

HUNTER VALLEY OPERATIONS

Monthly Environmental Monitoring Report

July 2020

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1.0 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 31st July 2020.

2.0 AIR QUALITY

2.1 Meteorological Monitoring

HVO maintains two meteorological stations; 'HVO Corporate' and 'Cheshunt' (Refer to Figure 4: Air Quality Monitoring Location Plan).

2.1.1 Rainfall

Rainfall for the period is summarised in Table 1. The 2020 trend and historical trends are shown in Figure 1.

Table 1: Rainfall data - July 2020

2020	Monthly Rainfall (mm)	Cumulative Rainfall (mm)
July	86	480

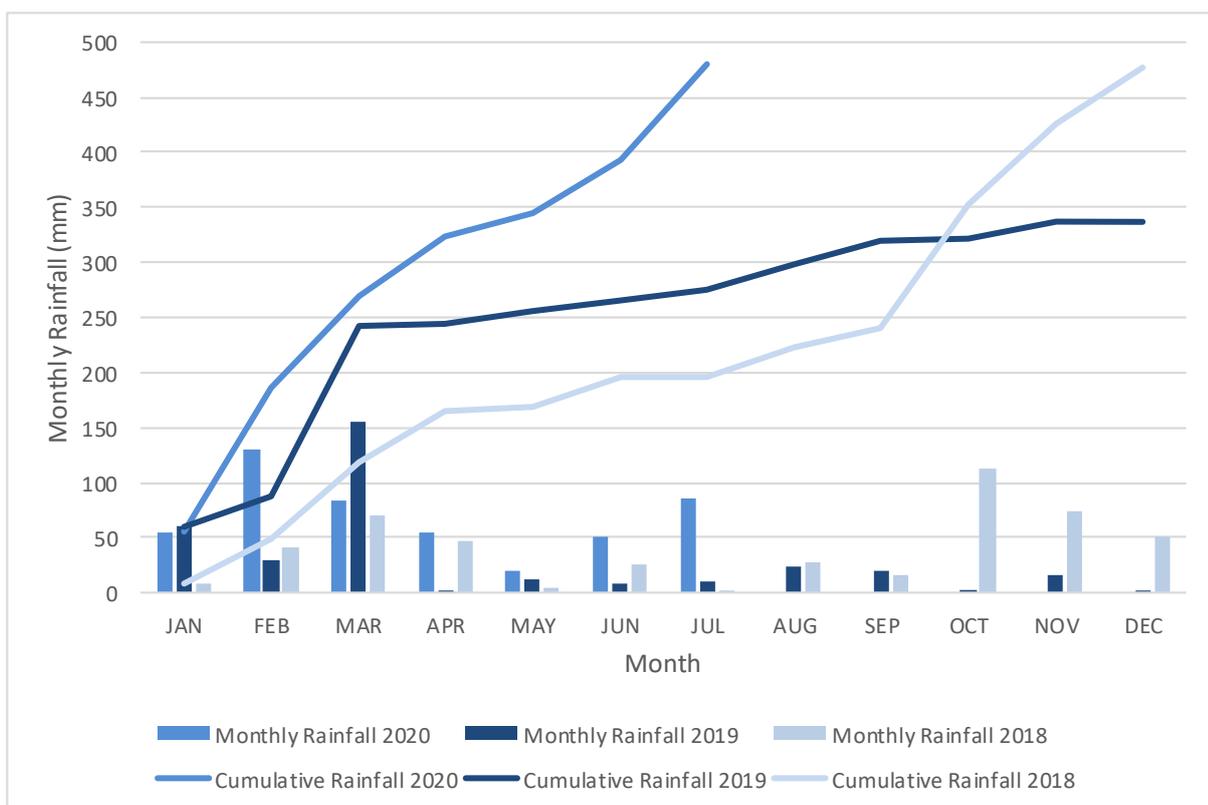


Figure 1: Rainfall Summary 2020

2.1.2 Wind Speed and Direction

West to North Westerly winds were dominant during July as shown in Figure 2 (HVO Corporate) and Figure 3 (HVO Cheshunt).

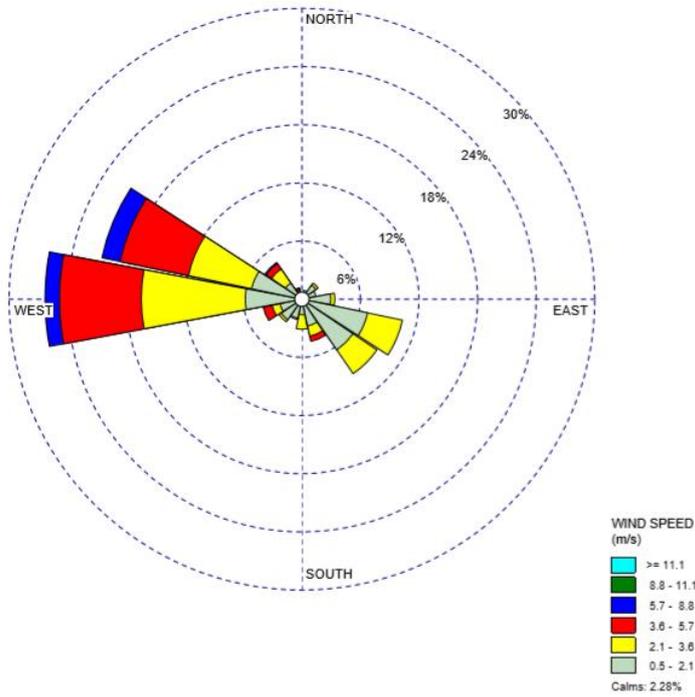


Figure 2: HVO Corporate Wind Rose – July 2020

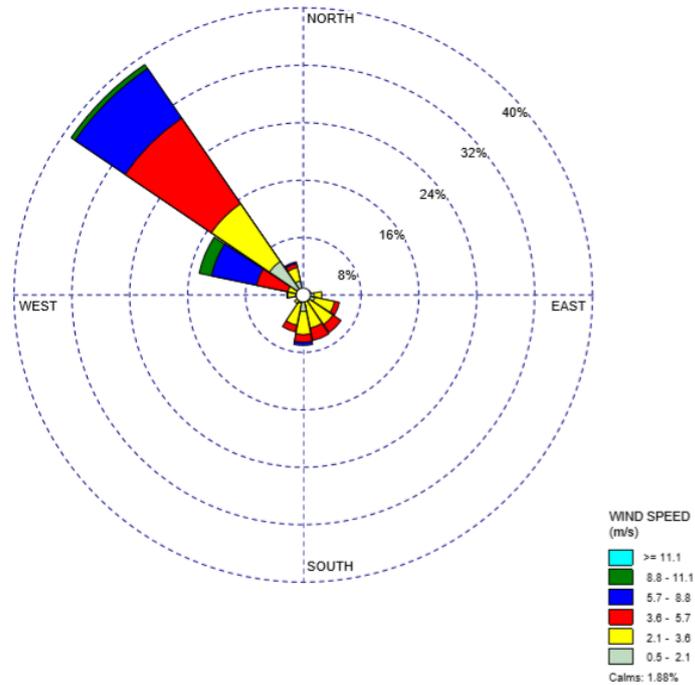


Figure 3: HVO Cheshunt Wind Rose – July 2020

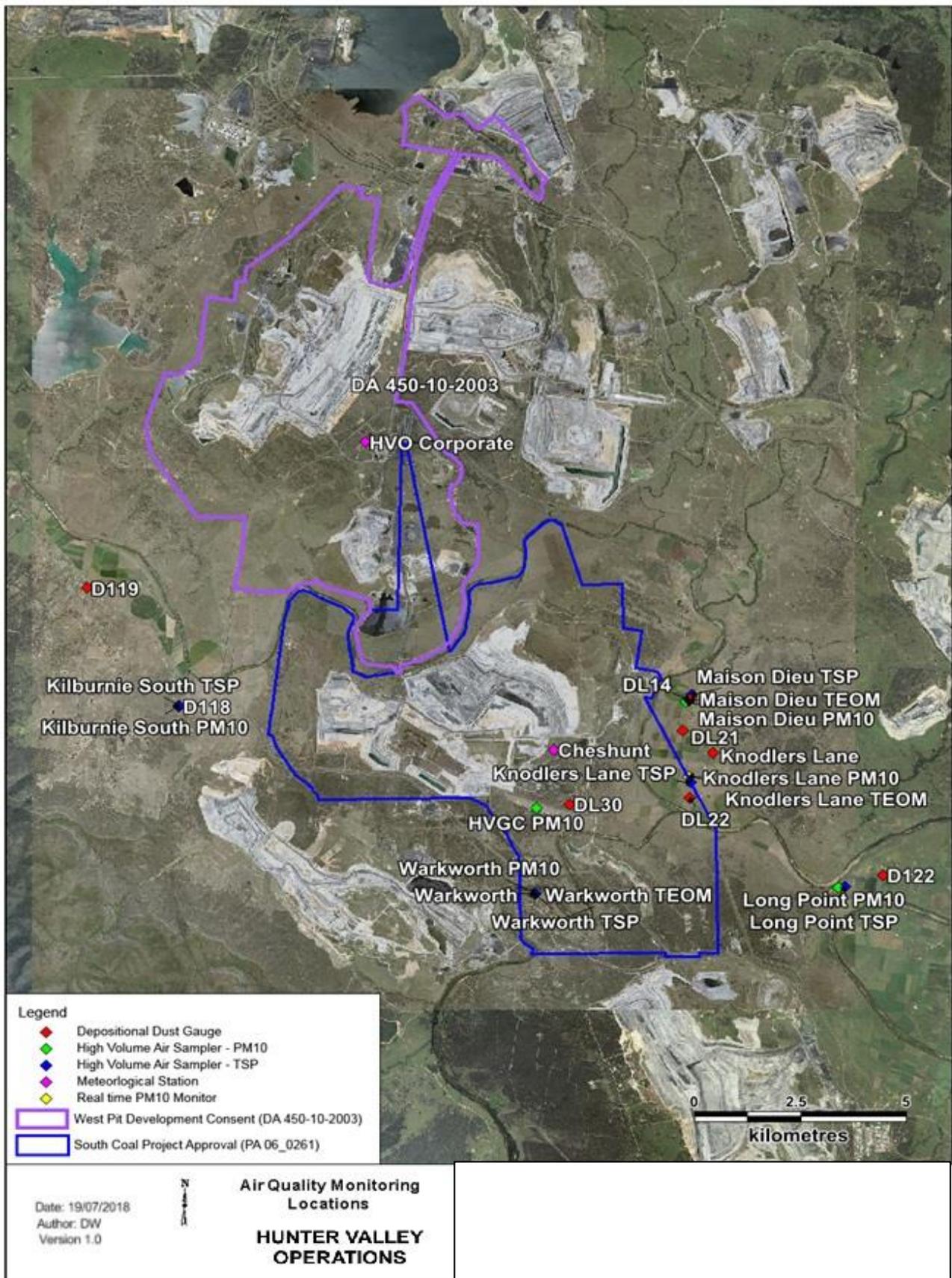


Figure 4: Air Quality Monitoring Location Plan

2.2 Depositional Dust

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

Figure 5 displays insoluble solids results from depositional dust gauges during the reporting period compared against the annual impact assessment criteria.

During the reporting period the D122, DL21 and DL30 monitors recorded a monthly result above the long term impact assessment criteria of 4.0 g/m² per month.

An assessment of HVO's contribution against the long term impact assessment criteria will be provided in the 2020 Annual Review.

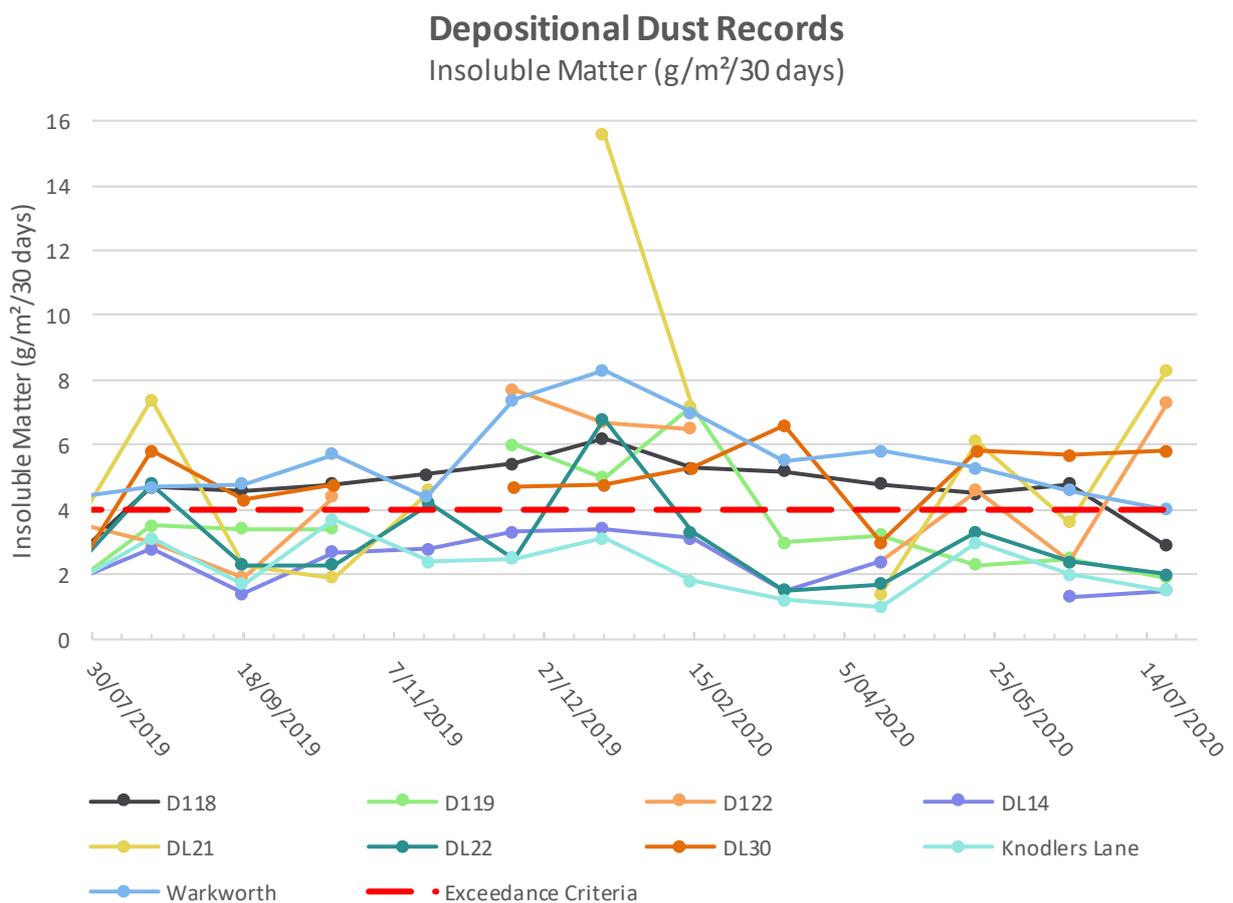


Figure 5: Depositional Dust Results – July 2020

2.3 Suspended Particulates

Suspended particulates 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 (PM_{2.5}). The location of these monitors can be found in Figure 4. Each HVAS runs for 24 hours on a six-day cycle.

2.3.1 HVAS PM₁₀ Results

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 50 µg/m³. During the reporting period, no monitors recorded an exceedance above the short term impact assessment criteria of 50 µg/m³.

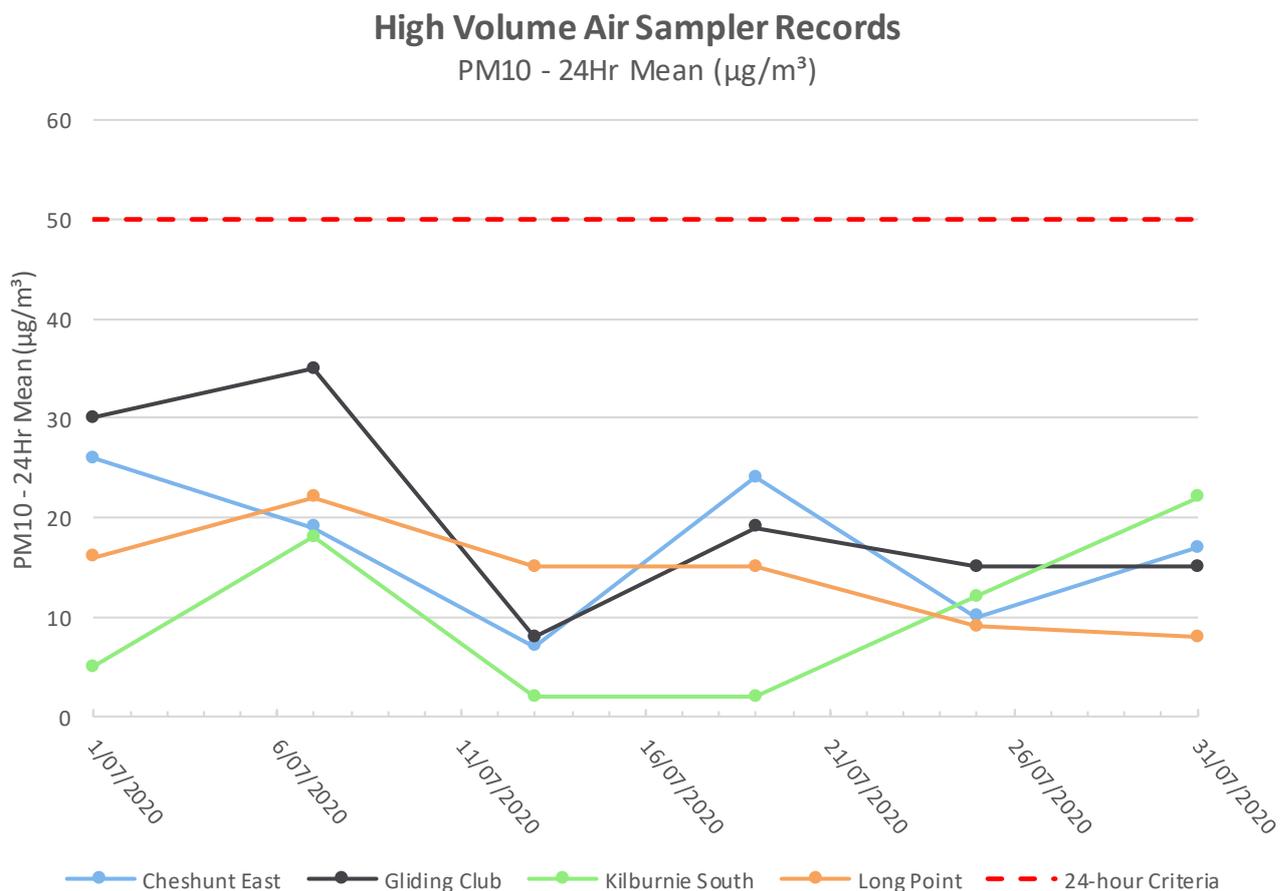


Figure 6: Individual PM₁₀ Results – July 2020

Performance against Long Term Impact Assessment Criteria

Figure 7 shows the year to date annual average PM₁₀ results. During the reporting period the Cheshunt East and Gliding Club monitors recorded an annual average above the PM₁₀ Annual Rolling

Mean criteria of 25µg/m³ for HVO South criteria. All monitors recorded an annual average below the 30µg/m³ criteria for HVO North.

An assessment of HVO's contribution against the long term impact assessment criteria will be provided in the 2020 Annual Review.

High Volume Air Sampler Records PM10 - Annual Mean to Date (µg/m³)

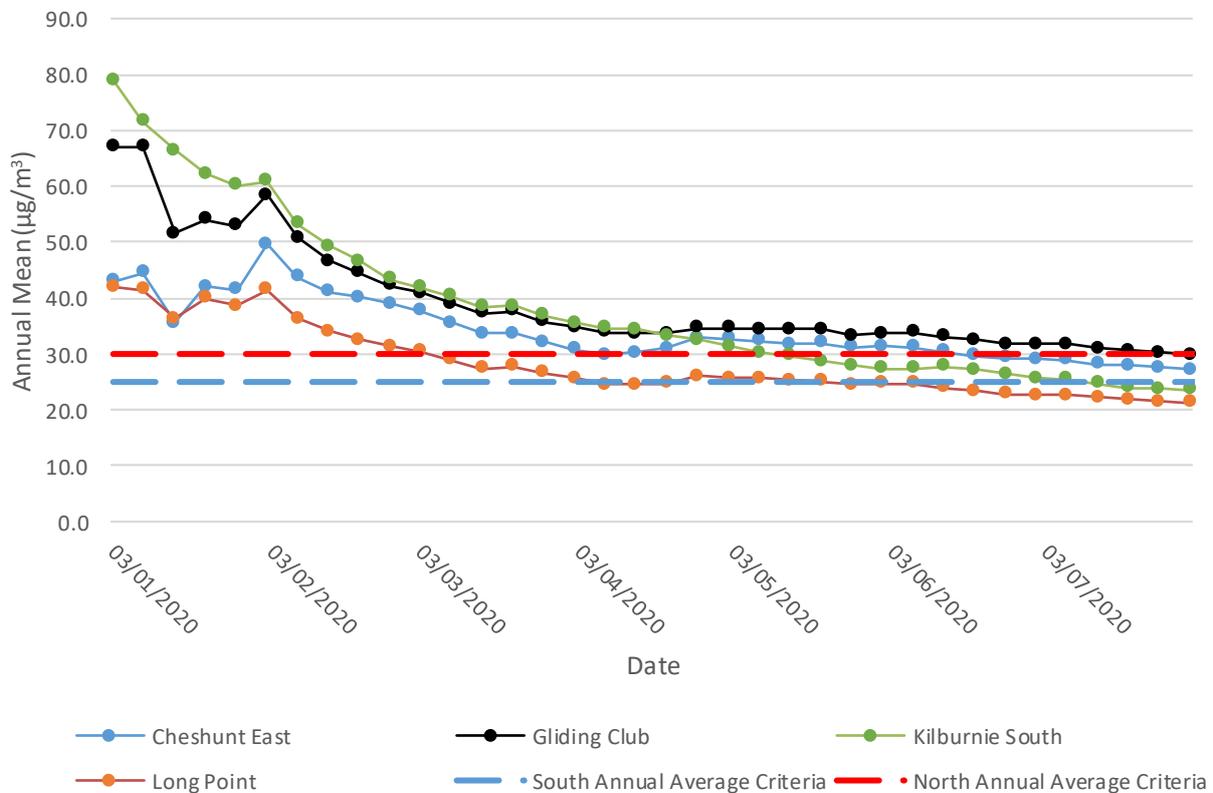


Figure 7: Year to Date Average PM₁₀ – as at end of July 2020

2.3.2 HVAS PM_{2.5} Results

HVO monitors PM_{2.5} at two HVAS locations, Kilburnie South and Maison Dieu.

Performance against Short Term Impact Assessment Criteria

Figure 8 shows individual PM_{2.5} results at each monitoring station against the HVO South short term impact assessment criteria of 25 µg/m³.

During the reporting period, neither monitor recorded an exceedance above the short term impact assessment criteria of 25 µg/m³.

High Volume Air Sampler Records PM2.5 - 24Hr Mean ($\mu\text{g}/\text{m}^3$)

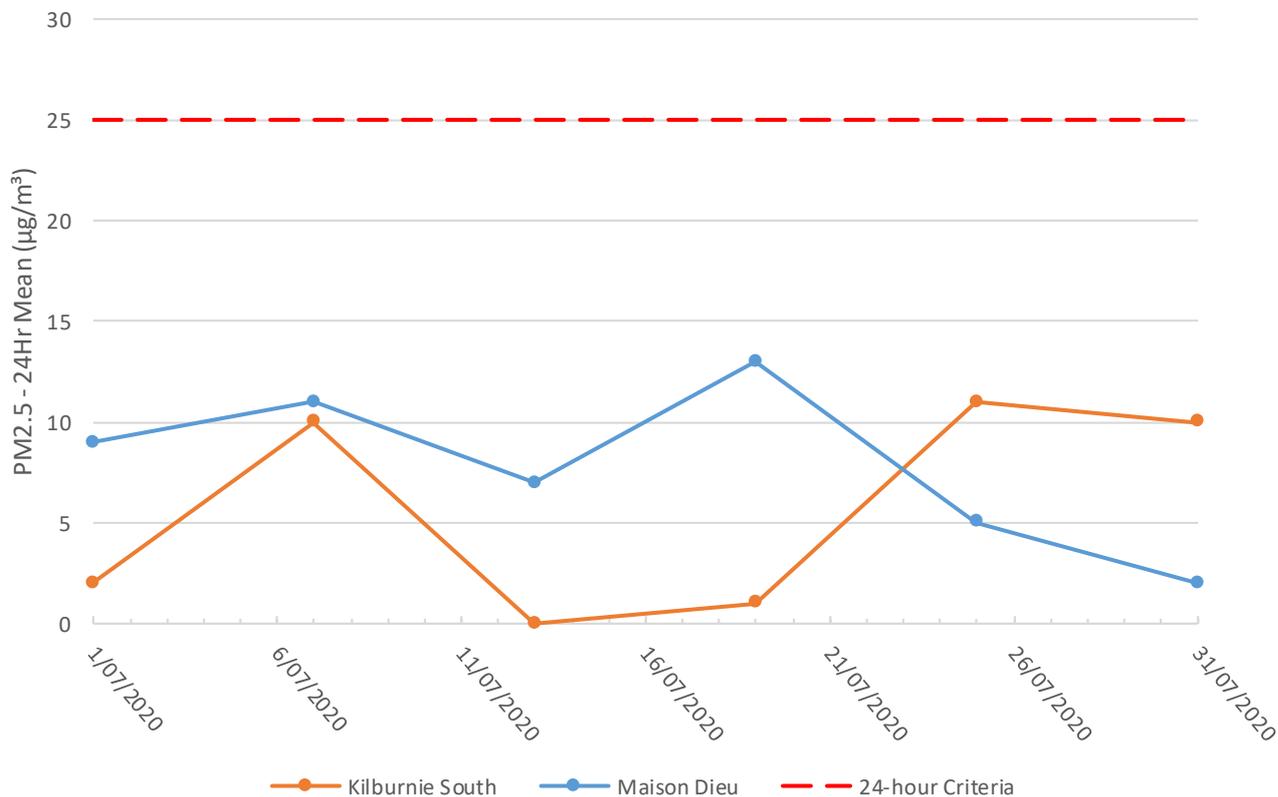


Figure 8: Individual PM_{2.5} Results – July 2020

Performance against Long Term Impact Assessment Criteria

Figure 9 shows the year to date annual average PM_{2.5} results. During the reporting period, both monitors recorded an annual average above the PM_{2.5} Annual Rolling Mean criteria of $8\mu\text{g}/\text{m}^3$.

This is likely due to the impact of bushfires smoke and regional air quality in the first months of the year. However, an assessment of HVO's contribution against the long term impact assessment criteria will be provided in the 2020 Annual Review.

High Volume Air Sampler Records PM2.5 - Annual Rolling Mean ($\mu\text{g}/\text{m}^3$)

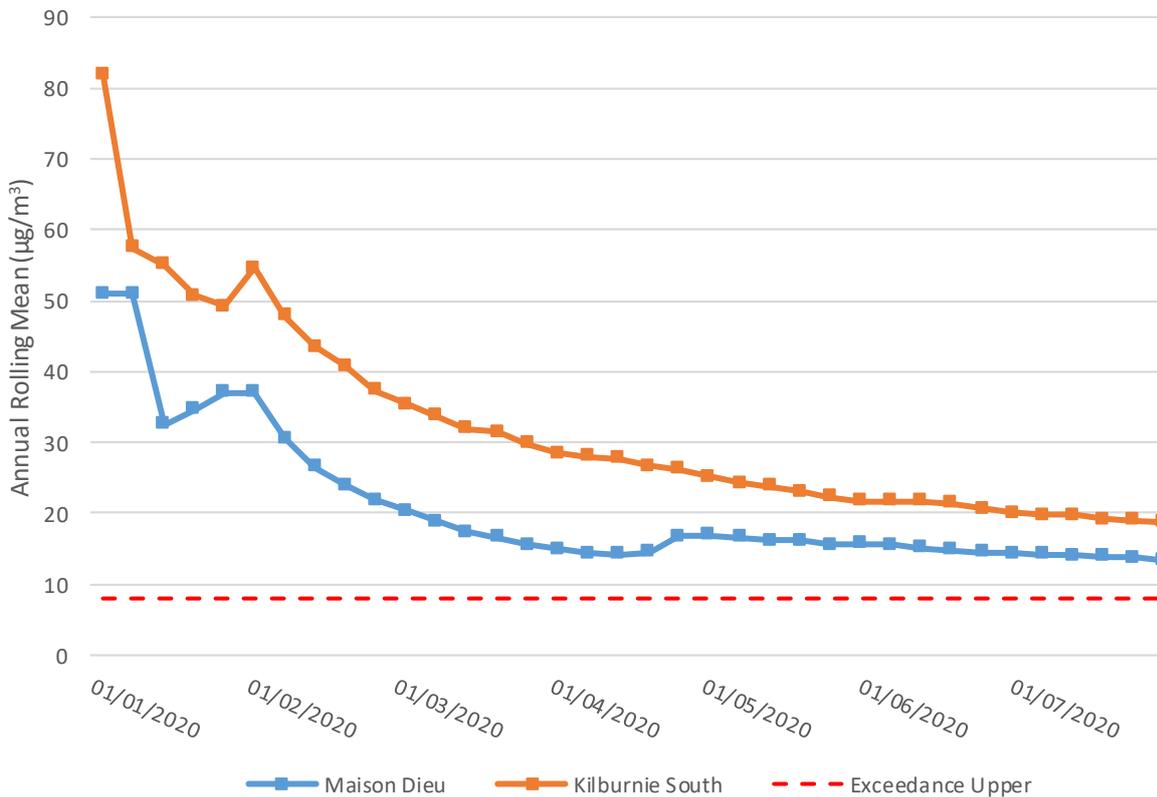


Figure 9: Year to Date Average PM_{2.5} – as at end of July 2020

2.3.3 TSP Results

Performance against Long Term Impact Assessment Criteria

Figure 10 shows the annual average TSP results compared against the long term impact assessment criteria of $90\mu\text{g}/\text{m}^3$.

During the reporting period, the Kilburnie South monitor recorded an annual average above the long term impact assessment criteria of $90\mu\text{g}/\text{m}^3$.

This is likely due to regional air quality conditions in the early months of the year, as the averages have been decreasing over subsequent reporting periods. However, an assessment of HVO’s contribution against the long term impact assessment criteria will be provided in the 2020 Annual Review.

High Volume Air Sampler Records TSP - Annual Mean to Date ($\mu\text{g}/\text{m}^3$)

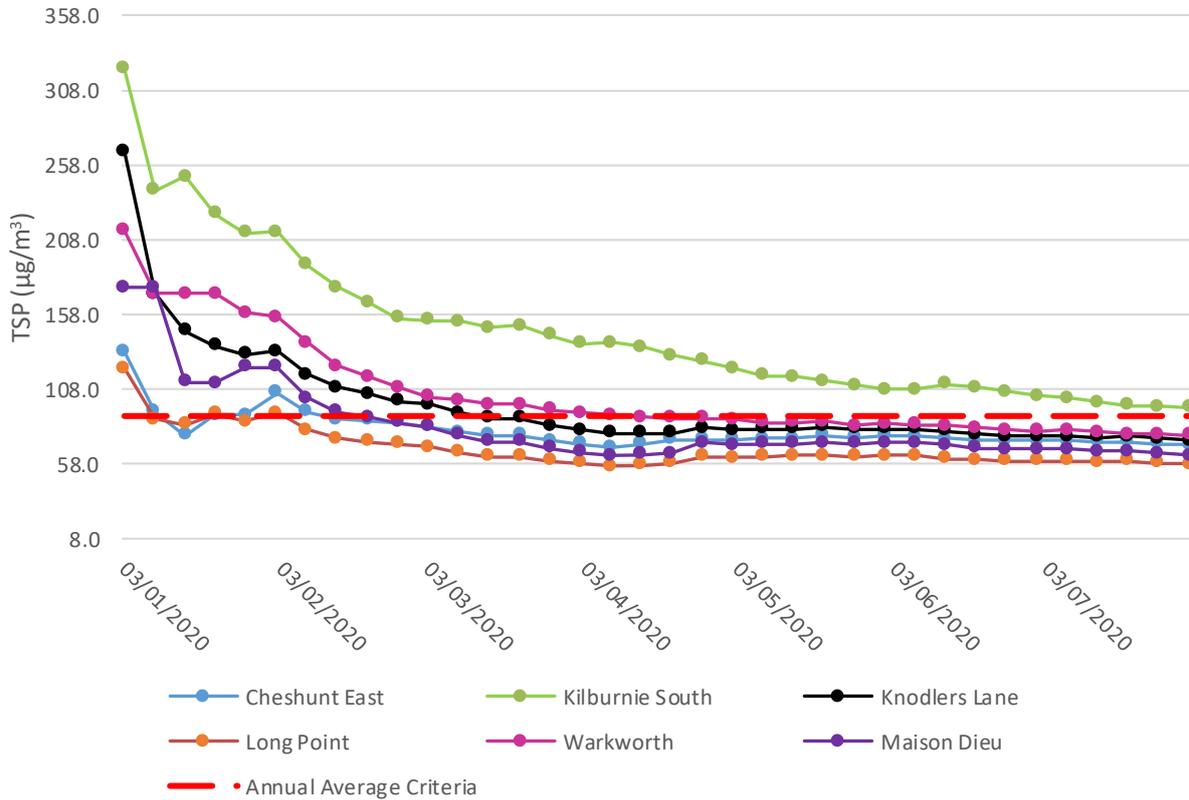


Figure 10: Year to Date Average Total Suspended Particulates – as at end of July 2020

2.3.4 Real Time PM10 Results

Hunter Valley Operations maintains a network of real time PM₁₀ monitors. The real time air quality monitoring stations continuously log information and transmit data to a central database, generating alarms when particulate matter levels exceed internal trigger limits. Results from real time PM₁₀ 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 PM₁₀ result from the real time monitoring sites, the year to date annual averages for each monitoring site are shown in Figure 12.

During the reporting period, no monitors exceeded the daily 24 hour average PM₁₀ result ($50\mu\text{g}/\text{m}^3$). No monitors recorded an annual average above the long term impact criteria.

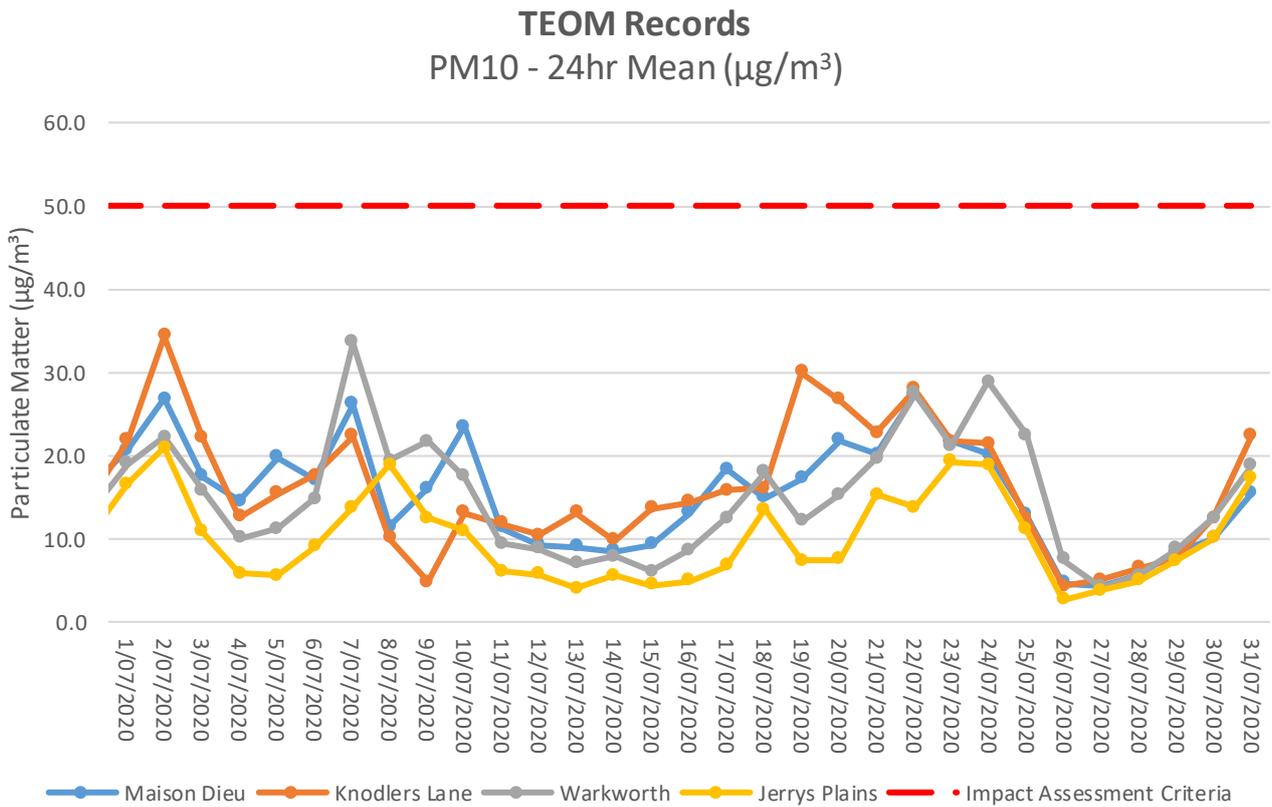


Figure 11: Real Time PM₁₀ 24hr average and YTD average – July 2020

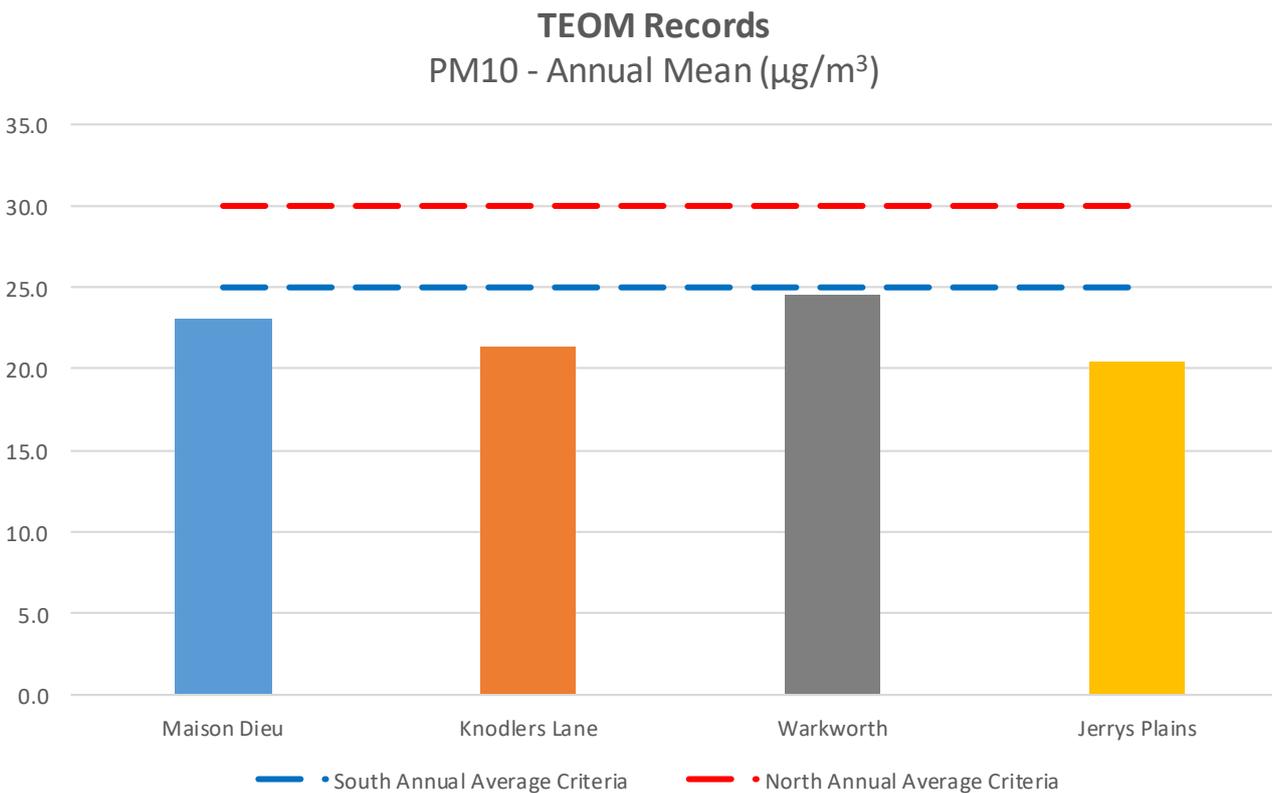


Figure 12: Real Time PM₁₀ Annual Average - July 2020

2.3.5 Real Time Alarms for Air Quality

During July the real time monitoring system generated 119 automated air quality related alarms. 50 alarms were related to adverse weather conditions and 69 alarms relating to PM₁₀.

3.0 WATER QUALITY

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

3.1 Surface Water

Surface water courses are sampled on a quarterly sampling regime. Water quality is assessed through the parameters of pH, Electrical Conductivity (EC) and Total Suspended Solids (TSS). Results of monitoring on Site Dams and the Hunter River as well as other natural tributaries are provided on a quarterly basis, results will appear in the September 2020 report.

3.2 Site Water Use

Under water allocation licences issued by the Water NSW, HVO is permitted to extract water from the Hunter River. During the reporting period, HVO extracted 363.9 ML of water from the Hunter River.

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.

During the reporting period 0ML water was discharged under the HRSTS.

3.4 Groundwater Monitoring Results

Groundwater monitoring is undertaken on a quarterly basis in accordance with the HVO Water Management Plan and Ground Water Monitoring Programme. Results of groundwater monitoring are reported quarterly and as such will be reported in the September 2020 report

4.0 BLASTING

HVO have a network of five blast monitoring units. These are located at nearby privately owned residences and function as regulatory compliance monitors. The location of these monitors can be found in Figure 13. Blasting criteria are summarised in Table 2.

Table 2: Blasting Criteria

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

10	0%
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4.1 Blast Monitoring Results

During July, 19 blasts were initiated at HVO, Table 3 and Table 4 show the blast monitoring results for the reporting period. No blasts triggered in July returned monitoring results above the assessment criteria.

Table 3: Overpressure Blast Monitoring Results – July 2020

Event Date/Time	Moses Crossing (dB)	Jerrys Plains Village (dB)	Maison Dieu (dB)	Warkworth (dB)	Knodlers Lane (dB)
1/07/2020 13:17	92.3	105.8	107.7	109.0	108.5
3/07/2020 13:31	90.2	106.6	113.4	103.3	110.0
4/07/2020 13:08	90.1	89.7	100.6	96.8	101.9
7/07/2020 13:06	95.5	99.3	93.0	93.3	92.4
8/07/2020 12:59	93.9	95.6	99.0	99.8	99.9
10/07/2020 12:54	93.5	87.6	91.8	101.8	96.4
11/07/2020 13:34	87.7	92.7	91.2	89.5	91.1
11/07/2020 13:35	93.4	87.2	102.6	98.7	99.5
11/07/2020 14:40	86.8	87.8	97.3	97.4	98.4
13/07/2020 14:01	94.2	90.1	103.1	104.1	105.6
13/07/2020 14:03	104.0	92.2	106.5	101.5	108.3
17/07/2020 13:01	93.6	77.9	95.0	96.0	104.4
18/07/2020 12:56	91.4	95.3	92.6	87.4	89.1
20/07/2020 12:57	103.4	101.6	108.2	102.7	95.6
21/07/2020 12:57	92.7	98.7	94.8	95.7	97.1
22/07/2020 13:03	78.9	76.0	88.8	89.1	87.2
23/07/2020 13:00	89.4	92.1	95.2	93.1	82.7
24/07/2020 12:58	96.2	98.2	89.9	89.5	86.6
25/07/2020 12:00	92.3	94.3	103.3	92.4	102.2

Table 4: Ground Vibration Blast Monitoring Results - July 2020

Event Date/Time	Moses Crossing (mm/s)	Jerrys Plains Village (mm/s)	Maison Dieu (mm/s)	Warkworth (mm/s)	Knodlers Lane (mm/s)
1/07/2020 13:17	0.27	0.14	0.46	0.69	0.39
3/07/2020 13:31	0.18	0.1	0.25	0.13	0.07
4/07/2020 13:08	0.14	0.06	0.55	0.53	0.31
7/07/2020 13:06	0.21	0.11	0.23	0.09	0.09
8/07/2020 12:59	0.23	0.11	0.34	0.66	0.28
10/07/2020 12:54	0.31	0.09	0.24	0.8	0.16
11/07/2020 13:34	0.12	0.06	0.07	0.16	0.07
11/07/2020 13:35	0.13	0.07	0.08	0.18	0.07
11/07/2020 14:40	0.11	0.03	0.14	0.63	0.13
13/07/2020 14:01	0.14	0.05	0.09	0.23	0.09
13/07/2020 14:03	0.12	0.04	0.06	1.05	0.07
17/07/2020 13:01	0.13	0.06	0.07	0.26	0.07
18/07/2020 12:56	0.17	0.13	0.13	0.13	0.11
20/07/2020 12:57	0.24	0.08	0.08	0.19	0.09
21/07/2020 12:57	0.17	0.08	0.14	0.95	0.15
22/07/2020 13:03	0.11	0.04	0.07	0.11	0.07
23/07/2020 13:00	0.25	0.2	0.14	0.66	0.13
24/07/2020 12:58	0.13	0.05	0.05	0.37	0.08
25/07/2020 12:00	0.23	0.13	1.17	0.97	0.67



Figure 13: Blast Monitoring Location Plan

5.0 NOISE

Routine attended noise monitoring is carried out at defined locations around HVO as described in the HVO Noise Monitoring Programme. The purpose of the noise surveys is to quantify and describe the acoustic environment around the site and compare results with specified limits. Unattended monitoring (real time noise monitoring) also occurs at five sites surrounding HVO. The attended noise monitoring locations are displayed in Figure 14.

5.1 Attended Noise Monitoring Results

Attended monitoring was conducted at receiver locations surrounding HVO on the night of 22nd July 2020 with no non-compliances recorded. Monitoring results are detailed in Table 5 to Table 9.

Table 5: L_{Aeq}, 15 minute HVO South - Impact Assessment Criteria – July 2020

Location	Date and Time	Wind Speed (m/s) ¹	Stability Class ¹	Criterion dB (A)	Criterion Applies? ²	HVO South L _{Aeq} dB ^{3,4,6,7}	Exceedance ^{4,5}
Knodlers Lane	22/07/2020 21:45	2.5	E	39	Yea	31	Nil
Maison Dieu	22/07/2020 21:24	2.4	E	39	Yes	28	Nil
Shearers Lane	22/07/2020 21:00	2.0	E	41	Yes	32	Nil
Kilburnie South	22/07/2020 22:56	3.1	E	39	No	IA	NA
Jerrys Plains Village	22/07/2020 21:23	2.4	E	35	Yes	IA	Nil
Jerrys Plains East	22/07/2020 21:00	2.0	E	35	Yes	IA	Nil
Long Point Road	22/07/2020 21:00	0.4	E	35	Yes	IA	Nil
HVGC	22/07/2020 23:26	3.8	E	55	No	40	NA

Notes:

1. Atmospheric data is sourced from the HVO Cheshunt (or MTW Charlton Ridge for Long Point) AWS using logged meteorological data;
2. Noise criteria apply for wind speeds up to 3 metres per second (at a height of 10m), or during stability class G conditions. Criterion may or may not apply due to rounding of meteorological data values;
3. Site-only L_{Aeq}, 15 minute attributed to HVO South Pit Area, including modifying factors if applicable;
4. Bold results in red indicate exceedance of relevant criterion;
5. NA in exceedance column means atmospheric conditions outside specified in approval and so criterion is not applicable;
6. IA means inaudible, there was no site noise at the monitoring location; and
7. NM means not measurable, noise was audible but could not be quantified.

Table 6: LA1, 1 minute HVO South - Impact Assessment Criteria – July 2020

Location	Date and Time	Wind Speed (m/s) ¹	Stability Class ¹	Criterion dB (A)	Criterion Applies? ²	HVO South L _{A1, 1min} dB ^{3,4,6,7}	Exceedance ^{4,5}
Knodlers Lane	22/07/2020 21:45	2.5	E	45	Yes	35	Nil
Maison Dieu	22/07/2020 21:24	2.4	E	45	Yes	37	Nil
Shearers Lane	22/07/2020 21:00	2.0	E	45	Yes	35	Nil
Kilburnie South	22/07/2020 22:56	3.1	E	45	No	IA	NA
Jerrys Plains Village	22/07/2020 21:23	2.4	E	45	Yes	IA	Nil
Jerrys Plains East	22/07/2020 21:00	2.0	E	45	Yes	IA	Nil
Long Point Road	22/07/2020 21:00	0.4	E	45	Yes	IA	Nil
HVGC	22/07/2020 23:26	3.8	E	NA	No	44	NA

Notes:

1. Atmospheric data is sourced from the HVO Cheshunt (or MTW Charlton Ridge for Long Point) AWS using logged meteorological data;
2. Noise criteria apply for wind speeds up to 3 metres per second (at a height of 10m), or during stability class G conditions. Criterion may or may not apply due to rounding of meteorological data values;
3. Site-only LA1, 1 minute attributed to HVO South Pit Area;
4. Bold results in red indicate exceedance of relevant criterion;
5. NA in criterion column indicates no criterion is applicable at this location. NA in exceedance column means atmospheric conditions outside specified in approval and so criterion is not applicable;
6. IA means inaudible, there was no site noise at the monitoring location; and
7. NM means not measurable, noise was audible but could not be quantified.

Table 7: LAeq, 15 minute HVO North – Impact Assessment Criteria – July 2020

Location	Date and Time	Wind Speed (m/s) ¹	Stability Class ¹	Criterion dB (A)	Criterion Applies? ²	HVO North LAeq dB ^{3,4,6,7}	Exceedance ^{4,5}
<i>Knodlers Lane</i>	<i>22/07/2020 21:45</i>	<i>2.1</i>	<i>D</i>	<i>35</i>	<i>Yes</i>	<i>IA</i>	<i>Nil</i>
<i>Maison Dieu</i>	<i>22/07/2020 21:24</i>	<i>2.0</i>	<i>E</i>	<i>35</i>	<i>Yes</i>	<i>IA</i>	<i>Nil</i>
<i>Shearers Lane</i>	<i>22/07/2020 21:00</i>	<i>2.0</i>	<i>D</i>	<i>35</i>	<i>Yes</i>	<i>IA</i>	<i>Nil</i>
<i>Kilburnie South</i>	<i>22/07/2020 22:56</i>	<i>2.9</i>	<i>D</i>	<i>39</i>	<i>Yes</i>	<i><25</i>	<i>Nil</i>
<i>Jerrys Plains Village</i>	<i>22/07/2020 21:23</i>	<i>2.0</i>	<i>E</i>	<i>36</i>	<i>Yes</i>	<i>IA</i>	<i>Nil</i>
<i>Jerrys Plains East</i>	<i>22/07/2020 21:00</i>	<i>2.0</i>	<i>D</i>	<i>39</i>	<i>Yes</i>	<i>IA</i>	<i>Nil</i>
<i>Long Point Road</i>	<i>22/07/2020 21:00</i>	<i>0.4</i>	<i>E</i>	<i>35</i>	<i>Yes</i>	<i>IA</i>	<i>Nil</i>
<i>HVGC</i>	<i>22/07/2020 23:26</i>	<i>2.9</i>	<i>D</i>	<i>NA</i>	<i>NA</i>	<i>IA</i>	<i>NA</i>

Notes:

1. Atmospheric data is sourced from the HVO Corporate (or MTW Charlton Ridge for Long Point) AWS using logged meteorological data;
2. Noise emission limits apply under all meteorological conditions, except during periods of rain or hail, when average winds speed at microphone heights exceeds 5 metres per second, when wind speeds greater than 3 metres per second are measured at 10m above ground level, or during stability class G conditions. Criterion may or may not apply due to rounding of meteorological data values;
3. Site-only LAeq, 15 minute attributed to HVO North Pit Area, including modifying factors if applicable;
4. Bold results in red indicate exceedance of criteria;
5. NA in criterion column indicates no criterion is applicable at this location. NA in exceedance column means atmospheric conditions outside specified in approval and so criterion is not applicable;
6. IA means inaudible, there was no site noise at the monitoring location; and
7. NM means not measurable, noise was audible but could not be quantified.

Table 8: LAeq,15 minute HVO North - Land Acquisition Criteria – July 2020

Location	Date and Time	Wind Speed (m/s) ¹	Stability Class ¹	Criterion dB (A)	Criterion Applies? ²	HVO North L _{Aeq} dB ^{3,4,6,7}	Exceedance ^{4,5}
Knodlers Lane	22/07/2020 21:45	2.1	D	41	Yes	IA	Nil
Maison Dieu	22/07/2020 21:24	2.0	E	41	Yes	IA	Nil
Shearers Lane	22/07/2020 21:00	2.0	D	41	Yes	IA	Nil
Kilburnie South	22/07/2020 22:56	2.9	D	41	Yes	<25	Nil
Jerrys Plains Village	22/07/2020 21:23	2.0	E	41	Yes	IA	Nil
Jerrys Plains East	22/07/2020 21:00	2.0	D	41	Yes	IA	Nil
Long Point Road	22/07/2020 21:00	0.4	E	41	Yes	IA	Nil
HVGC	22/07/2020 23:26	2.9	D	NA	NA	IA	NA

Notes:

1. Atmospheric data is sourced from the HVO Corporate (or MTW Charlton Ridge for Long Point) AWS using logged meteorological data;
2. Noise emission limits apply under all meteorological conditions, except during periods of rain or hail, when average winds speed at microphone heights exceeds 5 metres per second, when wind speeds greater than 3 metres per second are measured at 10m above ground level, or during stability class G conditions. Criterion may or may not apply due to rounding of meteorological data values;
3. Site-only LAeq, 15minute attributed to HVO North Pit Area, including modifying factors if applicable;
4. Bold results in red indicate exceedance of relevant criterion;
5. NA in criterion column indicates no criterion is applicable at this location. NA in exceedance column means atmospheric conditions outside specified in approval and so criterion is not applicable;
6. IA means inaudible, there was no site noise at the monitoring location; and
7. NM means not measurable, noise was audible but could not be quantified.

Table 9: LA1, 1 Minute HVO North - Impact Assessment Criteria – July 2020

Location	Date and Time	Wind Speed (m/s) ¹	Stability Class ¹	Criterion dB (A)	Criterion Applies? ²	HVO North LA1, 1min dB ^{3,4,6,7}	Exceedance ^{4,5}
Knodlers Lane	22/07/2020 21:45	2.1	D	46	Yes	IA	Nil
Maison Dieu	22/07/2020 21:24	2.0	E	46	Yes	IA	Nil
Shearers Lane	22/07/2020 21:00	2.0	D	46	Yes	IA	Nil
Kilburnie South	22/07/2020 22:56	2.9	D	46	Yes	<30	Nil
Jerrys Plains Village	22/07/2020 21:23	2.0	E	46	Yes	IA	Nil
Jerrys Plains East	22/07/2020 21:00	2.0	D	46	Yes	IA	Nil
Long Point Road	22/07/2020 21:00	0.4	E	46	Yes	IA	Nil
HVGC	22/07/2020 23:26	2.9	D	NA	NA	IA	NA

Notes:

1. Atmospheric data is sourced from the HVO Corporate (or MTW Charlton Ridge for Long Point) AWS using logged meteorological data;
2. Noise emission limits apply under all meteorological conditions, except during periods of rain or hail, when average winds speed at microphone heights exceeds 5 metres per second, when wind speeds greater than 3 metres per second are measured at 10m above ground level, or during stability class G conditions. Criterion may or may not apply due to rounding of meteorological data values;
3. Site-only LA1, 1 minute attributed to HVO North Pit Area;
4. Bold results in red indicate exceedance of relevant criterion;
5. NA in criterion column indicates no criterion is applicable at this location. NA in exceedance column means atmospheric conditions outside specified in approval and so criterion is not applicable;
6. IA means inaudible, there was no site noise at the monitoring location; and
7. NM means not measurable, noise was audible but could not be quantified.

5.2 NPfl Low Frequency Assessment

In accordance with the requirements of the EPA's Noise Policy for Industry (NPfl), the applicability of the low frequency modification penalty has been assessed. During July 2020 no penalties were applied. The assessments for low frequency noise are shown in Table 10 and Table 9.

Table 10: Modifying Factor Assessment – HVO South – July 2020

Location	Date and Time	Measured HVO South $L_{Aeq}dB^{1,2,3}$	Criterion Applied?	Intermittency Modifying Factor?	Tonality Modifying Factor?	Frequency of Tonality	Low-frequency Modifying Factor?	Maximum Exceedance of NPfl Reference Spectrum ⁴	Total Penalty dB ⁴
Knodlers Lane	22/07/2020 21:45	31	Yes	No	No	NA	No	NA	Nil
Maison Dieu	22/07/2020 21:24	28	Yes	No	No	NA	No	NA	Nil
Shearers Lane	22/07/2020 21:00	32	Yes	No	No	NA	No	NA	Nil
Kilburnie South	22/07/2020 22:56	IA	No	No	No	NA	No	NA	Nil
Jerrys Plains Village	22/07/2020 21:23	IA	Yes	No	No	NA	No	NA	Nil
Jerrys Plains East	22/07/2020 21:00	IA	Yes	No	No	NA	No	NA	Nil
Long Point Road	22/07/2020 21:00	IA	Yes	No	No	NA	No	NA	Nil
HVGC	22/07/2020 23:26	40	No	No	No	NA	No	NA	Nil

Notes:

1. NA means not applicable;
2. IA means inaudible, there was no site noise at the monitoring location;
3. NM means not measurable, noise was audible but could not be quantified; and
4. Bold results indicate that NPfl low-frequency modifying factor has been triggered and application of correction is required.

Table 11: Modifying Factor Assessment – HVO North – July 2020

Location	Date and Time	Measured HVO South $L_{Aeq} dB^{1,2,3}$	Criterion Applied?	Intermittency Modifying Factor?	Tonality Modifying Factor?	Frequency of Tonality	Low-frequency Modifying Factor?	Maximum Exceedance of NPfl Reference Spectrum ⁴	Total Penalty dB ⁴
Knodlers Lane	22/07/2020 21:45	IA	Yes	No	No	NA	No	NA	Nil
Maison Dieu	22/07/2020 21:24	IA	Yes	No	No	NA	No	NA	Nil
Shearers Lane	22/07/2020 21:00	IA	Yes	No	No	NA	No	NA	Nil
Kilburnie South	22/07/2020 22:56	<25	Yes	No	No	NA	No	NA	Nil
Jerrys Plains Village	22/07/2020 21:23	IA	Yes	No	No	NA	No	NA	Nil
Jerrys Plains East	22/07/2020 21:00	IA	Yes	No	No	NA	No	NA	Nil
Long Point Road	22/07/2020 21:00	IA	Yes	No	No	NA	No	NA	Nil
HVGC	22/07/2020 23:26	IA	Yes	No	No	NA	No	NA	Nil

Notes:

1. NA means not applicable;
2. IA means inaudible, there was no site noise at the monitoring location;
3. NM means not measurable, noise was audible but could not be quantified; and
4. Bold results indicate that NPfl low-frequency modifying factor has been triggered and application of correction 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. 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 likely to be attributable to HVO.

Noise alarms are investigated and responded to with the appropriate level of operational modification. Changes in response to a noise alarm can include replacing equipment with quieter (noise attenuated) units, changing or relocating tasks, and shutting down equipment. It should be noted that this assessment does not compliment or conflict with attended noise monitoring detailed in Section 5.1, and that real time monitoring data includes non-mine noise sources such as dogs, cows, or more commonly, road traffic.

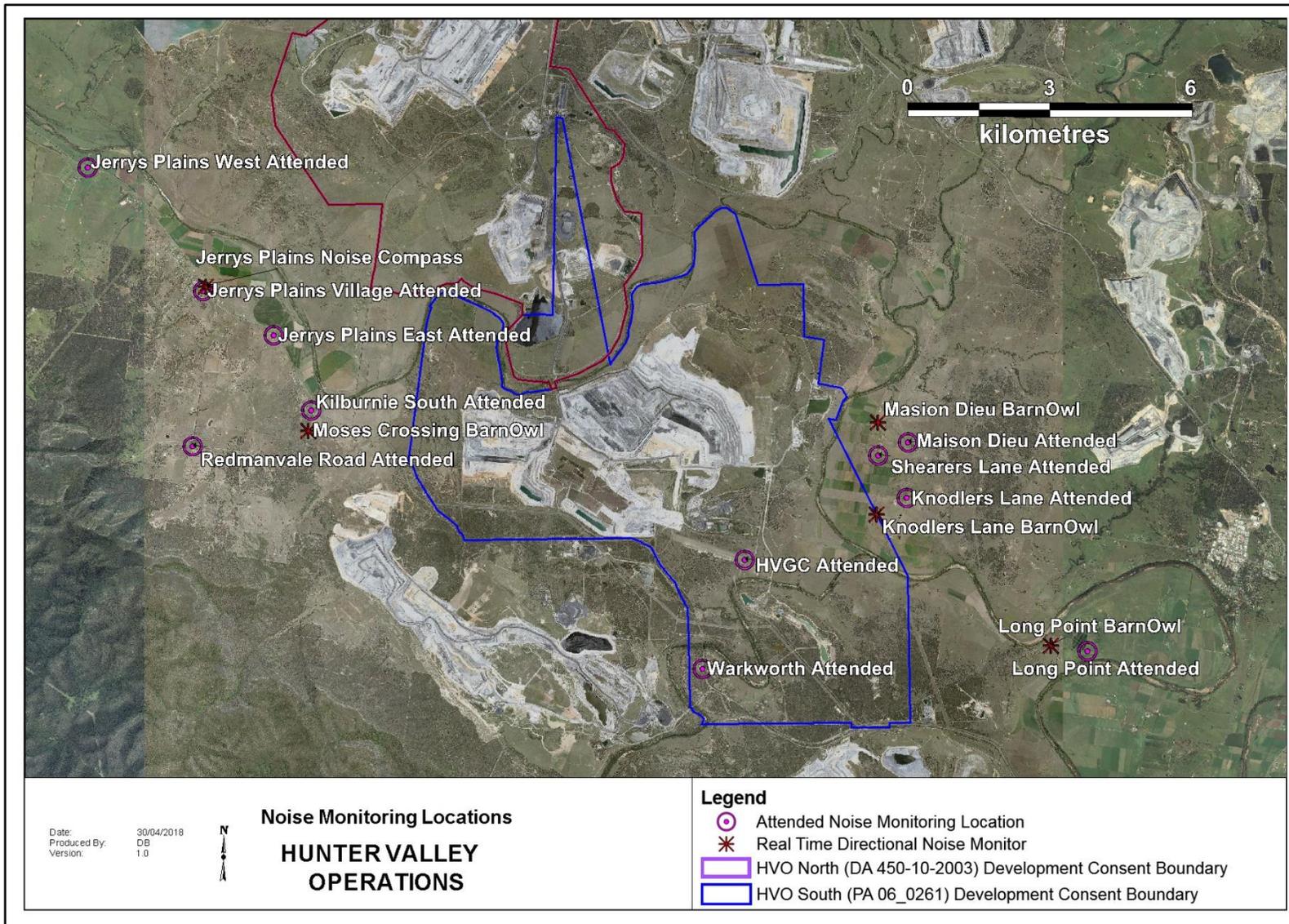


Figure 14: Noise Monitoring Location Plan

6.0 OPERATIONAL DOWNTIME

During July, a total of 2.08 hours of equipment downtime was logged in response to real time monitoring and visual inspections for environmental reasons such as dust, noise and meteorological conditions. Operational downtime by equipment type and reason is shown in Figure 15. 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).

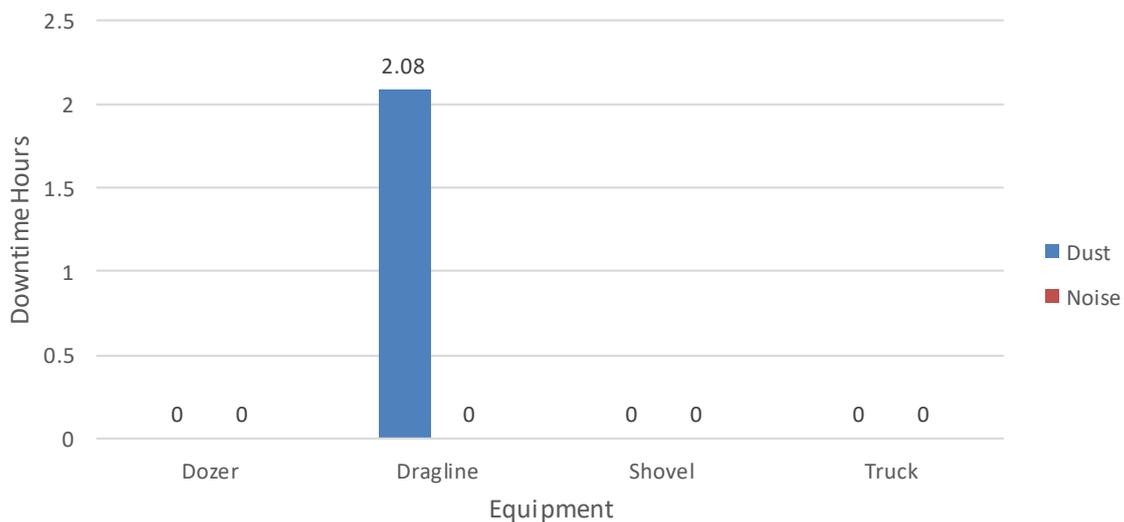


Figure 15: Operational Downtime by Equipment Type – July 2020

7.0 REHABILITATION

During July, 9.85 Ha of land was bulk shaped, 10.11 Ha of land was released and no land was rehabilitated or topsoiled. Year to date progress can be viewed in Figure 16.

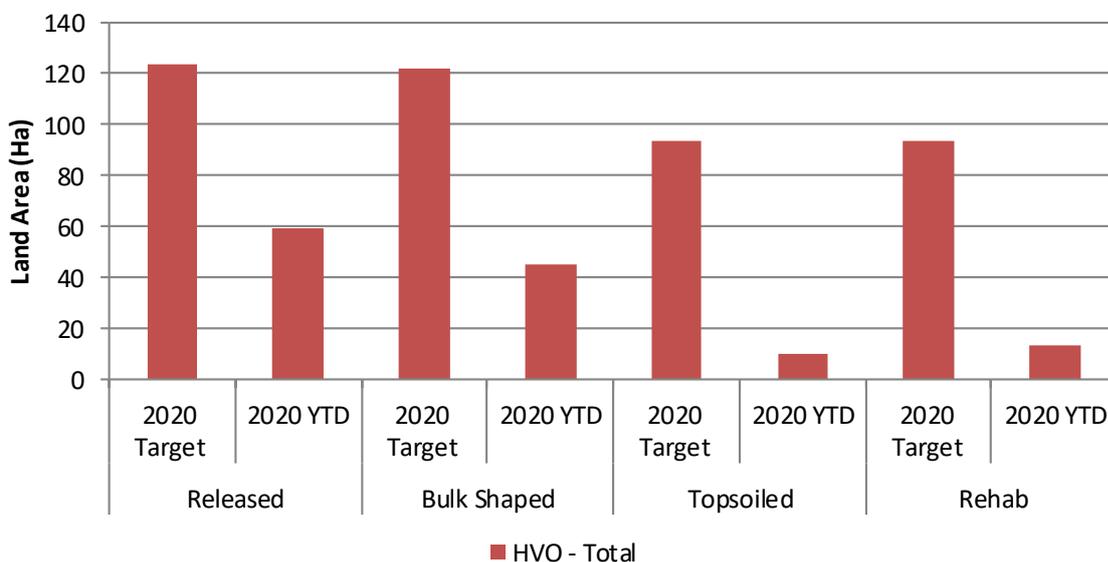


Figure 16: Rehabilitation YTD – July 2020

8.0 COMPLAINTS

No complaints were received during July 2020. Five complaints have been received in 2020. Details of complaints received are shown in Table 12 below.

Table 12: Complaints Summary 2020

Month	Noise	Dust	Blast	Lighting	Other	Total
<i>January</i>	-	-	-	-	-	-
<i>February</i>	-	-	-	-	-	-
<i>March</i>	-	-	-	-	-	-
<i>April</i>	-	-	-	-	-	-
<i>May</i>	3	-	-	-	-	3
<i>June</i>	2	-	-	-	-	2
<i>July</i>	-	-	-	-	-	-
<i>August</i>						
<i>September</i>						
<i>October</i>						
<i>November</i>						
<i>December</i>						
<i>Total</i>	5	0	0	0	0	5

9.0 ENVIRONMENTAL INCIDENTS

During the reporting period there were no reportable environmental incidents.

APPENDIX A: METEOROLOGICAL DATA

Table 13: Meteorological Data - HVO Corporate Meteorological Station – July 2020

Date	Air Temp Max (°C)	Air Temp Min (°C)*	Relative Humidity Max (%)	Relative Humidity Min (%)*	Solar Radiation Maximum (W/Sq. M)	Wind Dir. Avg (°)	Wind Speed Avg (m/sec)	Rainfall (mm)
1/07/2020	18.95	-1.00	98.1	37.2	501.2	262.9	2.08	0
2/07/2020	21.51	4.12	82.1	37.3	598.8	281.3	3.99	0
3/07/2020	17.32	2.98	93	31.2	718.4	275.7	3.72	0
4/07/2020	14.17	-0.05	96	41.5	772.9	287	4.21	0
5/07/2020	16.54	-0.95	90.2	40.3	517.2	300.1	3.07	0
6/07/2020	17.53	-1.66	94.7	45.7	514	227.8	1.71	0
7/07/2020	16.45	-2.04	109.8	44.4	585.8	182.8	1.23	0
8/07/2020	16.48	2.36	111.7	56.4	750.8	113.2	1.60	0.2
9/07/2020	18.28	-0.50	111.4	57.8	587.5	184.4	0.98	0
10/07/2020	13.96	2.57	111.6	82.3	661.9	180.7	0.90	1.8
11/07/2020	16.29	4.14	112.7	84.2	561.2	220.6	1.74	5.4
12/07/2020	18.16	2.06	109.3	42.4	709.4	262.2	2.41	1.4
13/07/2020	13.03	-1.41	110.8	51.6	612.3	272.9	3.16	0.2
14/07/2020	15.9	-1.29	100	55.9	867	221.9	3.99	1.2
15/07/2020	17.08	3.47	82.3	43.9	822	200	2.32	0
16/07/2020	15.31	0.05	83	45.0	864	238.7	2.53	0
17/07/2020	15.11	2.73	92.3	59.3	658.5	156.3	1.25	0
18/07/2020	16.61	2.93	100	53.5	750.1	124.9	1.14	0
19/07/2020	18.87	-1.09	109.3	38.8	678.9	283	3.53	0
20/07/2020	17.65	1.16	82.6	22.1	570.7	281	3.64	0
21/07/2020	15.38	-3.15	90.2	41.4	548.2	195.6	2.12	0
22/07/2020	15.21	-2.00	100	52.6	686.2	227.6	1.30	0
23/07/2020	17.84	-0.80	100	33.8	556.4	181.9	1.62	0
24/07/2020	16.24	-1.61	111.5	69.6	888	158.8	1.47	0
25/07/2020	15.28	0.17	113	69.2	695.6	139.6	1.72	5
26/07/2020	13.24	3.88	112.9	94.7	323.3	195.8	2.54	33.8
27/07/2020	15.09	2.70	109.3	61.2	292.1	276.4	5.62	17.6
28/07/2020	12.17	2.30	110.8	92.4	235.9	282.6	3.98	19.4
29/07/2020	19.49	3.79	100	54.8	836	214.6	1.80	0
30/07/2020	17.65	0.51	108.8	45.7	767.6	184.9	1.69	0
31/07/2020	15.4	7.9	99.8	50.8	438.2	128.2	1.49	0