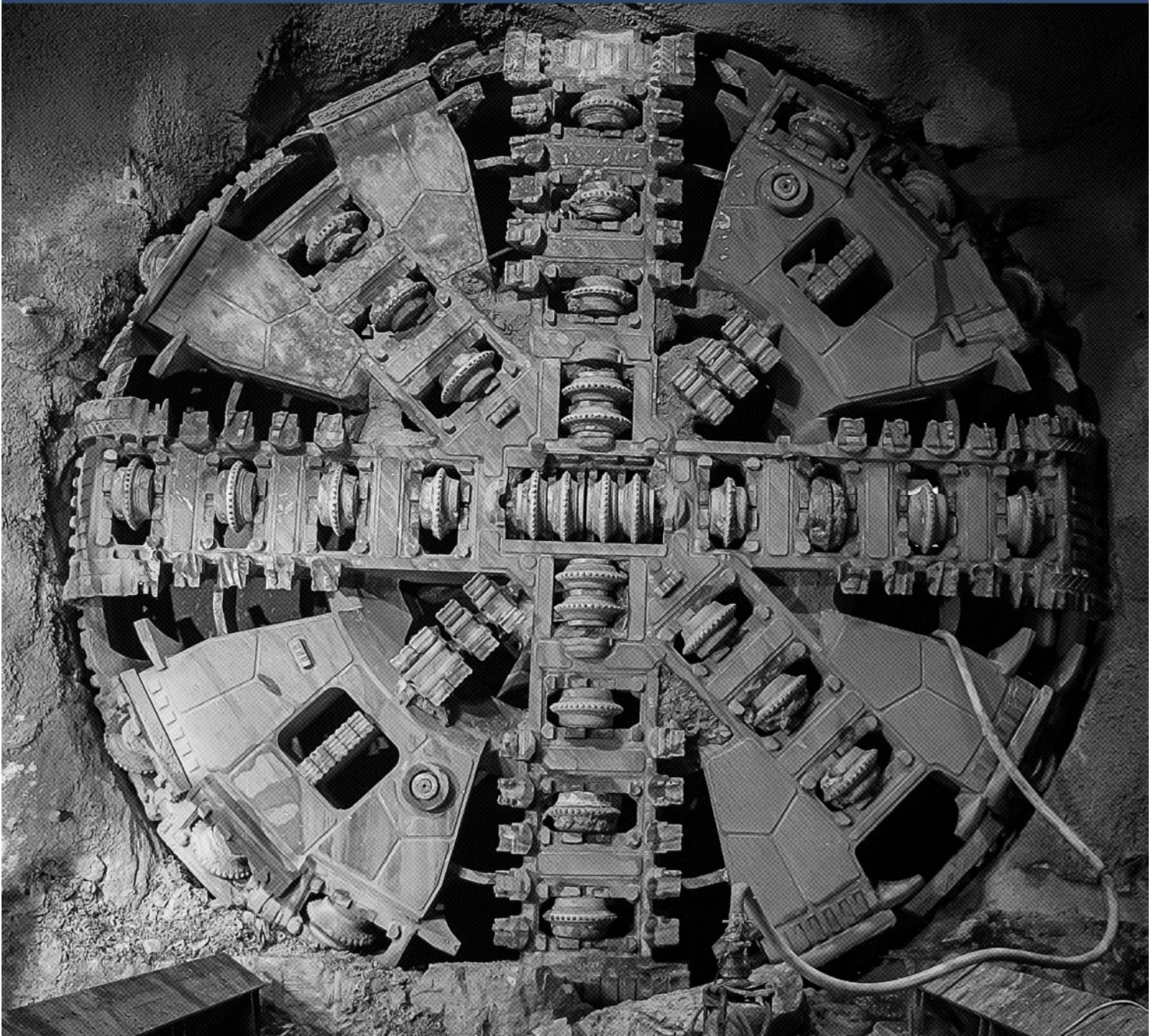


EPL 21784 POLLUTION MONITORING REPORT

April 2024



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Signature:					[REDACTED]

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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.

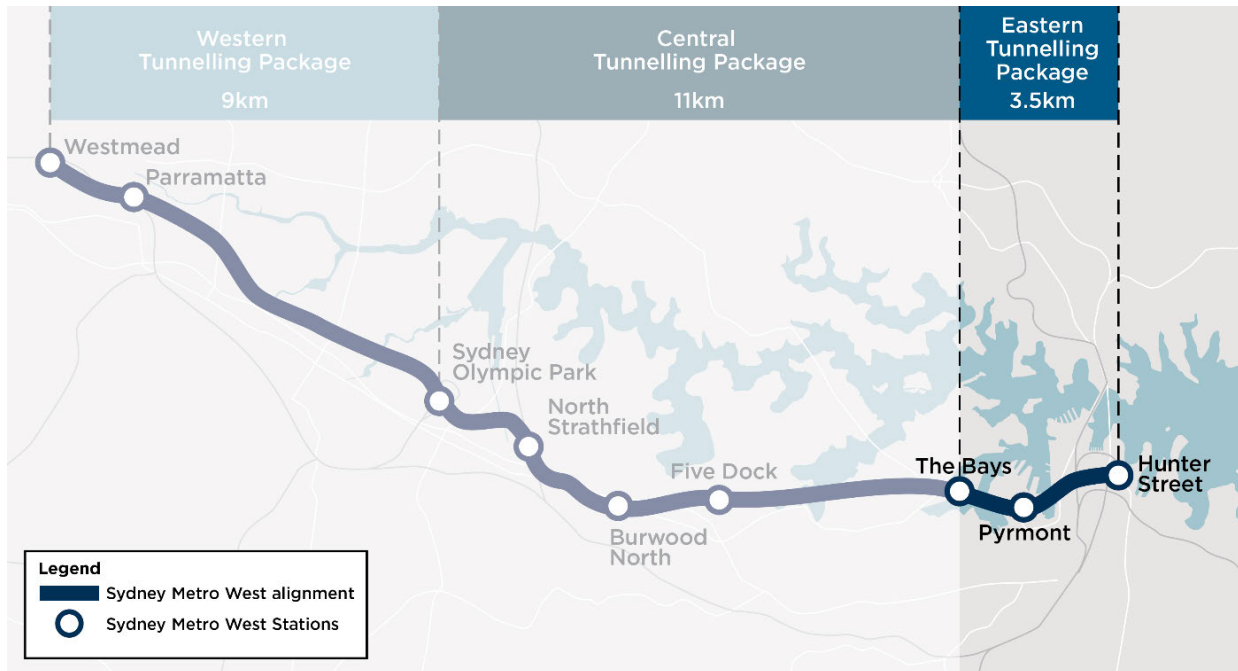


Figure 1: Sydney Metro West alignment

1.2. Project Scope

The ETP Works include design and construction of:

- Demolition of existing buildings at Pymont 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
- Pymont 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 Contractors 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

EPL Condition	Requirement	Report Reference																																
Weather																																		
M5.1	<p>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:</p> <ul style="list-style-type: none"> 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. 	Section 3.1 Appendix A3.1																																
Noise																																		
L5.9	<p>In undertaking any works and activities outside of standard construction hours under condition L5.8, the licensee must comply with the following:</p> <ul style="list-style-type: none"> a) Prepare a construction noise and vibration impact assessment in accordance with the Interim Construction Noise Guideline (DEC,2009) that is to include: <ul style="list-style-type: none"> 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). 	Section 3.2 Appendix B																																
M4.4	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.	N/A																																
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P1.1	<p>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.</p> <table border="1"> <thead> <tr> <th>EPA Identification no.</th> <th>Type of Monitoring Point</th> <th>Type of Discharge Point</th> <th>Location Description</th> </tr> </thead> <tbody> <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> </tbody> </table>	EPA Identification no.	Type of Monitoring Point	Type of Discharge Point	Location Description	1	Discharge & Monitoring	Discharge & Monitoring	Discharge from the Hunter St Station WTP to Sydney Harbour	2	Discharge & monitoring	Discharge & monitoring	Discharge from the Eastern Creek Precast Facility sediment basin	3	Discharge & monitoring	Discharge & monitoring	Discharge from The Bays temporary WTP to White Bay	4	Discharge & Monitoring	Discharge & Monitoring	Discharge from the Pyrmont Station WTP to Sydney Harbour	5	Discharge & Monitoring	Discharge & Monitoring	Discharge from the Eastern Tunnelling Package Eastern Creek Precast Facility Water Treatment Plant into Ropes Creek	6	Discharge & Monitoring	Discharge & Monitoring	Discharge from The Bays Construction WTP to White Bay	7	Discharge & Monitoring	Discharge & Monitoring	Discharge from Pyrmont East Surface Water Discharge	Section 3.3
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M2.1	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.	Section 3.3																																

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3. Monitoring

Section 3 presents a summary of the monitoring programs completed in the reporting period from 15 March 2024 – 15 April 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 163.2 mm with 9 days exceeding one millimetre of rain and 2 days of rain exceeding 10mm.

During the reporting period, there were 25 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 3 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	11.9°C
Maximum temperature	36.2 °C
Total rainfall	163.2 mm
Number of days with rain (>1 mm)	9 days
Number of days with rain (>10 mm)	2 days
>25 km/hr wind	25 days
>50 km/hr wind	6 days
>60 km/hr wind	3 days

3.2. Noise

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

Date	Monitoring Location	Method	Description
15/03/2024	Ground floor, 137 Pyrmont Street, Pyrmont, NSW, 2009	Sound Level Meter	Verification noise monitoring of rock hammering at Pyrmont West from boardroom
21/03/2024	68 Pitt St, Sydney NSW 2000, Australia	Sound Level Meter	Monitoring of demolition at Hunter Street West
25/03/2024	7/1-5 Harwood St, Pyrmont NSW 2009, Australia	Sound Level Meter	Tower crane unloading deliveries OOH
03/04/2024	320B George St, Sydney NSW 2000, Australia	Sound Level Meter	Noise monitoring of drill rig
11/04/2024	107 Pitt Street, Sydney, 2000	Vibration Meter	Monitoring impact of demolition at Hunter Street West, in response to complaint

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 Pymont Station water treatment plant and the Bays construction water treatment plant is 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			26/03/24
Type	Units	Criteria	Discharge
Ammonia	(µg/L)	910	160
Arsenic (III)	(µg/L)	8	<1
Manganese	(µg/L)	80	29
Nitrogen (Total)	(µg/L)	1720	1700
Oil and Grease	Visible	Not Visible	Not visible
pH	pH	7.0-8.5	7.0
Phosphorus (total) (µg/L)	(µg/L)	140	<50
TSS	(mg/L)	15	12

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

Date			11/04/2023
Type	Units	Criteria	Discharge
Oil and Grease	Visible	Not Visible	Not visible
pH	pH	6.5-8.5	8.5
TSS	(mg/L)	50	2.2

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

Date			05/04/24
Type	Units	Criteria	Discharge
Arsenic (III)	(µg/L)	90	<1
Manganese	(µg/L)	1900	720
Nitrate + Nitrite (oxidised nitrogen)	(µg/L)	200	150
Oil and Grease	Visible	Not Visible	Not visible
pH	pH	6.5-8.5	7.5
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 (%)
15/03/2023	18.4	28.5	9.8	19.9	100	26.5	70
16/03/2023	18.9	36.2	0	20.1	99	35.5	32
17/03/2023	20	31.6	0	24.1	48	28.2	61
18/03/2023	20.7	29.1	0	22.7	92	28.6	65
19/03/2023	20.7	28.9	0	21.6	100	28.4	70
20/03/2023	21.6	23.6	0	23.5	82	22.5	71
21/03/2023	18.1	22.9	0.6	20.2	68	22.4	60
22/03/2023	18.7	24.2	0.2	20.2	83	23.4	72
23/03/2023	19.4	27.3	1.2	20.9	92	25.4	71
24/03/2023	17.5	25.5	4.6	18.9	93	24.9	73
25/03/2023	18.9	24.6	0	22.2	72	23.5	64
26/03/2023	19.1	26.1	1.8	20.1	89	24.8	69
27/03/2023	19.4	24.6	8.2	19.6	98	23.4	86
28/03/2023	19.5	24.8	0.6	21.4	90	23.2	81
29/03/2023	19.6	27.1	4.2	20.7	88	24.3	69
30/03/2023	15.6	25.7	0	17.2	69	24.1	34
31/03/2023	14.3	25.7	0	15.5	63	25	38
1/04/2024	18	28.6	0	19.1	90	27.7	53
2/04/2024	19.1	25.3	0	21.5	71	21.5	89
3/04/2024	16.4	25.3	2.8	17.4	65	22.5	68
4/04/2024	17.4	21.3	0	20.7	70	18.1	91
5/04/2024	17.8	20.5	111	19.1	97	17.5	97
6/04/2024	17.4	28.5	ND	19.5	98	28.2	44
7/04/2024	17.7	27.9	0	20.8	71	25.3	55
8/04/2024	16.4	25.5	0	20.7	73	23.4	63
9/04/2024	16.5	22.5	0	19.5	70	16	80
10/04/2024	11.9	21.4	18.2	14.8	61	20.7	51
11/04/2024	12.1	22.4	0	17	62	21.5	49
12/04/2024	13	24.7	0	18.2	74	23.6	51
13/04/2024	14.4	25	0	18.6	79	24.1	62
14/04/2024	15.8	25.7	0	20.3	82	24.1	66
15/04/2024	16.4	26.2	0	20.1	78	24.4	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)
15/03/2023	ENE	24	12:29	WNW	13	E	19
16/03/2023	W	37	16:02	WNW	11	W	11
17/03/2023	SSE	41	11:56	W	13	ESE	28
18/03/2023	NNE	41	18:09	NNE	4	ENE	24
19/03/2023	SSW	28	21:40	W	13	ESE	19
20/03/2023	SSE	56	9:23	SSE	28	SSE	31
21/03/2023	ESE	35	23:20	ESE	20	ESE	15
22/03/2023	N	30	10:32	W	11	NE	13
23/03/2023	SSE	37	14:42	W	13	S	13
24/03/2023	SSE	33	11:26	W	19	SE	17
25/03/2023	E	37	18:16	ESE	20	ESE	19
26/03/2023	N	31	20:12	WNW	7	ENE	20
27/03/2023	W	28	12:53	N	13	W	19
28/03/2023	W	24	6:18	W	11	WNW	11
29/03/2023	W	54	16:48	NNW	31	NNW	26
30/03/2023	W	41	12:49	W	24	SW	24
31/03/2023	W	39	9:02	W	20	ESE	15
1/04/2024	NE	41	16:19	WNW	2	NE	20
2/04/2024	NW	33	18:17	NE	4	N	7
3/04/2024	W	37	4:10	W	19	SE	20
4/04/2024	SSE	46	22:53	SSE	22	ESE	13
5/04/2024	ESE	70	22:32	SE	6	S	17
6/04/2024	E	87	1:08	NNW	9	NW	15
7/04/2024	NE	24	13:05	W	11	ENE	11
8/04/2024	SSE	30	10:01	SSW	15	ESE	15
9/04/2024	SW	57	13:14	WNW	11	SSW	33
10/04/2024	SW	63	1:06	WSW	15	S	26
11/04/2024	SSE	35	14:40	WNW	22	S	20
12/04/2024	WNW	24	0:06	WNW	17	E	13
13/04/2024	ESE	24	12:24	WNW	11	ESE	11
14/04/2024	E	20	13:26	WNW	11	E	13
15/04/2024	W	26	04:26	WNW	15	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)	L _{Amax}	Exceedance of Predicted (dBA)	Exceedance of Predicted	Comments
Attended noise monitoring												
15/03/2024	12:40	Day	Noise monitoring in boardroom to verify noise from Pymont West construction works (rock hammering)	Pymont West	Ground Floor/137 Pymont St, Pymont NSW 2009, Australia	70	75	48.9	56.8	- 27.1	No	Validation monitoring indicated construction work was not the dominant noise source.
21/03/2024	15:35	Day	Demolition of HSTW	Hunter Street West	68 Pitt St, Sydney NSW 2000, Australia	94	94	57.9	64.8	- 36.1	No	Monitoring indicated construction work was not the dominant noise source.
25/03/2024	20:00	Evening	Tower crane unloading deliveries out of hours	Pymont East	7/1-5 Harwood St, Pymont NSW 2009, Australia	54	74	63.8	73.5	- 10.2	No	Monitoring indicated construction work was not the dominant noise source.
03/04/2024	15:25	Day	Noise monitoring of drill rig from George St	Hunter Street West	320B George St, Sydney NSW 2000, Australia	80	80	67	83.3	- 13	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 – 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) 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	*	*	*	*	*	*	*	

Date	Time	Works Period	Construction Activity	Activity Location	Monitoring Location	NML (dBA)	Predicted (dBA)	Recorded L _{eq, 15min} (dBA)	L _{Amax}	Exceedance of Predicted (dBA)	Exceedance of Predicted	Comments
	Continuous		Construction – Vibration	Hunter Street	Tank Stream Hotel (Basement) 97-99 Pitt Street, Sydney, 2000	*	*	*	*	*	*	
	Continuous		Construction – Noise	Pymont East	63 Edwards Street, Pymont, 2009	*	*	*	*	*	*	
	Continuous		Construction – Vibration	Pymont East	63 Edwards Street, Pymont, 2009	*	*	*	*	*	*	
	Continuous		Construction – Noise	Pymont West	28 Paternoster Row, Pymont, 2009	*	*	*	*	*	*	
	Continuous		Construction – Vibration	Pymont West	28 Paternoster Row, Pymont, 2009	*	*	*	*	*	*	
	Continuous		Construction – Vibration	Pymont	13A Union Street, Pymont, 2009	*	*	*	*	*	*	

* Data is available upon request