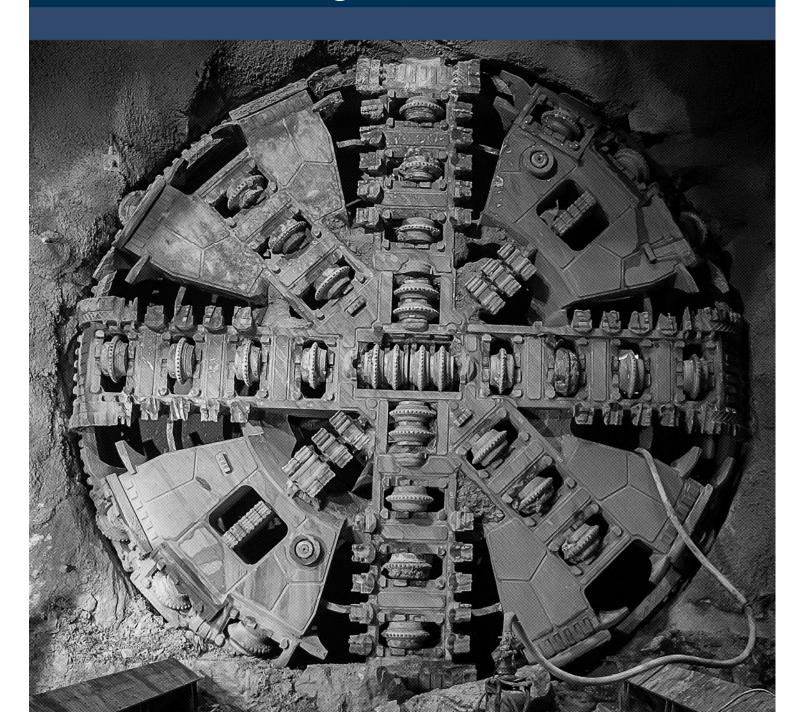


# EPL 21784 POLLUTION MONITORING REPORT August 2023





# **EPL 21784 POLLUTION MONITORING REPORT**

# August 2023

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# **Document approval**

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1	15/08/2023				
Signature:					

# **EASTERN** TUNNELLING PACKAGE



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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:
  - o 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.

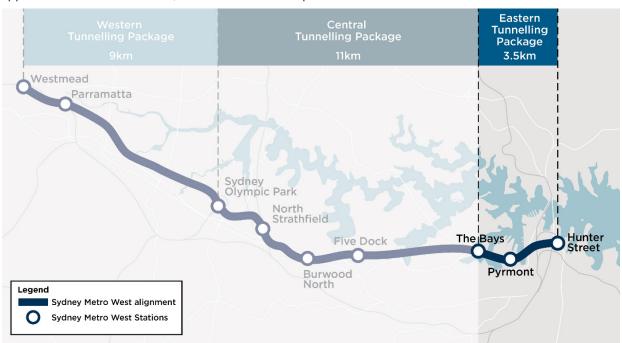


Figure 1: Sydney Metro West alignment



#### 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: Element 1: Leadership, accountability and culture

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**).

### **EASTERN** TUNNELLING PACKAGE



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	velocity and rainfa equivalent weathe Monitoring must: a) be representative b) commence prior and	a) be representative of each catchment area;     b) commence prior to any works that may cause sediment to leave the premises;						
Noise								
L5.9	under condition L5 a) Prepare a const with the Interim Co i. a description of constructions ho ii. predictions of from these work than those perm iii. a monitoring poundary of repi that are represe	.8, the licensee muruction noise and vonstruction Noise G of the proposed workers; LAeq(15 minute) does and activities, whitted under conditional to validate the resentative sensitive of the works the highest noise of monitoring in accordance.	ist comply with the ribration impact as ruideline (DEC,200 ks and activities of B noise levels at rere noise levels at noise predictions, and noise predictions, and activities, inclevel impacts.	sessment in accordance 09) that is to include:	Section 3.2 Appendix B			
M4.4	authorised officer		nsee is unable to	oring as directed by an obtain permission, they	N/A			
Water								
P1.1		onitoring and/or the point.  nitoring Point Type of I	e setting of limits for Discharge Point Locale & Monitoring Disc	d in this licence for the or discharges of pollutants ation Description harge from the Hunter St ion WTP to Sydney Harbour	Section 3.3			
M2.1	number), the licens analysis) the conc	specified below (by a point btaining results by n Column 1. The licensee sample at the frequency,	Section 3.3					
	specified opposite	in the other column	10.					
M2.2	specified opposite	in the other column			Section 3.3			
M2.2		Units of measure micrograms per litre micrograms per litre	Frequency  Monthly during discharge  Monthly during	Sampling Method Grab sample Grab sample	Section 3.3			
M2.2	POINT 1  Pollutant  Ammonia	Units of measure micrograms per litre	Frequency  Monthly during discharge  Monthly during discharge  Monthly during	Grab sample	Section 3.3			
M2.2	POINT 1 Pollutant Ammonia Arsenic	Units of measure micrograms per litre micrograms per litre	Frequency  Monthly during discharge  Monthly during discharge	Grab sample  Grab sample	Section 3.3			
M2.2	POINT 1 Pollutant Ammonia Arsenic Manganese	Units of measure micrograms per litre micrograms per litre micrograms per litre	Frequency Monthly during discharge Monthly during discharge Monthly during discharge Monthly during	Grab sample Grab sample Grab sample	Section 3.3			



#### Monitoring

Section 3 presents a summary of the monitoring programs completed in the reporting period from 17 July 2023 to 16 August 2023. The 14 – 16 July 2023 are included below as data for these days was not available at the time of reporting last month.

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

#### 3.1. Meteorological Data

Meteorological data for the Project has been taken from the Observatory Hill Bureau of Meteorology Weather Station.

The total rainfall recorded during the reporting period was 49.8 mm with 6 days exceeding one millimetre of rain and 2 day of rain exceeding 10mm.

During the reporting period, there were 23 days where the maximum wind gust recorded was greater than 25km/h, 1 day where the maximum wind gust recorded was greater than 50km/h and no days where the maximum wind gust recorded was greater than 60km/h. Winds recorded during the reporting period were predominantly westerly in the mornings and varied between southerly and westerly 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	3.5 °C
Maximum temperature	25.2 °C
Total rainfall	49.8 mm
Number of days with rain (>1 mm)	6 days
Number of days with rain (>10 mm)	2 days
>25 km/hr wind	23 days
>50 km/hr wind	1 days
>60 km/hr wind	0 days

#### 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 provides a summary of noise monitoring events conducted during the reporting period. Detailed noise monitoring results and comments are presented in Appendix B. There were no exceedances of the predicted noise level (LAeq15min) during the reporting period.



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

Date	Monitoring Location	Method	Description
25/07/2023	The Grand Hotel – 30 Hunter Street, Sydney	Attended	Installation of B-Class Hoarding at HSTE
25/07/2023	The Radisson Blu Plaza – 27 O'Connell St, Sydney	Attended	Installation of B-Class Hoarding at HSTE
27/07/2023	5 Lilyfield Road, Rozelle	Attended	Concrete pour for spoil shed at The Bays
31/07/2023	123 Pyrmont Street, Pyrmont	Attended	General demolition and loading out at PYRW
01/08/2023	63 Edward Street, Pyrmont	Attended	Emergency Works – Hoarding repair at PYRE Union St

#### 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.

Table 4 provides the detail of the concentration of pollutants discharged during the reporting period. There were no exceedances of the discharge criteria specified in L2.4.

Table 4 Concentration of pollutants discharged during the reporting period

Date			(μg/L) Phos		Total Total osphorus Nitrogen (μg/L) (μg/L)		Manganese (μg/L)	TSS (mg/L)	
	Criteria	1900	6.5-8.5	570	5400	90	90	15	
03/08/2023	Discharge	240	6.7	<50	600	<1	<5	<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 5 Weather Observations. Temperature and Relative Humidity. Observatory Hill BOM Station.

Date	ations. Temperature and Ro Min temperature	Max temperature	Rainfall (mm)	9am	9am relative	3pm	3pm relative
	(°C)	(°C)	<u> </u>	Temperature (°C)	humidity (%)	Temperature (°C)	humidity (%)
14/07/2023	8.3	23.3	0	10.8	75	23.2	35
15/07/2023	10.8	23.6	0	16.7	58	23.1	33
16/07/2023	13.5	18.1	0	16.4	85	15.8	90
17/07/2023	12	18.2	2.4	13.4	99	16.8	80
18/07/2023	10.2	21.9	0	12.2	98	21.7	39
19/07/2023	8.7	16	0.2	10.3	57	15.5	41
20/07/2023	5.1	19.5	0	7.5	81	19.4	35
21/07/2023	7.5	20.1	0	13.6	61	17.6	50
22/07/2023	7.1	17	0	9.3	65	15.6	53
23/07/2023	7.3	17.7	0	9.8	77	17.6	49
24/07/2023	9.8	17.1	14	12.3	100	16.7	68
25/07/2023	7.9	19.7	0	10.1	88	16.9	69
26/07/2023	8.3	20.7	0	10	95	19.6	53
27/07/2023	8.1	19.5	0	10.5	76	18.9	70
28/07/2023	10.4	24.4	0	15.9	57	24.1	35
29/07/2023	12.8	22.6	0	15.4	79	20.2	58
30/07/2023	11.6	25.2	0	14.6	78	24.9	35
31/07/2023	12.3	23.5	0	15.1	59	23.4	33
01/08/2023	5.2	21.8	0	14.5	52	19.9	29
02/08/2023	7.6	18.6	0	13.8	74	17.5	63
03/08/2023	5.4	22.2	0	13.1	99	20.7	55
04/08/2023	5.5	23.9	0	13.3	82	23.2	28
05/08/2023	7.3	17.9	0	12.4	77	17.1	63
06/08/2023	11.9	17.5	9.8	14.3	77	16	66
07/08/2023	7.2	16.9	0	13.3	77	14.9	77
08/08/2023	10.1	19	4.6	11.9	92	16.9	64
09/08/2023	6.8	20.6	0.2	13.2	86	20.3	41
10/08/2023	5.2	23.6	0	14	74	21.9	27
11/08/2023	5.1	19.7	0	12.9	54	19.5	31
12/08/2023	3.5	20.9	0	11.7	67	20.5	28
13/08/2023	8.8	18.2	0	14	65	15.1	76
14/08/2023	11.1	16	15.6	12.7	100	13	96



Date	Min temperature (°C)	Max temperature (°C)	Rainfall (mm)	9am Temperature (°C)	9am relative humidity (%)	3pm Temperature (°C)	3pm relative humidity (%)
15/08/2023	5.7	nd	3	11.7	77	14.8	69
16/08/2023	nd	nd	nd	nd	nd	nd	nd

Note: nd = not data available

Table 6 Wind Observations. Observatory Hill BOM Station.

Date	Direction of maximum wind gust	Speed of maximum wind gust (km/h)	Time of maximum wind gust	9am wind direction	9am wind speed (km/h)	3pm wind direction	3pm wind speed (km/h)
14/07/2023	NW	26	21:36	WNW	7	NNW	15
15/07/2023	WNW	44	15:09	N	17	WNW	22
16/07/2023	SSW	41	13:30	SSW	9	S	7
17/07/2023	ENE	22	15:51	W	17	ENE	11
18/07/2023	nd	nd	nd	WNW	17	WNW	15
19/07/2023	nd	nd	nd	W	20	S	17
20/07/2023	nd	nd	nd	W	22	N	9
21/07/2023	WNW	48	13:04	WNW	24	SSE	20
22/07/2023	W	35	5:34	W	28	S	20
23/07/2023	S	41	12:14	WNW	20	SSW	20
24/07/2023	W	33	0:21	WNW	20	S	15
25/07/2023	WNW	26	5:06	W	19	SE	13
26/07/2023	WSW	24	23:34	WNW	17	E	11
27/07/2023	W	30	8:33	W	22	ENE	17
28/07/2023	W	31	14:21	N	15	W	20
29/07/2023	ENE	26	13:54	WNW	11	ENE	17
30/07/2023	NW	31	13:32	W	13	WNW	20
31/07/2023	W	46	10:21	WNW	20	WNW	11
01/08/2023	WSW	28	9:11	WSW	15	SE	13
02/08/2023	ENE	22	15:00	W	6	ENE	13
03/08/2023	ENE	28	14:49	WNW	9	ENE	15
04/08/2023	NNW	24	13:48	W	9	NNW	11
05/08/2023	SE	24	21:22	WSW	2	WSW	4



Date	Direction of maximum wind gust	Speed of maximum wind gust (km/h)	Time of maximum wind gust	9am wind direction	9am wind speed (km/h)	3pm wind direction	3pm wind speed (km/h)
06/08/2023	SSE	33	16:29	S	15	S	17
07/08/2023	S	26	11:24	SSE	6	SSE	11
08/08/2023	SE	33	13:15	W	4	SE	20
09/08/2023	NNW	30	14:35	W	9	N	13
10/08/2023	WNW	54	14:09	Calm		WNW	28
11/08/2023	S	24	9:09	SW	13	SW	9
12/08/2023	WNW	43	13:38	W	9	WNW	11
13/08/2023	SE	35	14:11	SSW	9	SE	22
14/08/2023	SSE	31	14:04	S	7	SSE	15
15/08/2023	Nd	Nd	Nd	SW	17	SSE	20
16/08/2023	Nd	Nd	nd	nd	nd	nd	nd

Note: nd = no data available



# Appendix B Noise Monitoring Results

Date	Time	Works Period	Construction Activity	Activity Location	Monitoring Location	NML (dBA)	Predicted (dBA)	Recorded L <sub>eg. 15min</sub> (dBA)	LAmax	Exceedance of Predicted (dBA)	Exceedance of Predicted	Comments
Attended no	ise monito	ring										
25/07/2023	01:52	Night	Installation of B-Class Hoarding	Hunter Street East	27 O'Connell St (The Radisson)	60	75	70.5	100.1	-4.5	No	Validation monitoring indicated construction work was the dominant noise source.
25/07/2023	02:16	Night	Installation of B-Class Hoarding	Hunter Street East	30 Hunter St (The Grand Hotel)	60	63	62.3	74.0	-0.7	No	Validation monitoring indicated construction work was not the dominant noise source.
27/07/2023	06:24	Night	Concrete pour	The Bays	5 Lilyfield Road, Rozelle	50	49	64.4	88.6	15.4	Yes	Validation monitoring indicated construction work was not the dominant noise source.
31/07/2023	11:58	Standard	General demolition and load out	Pyrmont West	123 Pyrmont Street	60	93	65.3	84	-27.7	No	Validation monitoring indicated construction work was not the dominant noise source.
01/08/2023	18:05	Evening	Emergency Works – Hoarding repair at PYRE on Union St	Pyrmont East	63 Edward Street	52	86	61.3	87.6	-24.7	No	Validation monitoring indicated construction work was not the dominant noise source.
Real time no	ise and vib	ration monito	oring									
17/05/2023 - 16/06/2023	Continuous		Construction – Noise	Hunter Street	The Ivy (Level 5 External)	*	*	*	*		*	
17/05/2023 - 16/06/2023	Continuous		Construction – Noise	Hunter Street	The Ivy (Level 2 Office Printer Room)	*	*	*	*			
17/05/2023 - 16/06/2023	Continuous		Construction – Vibration	Hunter Street	The Ivy (Basement Carpark)	*			*			
17/05/2023 - 16/06/2023	Continuous		Construction – Noise	Hunter Street	The Radisson Blu Plaza Hotel (Basement) 27 O'Connell Street, Sydney, 2000	•						Real time noise and vibration monitoring data is available on request.
17/05/2023  16/06/2023	Continuous		Construction – Noise	Hunter Street	The Radisson Blu Plaza Hotel (Level 1) 27 O'Connell Street, Sydney, 2000							
17/05/2023 - 16/06/2023	Continuous		Construction – Vibration	Hunter Street	The Radisson Blu Plaza Hotel	*	*	*	*	*	*	



Date	Time	Works Period	Construction Activity	Activity Location	Monitoring Location	NML (dBA)	Predicted (dBA)	Recorded L <sub>eq. 15min</sub> (dBA)	LAmax	Exceedance of Predicted (dBA)	Exceedance of Predicted	Comments
					(Basement) 27 O'Connell Street, Sydney, 2000							
17/05/2023 - 16/06/2023	Continuous		Construction – Noise	Hunter Street	Tank Stream Hotel (Level 1 Office) 97-99 Pitt Street, Sydney, 2000	•						
17/05/2023 - 16/06/2023	Continuo	us	Construction – Vibration	Hunter Street	Tank Stream Hotel (Basement) 97-99 Pitt Street, Sydney, 2000	*	*		*	*		
17/05/2023 - 16/06/2023	Continuo	us	Construction – Noise	Pyrmont East	63 Edwards Street, Pyrmont, 2009	*	*	*	*		*	
17/05/2023 - 16/06/2023	Continuo	us	Construction – Vibration	Pyrmont East	63 Edwards Street, Pyrmont, 2009	*	*	*	*		*	
17/05/2023 - 16/06/2023	Continuo	us	Construction – Noise	Pyrmont West	28 Paternoster Row, Pyrmont, 2009	*	*		•	*		
17/05/2023 - 16/06/2023	Continuous		Construction – Vibration	Pyrmont West	28 Paternoster Row, Pyrmont, 2009	*	*	*	*	*	*	
17/05/2023 - 16/06/2023	Continuous		Construction – Vibration	Pyrmont	13A Union Street, Pyrmont, 2009	*	*	*	*	*	*	

<sup>\*</sup> Data is available upon request