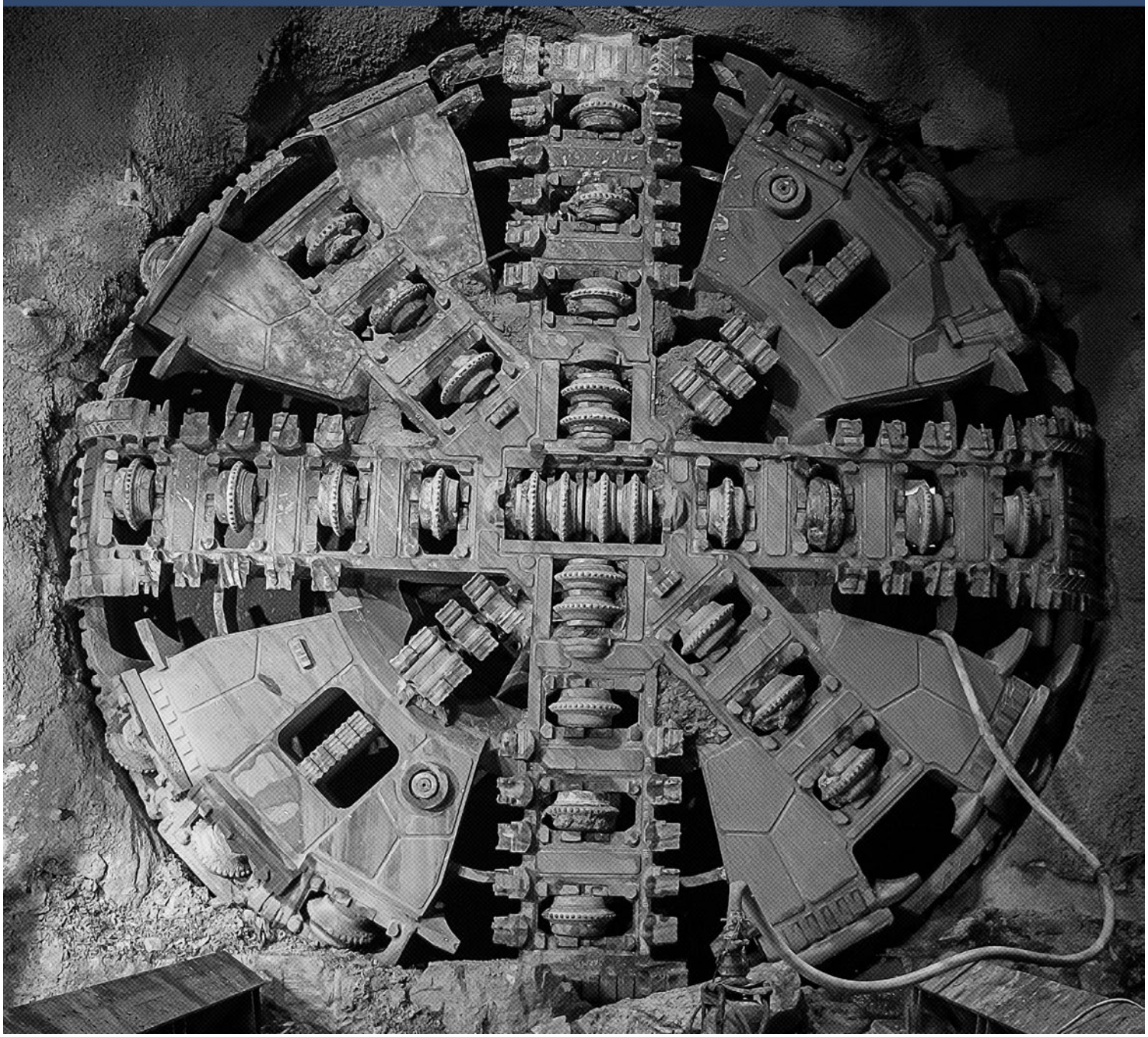
EASTERN TUNNELLING PACKAGE
John Holland CPB Contractors Ghella JV

JOHN HOLLAND CPB CONTRACTORS Ghella

# EPL 21784 POLLUTION MONITORING REPORT

## November 2023



# EPL 21784 POLLUTION MONITORING REPORT

## November 2023

| | |
|---|---|
| Project number | 7040 |
| Document number | SMWSTETP-JCG-SWD-SW000-EN-RPT-095011 |

## Document approval

| Rev | Date | Prepared by | Reviewed by | Comments | Approved by |
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| 1 | 16/10/2023 | [redacted] | [redacted] | | [redacted] |
| | | | | | |
| | | | | | |
| Signature: | | | | | |

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# 1. Introduction

## 1.1. Project overview

Sydney Metro West (SMW) is a new 24-kilometre metro line with nine new stations confirmed at Westmead, Parramatta, Sydney Olympic Park, North Strathfield, Burwood North, Five Dock, The Bays, Pyrmont, and Hunter Street in the Sydney CBD.

The planning process for Sydney Metro West was assessed as a staged infrastructure application under section 5.20 of the *Environment Planning and Assessment Act 1979 (EP&A Act)*.

Stage 1 of the development, the Sydney Metro West Concept and major civil construction work for Sydney Metro West between Westmead and The Bays (SSI-10038 Schedule 2), was approved on 11 March 2021 and includes:

- Construction and operation of new passenger rail infrastructure between Westmead and the central business district of Sydney, including:
  - Tunnels, stations (including surrounding areas) and associated rail facilities
  - Stabling and maintenance facilities (including associated underground and overground connections to tunnels)
- Modification of existing rail infrastructure, including stations and surrounding areas
- Ancillary development.

The Eastern Tunnelling Package (ETP or this Project) is addressed under the Stage 2 Planning Approval (SSI 19238057). This Project includes all major civil construction work including station excavation (at the Pyrmont Station and Hunter Street Station (Sydney CBD) construction sites) and tunnelling between The Bays and Sydney CBD (Figure 1).

It is noted that the existing Sydney Metro West precast facility at Eastern Creek will be utilised in the delivery of the ETP Works. The facility, which was assessed by Sydney Metro in a Review of Environmental Factors (REF) and approved on 11 March 2021, is outside of the scope of the SWMP.

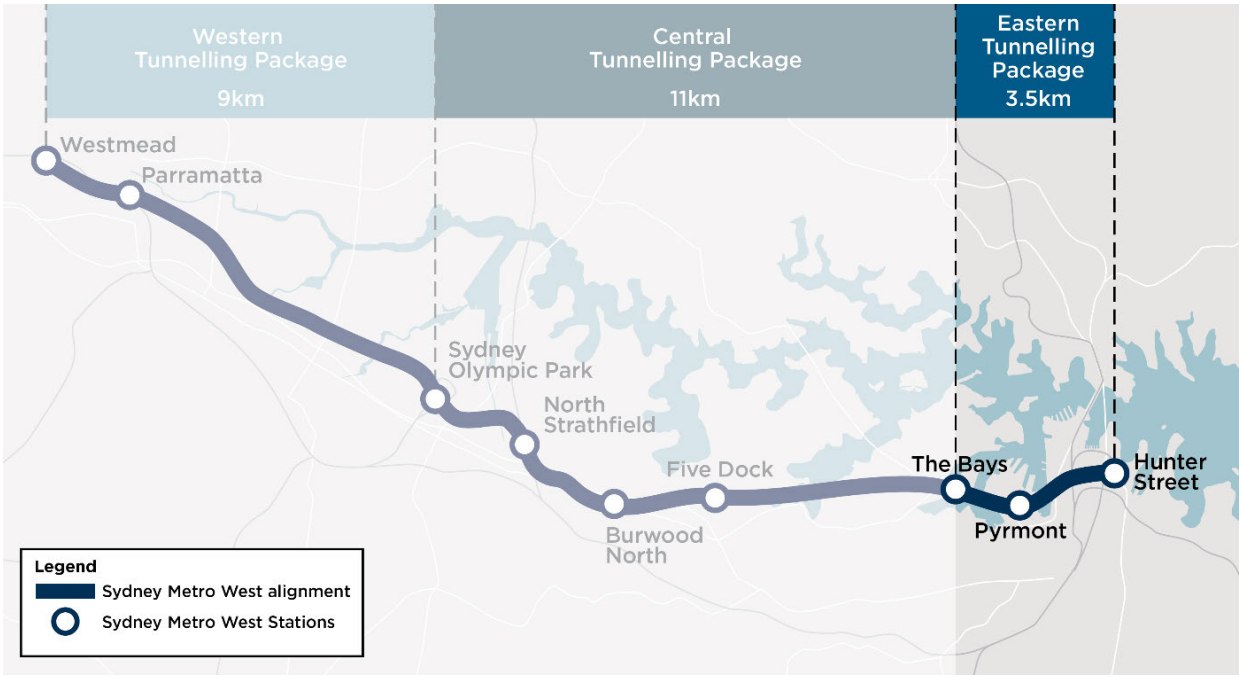


*Figure 1: Sydney Metro West alignment*

## 1.2. Project Scope

The ETP Works include design and construction of:

- Demolition of existing buildings at Pyrmont East and West shaft sites and at Hunter Street East and West shaft sites
- Tunnel Boring Machine (TBM) assembly, launch, tunnelling support from an existing shaft at The Bays
- Approximately 2.5 km twin underground eastbound and westbound bored railway tunnels between The Bays and Hunter Street and six cross passages spaced up to 500 metres apart
- Pyrmont Station excavation, including two shaft excavations, associated access adits and nozzle enlargements, including temporary ground support and cast in situ cavern linings
- Excavation and lining of a mined crossover cavern to allow trains to cross from one track to the other
- Hunter Street station mined cavern excavation, including:
    - Two shaft excavations, associated access adits
    - Nozzle enlargements
    - Conversion of an existing temporary connection adit at Bligh Street linking Hunter Street Station to Martin Place Station into a permanent pedestrian connection linking the stations (including temporary ground support and cast in situ linings)
- A turnback extension tunnel, of approximately 675 metres, east of the Hunter Street Station works to enable Sydney Metro train storage and to change tracks and travel direction (eastbound to westbound)
- TBM disassembly and retrieval from Hunter Street East.

## 1.3. Scope of this report

John Holland CPB Contactors Ghella (JCG) have been issued an Environmental Protection Licence (EPL No. 21784) from the NSW Environment Protection Authority (EPA) for the Sydney Metro West Eastern Tunnelling Package (ETP) Project.

The EPL applies to the works approved under the Infrastructure Approval SSI-19238057 associated with the delivery of the Sydney Metro West Eastern Tunnelling Package (ETP) Project.

This EPL Pollution Monitoring Report provides the results of all pollution monitoring required to be measured or monitored by the licensee of EPL 21784 as required by Section 66 of the Protection of the Environment Operations Act 1997 (POEO Act) and with reference to EPA Publication Requirements for publishing pollution monitoring data (Environment Protection Authority, 2013).

Table 1 provides a summary of the EPL 21784 details.

*Table 1: Licence Details*

| Licence Details | |
|---|---|
| Number | 21784 |
| Copy of Licence | https://apps.epa.nsw.gov.au/prpoeoapp/ViewPOEOLicence.aspx?DOCID=266460&SYSUID=1&LICID=21784 |
| Anniversary Date | 16 March |
| Licensee | John Holland Pty Ltd |
| Premises | Sydney Metro West – Eastern Tunnelling Package |
| Scheduled Activity | Railway activities – railway infrastructure construction |

## 2. Reporting Requirements

Under the POEO Act, holders of environment protection licences (licensees) must publish or make pollution monitoring data available to members of the public.

The POEO Act Section 66 requires:

> "66 Conditions requiring monitoring, certification or provision of information, and related offences
>
> (1) Monitoring The conditions of a licence may require—
>
> (a) monitoring by the holder of the licence of the activity or work authorised, required or controlled by the licence, including with respect to—
>
> (i) the operation or maintenance of premises or plant, and
>
> (ii) discharges from premises, and
>
> (iii) relevant ambient conditions prevailing on or outside premises,
>
> and
>
> (iv) anything required by the conditions of the licence, and
>
> (b) the provision and maintenance of appropriate measuring and recording devices for the purposes of that monitoring, and
>
> (c) the analysis, reporting and retention of monitoring data.
>
> (2) False or misleading information A holder of a licence who supplies information, or on whose behalf information is supplied, to the appropriate regulatory authority under the conditions of the licence is guilty of an offence if the information is false or misleading in a material respect."

The primary objective of the pollution monitoring reporting requirements is that members of the public have access to the results of all pollution monitoring (which a licence specifies must be carried out) in a way that is meaningful to them. Data for the Sydney Metro West Eastern Tunnelling Package is presented on a monthly sampling period.

The monitoring data that must be published and/or made available on request is any data that is obtained as a result of a monitoring condition on a licence that relates to air, water (surface or groundwater), noise and/or land pollution. The data to be published or provided is limited to data that relates to pollutants generated, discharged or emitted from the licensed premises.

The data is provided in tabular format that is easy for the general public to understand. Tables definitively display raw data values, while graphs and charts are useful for overviews and visualisation of long-term trends. Raw data will be provided upon request.

An upfront note will be included on the licensee's website or in this report to explain why any data may appear to be missing because there is no discharge or the level of pollutant being below the detection level of the measurement instrument.

It is possible from time to time that incorrect data may be published in good faith. As soon as practicable after the licensee becomes aware that the published pollution monitoring data is incorrect or misleading, licensees must then publish a correction log to correct this data that is incorrect or misleading (refer to **Section 4**).

Table 1 provides a summary of the pollution monitoring requirements of EPL 21784.

*Table 1 EPL 21784 Pollution Monitoring Requirements*

<table>
<tr><th>EPL Condition</th><th>Requirement</th><th>Report Reference</th></tr>
<tr><td colspan="3">Weather</td></tr>
<tr><td>M5.1</td><td>The licensee must monitor and record temperature, humidity, wind direction, wind velocity and rainfall at either the project weather station, or through analysis of equivalent weather information obtained from the Australia Bureau of Meteorology. Monitoring must:<br>a) be representative of each catchment area;<br>b) commence prior to any works that may cause sediment to leave the premises; and<br>c) continue to be operated until soil disturbance activities cease at the premises and the site has been stabilised.</td><td>Section 3.1<br>Appendix A3.1</td></tr>
<tr><td colspan="3">Noise</td></tr>
<tr><td>L5.9</td><td>In undertaking any works and activities outside of standard construction hours under condition L5.8, the licensee must comply with the following:<br>a) Prepare a construction noise and vibration impact assessment in accordance with the Interim Construction Noise Guideline (DEC,2009) that is to include:<br>i. a description of the proposed works and activities outside of standard constructions hours;<br>ii. predictions of LAeq(15 minute) dB noise levels at noise sensitive receivers from these works and activities, where noise levels are predicted to be greater than those permitted under condition L5.3; and<br>iii. a monitoring plan to validate the noise predictions, based on monitoring at the boundary of representative sensitive receivers during noise generating activities that are representative of the works and activities, including during the period/s predicted to have the highest noise level impacts.<br>b) Undertake noise monitoring in accordance with the monitoring plan required by condition L5.9(a)(iii).</td><td>Section 3.2<br>Appendix B</td></tr>
<tr><td>M4.4</td><td>The licensee must undertake noise and vibration monitoring as directed by an authorised officer of the EPA. If a licensee is unable to obtain permission, they must provide the response to the EPA.</td><td>N/A</td></tr>
<tr><td colspan="3">Water</td></tr>
<tr><td>P1.1</td><td>The following points referred to in the table are identified in this licence for the purposes of the monitoring and/or the setting of limits for discharges of pollutants to water from the point.
<table>
<tr><th>EPA Identi-fication no.</th><th>Type of Monitoring Point</th><th>Type of Discharge Point</th><th>Location Description</th></tr>
<tr><td>1</td><td>Discharge & Monitoring</td><td>Discharge & Monitoring</td><td>Discharge from the Hunter St Station WTP to Sydney Harbour</td></tr>
<tr><td>2</td><td>Discharge & monitoring</td><td>Discharge & monitoring</td><td>Discharge from the Eastern Creek Precast Facility sediment basin</td></tr>
<tr><td>3</td><td>Discharge & monitoring</td><td>Discharge & monitoring</td><td>Discharge from The Bays temporary WTP to White Bay</td></tr>
<tr><td>4</td><td>Discharge & Monitoring</td><td>Discharge & Monitoring</td><td>Discharge from the Pyrmont Station WTP to Sydney Harbour</td></tr>
<tr><td>5</td><td>Discharge & Monitoring</td><td>Discharge & Monitoring</td><td>Discharge from the Eastern Tunnelling Package Eastern Creek Precast Facility Water Treatment Plant into Ropes Creek</td></tr>
</table></td><td>Section 3.3</td></tr>
<tr><td>M2.1</td><td>For each monitoring/discharge point or utilisation area specified below (by a point number), the licensee must monitor (by sampling and obtaining results by analysis) the concentration of each pollutant specified in Column 1. The licensee must use the sampling method, units of measure, and sample at the frequency, specified opposite in the other columns.</td><td>Section 3.3</td></tr>
</table>

M2.2

**POINT 1**

| Pollutant | Units of measure | Frequency | Sampling Method |
|---|---|---|---|
| Ammonia | micrograms per litre | Monthly during discharge | Grab sample |
| Arsenic | micrograms per litre | Monthly during discharge | Grab sample |
| Manganese | micrograms per litre | Monthly during discharge | Grab sample |
| Nitrogen (total) | micrograms per litre | Monthly during discharge | Grab sample |
| Oil and Grease | Visible | Monthly during discharge | Visual Inspection |
| pH | pH | Daily during any discharge | Probe |
| Phosphorus (total) | micrograms per litre | Monthly during discharge | Grab sample |
| TSS | milligrams per litre | Monthly during discharge | Grab sample |

**POINT 2**

| Pollutant | Units of measure | Frequency | Sampling Method |
|---|---|---|---|
| Oil and Grease | Visible | Special Frequency 1 | Visual Inspection |
| pH | pH | Special Frequency 1 | Probe |
| TSS | milligrams per litre | Special Frequency 1 | Grab sample |

**POINT 3**

| Pollutant | Units of measure | Frequency | Sampling Method |
|---|---|---|---|
| Arsenic (III) | micrograms per litre | Monthly during discharge | Grab sample |
| Manganese | micrograms per litre | Monthly during discharge | Grab sample |
| Nitrate + nitrite (oxidised nitrogen) | micrograms per litre | Monthly during discharge | Grab sample |
| Oil and Grease | Visible | Monthly during discharge | Visual Inspection |
| pH | pH | Daily during any discharge | Probe |
| Phosphorus (total) | micrograms per litre | Monthly during discharge | Grab sample |
| TSS | milligrams per litre | Monthly during discharge | Grab sample |

**POINT 4**

| Pollutant | Units of measure | Frequency | Sampling Method |
|---|---|---|---|
| Aluminium | micrograms per litre | Monthly during discharge | Grab sample |
| Ammonia | micrograms per litre | Monthly during discharge | Grab sample |
| Arsenic (III) | micrograms per litre | Monthly during discharge | Grab sample |
| Cadmium | micrograms per litre | Monthly during discharge | Grab sample |
| Chromium (hexavalent) | micrograms per litre | Monthly during discharge | Grab sample |
| Cobalt | micrograms per litre | Monthly during discharge | Grab sample |
| Copper | micrograms per litre | Monthly during discharge | Grab sample |
| Iron | micrograms per litre | Monthly during discharge | Grab sample |
| Manganese | micrograms per litre | Monthly during discharge | Grab sample |
| Nitrate | micrograms per litre | Monthly during discharge | Grab sample |
| Nitrogen (total) | micrograms per litre | Monthly during discharge | Grab sample |
| Oil and Grease | Visible | Monthly during discharge | Visual Inspection |
| pH | pH | Daily during any discharge | Probe |
| Phosphorus (total) | micrograms per litre | Monthly during discharge | Grab sample |
| TSS | milligrams per litre | Monthly during discharge | Grab sample |
| Zinc | micrograms per litre | Monthly during discharge | Grab sample |

**POINT 5**

| Pollutant | Units of measure | Frequency | Sampling Method |
|---|---|---|---|
| Oil and Grease | Visible | Monthly during discharge | Visual Inspection |
| pH | pH | Daily during any discharge | Probe |
| TSS | milligrams per litre | Monthly during discharge | Grab sample |

Section 3.3

# 3. Monitoring

Section 3 presents a summary of the monitoring programs completed in the reporting period from 17 October 2023 to 16 November 2023. Some meteorological data was unavailable on the Bureau of Meteorology at the time of report submission.

Detailed monitoring results for each program are presented in the Appendices.

## 3.1. Meteorological Data

Meteorological data for the Project has been mostly taken from the Observatory Hill but some has also been taken from Fort Denison and Sydney Airport, Bureau of Meteorology Weather Station.

The total rainfall recorded during the reporting period was 58.6 mm with 8 days exceeding one millimetre of rain and 3 days of rain exceeding 10mm.

During the reporting period, there were 27 days where the maximum wind gust recorded was greater than 25km/h, 6 days where the maximum wind gust recorded was greater than 50km/h and 1 day where the maximum wind gust recorded was greater than 60km/h. Winds recorded during the reporting period were predominantly westerly in the mornings and easterly into the afternoons, with some variability throughout the month.

A summary of the weather observations and weather events during the reporting period of relevance to the Soil and Water Management Sub-plan and Air Quality Management Sub-plan Trigger Action Response Plans (TARPs) are summarised in Table 2.

Detailed weather observation records for the reporting period are presented in Appendix A.

*Table 2 Weather summary and trigger weather events for the reporting period*

| Weather Event | Observation |
|---|---|
| Minimum temperature | 9.8 °C |
| Maximum temperature | 31.3 °C |
| Total rainfall | 58.6 mm |
| Number of days with rain (>1 mm) | 8 days |
| Number of days with rain (>10 mm) | 3 days |
| >25 km/hr wind | 27 days |
| >50 km/hr wind | 6 days |
| >60 km/hr wind | 1 day |

## 3.2. Noise

Noise monitoring is a requirement of the following conditions of EPL 21784:

- L5.9 Monitoring to validate the noise predictions for works undertaken outside of the standard construction hours as per the construction noise impact assessment
- M7.5(c) Noise or vibration monitoring following noise and vibration complaints
- M4.4 Noise and vibration monitoring as directed by an authorised officer of the EPA.

*Table 3 Summary of noise and vibration monitoring completed during the reporting period*

| Date | Monitoring Location | Method | Description |
|---|---|---|---|
| 24/10/23 | 2 Hunter St - De Mestre Place | Sound Level Meter | HV power disconnection on George St |
| 24/10/23 | 30 Hunter St – The Grand Hotel | Sound Level Meter | HV power disconnection on George St |
| 09/11/23 | 104 Pyrmont St – The Sebel | Sound Level Meter | Hoarding Removal Works PYRW |
| 09/11/23 | 26-28 Paternoster Lane | Sound Level Meter | Hoarding Removal Works PYRW |
| 09/11/23 | 33 Union St | Sound Level Meter | Hoarding Removal Works PYRW |

| | | | |
|---|---|---|---|
| 13/11/23 | 5 Lilyfield Rd | Sound Level Meter | Concrete pour at the Southern Batter – The Bays |

No noise and vibration monitoring was undertaken as a result of a direction by the EPA.

## 3.3. Discharge to water

Discharge water quality monitoring is a requirement of the following conditions of EPL 21784:

- M2.1 Monitoring the concentration of each pollutant specified using the specified sampling method, units of measure and frequency

During the reporting period sampling was undertaken from Point 1 – Discharge from the Hunter St Station WTP, Point 2 – Eastern Creek Precast Facility and Point 3 – Discharge from The Bays temporary WTP. The Pyrmont Station water treatment plant is yet to be commissioned. As such no water sampling or discharge has occurred in this recording period.

Table 4, 5 & 6 provide the details of the concentration of pollutants discharged during the reporting period. There were no exceedances of the discharge criteria specified in L2.4 for all discharge points.

*Table 4 Concentration of pollutants discharged from Point 1 during the reporting period*

| Date | | | 2/11/23 |
|---|---|---|---|
| **Type** | **Units** | **Criteria** | **Discharge** |
| **Ammonia** | (µg/L) | 910 | 330 |
| **Arsenic (III)** | (µg/L) | 8 | 4 |
| **Manganese** | (µg/L) | 80 | 10 |
| **Nitrogen (Total)** | (µg/L) | 1720 | 1100 |
| **Oil and Grease** | Visible | Not Visible | Not visible |
| **pH** | pH | 7.0-8.5 | 7.5 |
| **Phosphorus (total) (µg/L)** | (µg/L) | 140 | <50 |
| **TSS** | (mg/L) | 15 | <5 |

*Table 5 Concentration of pollutants discharged from Point 2 during the reporting period*

| Date | | | 6/11/23 |
|---|---|---|---|
| **Type** | **Units** | **Criteria** | **Discharge** |
| **Oil and Grease** | Visible | Not Visible | Not visible |
| **pH** | pH | 6.5-8.5 | 8.33 |
| **TSS** | (mg/L) | 50 | 4 |

*Table 6 Concentration of pollutants discharged from Point 3 during the reporting period*

| Date | | | 26/10/23 |
|---|---|---|---|
| **Type** | **Units** | **Criteria** | **Discharge** |
| **Arsenic (III)** | (µg/L) | 90 | <1 |
| **Manganese** | (µg/L) | 1900 | 1000 |
| **Nitrate + Nitrite (oxidised nitrogen)** | (µg/L) | 200 | 115 |
| **Oil and Grease** | Visible | Not Visible | Not Visible |

| | | | |
|---|---|---|---|
| pH | pH | 6.5-8.5 | 7.4 |
| Phosphorus (total) (µg/L) | (µg/L) | 1000 | <50 |
| TSS (mg/L) | (mg/L) | 50 | <5 |

## 4. Correction Log

It is possible from time to time for incorrect data to get published in good faith.

As soon as practicable after the licensee becomes aware that the published pollution monitoring data is incorrect or misleading, licensees must then publish a correction log to correct this data that is incorrect or misleading.

There are no matters included in the correction log for this reporting period.

# Appendix A Weather Data

*Table 7 Weather Observations. Temperature and Relative Humidity. Observatory Hill BOM Station.*

| Date | Min temperature (°C) | Max temperature (°C) | Rainfall (mm) | 9am Temperature (°C) | 9am relative humidity (%) | 3pm Temperature (°C) | 3pm relative humidity (%) |
|---|---|---|---|---|---|---|---|
| 17/10/2023 | 9.8 | | 0.4 | 13 | 85 | 18.4 | 69 |
| 18/10/2023 | 12.6 | 22.3 | | 15.8 | 93 | 21 | 51 |
| 19/10/2023 | 12.9 | 23.9 | 2.6 | 17.3 | 79 | 21.7 | 53 |
| 20/10/2023 | 13.5 | 25.6 | 0 | 16.8 | 88 | 24.5 | 59 |
| 21/10/2023 | 16.1 | 25.7 | 0 | 18.8 | 95 | 23.6 | 71 |
| 22/10/2023 | 16.9 | 28.7 | 0 | 20.9 | 73 | 27.1 | 51 |
| 23/10/2023 | 14.1 | 27.1 | 0 | 18.8 | 48 | 24.6 | 45 |
| 24/10/2023 | 14.8 | 26.2 | 0 | 18.8 | 78 | 24.8 | 63 |
| 25/10/2023 | 18.8 | 24.6 | 0 | 20.2 | 78 | 23.6 | 60 |
| 26/10/2023 | 12.7 | 16.4 | 3.2 | 14.2 | 78 | 15.6 | 60 |
| 27/10/2023 | 11.6 | 19.4 | 14 | 14.9 | 84 | 18.2 | 57 |
| 28/10/2023 | 12.1 | 22.6 | 2.4 | 15.4 | 77 | 19.3 | 57 |
| 29/10/2023 | 12.4 | 25.1 | 0 | 17.6 | 70 | 24.2 | 51 |
| 30/10/2023 | 14.9 | 31.3 | 0 | 20.3 | 64 | 27.5 | 46 |
| 31/10/2023 | 20.3 | 29.8 | 0 | 25.7 | 31 | 23.9 | 50 |
| 1/11/2023 | 16 | 22.3 | 0 | 19 | 68 | 21.4 | 52 |
| 2/11/2023 | 14.5 | 23.1 | 0 | 18.7 | 69 | 22 | 54 |
| 3/11/2023 | 16.3 | 24.5 | 4.4 | 18.8 | 86 | 22.8 | 67 |
| 4/11/2023 | 16.9 | 22.3 | 0 | 20.9 | 79 | 18.9 | 92 |
| 5/11/2023 | 15.6 | 20.2 | 16.8 | 15.9 | 100 | 18.7 | 66 |
| 6/11/2023 | 13.7 | 22 | 3 | 17.8 | 83 | 21.4 | 63 |
| 7/11/2023 | 14 | 24.2 | 0.2 | 19.6 | 76 | 23.6 | 61 |
| 8/11/2023 | 15.8 | 25.9 | 0 | 21.1 | 81 | 24.2 | 71 |
| 9/11/2023 | 17.7 | 25.5 | 0 | 21.2 | 87 | 22.5 | 76 |
| 10/11/2023 | 16.2 | 25.1 | 10.6 | 19.1 | 92 | 24.3 | 73 |
| 11/11/2023 | 18.6 | 27.1 | 0.2 | 22.2 | 87 | 26.3 | 66 |
| 12/11/2023 | 18.2 | 26.3 | 0 | 21.2 | 77 | 23.1 | 78 |
| 13/11/2023 | 17.5 | nd | 0.8 | 18.4 | 87 | 22.9 | 59 |
| 14/11/2023 | nd | nd | nd | nd | nd | nd | nd |
| 15/11/2023 | nd | nd | nd | nd | nd | nd | nd |
| 16/11/2023 | nd | nd | nd | nd | nd | nd | nd |

Note: nd = not data available

*Table 8 Wind Observations. Observatory Hill BOM Station.*

| Date | Direction of max wind gust | Speed of max wind gust (km/h) | Time of max wind gust | 9am wind direction | 9am wind speed (km/h) | 3pm wind direction | 3pm wind speed (km/h) |
|---|---|---|---|---|---|---|---|
| 17/10/2023 | SSW | 54 | 14:39 | WSW | 19 | SSW | 28 |
| 18/10/2023 | ESE | 33 | 3:22 | WNW | 13 | ESE | 19 |
| 19/10/2023 | ENE | 33 | 16:31 | WNW | 15 | NE | 19 |
| 20/10/2023 | ENE | 41 | 14:07 | W | 9 | NE | 20 |
| 21/10/2023 | NE | 52 | 20:11 | W | 9 | NE | 30 |
| 22/10/2023 | NNE | 37 | 23:06 | WSW | 6 | E | 20 |
| 23/10/2023 | ENE | 31 | 14:11 | W | 13 | ENE | 26 |
| 24/10/2023 | NE | 43 | 15:11 | WNW | 11 | NE | 20 |
| 25/10/2023 | SSW | 48 | 6:43 | SSW | 24 | SE | 17 |
| 26/10/2023 | SSE | 56 | 12:39 | S | 11 | SSE | 35 |
| 27/10/2023 | SSE | 56 | 1:07 | SSE | 30 | SSE | 30 |
| 28/10/2023 | SE | 31 | 0:31 | WNW | 15 | E | 13 |
| 29/10/2023 | NE | 43 | 17:27 | NNW | 11 | NE | 22 |
| 30/10/2023 | NE | 44 | 15:22 | ESE | 9 | NE | 20 |
| 31/10/2023 | WNW | 69 | 3:32 | W | 24 | SSE | 33 |
| 1/11/2023 | SSE | 39 | 13:24 | S | 11 | SE | 24 |
| 2/11/2023 | SW | 31 | 8:29 | SSW | 11 | ESE | 19 |
| 3/11/2023 | ESE | 31 | 15:31 | S | 2 | ESE | 20 |
| 4/11/2023 | SE | 50 | 15:46 | ENE | 15 | SSE | 15 |
| 5/11/2023 | ESE | 44 | 7:59 | ESE | 33 | ESE | 24 |
| 6/11/2023 | ENE | 31 | 15:05 | WNW | 6 | E | 22 |
| 7/11/2023 | ENE | 46 | 15:58 | WNW | 4 | NE | 28 |
| 8/11/2023 | ENE | 44 | 14:47 | E | 4 | E | 30 |
| 9/11/2023 | ENE | 43 | 12:57 | ENE | 9 | NE | 19 |
| 10/11/2023 | E | 46 | 14:54 | WSW | 13 | ENE | 31 |
| 11/11/2023 | NNE | 56 | 17:11 | ENE | 9 | NE | 22 |
| 12/11/2023 | S | 44 | 1:47 | S | 15 | ESE | 17 |
| 13/11/2023 | nd | nd | nd | SSE | 17 | ESE | 19 |
| 14/11/2023 | nd | nd | nd | nd | nd | nd | nd |
| 15/11/2023 | nd | nd | nd | nd | nd | nd | nd |
| 16/11/2023 | nd | nd | nd | nd | nd | nd | nd |

Note: nd = no data available

# Appendix B Noise Monitoring Results

*Table 9 Noise Monitoring Results*

| Date | Time | Works Period | Construction Activity | Activity Location | Monitoring Location | NML (dBA) | Predicted (dBA) | Recorded $L_{eq,\ 15min}$ (dBA) | LAmax | Exceedance of Predicted (dBA) | Exceedance of Predicted | Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Attended noise monitoring** | | | | | | | | | | | | |
| 23/10/2023 | 10:43 | Night | HV power disconnection on George St | Hunter Street West | 2 Hunter St | 57 | 73 | 60.4 | 84.4 | - | No | Validation monitoring indicated construction work was not the dominant noise source. |
| 23/10/2023 | 11:08 | Night | HV power disconnection on George St | Hunter Street West | 30 Hunter St | 57 | 61 | 63 | 78.8 | 2 | Yes | Validation monitoring indicated construction work was not the dominant noise source. |
| 7/11/2023 | 21:55 | Night | Hoarding Removal Works PYRW | Pyrmont West | 104 Pyrmont St | 60 | 72 | 73.1 | 99 | 1.1 | Yes | Dominant noise was from passing traffic not from construction activities |
| 7/11/2023 | 22:50 | Night | Hoarding Removal Works PYRW | Pyrmont West | 26-28 Paternoster Lane | 50 | 68 | 55.4 | 83.4 | - | No | Mostly metal-on-metal noise around 50-55dB, spikes to 70dB |
| 7/11/2023 | 23:15 | Night | Hoarding Removal Works PYRW | Pyrmont West | 33 Union St | 55 | 38 | 59.3 | 73.5 | 21.3 | Yes | No construction noise audible |
| 13/11/2023 | 6:59 | Morning | Concrete pour at the Southern Batter – The Bays | The Bays | 5 Lilyfield Rd | 49 | 45 | 63.6 | 98 | 18.6 | Yes | Construction noise not audible from Lilyfield road |
| **Real time noise and vibration monitoring** | | | | | | | | | | | | |
| | Continuous | | Construction – Noise | Hunter Street | The Ivy (Level 5 External) | * | * | * | * | * | * | Real time noise and vibration monitoring data is available on request. |
| | Continuous | | Construction – Noise | Hunter Street | The Ivy (Level 2 Office Printer Room) | * | * | * | * | * | * | |
| | Continuous | | Construction – Vibration | Hunter Street | The Ivy (Basement Carpark) | * | * | * | * | * | * | |
| | Continuous | | Construction – Noise | Hunter Street | The Radisson Blu Plaza Hotel (Basement) 27 O'Connell Street, Sydney, 2000 | * | * | * | * | * | * | |
| | Continuous | | Construction – Noise | Hunter Street | The Radisson Blu Plaza Hotel (Level 1) | * | * | * | * | * | * | |

| Date | Time | Works Period | Construction Activity | Activity Location | Monitoring Location | NML (dBA) | Predicted (dBA) | Recorded $L_{eq, 15min}$ (dBA) | LAmax | Exceedance of Predicted (dBA) | Exceedance of Predicted | Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | 27 O'Connell Street, Sydney, 2000 | | | | | | | |
| | Continuous | | Construction – Vibration | Hunter Street | The Radisson Blu Plaza Hotel (Basement) 27 O'Connell Street, Sydney, 2000 | * | * | * | * | * | * | |
| | Continuous | | Construction – Noise | Hunter Street | Tank Stream Hotel (Level 1 Office) 97-99 Pitt Street, Sydney, 2000 | * | * | * | * | * | * | |
| | Continuous | | Construction – Vibration | Hunter Street | Tank Stream Hotel (Basement) 97-99 Pitt Street, Sydney, 2000 | * | * | * | * | * | * | |
| | Continuous | | Construction – Noise | Pyrmont East | 63 Edwards Street, Pyrmont, 2009 | * | * | * | * | * | * | |
| | Continuous | | Construction – Vibration | Pyrmont East | 63 Edwards Street, Pyrmont, 2009 | * | * | * | * | * | * | |
| | Continuous | | Construction – Noise | Pyrmont West | 28 Paternoster Row, Pyrmont, 2009 | * | * | * | * | * | * | |
| | Continuous | | Construction – Vibration | Pyrmont West | 28 Paternoster Row, Pyrmont, 2009 | * | * | * | * | * | * | |
| | Continuous | | Construction – Vibration | Pyrmont | 13A Union Street, Pyrmont, 2009 | * | * | * | * | * | * | |

* Data is available upon request