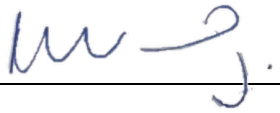
## 1 October – 31 December 2024

# Northparkes Operations

# Environmental Monitoring Results Summary

| | |
|---|---|
| **Name of Mine** | Northparkes Mine |
| **Name of Leaseholder and Mine Operator** | Evolution Mining (Northparkes) Pty Limited |
| **Mining Leases** | ML1247, ML1367, ML1641 AND ML1743 |
| **Environment Protection Licence** | EPL 4784 |
| **Development Consent** | DC11_0060 (as modified) |

| | |
|---|---|
| **Reviewed by** | Chris Higgins |
| **Title**<br><br>**Signature** | Superintendent – Environment & Farms<br>C Higgins |
| **Approved by** | Rachael Whiting |
| **Title**<br><br>**Signature** | Manager – Sustainability<br>  |

# 1. SCOPE OF REPORT

This report provides a summary of monitoring results for the period from 1 October to 31 December 2024. This monitoring is undertaken in accordance with the Environmental Monitoring Program (available at www.northparkes.com.au). Details of air quality, noise, water and vibration monitoring locations are available in the Environmental Monitoring Program. Refer to appendix A for all monitoring location maps. Monitoring continues to be recorded during the calendar year to align with the Annual Review submission.

# 2. AIR QUALITY

During the quarter, the air quality monitoring program utilised $PM_{10}$ (beta attenuated monitors). Monitoring locations are strategically positioned around the mine lease and neighbouring properties. $PM_{10}$ monitoring is undertaken at three nearby farm residences Hubberstone, Milpose and Hillview. A summary of the monitoring results are provided below.

## 2.1 PM10

$PM_{10}$ monitoring results for the Hubberstone, Milpose and Hillview monitoring locations, for the reporting period, are displayed in Figure 1, Figure 2 and Figure 3 respectively. The criteria for exceedances (as nominated in the Development Consent DC11_0060, known as the Consent), are >25 µg/m$^3$ for the annual average and >50 µg/m$^3$ for a 24-hour monitoring period.

**24-hour average:**
During the reporting period Hubberstone had one elevated result on 31 October this was deemed as a direct result of tailings and operational dust emission. Northparkes self reported to the EPA and Department of Planning. Milpose had one elevated reading on 22 November which was determined to be agriculture related. Missing data is the result of instrumentation issues which have since been rectified or power outages.

**Annual Averages:**
Annual averages, recorded year to date, at all monitoring locations are below the Consent criteria of 25 µg/m$^3$:

- 10.3 µg/m$^3$ at Hubberstone
- 9.7 µg/m$^3$ at Milpose, and
- 11.7 µg/m$^3$ at Hillview.

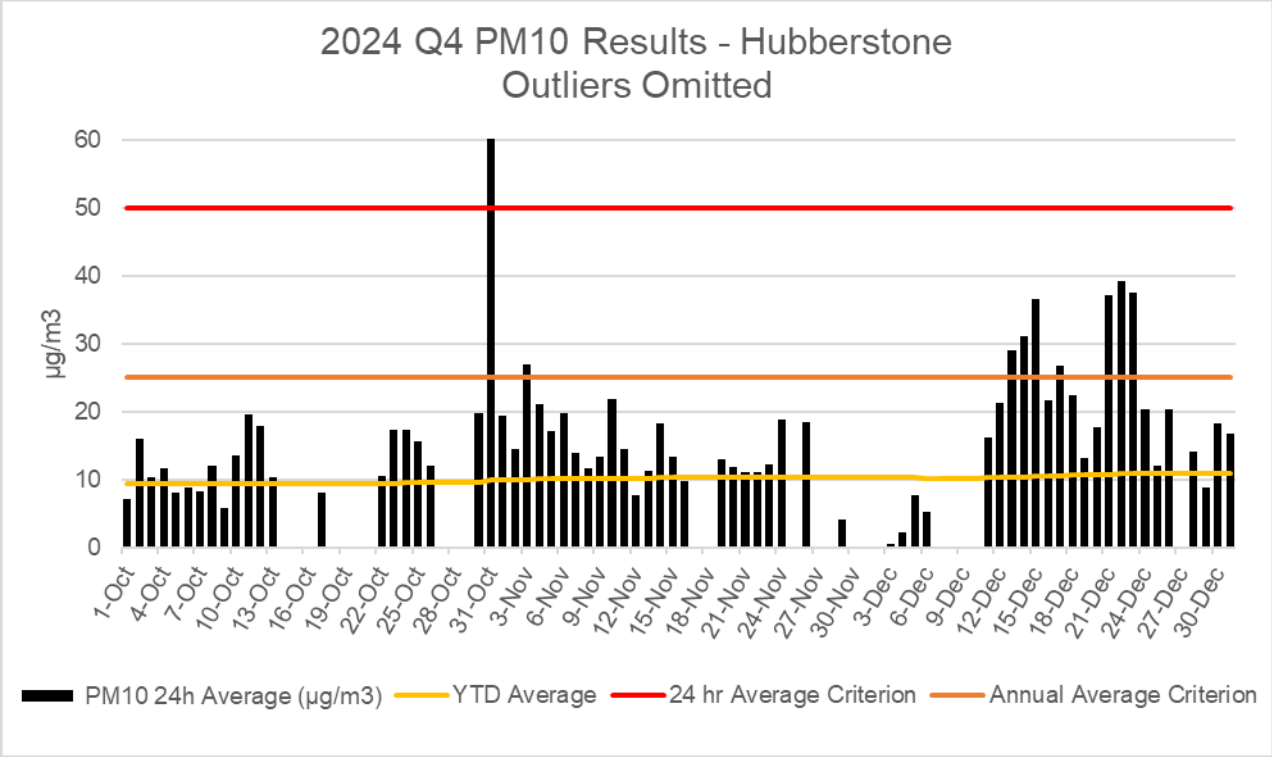



**Figure 1:** Hubberstone

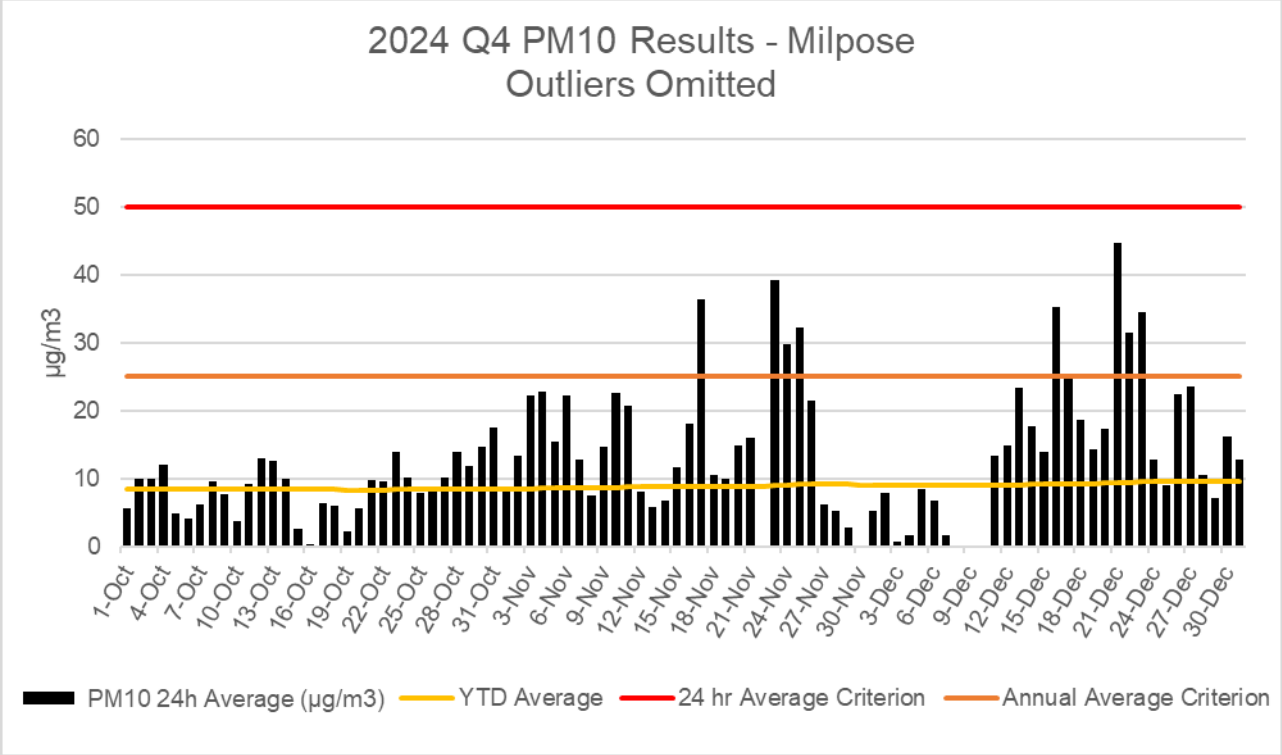



**Figure 2:** Milpose

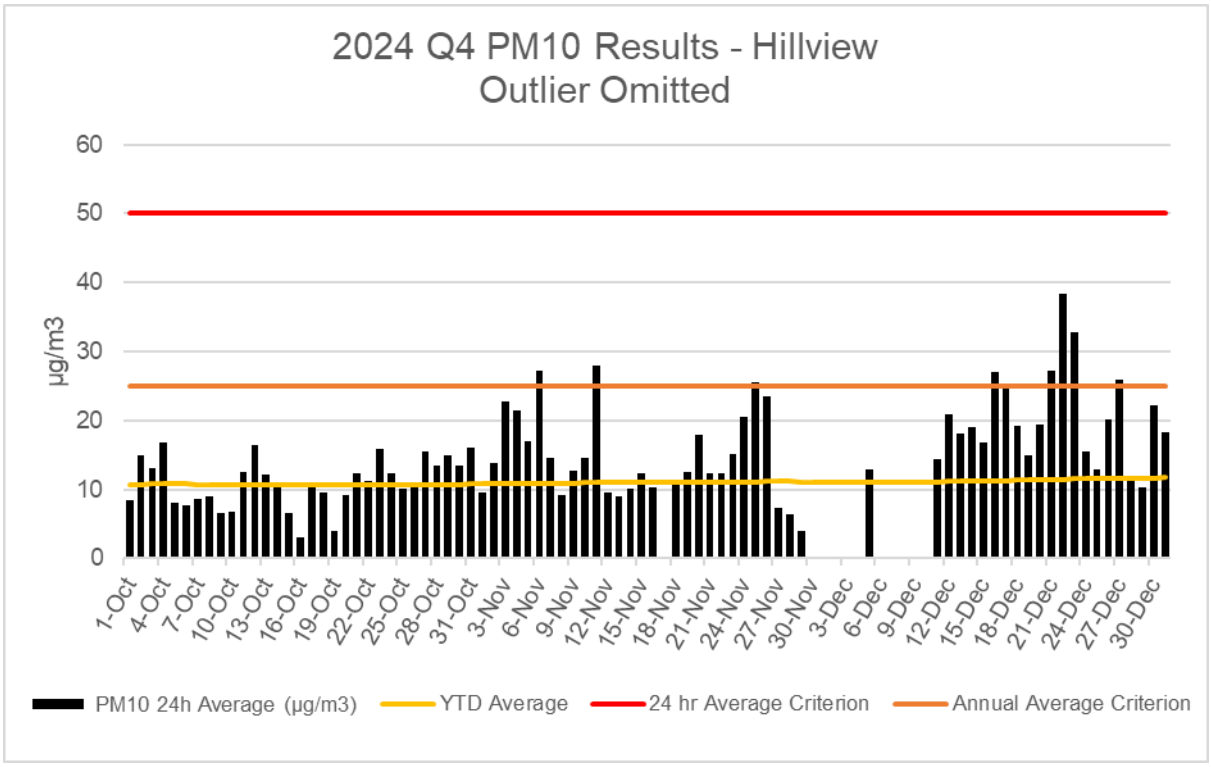



**Figure 3**: Hillview

## 2.2 PM2.5

$PM_{2.5}$ monitoring results for the same three properties are displayed in Figures 4, 5 and 6 respectively. The development consent states that compliance with the assessment criteria for $PM_{2.5}$ may be calculated as a ratio of $PM_{10}$. This ratio is calculated as 0.35.

The criteria for exceedances are >8 µg/m$^3$ for the annual average and >25 µg/m$^3$ for a 24-hour monitoring period.

**24 hour average:**
During the period Hubberstone had one elevated result on 31 October this was deemed as a direct result of tailings and operational dust emission. Northparkes self reported to the EPA and Department of Planning. Missing data is the result of instrumentation issues which have since been rectified or power outages.

**Annual Averages:**
Annual averages recorded at all monitoring locations are below the Consent criteria of 8 µg/m$^3$:

- 3.6 µg/m$^3$ at Hubberstone
- 3.5 µg/m$^3$ at Milpose, and
- 4.0 µg/m$^3$ at Hillview.

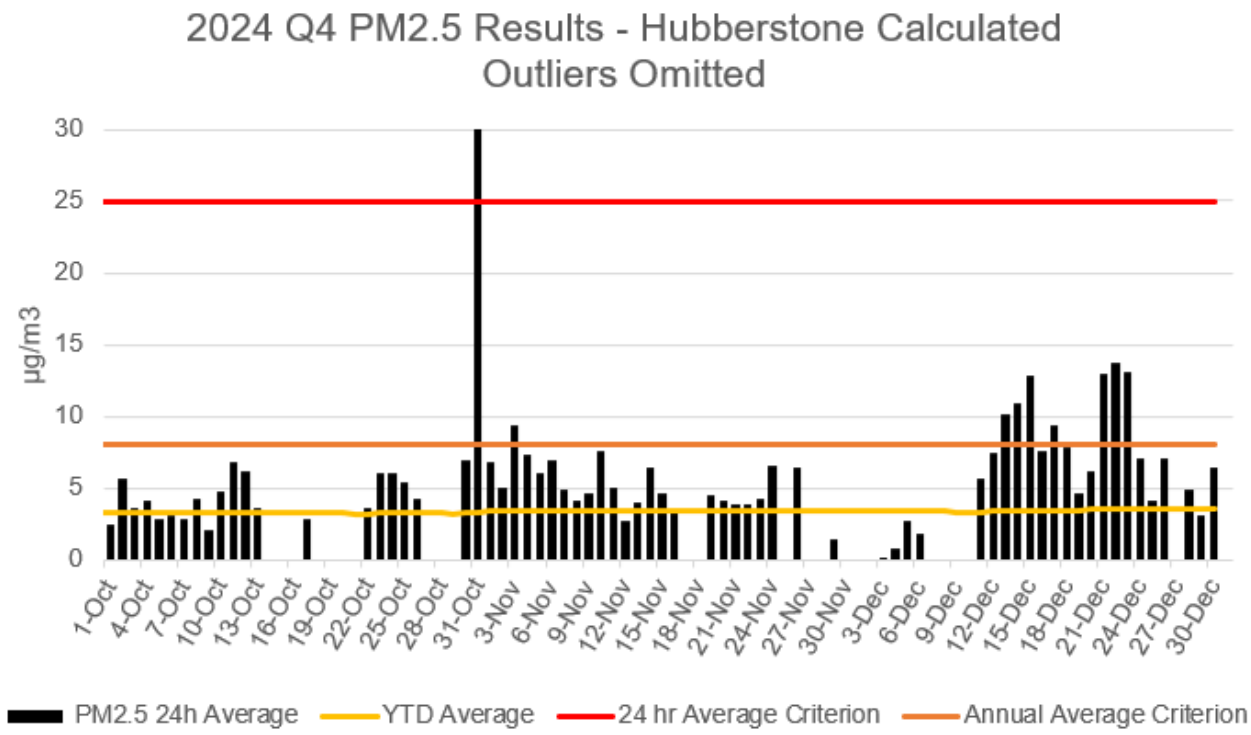



**Figure 4:** Hubberstone (calculated)

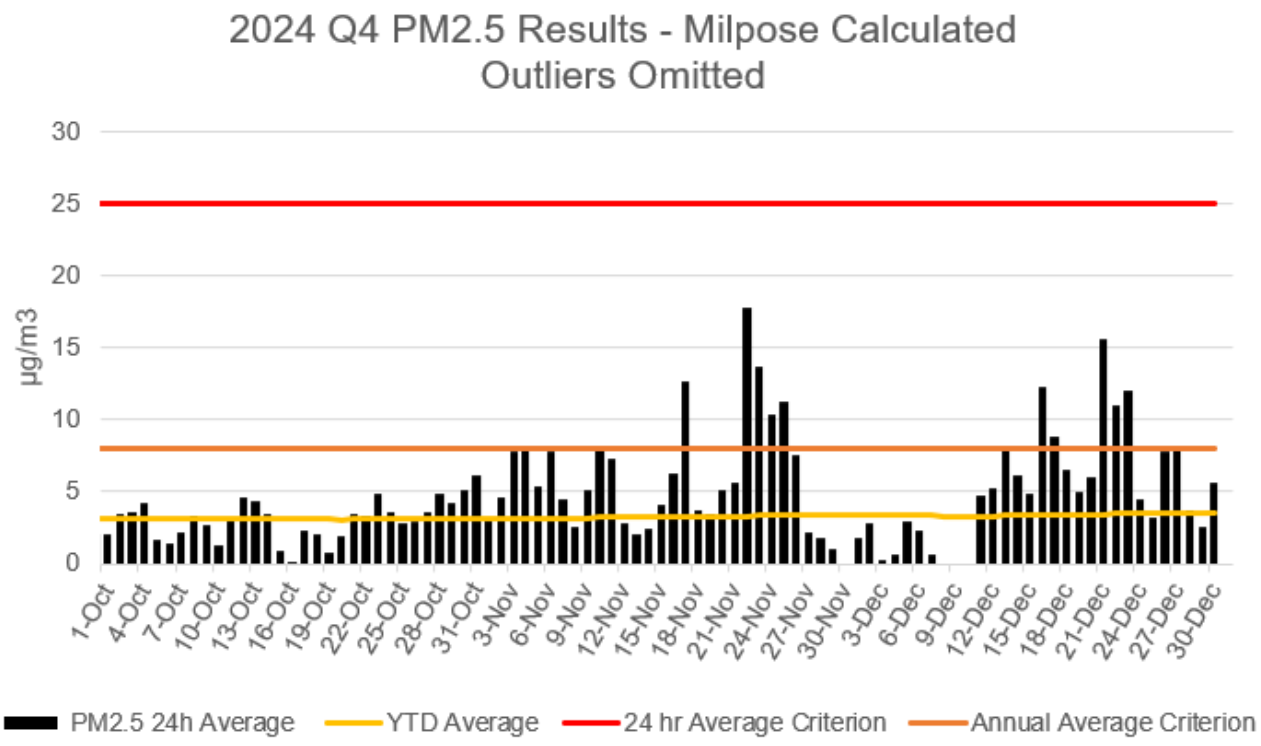



**Figure 5:** Milpose (calculated)

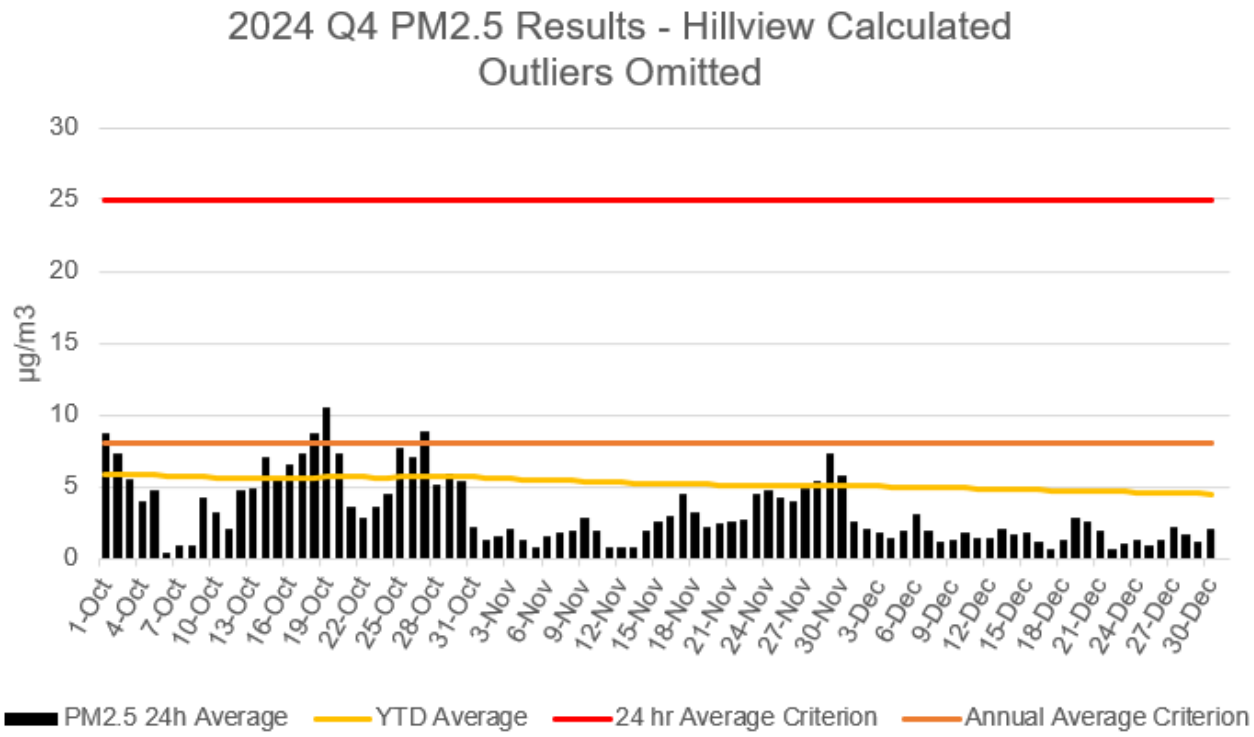



**Figure 6:** Hillview (calculated)

# 3. WATER

## 3.1 Overview

Water management at Northparkes is undertaken in accordance with approved management plans, prepared in accordance with the Consent. All water samples are analysed at an independent National Association of Testing Authorities (NATA) accredited laboratory.

Surface water quality monitoring is undertaken at Northparkes specifically within the three defined water management systems of;

- Clean water management system, which includes farm dams and watercourses;
- Dirty water management system, which includes settlement ponds; and
- Contaminated water management system, which includes all aspects of ore processing, and retention ponds.

The groundwater monitoring program at Northparkes aims to identify any changes to the natural groundwater system as a result of mining operations and ensure compliance with the Consent. It focuses on potential impacts to environmental assets and groundwater users in the area surrounding Northparkes.

Monitoring results are assessed and interpreted utilising historical trend analysis and internal water quality criteria and trigger levels to identify potential changes.

## 3.2 Quarterly Monitoring Analysis

Water quality monitoring was carried out generally in accordance with the Consent, with no significant changes to the pH or EC for all locations. Copper concentrations increased at several locations, although results are still consistent with long term data. These locations will be closely monitored during the future reporting periods. A summary of the monitoring results at each location sampled are presented in Tables 1-8 below.

Bores W14, W22 and W23 are planned to be impacted during future operations and have been replaced with W33 and W34. These changes were approved in consultation with the Environment Protection Authority (EPA).

**Table 1:** Process Water System

| Location | RP01 | RP02 | RP03 | RP04 | RP05 | RP06 | RP07 | RP08 | RP12 | RP13 | RP15 | RP16 | RP19 | RP20 | RP21 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **EC (uS/cm)** | 619 | 2,752 | 5,314 | 3,602 | 859 | 1,027 | 856 | 2,968 | 857 | 622 | Dry | 24,884 | 4,926 | 8,452 | 2,148 |
| **Cu (mg/L)** | 0.055 | 0.039 | 0.035 | 0.321 | 0.02 | 0.016 | 0.032 | 0.036 | 0.023 | 0.024 | Dry | 0.013 | 0.005 | 0.027 | 0.012 |
| **pH** | 8.19 | 7.84 | 8.23 | 7.93 | 8.02 | 8.02 | 7.71 | 7.93 | 9.10 | 7.99 | Dry | 8.26 | 8.02 | 7.90 | 7.83 |

**Table 1 continued:** Process Water System

| Location | RP22 | RP23 | RP24 | RP25 | RP26 | RP27 | RP32 | PWD | Caloola North | Caloola South | GT02 | SD1 | SD2 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **EC (uS/cm)** | 941 | 2,227 | Dry | 871 | 765 | 4,670 | 980 | 4,682 | 3,160 | 4,093 | 2,490 | 4,238 | 13,003 |
| **Cu (mg/L)** | 0.043 | 0.054 | Dry | 0.018 | 0.024 | 0.026 | 0.032 | 0.027 | 0.009 | 0.014 | 0.072 | 0.034 | 0.103 |
| **pH** | 8.27 | 7.68 | Dry | 8.24 | 8.53 | 8.16 | 8.17 | 7.79 | 8.23 | 8.36 | 7.42 | 8.27 | 8.46 |

**Table 2:** Sediment Ponds

| Location | SP03 | SP10 | SP15 | SP33 |
|---|---|---|---|---|
| **EC (uS/cm)** | 1,739 | 336 | Dry | 723 |
| **Cu (mg/L)** | 0.006 | 0.05 | Dry | 0.009 |
| **pH** | 9.10 | 8.33 | Dry | 8.85 |

**Table 3:** Farm Dams

| Location | FD04 | FD05 | FD06 | FD07 | FD11 | FD12 | FD16 | FD18 | FD25 | FD26 | FD27 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **EC (uS/cm)** | 1,500 | 108 | 218 | 286 | 400 | Dry | 211 | 3,676 | 290 | 309 | 301 |
| **Cu (mg/L)** | 0.005 | 0.025 | 0.005 | 0.009 | 0.034 | Dry | 0.023 | 0.01 | 0.007 | 0.02 | 0.011 |
| **pH** | 8.15 | 7.38 | 8.33 | 8.73 | 8.39 | Dry | 8.52 | 7.95 | 8.50 | 8.87 | 9.05 |

*No sample – insufficient water to collect sample or no access to obtain sample
**Dry – No water to sample

**Table 4:** Water Courses

| Location | WC01 | WC02 | WC03 | WC04 | WC05 | WC06 | WC07 | WC11 | WC12 | WC13 | WC14 | WC15 | WC16 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **EC (uS/cm)** | Dry | Dry | Dry | Dry | Dry | Dry | Dry | Dry | 187 | Dry | Dry | Dry | Dry |
| **Cu (mg/L)** | Dry | Dry | Dry | Dry | Dry | Dry | Dry | Dry | 0.10 | Dry | Dry | Dry | Dry |
| **pH** | Dry | Dry | Dry | Dry | Dry | Dry | Dry | Dry | 8.41 | Dry | Dry | Dry | Dry |

**Table 5:** TSF Bores

| Location | MB01 | MB02 | MB03 | MB05 | MB06B | W28 | W29 | W30 | W31 | W32 | W33 | W34 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **EC (uS/cm)** | 6,620 | 11,157 | 26,872 | 25,988 | 19,550 | 16,398 | 20,440 | 2,510 | 1,266 | 2,470 | 9,022 | 15,324 |
| **Cu (mg/L)** | 0.007 | 0.006 | 0.035 | 0.007 | 0.024 | 0.018 | 0.029 | 0.012 | 0.022 | 0.016 | 0.009 | 0.076 |
| **pH** | 7.20 | 6.94 | 6.80 | 6.81 | 7.08 | 7.93 | 12.37 | 7.56 | 8.09 | 11.01 | 7.64 | 7.19 |
| **SWL** | 248.3 | 239.7 | 245.7 | 247.4 | 250.8 | 261.5 | 257.9 | 247.0 | 265.3 | 267.3 | 260.4 | 259.8 |

**Table 6:** Opencut Bores

| Location | MB10 | MB11 (dry) | MB12 | MB13 | MB14 | W19 | W20 | W21 | W24 | W25 |
|---|---|---|---|---|---|---|---|---|---|---|
| **EC (uS/cm)** | 13,592 | Dry | No sample | 24,932 | 3,656 | 13,693 | 12,825 | 27,295 | 2,667 | 2,844 |
| **Cu (mg/L)** | 0.004 | Dry | No sample | 0.003 | 0.006 | 0.026 | 0.03 | 0.01 | 0.022 | 0.014 |
| **pH** | 7.07 | Dry | No sample | 6.67 | 7.07 | 7.15 | 7.34 | 7.07 | 7.45 | 7.14 |
| **SWL** | 253.2 | 226.0 | 236.7 | 248.0 | 262.8 | 257.1 | 269.4 | 270.8 | 284.3 | 284.1 |

**Table 7:** Underground Bores

| Location | MB17 | MB18 | MB19 | MB20 | P101 | P102 | P103 | P104 | P139 | P145 | P149 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **EC (uS/cm)** | 865 | 19,613 | 16,940 | 13,006 | 10,898 | No sample | No sample | No sample | No sample | 30,680 | 297 |
| **Cu (mg/L)** | 0.006 | 0.02 | 0.002 | 0.033 | 0.002 | No sample | No sample | No sample | No sample | 0.01 | 0.012 |
| **pH** | 7.67 | 7.51 | 7.32 | 7.38 | 6.81 | No sample | No sample | No sample | No sample | 6.71 | 7.33 |
| **SWL** | 265.7 | 250.6 | 246.1 | 246.4 | 255.5 | 254.6 | 252.4 | 254.9 | 253.4 | 251.4 | 229.2 |

**Table 8:** Regional Bores

| Location | Far Hilliers | Long Paddock | Moss #1 | South Hilliers | Wright |
|---|---|---|---|---|---|
| **EC (uS/cm)** | 1,036 | 1,699 | 2,594 | No sample | 1,221 |
| **Cu (mg/L)** | 0.012 | 0.019 | 0.011 | No sample | 0.01 |
| **pH** | 6.77 | 8.93 | 7.13 | No sample | 7.52 |
| **SWL** | 264.5 | 240.1 | 285.8 | 258.3 | 287.8 |

*No sample – insufficient water to collect sample or no access to obtain sample
**Dry – No water to sample

# 4. VIBRATION

## 4.1 Overview

The assessment criteria for blast impacts at Northparkes are based on the ANZECC Guideline, aimed to minimise annoyance to human comfort levels.

The blast monitoring program uses blast units which measure ground vibration and air overpressure at the residences of the four closest privately owned properties, Adavale, Hillview, Hubberstone and Milpose. The program is designed to measure the effectiveness of control measures and ensure compliance with consent and licence conditions, relevant standards and corporate requirements. A summary of the monitoring results are provided below.

The criteria for exceedances are:

| | |
|---|---|
| Overpressure: | 115 dB(Lin Peak) |
| Ground vibration | 5 mm/s |

## 4.2 Quarterly Monitoring Analysis

During the reporting period, 13 surface blasts were undertaken with no exceedances of vibration and overpressure recorded.

**Table 9:** Overpressure results at monitoring locations.

| | Overpressure (dB) – 115 (dB) | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Monitor Location | 3-Oct-24 | 11-Oct-24 | 16-Oct-24 | 24-Oct-24 | 30-Oct-24 | 5-Nov-24 | 13-Nov-24 | 14-Nov-24 | 21-Nov-24 | 27-Nov-24 | 5-Dec-24 | 13-Dec-24 | 19-Dec-24 |
| | E31N | E31S | E31N | E31N | E31S | E31S | E31S | E31N | E31N | E31S | E31S | E31N | E31S |
| Adavale | 86.7 | 97.4 | 91.6 | 84.3 | 93.8 | 81.9 | 86.4 | 101.1 | 109.6 | 85.9 | 90.1 | 80.8 | 98.6 |
| Hillview | 94.1 | 106.8 | 92.5 | 90.4 | 93.8 | 92.3 | 98.6 | 100.1 | 93.3 | 97 | 95.8 | 93.1 | 99.8 |
| Hubberstone | 86.1 | 98.3 | 84.5 | 101.3 | 90.8 | 86.4 | 94 | 99.6 | 94.1 | 98.7 | 102.3 | 81.8 | 87.7 |
| Milpose | 90 | 104.7 | 96.6 | 104.5 | 88.2 | 89.8 | 97.5 | 102.9 | 97.9 | 85.9 | 97.6 | 93 | 94.5 |

**Table 10:** Vibration results at monitoring locations

| | Vibration (mm/s) – 5 mm/s | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Monitor Location | 3-Oct-24 | 11-Oct-24 | 16-Oct-24 | 24-Oct-24 | 30-Oct-24 | 5-Nov-24 | 13-Nov-24 | 14-Nov-24 | 21-Nov-24 | 27-Nov-24 | 5-Dec-24 | 13-Dec-24 | 19-Dec-24 |
| | E31N | E31S | E31N | E31N | E31S | E31S | E31S | E31N | E31N | E31S | E31S | E31N | E31S |
| Adavale | 0.11 | 0.07 | 0.11 | 0.08 | 0.08 | 0.04 | 0.02 | 0.10 | 0.08 | 0.11 | 0.09 | 0.07 | 0.1 |
| Hillview | 0.1 | 0.41 | 0.08 | 0.07 | 0.08 | 0.08 | 0.05 | 0.07 | 0.07 | 0.12 | 0.16 | 0.05 | 0.1 |
| Hubberstone | 0.17 | 0.09 | 0.09 | 0.07 | 0.05 | 0.05 | 0.02 | 0.12 | 0.12 | 0.08 | 0.12 | 0.13 | 0.09 |
| Milpose | 0.07 | 0.05 | 0.04 | 0.04 | 0.05 | 0.04 | 0.03 | 0.05 | 0.04 | 0.05 | 0.07 | 0.05 | 0.04 |

# 5. NOISE

Operational noise is managed in accordance with the approved Noise Management Plan (NMP). The NMP covers all operational activities with the potential to generate noise at Northparkes. It details specific noise management and mitigation measures, outlines monitoring and reporting requirements and provides clear definitions of the roles and responsibilities for noise management.

## 5.1 Overview

Northparkes undertakes a noise monitoring program that consists of both operator-attended and unattended surveys. This program includes four real time monitors at the nearest occupied residences of Hubberstone, Milpose, Hillview and Adavale. Lone Pine is included in the attended monitoring program along with the four listed previously.

Operator-attended noise measurements and recordings are undertaken outside the mining leases in order to quantify the intrusive noise emissions from construction and of general mine activity as well as the overall level of ambient noise. This noise monitoring was undertaken by an independent and suitably qualified noise professional.

## 5.2 Quarterly Monitoring Analysis

Attended noise monitoring was undertaken between Wednesday 4 December to Thursday 5 December 2024.

The assessment was completed to quantify site noise emissions against relevant noise criteria pertaining to Northparkes operations in accordance with Conditions 1 to 5 of Schedule 3 of the NSW Development Consent Conditions (DC11_110060), Northparkes Noise Management Plan (NMP, 2019) and Traffic Management Plan (TMP, 2019).

Road noise monitoring identified that vehicle movements associated with shift change generated levels below the relevant road noise criteria specified in the TMP and NMP.

Attended monitoring has identified that operational emissions generated by Northparkes comply with relevant noise criteria at all monitoring locations for all assessment periods. Furthermore, project related noise emissions are generally barely audible at monitoring locations. Extraneous non-mining sources such as traffic, insects, wind in trees, birds, aircraft, residential and agricultural noise were audible during the monitoring period. A summary of the monitoring results at each monitoring location are presented in Tables 11-16 below.

**Table 11:** Attended noise monitoring results for Hubberstone

| Table 3 Operator-Attended Noise Survey Results – Location NM1, Hubberstone | | | | | |
|---|---|---|---|---|---|
| Time(hrs)/Date<br>Duration 15min | Noise Descriptor (dBA re 20 µPa)<br>$L_{Amax}$ | <br>$L_{Aeq}$ | <br>$L_{A90}$ | Meteorology | Description and SPL, dBA |
| **Day** | | | | | |
| 14:43<br>05/12/2024 | 54 | 41 | 38 | WD: NE<br>WS: 1.0m/s<br>Stab Class: D | Wind Gusts 32-50<br>Birds 30-58<br>Traffic 30-60<br>Insects 34-38<br>NPM Inaudible |
| 14:58<br>05/12/2024 | 60 | 41 | 36 | | |
| 15:13<br>05/12/2024 | 58 | 40 | 36 | | |
| Site $L_{Aeq(15min)}$ Contribution | | | | | <35 |
| **Evening** | | | | | |
| 20:08<br>04/12/2024 | 58 | 42 | 36 | WD: E<br>WS: 1.5m/s<br>Stab Class: D | Insects 34-51<br>Birds 30-55<br>Traffic 30-58<br>Aircraft 35-61<br>NPM Inaudible |
| 20:23<br>04/12/2024 | 61 | 45 | 43 | | |
| 20:38<br>04/12/2024 | 58 | 42 | 39 | | |
| Site $L_{Aeq(15min)}$ Contribution | | | | | <35 |
| **Night** | | | | | |
| 22:31<br>04/12/2024 | 58 | 45 | 42 | WD: NE<br>WS: 0.5m/s<br>Stab Class: E | Insects 40-51<br>Traffic 35-55<br>Distant Thunder 50-58<br>NPM Inaudible |
| 22:46<br>04/12/2024 | 48 | 44 | 42 | | |
| 23:01<br>04/12/2024 | 47 | 44 | 42 | | |
| Site $L_{Aeq(15min)}$ Contribution | | | | | <35 |
| Site $L_{A1(1min)}$ Contribution | | | | | <45 |

Note: NPM denotes Northparkes Mines.

Note: Day - the period from 7am to 6pm Monday to Saturday or 8am to 6pm on Sundays and public holidays; Evening - the period from 6pm to 10pm; Night - the remaining periods.

**Table 12:** Attended noise monitoring results for Lone Pine

| Table 4 Operator-Attended Noise Survey Results – Location NM2, Lone Pine | | | | | |
|---|---|---|---|---|---|
| Time(hrs)/Date<br>Duration 15min | Noise Descriptor (dBA re 20 µPa) | | | Meteorology | Description and SPL, dBA |
| | $L_{Amax}$ | $L_{Aeq}$ | $L_{A90}$ | | |
| **Day** | | | | | |
| 16:31<br>05/12/2024 | 53 | 41 | 34 | WD: N<br>WS: 1.0m/s<br>Stab Class: A | Wind Gusts 25-35<br>Birds 25-55<br>Insects 27-39<br>Traffic 25-70<br>NPM Inaudible |
| 16:46<br>05/12/2024 | 70 | 45 | 33 | | |
| 17:01<br>05/12/2024 | 55 | 39 | 32 | | |
| Site $LA_{eq(15min)}$ Contribution | | | | | <35 |
| **Evening** | | | | | |
| 21:12<br>04/12/2024 | 74 | 51 | 46 | WD: NE<br>WS: 1.5m/s<br>Stab Class: E | Insects 42-55<br>Traffic 40-74<br>NPM – Site Hum <35<br>(barely audible <50% measurement) |
| 21:27<br>04/12/2024 | 66 | 49 | 46 | | |
| 21:42<br>04/12/2024 | Rain Affected – No results[2] | | | | |
| Site $LA_{eq(15min)}$ Contribution | | | | | <35[1] |
| **Night** | | | | | |
| 01:41<br>05/12/2024 | 50 | 47 | 45 | WD: NE<br>WS: 0.5m/s<br>Stab Class: E | Insects 44-51<br>NPM – Site Hum <35<br>(barely audible <50% measurement) |
| 01:56<br>05/12/2024 | 50 | 47 | 46 | | |
| 02:11<br>05/12/2024 | 51 | 48 | 47 | | |
| Site $LA_{eq(15min)}$ Contribution | | | | | <35[1] |
| Site $LA_{1(1min)}$ Contribution | | | | | <45 |

Note: NPM denotes Northparkes Mines.

Note: Day - the period from 7am to 6pm Monday to Saturday or 8am to 6pm on Sundays and public holidays; Evening - the period from 6pm to 10pm; Night - the remaining periods.

Note 1: NPM Contribution derived from further analysis.

Note 2: Monitoring was unable to be completed as per Table A1, Fact Sheet A in the Noise Policy for Industry (NPI), 2017 and AS1055:2018.

**Table 13:** Attended noise monitoring results for Milpose

| Table 5 Operator-Attended Noise Survey Results – Location NM3, Milpose | | | | | |
|---|---|---|---|---|---|
| Time(hrs)/Date<br>Duration 15min | Noise Descriptor (dBA re 20 µPa)<br>$L_{Amax}$ | <br>$L_{Aeq}$ | <br>$L_{A90}$ | Meteorology | Description and SPL, dBA |
| **Day** | | | | | |
| 13:30<br>05/12/2024 | 57 | 40 | 31 | WD: N<br>WS: 2.0m/s<br>Stab Class: D | Wind Gusts 28-59<br>Birds 25-51<br>Aircraft 25-46<br>NPM Inaudible |
| 13:45<br>05/12/2024 | 59 | 39 | 29 | | |
| 14:00<br>05/12/2024 | 57 | 40 | 32 | | |
| Site $L_{Aeq(15min)}$ Contribution | | | | | <35 |
| **Evening** | | | | | |
| 19:15<br>05/12/2024 | 52 | 35 | 31 | WD: N<br>WS: 1.0m/s<br>Stab Class: E | Insects 29-48<br>Birds 30-56<br>Traffic 25-33<br>NPM – Site Hum <30<br>(barely audible throughout) |
| 19:30<br>05/12/2024 | 51 | 35 | 32 | | |
| 19:45<br>05/12/2024 | 56 | 37 | 33 | | |
| Site $L_{Aeq(15min)}$ Contribution | | | | | <35 |
| **Night** | | | | | |
| 00:31<br>05/12/2024 | 47 | 41 | 40 | WD: N<br>WS: 0.1m/s<br>Stab Class: E | Insects 38-49<br>MAC Operator 54<br>NPM – Site Hum <35<br>(barely audible throughout) |
| 00:46<br>05/12/2024 | 46 | 40 | 39 | | |
| 01:01<br>05/12/2024 | 54 | 41 | 39 | | |
| Site $L_{Aeq(15min)}$ Contribution | | | | | <35[1] |
| Site $L_{A1(1min)}$ Contribution | | | | | <45 |

Note: NPM denotes Northparkes Mines.

Note: Day - the period from 7am to 6pm Monday to Saturday or 8am to 6pm on Sundays and public holidays; Evening - the period from 6pm to 10pm; Night - the remaining periods.

Note 1: NPM Contribution derived from further analysis.

**Table 14:** Attended noise monitoring results for Hillview

| Table 6 Operator-Attended Noise Survey Results – Location NM4, Hillview | | | | | |
|---|---|---|---|---|---|
| Time(hrs)/Date<br>Duration 15min | Noise Descriptor (dBA re 20 µPa)<br>$L_{Amax}$ | <br>$L_{Aeq}$ | <br>$L_{A90}$ | Meteorology | Description and SPL, dBA |
| **Day** | | | | | |
| 12:15<br>05/12/2024 | 62 | 46 | 38 | WD: NE<br>WS: 2.0m/s<br>Stab Class: D | Wind Gusts 30-49<br>Birds 27-52<br>Traffic 30-62<br>NPM Inaudible |
| 12:30<br>05/12/2024 | 53 | 44 | 37 | | |
| 12:45<br>05/12/2024 | 60 | 42 | 33 | | |
| Site $L_{Aeq(15min)}$ Contribution | | | | | <35 |
| **Evening** | | | | | |
| 18:00<br>05/12/2024 | 71 | 46 | 31 | WD: N<br>WS: 0.5m/s<br>Stab Class: D | Birds 25-48<br>Traffic 28-63<br>Residential Nosie 30-71<br>NPM Inaudible |
| 18:15<br>05/12/2024 | 61 | 44 | 32 | | |
| 18:30<br>05/12/2024 | 66 | 48 | 31 | | |
| Site $L_{Aeq(15min)}$ Contribution | | | | | <35 |
| **Night** | | | | | |
| 23:28<br>04/12/2024 | 49 | 34 | 31 | WD: N<br>WS: 0.1m/s<br>Stab Class: E | Traffic 30-67<br>Insects 29-38<br>Aircraft 30-50<br>NPM Inaudible |
| 23:43<br>04/12/2024 | 50 | 36 | 31 | | |
| 23:58<br>04/12/2024 | 67 | 44 | 31 | | |
| Site $L_{Aeq(15min)}$ Contribution | | | | | <35 |
| Site $L_{A1(1min)}$ Contribution | | | | | <45 |

Note: NPM denotes Northparkes Mines.

Note: Day - the period from 7am to 6pm Monday to Saturday or 8am to 6pm on Sundays and public holidays; Evening - the period from 6pm to 10pm; Night - the remaining periods.

**Table 15:** Attended noise monitoring results for Adavale

| Table 7 Operator-Attended Noise Survey Results – Location NM5, Adavale | | | | | |
|---|---|---|---|---|---|
| Time(hrs)/Date<br>Duration 15min | Noise Descriptor (dBA re 20 µPa)<br>$L_{Amax}$ | <br>$L_{Aeq}$ | <br>$L_{A90}$ | Meteorology | Description and SPL, dBA |
| **Day** | | | | | |
| 15:40<br>05/12/2024 | 71 | 45 | 26 | WD: N<br>WS: 1.0m/s<br>Stab Class: B | Wind Gusts 24-41<br>Birds 25-62<br>Insects 25-45<br>Traffic 25-86<br>NPM Inaudible |
| 15:55<br>05/12/2024 | 83 | 57 | 27 | | |
| 16:10<br>05/12/2024 | 86 | 56 | 27 | | |
| Site $L_{Aeq(15min)}$ Contribution | | | | | <35 |
| **Evening** | | | | | |
| 20:27<br>05/12/2024 | 72 | 53 | 48 | WD: N<br>WS: 0.5m/s<br>Stab Class: E | Insects 45-60<br>Traffic 40-72<br>NPM – Site Hum/Vent Fan <35<br>(barely audible <50% measurement) |
| 20:42<br>05/12/2024 | 59 | 54 | 51 | | |
| 20:57<br>05/12/2024 | 60 | 55 | 52 | | |
| Site $L_{Aeq(15min)}$ Contribution | | | | | <35[1] |
| **Night** | | | | | |
| 02:34<br>05/12/2024 | 50 | 46 | 44 | WD: NE<br>WS: 0.1m/s<br>Stab Class: E | Insects 42-53<br>NPM – Site Hum/Vent Fan <35<br>(barely audible throughout) |
| 02:49<br>05/12/2024 | 53 | 46 | 44 | | |
| 03:04<br>05/12/2024 | 53 | 46 | 45 | | |
| Site $L_{Aeq(15min)}$ Contribution | | | | | <35[1] |
| Site $L_{A1(1min)}$ Contribution | | | | | <45 |

Note: NPM denotes Northparkes Mines.

Note: Day - the period from 7am to 6pm Monday to Saturday or 8am to 6pm on Sundays and public holidays; Evening - the period from 6pm to 10pm; Night - the remaining periods.

Note 1: NPM Contribution derived from further analysis.

**Table 16:** Attended road noise survey results

| Table 8 Operator-Attended Road Noise Survey Results – Location NM4, Hillview | | | | |
|---|---|---|---|---|
| Time(hrs)/Date<br>Duration 1 hour | Measured Noise Level<br>dB $LA_{eq(1hr)}$ | Meteorology | Criteria<br>dB $LA_{eq(1hr)}$ | Description and SPL dBA |
| 12:15<br>05/12/2024<br>(Day) | 44 | WD: NE<br>WS: 2.0m/s<br>Stab Class: D | 55 | Wind Gusts 30-49<br>Birds 27-52<br>Traffic 30-56<br>NPM Concentrate Truck (offsite) 30-62<br>(Two passes)<br>(Approx. 10 vehicles Enter/Exit NPM Site) |
| 18:00<br>05/12/2024<br>(Evening) | 46 | WD: N<br>WS: 0.5m/s<br>Stab Class: D | 55 | Birds 25-48<br>Traffic 28-63<br>Residential Nosie 30-71<br>NPM Concentrate Truck (offsite) 30-66<br>(Three passes)<br>(Approx. 85 vehicles Enter/Exit NPM Site) |

Note: NPM denotes Northparkes Mines.

Note: Day - the period from 7am to 6pm Monday to Saturday or 8am to 6pm on Sundays and public holidays; Evening - the period from 6pm to 10pm; Night - the remaining periods.