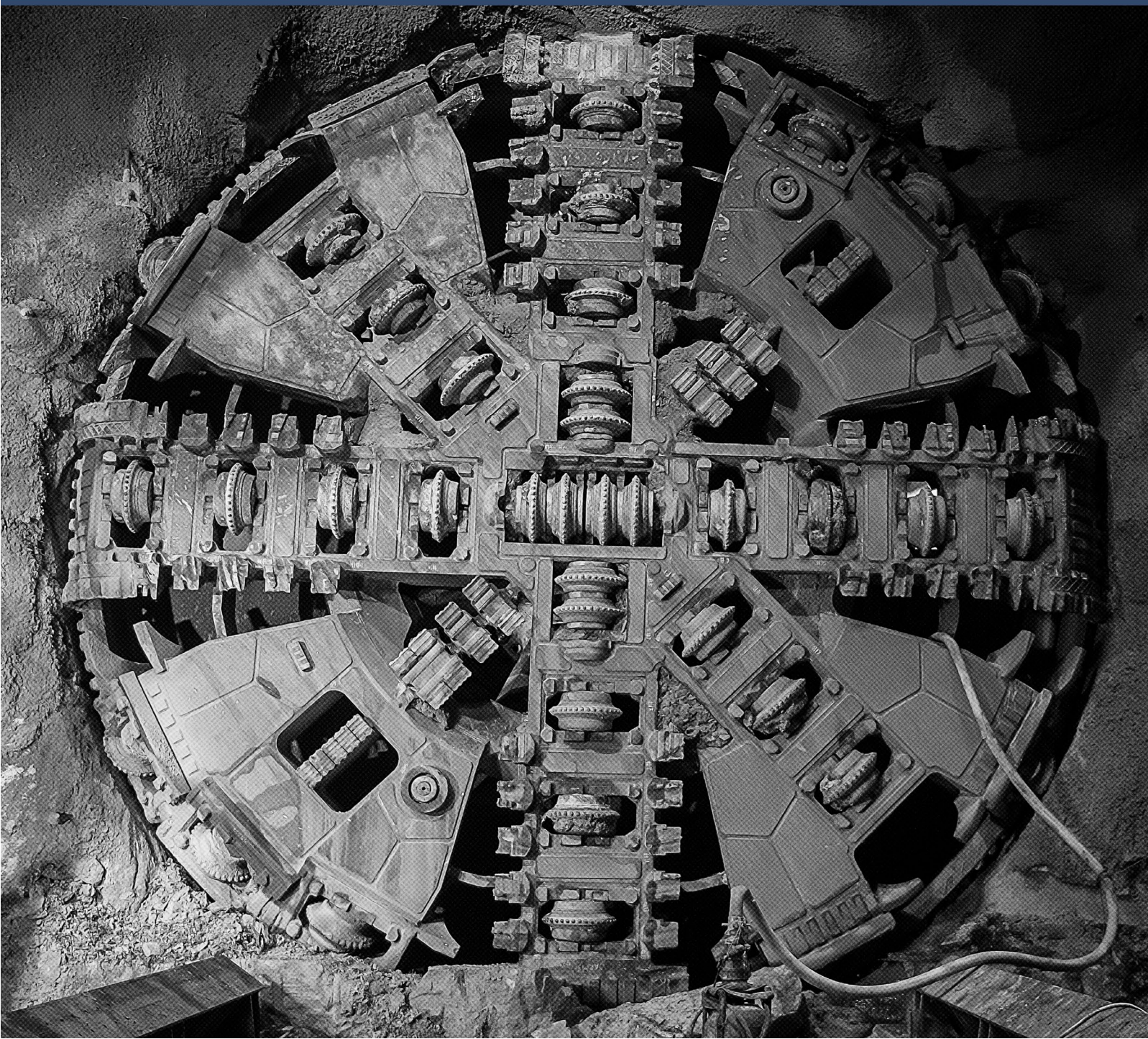
EASTERN TUNNELLING PACKAGE
John Holland CPB Contractors Ghella JV

JOHN HOLLAND CPB CONTRACTORS Ghella 5 Generations of Tunnelers

EPL 21784 POLLUTION MONITORING REPORT

May 2024



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May 2024

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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.

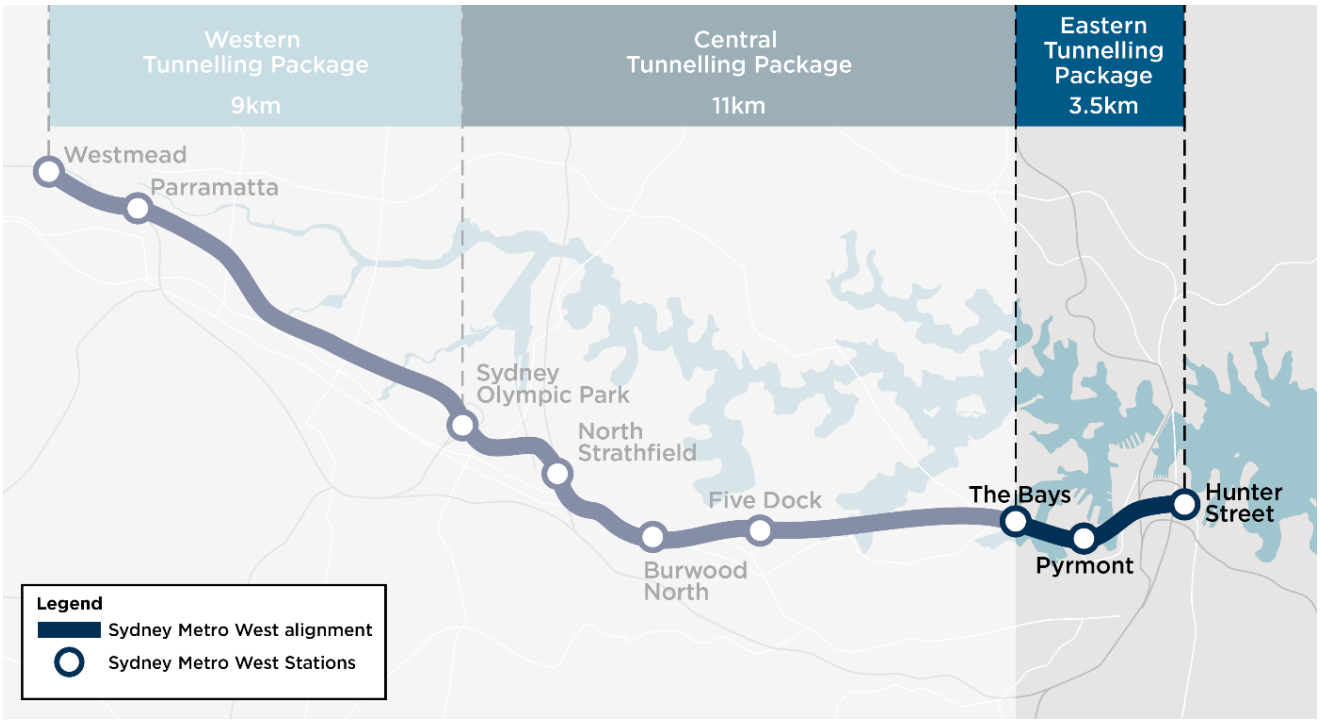

Figure 1: Sydney Metro West alignment

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:
a) be representative of each catchment area;
b) commence prior to any works that may cause sediment to leave the premises; and
c) continue to be operated until soil disturbance activities cease at the premises and the site has been stabilised.</td><td>Section 3.1
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:
a) Prepare a construction noise and vibration impact assessment in accordance with the Interim Construction Noise Guideline (DEC,2009) that is to include:
i. a description of the proposed works and activities outside of standard constructions hours;
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
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.
b) Undertake noise monitoring in accordance with the monitoring plan required by condition L5.9(a)(iii).</td><td>Section 3.2
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 Identification 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>
<tr><td>6</td><td>Discharge & Monitoring</td><td>Discharge & Monitoring</td><td>Discharge from The Bays Construction WTP to White Bay</td></tr>
<tr><td>7</td><td>Discharge & Monitoring</td><td>Discharge & Monitoring</td><td>Discharge from Pyrmont East Surface Water Discharge</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>

EPL Condition	Requirement	Report Reference
M2.2		Section 3.3

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

EPL Condition	Requirement	Report Reference

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

POINT 6

Pollutant	Units of Measure	50 Percentile concentration limit	90 Percentile concentration limit	3DGM concentration limit	100 percentile concentration limit
Aluminium	micrograms per litre				250
Ammonia	micrograms per litre				910
Arsenic	micrograms per litre				4.5
Cadmium	micrograms per litre				0.7
Chromium (hexavalent)	micrograms per litre				20
Cobalt	micrograms per litre				1.4
Copper	micrograms per litre				2
Iron	micrograms per litre				700
Lead	micrograms per litre				4.4
Manganese	micrograms per litre				1900
Mercury	micrograms per litre				0.1
Nickel	micrograms per litre				70
Nitrate	micrograms per litre				660
Nitrogen (total)	micrograms per litre				1,720
Oil and Grease	Visible				Not visible
pH	pH				7.0-8.5
Phosphorus (total)	micrograms per litre				140
TPH > C10-C40 (sum) Fraction	micrograms per litre				100
TSS	milligrams per litre				15
Zinc	micrograms per litre				15

POINT 7

Pollutant	Units of Measure	50 Percentile concentration limit	90 Percentile concentration limit	3DGM concentration limit	100 percentile concentration limit
Oil and Grease	Visible				Not visible
pH	pH				7.0-8.5
TSS	milligrams per litre				50

3. Monitoring

Section 3 presents a summary of the monitoring programs completed in the reporting period from 15 April 2024 – 15 May 2024. 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 236.8 mm with 17 days exceeding one millimetre of rain and 9 days of rain exceeding 10mm.

During the reporting period, there were 26 days where the maximum wind gust recorded was greater than 25km/h, 5 days where the maximum wind gust recorded was greater than 50km/h and 0 days where the maximum wind gust recorded was greater than 60km/h. Winds recorded during the reporting period in the mornings were predominantly westerly and south 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	11.5°C
Maximum temperature	27.7 °C
Total rainfall	236.8 mm
Number of days with rain (>1 mm)	17 days
Number of days with rain (>10 mm)	9 days
>25 km/hr wind	26 days
>50 km/hr wind	5 days
>60 km/hr wind	0 days

3.2. Noise

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

Date	Monitoring Location	Method	Description
16/04/2024	1-5 Harwood St, Pyrmont NSW 2009, Australia	Sound Level Meter	Verification noise monitoring of rock hammering, welding, cutting, and crane use at Pyrmont. Monitoring performed outside on the balcony.
16/04/2024	1-5 Harwood St, Pyrmont NSW 2009, Australia	Sound Level Meter	Verification noise monitoring of rock hammering, welding, cutting, and crane use at Pyrmont. Monitoring performed inside, bedroom space.
16/04/2024	1-5 Harwood St, Pyrmont NSW 2009, Australia	Sound Level Meter	Verification noise monitoring of rock hammering, welding, cutting, and crane use at Pyrmont. Monitoring performed inside, in the living room.
17/04/2024	1-5 Harwood St, Pyrmont NSW 2009, Australia	Sound Level Meter	Noise monitoring Tower crane operation during OOH.

Date	Monitoring Location	Method	Description
24/04/2024	63 Edward St, Pyrmont NSW 2009, Australia	Sound Level Meter	Verification noise monitoring of concrete boom usage, rock hammering, excavator usage, saw cutting and vac truck usage. Monitoring performed indoors.
06/05/2024	109 Pitt St, Sydney NSW 2000, Australia	Sound Level Meter	Noise monitoring Hunter West (Demo site). Monitoring in response of a compliant.
08/05/2024	65 Edward St, Pyrmont NSW 2009, Australia	Sound Level Meter	Verification noise monitoring of hammering, loading spoil truck, excavator clam claw.
09/05/2024	65-67 Edward Street, Pyrmont NSW 2009, Australia	Sound Level Meter	Noise monitoring EWP working below deck girder OOH.
09/05/2024	Edward Street, Site entry point, Pyrmont NSW 2009, Australia	Sound Level Meter	Noise monitoring EWP working below deck girder OOH.
10/05/2024	109 Pitt St, Sydney NSW 2000, Australia	Sound Level Meter	Verification noise monitoring of demolition of HSTW.

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 Sediment Basin and Point 3 – Discharge from The Bays temporary WTP. The water treatment plants for The Bays (permanent), Pyrmont Station and Eastern Creek Precast Facility are yet to be commissioned. As such no water sampling or discharge has occurred in this reporting period.

Table 4, 5 and 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			**13/05/24**
Type	**Units**	**Criteria**	**Discharge**
Ammonia	(µg/L)	910	630
Arsenic (III)	(µg/L)	8	1
Manganese	(µg/L)	80	34
Nitrogen (Total)	(µg/L)	1720	1700
Oil and Grease	Visible	Not Visible	Not visible
pH	pH	7.0-8.5	7.9
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			**08/05/2024**
Type	**Units**	**Criteria**	**Discharge**
Oil and Grease	Visible	Not Visible	Not visible
pH	pH	6.5-8.5	8.1
TSS	(mg/L)	50	18

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

Date			15/05/24
Type	**Units**	**Criteria**	**Discharge**
Arsenic (III)	(µg/L)	90	<1
Manganese	(µg/L)	1900	930
Nitrate + Nitrite (oxidised nitrogen)	(µg/L)	200	150
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 (%)
16/04/2024	14.8	25	0	18.7	78	23.5	64
17/04/2024	16.3	23.3	0	20.7	81	21.3	74
18/04/2024	16.7	24.8	1.4	17.6	95	20.2	86
19/04/2024	12.2	22.5	7.4	16.5	68	19.3	63
20/04/2024	15.5	18.9	2.2	17.4	86	18	85
21/04/2024	14.5	21.6	12.8	16.6	77	20.1	64
22/04/2024	13.2	24.3	0	17	82	23.6	58
23/04/2024	14	25.7	0	17.8	84	24.4	56
24/04/2024	17.8	26.3	0	20.9	54	25.6	40
25/04/2024	12.5	22.4	0	17.2	66	21.4	46
26/04/2024	11.5	21.2	0	16	64	20.8	51
27/04/2024	12	23.4	0	16.5	73	22.7	58
28/04/2024	13.5	24.9	0	17.3	87	24	59
29/04/2024	14.4	27.7	0	17.3	83	25.2	59
30/04/2024	17.2	19.8	0	19	81	17.1	86
1/05/2024	12.9	18.9	22.8	13.8	90	17.9	79
2/05/2024	12.9	19.8	23.2	15	93	19.2	67
3/05/2024	13.6	16.8	6.8	14.8	96	16.1	93
4/05/2024	13.7	19.5	18.6	14.7	98	17.2	87
5/05/2024	14.7	19.2	21.4	15.3	96	16.3	91
6/05/2024	15.2	22.3	31.2	19.1	64	21.4	51
7/05/2024	13.8	23.3	3	15.5	95	17.6	82
8/05/2024	13.6	21.3	8.8	17.4	91	19.2	75
9/05/2024	14.6	20.1	8.4	17.1	92	19.4	76
10/05/2024	14.9	19.8	5.2	16	97	19.2	85
11/05/2024	15.6	17.1	21.6	15.8	96	16.1	92
12/05/2024	14.3	22.5	31.2	15.2	98	19.4	72
13/05/2024	14.5	21.3	10.6	16.4	93	20.3	70
14/05/2024	12.8	23.1	0.2	16.5	78	22.3	52

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)
16/04/2024	ESE	24	14:57	WNW	15	ESE	19
17/04/2024	S	33	10:19	S	22	SSE	20
18/04/2024	SSE	35	14:28	W	13	SSE	15
19/04/2024	S	44	16:01	W	17	S	19
20/04/2024	SSW	59	12:46	SSW	26	SSW	26
21/04/2024	SSW	37	11:14	W	17	SSW	17
22/04/2024	W	22	2:34	WNW	17	E	11
23/04/2024	NE	33	15:23	WNW	17	ENE	22
24/04/2024	SSE	57	16:54	NNW	20	SSW	11
25/04/2024	ESE	31	13:50	WNW	17	SSE	13
26/04/2024	SW	39	10:23	W	19	SSE	22
27/04/2024	W	28	0:07	W	20	ESE	11
28/04/2024	NE	31	14:18	WNW	13	NE	19
29/04/2024	W	28	21:27	WNW	13	E	11
30/04/2024	SSE	52	22:56	SSW	15	SSW	24
1/05/2024	SSW	46	14:48	W	20	SSW	24
2/05/2024	W	30	3:25	W	17	S	15
3/05/2024	SSW	28	13:00	W	17	SSW	9
4/05/2024	SSE	30	14:33	W	15	SSW	13
5/05/2024	SE	44	22:50	WSW	7	SSW	11
6/05/2024	ESE	57	2:54	SE	26	SE	26
7/05/2024	ESE	39	0:29	W	17	S	6
8/05/2024	E	37	15:31	WNW	7	ESE	20
9/05/2024	ESE	24	17:56	W	15	SE	7
10/05/2024	SE	31	23:40	WNW	13	S	9
11/05/2024	ESE	33	0:28	NNW	4	NNE	6
12/05/2024	W	39	19:31	WNW	15	SSW	13
13/05/2024	SSW	56	12:24	W	22	SSW	22
14/05/2024	W	28	8:33	WNW	22	ESE	13

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												
16/04/2024	14:41	Day	Hammering, Welding/cutting, crane use	Pyrmont East	1-5 Hardwood Street, Pyrmont	62	85	77.4	93.9	-7.6	No	Validation monitoring indicated construction work was **not** the dominant noise source.
16/04/2024	15:00	Day	Tower crane, metal cutting	Pyrmont East	60/1-5 Hardwood Street	62	85	44.7	54.1	-40.3	No	Monitoring indicated construction work was **not** the dominant noise source.
16/04/2024	15:08	Day	Hammering, cutting metal	Pyrmont East	60/1-5 Hardwood Street	62	85	42.9	52.6	-42.1	No	Monitoring indicated construction work was **not** the dominant noise source.
17/04/2024	20:54	Evening	Tower crane lifting components from ground to upper deck	Pyrmont East	1-5 Hardwood Street, Pyrmont	52	74	61.3	74.1	-12.7	No	Monitoring indicated construction work was **not** the dominant noise source.
24/04/2024	13:12	Day	Concrete boom, 2x rock hammering, excavator, vac truck, saw cutting	Pyrmont East	63 Edward Street, Pyrmont	60	80	58.3	84.6	-21.7	No	Monitoring indicated construction work was **not** the dominant noise source.
06/05/2024	11:37	Day	Hammering, 3x excavators	Hunter West	109 Pitt Street, Sydney	70	119	48.3	42.9	-70.7	No	Monitoring indicated construction work was **not** the dominant noise source.
08/05/2024	10:08	Day	Hammering, loading spoil truck, excavator clam claw	Pyrmont East	65 Edward Street, Pyrmont	60	84	54.8	60.6	-29.2	No	Monitoring indicated construction work was **not** the dominant noise source.
09/05/2024	20:00	Evening	EWP working below deck girder	Pyrmont East	65-67 Edward Street, Pyrmont	50	44	61.5	79	17.5	Yes	Monitoring indicated construction work was **not** the dominant noise source. Works were not audible due to background noise
09/05/2024	20:20	Evening	EWP working below deck girder	Pyrmont East	Edward Street, Pyrmont (site entry)	51	40	39.3	70.9	-0.7	No	Monitoring indicated construction work was **not** the dominant noise source.
10/05/2024	15:10	Day	Demolition of HSTW	Hunter West	109 Pitt Street, Sydney	70	119	50.8	67.9	-68.2	No	Monitoring indicated construction work was **not** the dominant noise source.
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 – Noise	Pyrmont	1-5 Hardwood Ln	*	*	*	*	*	*	

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
	Continuous	Construction – Noise	Hunter Street	Tank Stream Hotel (Level 1 Office) 97-99 Pitt Street, Sydney, 2000	*	*	*	*	*	*	
	Continuous	Construction – Noise	Pyrmont East	69 Edwards Street, Pyrmont, 2009	*	*	*	*	*	*	
	Continuous	Construction – Noise	Pyrmont West	28 Paternoster Row, Pyrmont, 2009	*	*	*	*	*	*	
	Continuous	Construction – Noise	Hunter Street	The Radisson Blu Plaza Hotel (Level 1) 27 O'Connell Street, Sydney, 2000	*	*	*	*	*	*	
	Continuous	Construction – Vibration	Pyrmont	125 Pyrmont St	*	*	*	*	*	*	
	Continuous	Construction – Vibration	Pyrmont	107 Pyrmont St	*	*	*	*	*	*	
	Continuous	Construction – Vibration	Hunter Street	The Ivy (Basement)	*	*	*	*	*	*	
	Continuous	Construction – Vibration	Hunter Street	The Skinners Hotel (Level 1)	*	*	*	*	*	*	
	Continuous	Construction – Vibration	Hunter Street	The Skinners Hotel (Level 3)	*	*	*	*	*	*	
	Continuous	Construction – Vibration	Hunter Street	The Skinners Hotel (Level 3)	*	*	*	*	*	*	
	Continuous	Construction – Vibration	Hunter Street	Pangas House	*	*	*	*	*	*	
	Continuous	Construction – Vibration	Pyrmont East	69 Edwards Street, Pyrmont, 2009	*	*	*	*	*	*	
	Continuous	Construction – Vibration	Pyrmont West	28 Paternoster Row, Pyrmont, 2009	*	*	*	*	*	*	

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
	Continuous	Construction – Vibration	Pyrmont	13A Union Street, Pyrmont, 2009	*	*	*	*	*	*	

* Data is available upon request