Very enhancing? <sup>1</sup>	Intermittency modifying factor?	Tonality modifying factor?	Frequency of tonality	Low-frequency modifying factor? <sup>1,2</sup>	Exceedance of reference spectrum <sup>2,3</sup>	Total penalty dB <sup>2,3</sup>
Shearers Lane	25/01/2023 21:00	IA	Yes	No	No	NA	NA	NA	Nil
Knodlers Lane	25/01/2023 21:45	IA	Yes	No	No	NA	NA	NA	Nil
Maison Dieu	25/01/2023 21:22	IA	Yes	No	No	NA	NA	NA	Nil
Long Point (Dights Crossing)	25/01/2023 22:40	IA	Yes	No	No	NA	NA	NA	Nil
Kilburnie South	25/01/2023 23:29	33	No	No	No	NA	No	NA	Nil
Jerrys Plains East	25/01/2023 23:02	36	Yes	No	No	NA	NA	NA	Nil
Jerrys Plains Village	25/01/2023 21:26	36	Yes	No	No	NA	NA	NA	Nil
Jerrys Plains West	25/01/2023 21:00	33	Yes	No	No	NA	NA	NA	Nil
HVGC	25/01/2023 23:56	IA	No	No	No	NA	No	NA	Nil
Kilburnie South	11/01/2023 21:16	IA	Yes	No	No	NA	NA	NA	Nil
Jerrys Plains East	11/01/2023 21:37	IA	Yes	No	No	NA	NA	NA	Nil
Jerrys Plains Village	11/01/2023 22:06	29	Yes	No	No	NA	NA	NA	Nil

1. Low-frequency modifying factors are not applicable during 'very noise-enhancing meteorological conditions' in accordance with the NPfI.

2. NA denotes 'not applicable'.

3. Bold results indicate that application of NPfI modifying factor(s) is required.



*Table 8 - Modifying Factor Assessment HVO South for the Reporting Period*

Location	Start date and time	Measured HVO South LAeq dB	Very enhancing? !	Intermittency modifying factor?	Tonality modifying factor?	Frequency of tonality	Low-frequency modifying factor? 1,2	Exceedance of reference spectrum 2,3	Total penalty dB 2,3
Shearers Lane	25/01/2023 21:00	IA	Yes	No	No	NA	NA	NA	Nil
Knodlers Lane	25/01/2023 21:45	IA	Yes	No	No	NA	NA	NA	Nil
Maison Dieu	25/01/2023 21:22	IA	Yes	No	No	NA	NA	NA	Nil
Long Point (Dights Crossing)	25/01/2023 22:40	IA	Yes	No	No	NA	NA	NA	Nil
Kilburnie South	25/01/2023 23:29	IA	Yes	No	No	NA	NA	NA	Nil
Jerrys Plains East	25/01/2023 23:02	IA	Yes	No	No	NA	NA	NA	Nil
Jerrys Plains Village	25/01/2023 21:26	IA	Yes	No	No	NA	NA	NA	Nil
Jerrys Plains West	25/01/2023 21:00	IA	Yes	No	No	NA	NA	NA	Nil
HVGC	25/01/2023 23:56	IA	Yes	No	No	NA	NA	NA	Nil

1. NA denotes 'not applicable'; and

2. Bold results indicate that application of NPfl modifying factor/s is required



5.3 | REAL TIME NOISE MONITORING

HVO utilises a network of real-time directional noise monitors to manage noise impacts on a continuous basis, shown in **Figure 16**. Noise alarms are in place at five monitoring locations (Knodlers Lane, Maison Dieu, Jerrys Plains, Moses Crossing, and Long Point) which alert HVO staff to elevated noise levels that require investigation.

HVO investigates and responds to noise alarms with appropriate modification to operations. Changes in response to a noise alarm can include replacing equipment with alternative units, changing or relocating tasks, or shutting down equipment. It should be noted that this assessment does not compliment or conflict with attended noise monitoring detailed in **Section 5.1**. Real time monitoring data includes non-mine noise sources such as animals, road traffic and weather.

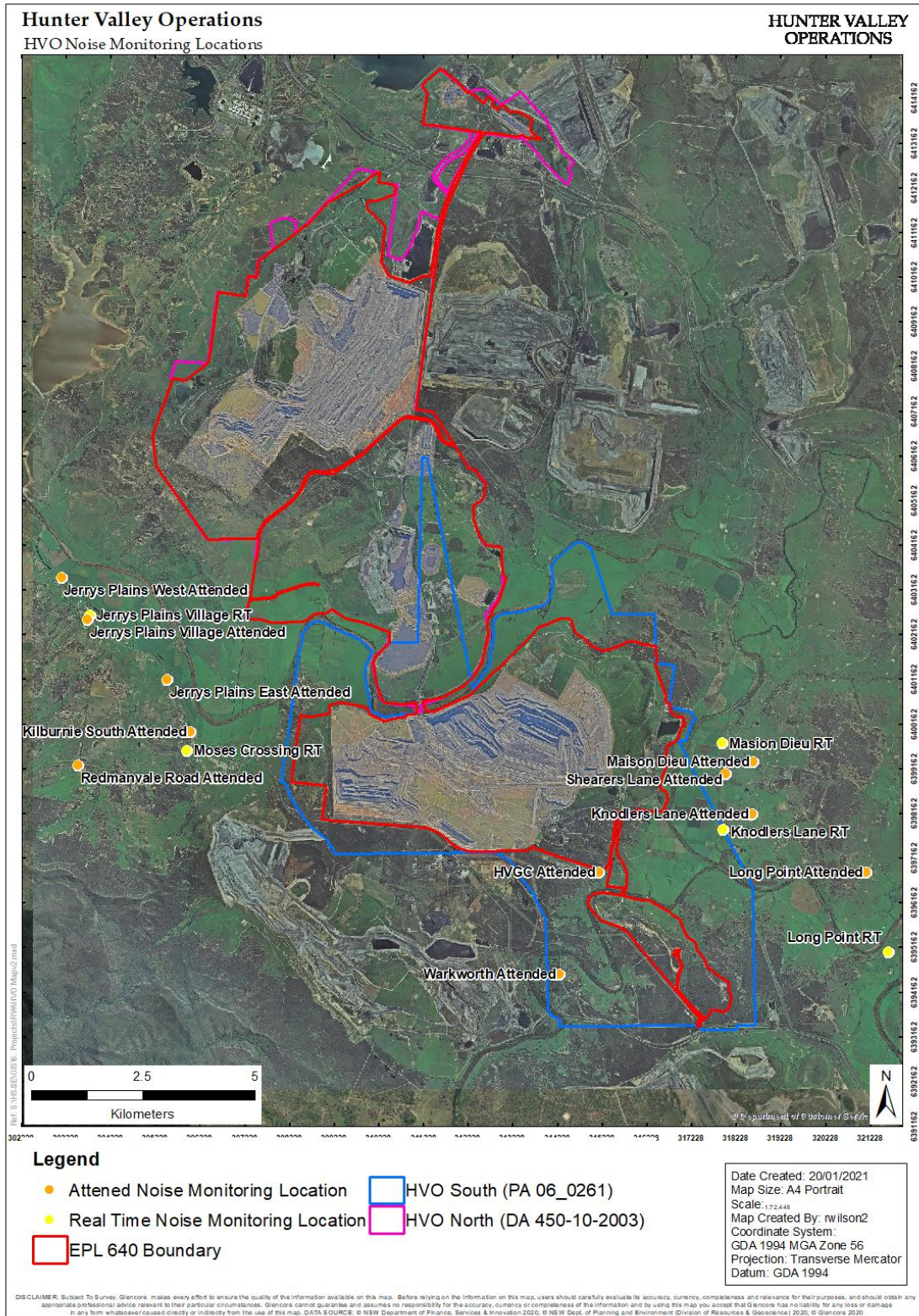
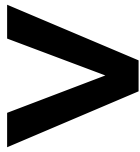


Figure 16 - Noise Monitoring Location Plan

## 6 | OPERATIONAL DOWNTIME

A total of 874.2 hours of equipment downtime was logged in response to real time monitoring and inspections for environmental factors such as noise and dust during the reporting period. Operational downtime by equipment type is show in **Figure 17**. Note that these delays are instances where operations were completely stopped and does not include occasions where operations were changed/modified but not stopped (e.g. changed from exposed dump to in-pit dump).

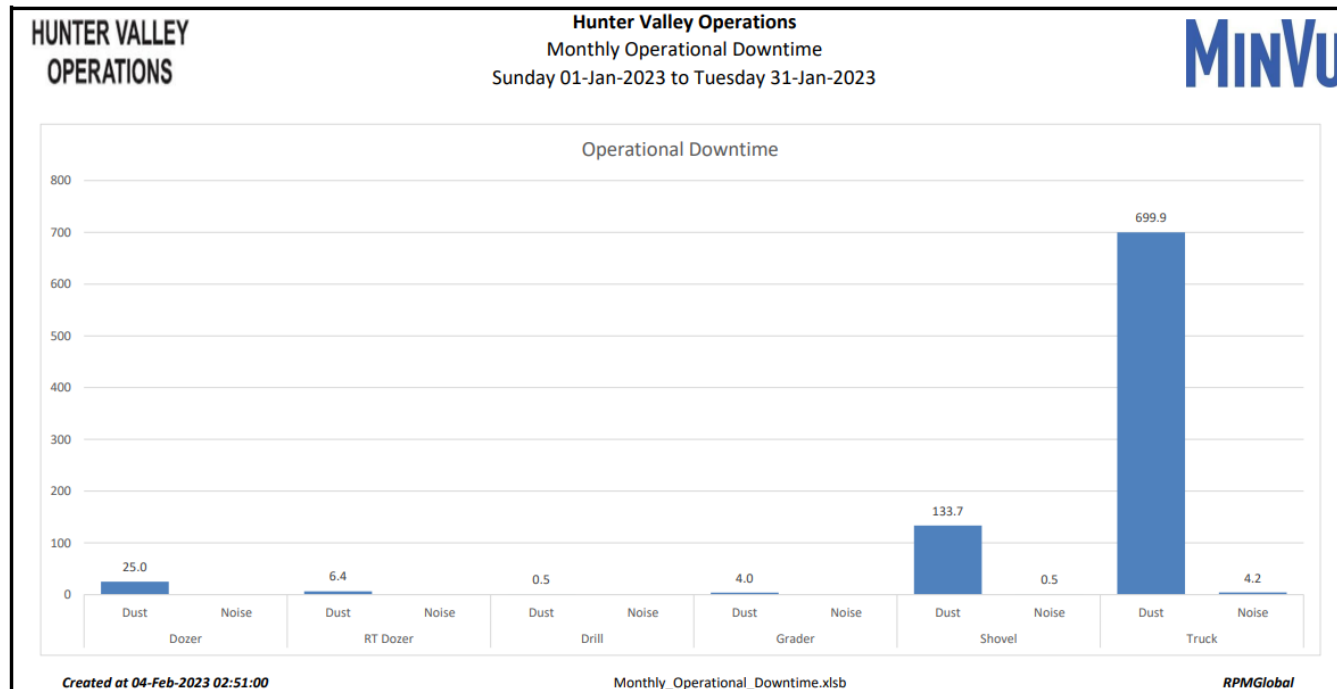


Figure 17 - Operational Downtime by Equipment Type for the Reporting Period

**Number:** HVOOC-748212775-6  
**Owner:** [Owner (Office)]

**Status:** [Document Status (Office)]  
**Version:** [Document Version (Office)]  
**Effective:** [Effective Date]  
**Review:** [Planned Review Date]



### 7 | REHABILITATION

The following activities related to rehabilitation were completed during the reporting period:

- 9.7 Ha of land was reshaped
- 0 Ha of land was released (became available for the application of topsoil)
- 9.7 Ha of land was topsoiled
- 2.63 Ha of land was rehabilitated

Year to date progress is shown in **Figure 18**.

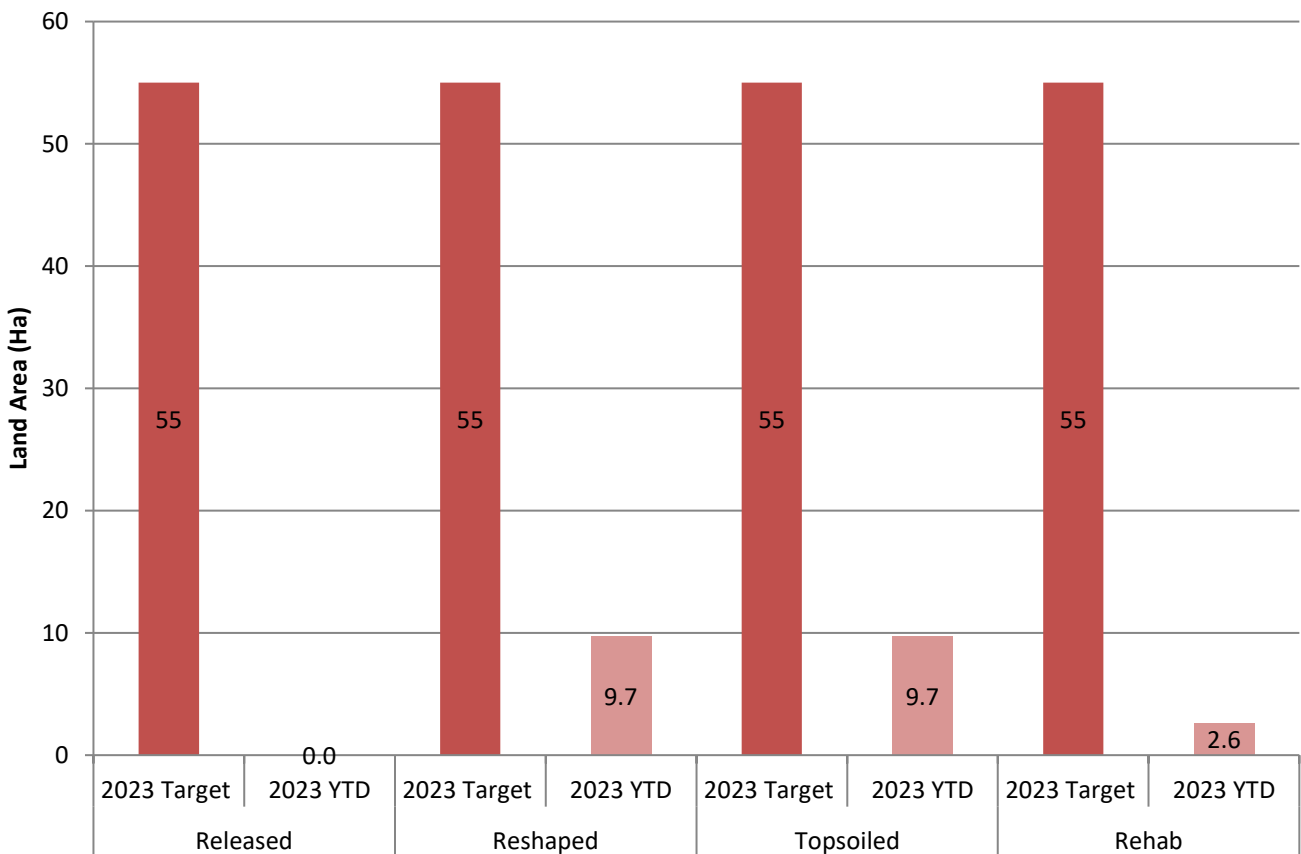


Figure 18 - Rehabilitation YTD January 2023



## 8 | COMPLAINTS

No complaints were received during the reporting period.



## 9 | ENVIRONMENTAL INCIDENTS

There were two reportable environmental incidents during the reporting period:

- **05/01/2023 – Warkworth HVAS TSP mis-capture**

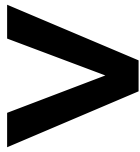
HVO were notified by the monitoring contractor on 6 January 2023 that the Warkworth TSP HVAS failed to run for the full monitoring period on 5 January 2023.

An investigation revealed that power to an electrical sub-board which supplies power to both the Warkworth TSP HVAS, and a local premises was isolated. The isolation was completed by an electrical contractor to allow for building maintenance work to be completed at the premises. To prevent a reoccurrence of this type of incident HVO will install signage inside the electrical sub-board to ensure in future HVO is notified prior to any planned power isolations. The data mis-capture will be noted in the 2023 Annual Review, and the DPE were advised of the mis-capture.

- **29/01/2023 – Maison Dieu TSP mis-capture**

HVO were notified by the monitoring contractor that the Maison Dieu TSP HVAS failed to run for the full monitoring day on 29 January due to a motor failure or internal blockage.

An inspection of the unit set up as well as further testing has been completed with no issues being detected. This inspection is in addition to quarterly testing and tagging inspections that are undertaken at the site. The data mis-capture will be noted in the 2023 Annual Review, and the DPE were advised of the mis-capture.



**APPENDIX A: METEOROLOGICAL DATA**

Date	Air Temp Max (°C)	Air Temp Min (°C)	Relative Humidity (Max %)	Relative Humidity (Min %)	Solar Radiation Maximum (W/Sq. M)	Average Wind Direction (°)	Average Wind Speed (m/sec)	Rainfall (mm)
1/01/2023	29.89	18.12	88.7	37.58	1554	116.5	3.539	0
2/01/2023	30.84	16.21	92.5	29.47	1311	120	2.624	0
3/01/2023	33.7	17.81	80.4	29.23	1214	141.9	2.821	0
4/01/2023	31.53	17.96	94.6	39.01	1334	118.4	3.233	13.8
5/01/2023	21.28	14.06	89.9	51.88	996	131.7	3.962	2
6/01/2023	23.58	13.21	92.1	49.34	1730	137.5	3.045	2.6
7/01/2023	24.03	15.1	85.2	50.1	1698	129.1	3.701	0
8/01/2023	27.2	15.96	87.8	26.52	1483	125.3	2.753	0
9/01/2023	31.66	13.28	89.1	27.75	1126	156	2.194	0
10/01/2023	29.39	17.54	77.19	35.06	1133	112.7	3.804	0
11/01/2023	28.1	18.32	74.64	39.69	1515	113.6	4.09	0
12/01/2023	31.04	16.17	85.8	39.47	1084	115.4	3.367	0
13/01/2023	29.62	17.8	84.4	36.63	1489	115.9	3.289	0
14/01/2023	30.53	17.09	89.1	29.23	1573	121.1	3.503	0
15/01/2023	34.1	16.01	86.6	28.66	1114	145.4	2.313	0
16/01/2023	29.99	18.25	84	36.16	1422	111.4	4.528	0
17/01/2023	30.74	16.73	93.8	33.82	1415	109.7	3.301	0
18/01/2023	35.38	15.74	91.9	21.17	1245	165.6	1.886	0
19/01/2023	22.54	15.02	95.3	71.64	551.3	161.2	2.732	0
20/01/2023	21.68	15.12	92.7	59.11	1670	121.2	3.714	0
21/01/2023	26.98	14.61	86.9	30.38	1386	118.6	3.241	0
22/01/2023	21.81	15.74	93.6	62.77	1110	121.6	2.984	0
23/01/2023	27.07	15.98	88.4	43.6	1567	121.4	2.3	0
24/01/2023	32.14	17.63	85.4	22.35	1354	115.8	1.989	0
25/01/2023	34	17.25	89.1	24.42	1258	160.8	2.476	0
26/01/2023	38.32	18.69	94.8	15.35	1269	200.6	2.702	0
27/01/2023	33.1	19.15	83	36.7	1063	119.3	3.113	0
28/01/2023	36.09	21.02	87.5	29.77	1203	153.6	1.915	0
29/01/2023	38.7	20.49	93	21.33	1210	166.5	2.467	0
30/01/2023	23.3	19.11	95.7	76.59	1508	167.7	1.519	0
31/01/2023	28.56	18.43	96.3	46.2	1593	143.3	1.618	0