



**SYDNEY METRO – WESTERN SYDNEY AIRPORT  
STATION BOXES AND TUNNELLING WORKS**

# EPL 21672 Monitoring Report

## April 2023

Sydney Metro Western Sydney Airport Station Boxes and Tunnelling Works

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## 1. Introduction

### 1.1. Background

The Sydney Metro Western Sydney Airport will become the transport spine for Greater Western Sydney, connecting communities and travellers with the new Western Sydney International (Nancy-Bird Walton) Airport (referred to as Western Sydney International) and the growing region.

The Project forms part of the broader Sydney Metro network. It involves the construction and operation of a 23km new metro rail line that extends from the existing Sydney Trains suburban T1 Western Line (at St Marys) in the north and the Aerotropolis (at Bringelly) in the south. The alignment includes a combination of tunnels and civil structures, including viaduct, bridges, surface and open-cut troughs between the two tunnel sections (**Error! Reference source not found.**).

The Sydney Metro Western Sydney Airport EIS was prepared in October 2020 to assess the impacts of construction and operation of the Project and was placed on public exhibition between 21 October 2020 and 2 December 2020. The Project was declared a Critical State Significant Infrastructure (CSSI) Project and is listed in Schedule 5 of *State Environmental Planning Policy (State and Regional Development)*.

The Sydney Metro Western Sydney Airport was approved by the Minister for Planning and Public Spaces on 23 July 2021 (SSI 10051) under section 5.19 of the *Environmental Planning and Assessment Act 1997* (EP&A Act).

The Project will be delivered through the following stages:

- **Advanced and Enabling Works (AEW)** – Site investigations, modification of the existing transport network, power and water supply for construction sites, utility and stormwater diversions and some demolition works.
- **Station Boxes and Tunnelling Works (SBT)** – delivered through the following sub-stages:
  - Preparatory Works (the subject of this Plan) – Including NSW (off-airport) demolition works, site levelling/grading, site access and parking, utility and temporary services works, erection of demountable buildings and noise barriers, tunnelling preparatory works and use of ancillary facilities including onsite parking.
  - Bulk Excavation and Tunnelling Works – Preparatory Works (works not completed prior to Final CEMP approval), bulk excavation, acoustic shed installation, tunnelling and cross passage installation.
- **Surface and Civil Alignment Works (SCAW)** – Construction of bridges and viaducts to cross floodplains, watercourses and existing and proposed permanent infrastructure.
- **Stations, Systems, Trains, Operations and Maintenance (SSTOM)**– Station design and fitout, testing and commissioning, and operation of the Western Sydney Airport metro service
- **Finalisation Auxiliary Works.**

Each package of work is to be delivered under separate contracts on behalf of the proponent Sydney Metro.



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Figure 1: Overview of the Project



### 1.1.1. Station Boxes and Tunnelling Works

The CPB Ghella JV has been engaged to deliver the SBT Works. The SBT Works include the design and construction of:

- Two sections of twin tunnels with a total combined length of approximately 9.8km, including associated portal structures; Orchard Hills to St Marys and Western Sydney International (WSI) airport to the new Aerotropolis Station in NSW
- Excavations at either end to enable trains to turn back and stub tunnels to enable future extensions
- Station box excavations with temporary ground support for four stations at St Marys, Orchard Hills, Airport Terminal and Aerotropolis
- Excavations for two intermediate service facilities, one in each of the tunnel sections at Claremont and Bringelly.

Completed sections of the SBT Works, including established construction worksites, will be progressively handed over to Sydney Metro to enable follow-on contractors to commence works.

### 1.2. Scope of this report

CPB Contractors Pty Limited have been issued an Environmental Protection Licence (EPL No. 21672) from the NSW Environment Protection Authority (EPA) for the Sydney Metro Western Sydney Airport Station Box and Tunnelling Package on behalf of Sydney Metro.

The EPL applies to the works approved under the Infrastructure Approval SSI-10051 associated with the delivery of Sydney Metro Western Sydney Airport SBT Works Off-airport worksites. The EPL does not apply to other Sydney Metro Western Sydney Airport works packages or On-airport SBT Worksites.

An overview of relevant jurisdiction at each SBT Worksite is provided in Table 1.

Table 1: SBT Worksite Jurisdiction

Jurisdiction	Worksite
NSW	St Marys
NSW	Claremont Meadows
NSW	Orchard Hills
On-Airport	Airport Portal Dive Structure
On-Airport	Airport Terminal and TBM shaft
On-Airport	Precast Segment Storage Facility
On-Airport	Primary Spoil Reveal
NSW	Bringelly
NSW	Aerotropolis

Note: Worksites shown in grey are within the boundary of the Western Sydney International (On-Airport), are regulated under the *Commonwealth Airports Act 1996* and are outside the scope of EPL 21672.



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This EPL Pollution Monitoring Report provides the results of all pollution monitoring required to be measured or monitored by the licensee of EPL 21672 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 2 provides a summary of the EPL 21672 details.

Table 2: Licence details

Licence Details	
Number:	21672
Copy of Licence	<a href="#">ViewPOEOLicence.aspx (nsw.gov.au)</a>
Anniversary Date	30-May
Licensee	CPB Contractors Pty Limited
Premises	Sydney Metro Western Sydney Airport Station Box and Tunnelling Package St Marys to Orchard Hills and Bringelly to Aerotropolis St Marys NSW 2760
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 SBT Works 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 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 3 provides a summary of the pollution monitoring requirements of EPL 21672.



Table 3: EPL 21672 Pollution Monitoring Requirements

EPL Condition	Requirement	Report Reference
<b>Weather</b>		
M5.1	<p>The licensee must monitor and record temperature, wind direction, wind velocity and rainfall at either the project weather station, or through analysis of equivalent weather information obtained from the Australian Bureau of Meteorology. Monitoring must:</p> <ul style="list-style-type: none"> <li>a) be representative of the premises;</li> <li>b) commence prior to any works that may cause sediment to leave the premises; and</li> <li>c) continue to be operated until soil disturbance activities cease at the premises and the site has been stabilised.</li> </ul> <p>The rainfall monitoring data collected in compliance with this condition can be used to determine compliance with condition L2.5</p>	Section 3.1 Annexure A
<b>Noise</b>		
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"> <li>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"> <li>i. a description of the proposed works and activities outside of standard construction hours;</li> <li>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</li> <li>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.</li> </ul> </li> <li>b) Undertake noise monitoring in accordance with the monitoring plan required by condition L5.9(a)(iii).</li> </ul>	Section 3.2 Annexure B
M4.4	<p>The licensee must undertake noise and vibration monitoring as directed by an authorised officer of the EPA. Where the monitoring is requested to take place on private land (for example a residential property) the licensee must request permission to access the premises in advance and keep a record of permission requests and responses. If a licensee is unable to obtain permission, the licensee must undertake the monitoring at an indicative location where possible and they must provide the response (including any nil response) to the EPA.</p>	N/A  No direction received from EPA to undertake noise and vibration monitoring during this reporting period.



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EPL Condition	Requirement	Report Reference																				
<p><b>Community Agreements</b></p> <p>The licensee may work outside standard construction hours (as defined in L5.1) in circumstances other than those permitted under conditions L5.3, L5.4, or any other condition of the licence, subject to the condition outlined Section E1.</p>																						
E1.4	A noise validation monitoring plan must be submitted to the EPA for approval as part of the community agreement documentation prior to any OOHW occurring.	Triggered																				
E1.5	<p>Validation monitoring must be undertaken for any OOHW that are the approved under condition E1.1 and must:</p> <p>a) be undertaken in accordance with the monitoring plan prepared under condition E1.4;</p> <p>b) be performed by a Competent Person;</p> <p>c) be performed on at least the first 2 occasions (day, evening, nights) where OOHW will be undertaken and are likely to impact Noise Sensitive Receivers;</p> <p>d) be performed on any other occasion (day, evening, night) where the nature of the works is likely to cause greater noise impacts than the first 2 occasions;</p> <p>e) be representative of the impacts in terms of monitoring locations, time and duration of measurements; and</p> <p>f) be recorded and provided to an EPA officer upon request</p>	Triggered																				
<p><b>Water</b></p>																						
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"> <tbody> <tr> <td>1</td> <td>Discharge and Monitoring</td> <td>Discharge and Monitoring</td> <td>The outlet(s) of the sediment basin(s) on the Orchard Hills site discharging to South Creek referred to in Condition P1.2</td> </tr> <tr> <td>2</td> <td>Discharge and Monitoring</td> <td>Discharge and Monitoring</td> <td>The outlet(s) of the sediment basin(s) on the Claremont site discharging to South Creek referred to in Condition P1.2</td> </tr> <tr> <td>3</td> <td>Discharge and Monitoring</td> <td>Discharge and Monitoring</td> <td>The outlet(s) of the sediment basin(s) on the St Marys site discharging to South Creek referred to in Condition P1.2</td> </tr> <tr> <td>4</td> <td>Discharge and Monitoring</td> <td>Discharge and Monitoring</td> <td>The outlet(s) of the sediment basin(s) on the Bringelly site discharging to Badgerys Creek referred to in Condition P1.2</td> </tr> <tr> <td>5</td> <td>Discharge and Monitoring</td> <td>Discharge and Monitoring</td> <td>The outlet(s) of the sediment basin(s) on the Aerotropolis site discharging to Thompson Creek referred to in Condition P1.2</td> </tr> </tbody> </table>	1	Discharge and Monitoring	Discharge and Monitoring	The outlet(s) of the sediment basin(s) on the Orchard Hills site discharging to South Creek referred to in Condition P1.2	2	Discharge and Monitoring	Discharge and Monitoring	The outlet(s) of the sediment basin(s) on the Claremont site discharging to South Creek referred to in Condition P1.2	3	Discharge and Monitoring	Discharge and Monitoring	The outlet(s) of the sediment basin(s) on the St Marys site discharging to South Creek referred to in Condition P1.2	4	Discharge and Monitoring	Discharge and Monitoring	The outlet(s) of the sediment basin(s) on the Bringelly site discharging to Badgerys Creek referred to in Condition P1.2	5	Discharge and Monitoring	Discharge and Monitoring	The outlet(s) of the sediment basin(s) on the Aerotropolis site discharging to Thompson Creek referred to in Condition P1.2	Section 3.3 Annexure C
1	Discharge and Monitoring	Discharge and Monitoring	The outlet(s) of the sediment basin(s) on the Orchard Hills site discharging to South Creek referred to in Condition P1.2																			
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4	Discharge and Monitoring	Discharge and Monitoring	The outlet(s) of the sediment basin(s) on the Bringelly site discharging to Badgerys Creek referred to in Condition P1.2																			
5	Discharge and Monitoring	Discharge and Monitoring	The outlet(s) of the sediment basin(s) on the Aerotropolis site discharging to Thompson Creek referred to in Condition P1.2																			
L2.1	For each monitoring/discharge point or utilisation area specified in the table below (by a point number), the concentration of a pollutant discharged at that point, or applied to that area, must not exceed the concentration limits specified for that pollutant in the table.	No discharge locations used yet																				



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EPL Condition	Requirement	Report Reference																
M2.2	<p><b>POINT 1,2,3,4,5</b></p> <table border="1"> <thead> <tr> <th>Pollutant</th> <th>Units of measure</th> <th>Frequency</th> <th>Sampling Method</th> </tr> </thead> <tbody> <tr> <td>Oil and Grease</td> <td>Visible</td> <td>Special Frequency 1</td> <td>Visual Inspection</td> </tr> <tr> <td>pH</td> <td>pH</td> <td>Special Frequency 1</td> <td>Probe</td> </tr> <tr> <td>Turbidity</td> <td>nephelometric turbidity units</td> <td>Special Frequency 1</td> <td>Probe</td> </tr> </tbody> </table>	Pollutant	Units of measure	Frequency	Sampling Method	Oil and Grease	Visible	Special Frequency 1	Visual Inspection	pH	pH	Special Frequency 1	Probe	Turbidity	nephelometric turbidity units	Special Frequency 1	Probe	Noted
Pollutant	Units of measure	Frequency	Sampling Method															
Oil and Grease	Visible	Special Frequency 1	Visual Inspection															
pH	pH	Special Frequency 1	Probe															
Turbidity	nephelometric turbidity units	Special Frequency 1	Probe															
M2.3	<p>For the purposes of Condition M2.2 and the Table thereto, ‘Special Frequency 1’ means:</p> <p>a) less than 24 hours prior to a controlled discharge and daily for any continued controlled discharge, when it is safe to do so; and</p> <p>b) when rainfall causes a discharge from a sediment basin which has not been emptied within the design management period following cessation of a rainfall event, when it is safe to do so.</p>	No discharge locations used yet																
E2.1	<p>The licensee must undertake monthly surface water monitoring at discharge point 1 identified in Condition P1.1 for a minimum of 6 months from the date of issue of this licence. Monthly monitoring results must include:</p> <p>a) quality and quantity of all parameters that are identified in the table in E2.2 at each discharge point; and</p> <p>b) results must be submitted to the EPA no more than 2 weeks after each monthly monitoring event has occurred for a minimum of 6 months from the date of issue of this licence.</p>	No discharge locations used yet																
<b>Additional Monitoring Conditions</b>																		
M4.5	<p>The licensee must undertake monitoring, sampling, video recording and/or take photographs:</p> <p>a) if the EPA or licensee reasonably suspects that an event has occurred at the premises or in connection with the carrying out of the activities that has caused, is causing, is likely to cause or has the potential to cause material harm to the environment (whether the harm occurs on or off premises to which the licence applies);</p> <p>b) as soon as practicable; and</p> <p>c) as directed by an authorised officer.</p>	Noted																



### 3. Monitoring

Section 3 presents a summary of the monitoring programs completed in the reporting period from 1 April 2023 to 30 April 2023.

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

#### 3.1. Meteorological Data

Meteorological data for the Project has been taken from Penrith Lakes Automatic Weather Station (AWS).

The total rainfall recorded during the reporting period was 103.4 mm with 13 days exceeding one millimetre of rain and 4 days exceeding 10 mm of rain.

During the reporting period, there were 13 days where the maximum wind gust recorded was greater than 25 km/hr and 1 day where the maximum wind gust recorded was greater than 50 km/h and 0 days where the maximum wind gust was greater than 60 km/hr. Winds recorded during the reporting period were predominantly Southern component, however there was variability throughout the month.

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

This information is used daily on site to assess daily activities and consider mitigation measures as required.

Table 4 Weather summary and trigger weather events for reporting period<sup>1</sup>

Weather Event	Observation
Minimum temperature	9.2°C
Maximum temperature	29.7°C
Total rainfall	103.4mm
Number of days with rain (>1mm)	12 Day
Number of days with rain (>10mm)	4 Days
Number of days with >25km/hr wind <sup>2</sup>	13 Days
Number of days with >50km/hr wind	1 Day
Number of days with >60km/hr wind	0 Days

<sup>1</sup>Weather summary based on data from the 1 April 2023 to 30 April 2023 (30 days).

<sup>2</sup>Weather data from Penrith Lakes AWS {station 067113}.



## 3.2. Noise

Noise monitoring is a requirement of the following conditions of EPL 21672:

- L5.9, E1.4 Monitoring to validate the noise predictions for works undertaken outside of the standard construction hours as per the construction noise impact assessment
- M7.6 Noise monitoring following noise and vibration complaints
- M4.4 Noise and vibration monitoring as directed by an authorised officer of the EPA.

Table 5 provides a summary of noise monitoring events conducted during the reporting period. Detailed noise monitoring results and comments are presented in Annexure B.

Table 5: Summary of noise monitoring for reporting period

Date	Monitoring Location	Attended/Continuous	Description
11/04/2023	77 Kent Road	Attended	TBM Assembly & station box excavation
14/04/2023	On-site (inside hoarding)	Attended	Anchor Drilling
14/04/2023	2 Picnic Place	Attended	Anchor Drilling
28/04/23	49 Lansdowne Road	Attended	Shaft Excavation

Attended monitoring undertaken during this reporting period measured exceedances of the predicted noise levels during two monitoring events (Table 6).

Table 6: Recorded exceedances within reporting period

Date	Monitoring Location	Reason for exceedance
14/04/2023	2 Picnic Place, Claremont Meadows	Exceedances attributed to local traffic, aircraft, and the local communities' activities.
28/04/23	49 Lansdowne Road, Orchard Hills	Exceedances attributed to local traffic, and birds chirping.

## 3.3. Discharge to Water

### 3.3.1 Discharge to Water

The discharge of water from sediment basins and settling containers occurred at the following discharging monitoring points/locations during this reporting period:

- SBT-003
- SBT-010
- SBT-012
- SBT-014

Discharge to natural waterways and local stormwater systems is directly linked to the surface water monitoring program, where monitoring is undertaken to:



- Measure the effectiveness of environmental controls in minimising and managing environmental impacts
- Demonstrate compliance with relevant stakeholder conditions

The EPL discharge criteria apply to the sediment basins and settling containers identified and located on Electronic File EF22/5394 and approved by the EPA. Discharge to water events must adhere to the following Limit Conditions of EPL 21672:

- L1.1 Except as may be expressly provided in any other condition of this licence, the licensee must comply with section 120 of the Protection of the Environment Operations Act 1997.
- L2.1 For each monitoring/discharge point or utilisation area specified in the table/s below (by a point number), the concentration of a pollutant discharged at that point, or applied to that area, must not exceed the concentration limits specified for that pollutant in the table.
- L2.2 Where a pH quality limit is specified in the table, the specified percentage of samples must be within the specified ranges.
- L2.3 To avoid any doubt, this condition does not authorise the pollution of waters by any pollutant other than those specified in the table/s.
- L2.4 Water and/or Land Concentration Limits

Basins and discharge points are summarised in Table 7.

The discharge events and water quality monitoring data during the reporting period are summarised in Annexure C.



Table 6: Discharge Water Quality (Condition P1.1: Points 6,7,8,9,10)

ID	Construction Status	EPA ID	Easting	Northing	Description of location of discharge point	Catchment name	Name of nearest waters	Direct discharge to waters	Location description	Date added	Revision Added
SBT-001	Inactive	3	294119.4684	6261927.807	The outlet of the sediment basin(s) on the St Marys site North of Station Street	South Creek	South Creek	No	Discharge into local stormwater system	4/10/2022	1
SBT-002	Active	3	294041.6184	6261905.9783	The outlet of the sediment basin(s) on the St Marys site at former Plaza	South Creek	South Creek	No	Discharge into local stormwater system	4/10/2022	1
SBT-003	Active	2	292018.2099	6261255.3813	The outlet of the sediment basin on the Claremont Meadows Site south of Great Western Highway	South Creek	Claremont Creek	No	Discharge into local stormwater system	4/10/2022	1
SBT-004	Active	2	292072.0196	6261326.0789	The outlet of the sediment basin on the Claremont Meadows site West of Gipps Street	South Creek	Claremont Creek	No	Discharge into local stormwater system	4/10/2022	1
SBT-005	Inactive	1	292053.3538	6259530.3707	The outlet of the sediment basin on the Orchard Hills site	South Creek	South Creek	No	Discharge into vegetated / stabilized land	4/10/2022	1
SBT-006	Inactive	1	292065.7524	6259303.9277	The outlet of the sediment basin on the Orchard Hills site south of M4	South Creek	South Creek	No	Discharge into vegetated / stabilized land	4/10/2022	1
SBT-007	Inactive	1	291857.7443	6259276.8491	The outlet of the sediment basin on the Orchard Hills site east of Kent Road	South Creek	Unnamed tributary of South Creek	Yes	Discharge into creek	4/10/2022	1
SBT-008	Active	1	291857.4535	6259221.8921	The outlet of the sediment basin on the Orchard Hills site east of Kent Road	South Creek	Unnamed tributary of South Creek	Yes	Discharge into creek	4/10/2022	1
SBT-009	Inactive	1	291808.8936	6258854.9307	The outlet of the sediment basin on the Orchard Hills site north of Lansdowne Road	South Creek	South Creek	No	Discharge into vegetated / stabilized land	4/10/2022	1
SBT-010	Active	1	291963.0058	6258833.1224	The outlet of the sediment basin on the Orchard Hills site north of Lansdowne Road	South Creek	South Creek	No	Discharge into vegetated / stabilized land	4/10/2022	1
SBT-011	Active	1	291975.5092	6258798.5199	The outlet of the sediment basin on the Orchard Hills site south of Lansdowne Road	South Creek	South Creek	No	Discharge into vegetated / stabilized land	4/10/2022	1
SBT-012	Active	1	291803.9504	6258604.2804	The outlet of the sediment basin on the Orchard Hills site south of Lansdowne Road	South Creek	South Creek	No	Discharge into vegetated / stabilized land	4/10/2022	1
SBT-013	Active	4	289481.8143	6245851.2954	The outlet of the sediment basin on the Bringelly site west of Derwent Road	South Creek	Badgerys Creek	No	Discharge into vegetated / stabilized land	4/10/2022	1
SBT-014	Active	5	290853.6384	6243780.4655	The outlet of the sediment basin on the Aerotropolis site east side of Aerotropolis	South Creek	Thompsons Creek	No	Discharge into vegetated / stabilized land	4/10/2022	1



### 3.4. Receiving Waterways

As per Condition E2.1 of the EPL, weekly surface water monitoring of receiving waterways commenced on 14 February 2023 and will be undertaken for a minimum of six months. For each sampling event undertaken during the reporting period, samples were taken at each monitoring location for the analytes listed in Condition M2.1 for Points 6,7,8,9 and 10.

Wet weather monitoring is carried as per the following:

- A minimum of once per 3 months where rainfall does not exceed 25mm
- In the event of a continuous rainfall event of >27.4mm is received in the local catchment during a 24-hour period (as recorded at the SBT Works rain gauge(s) or nearby weather station) and has generated runoff from site.

Surface water monitoring at receiving water ways was undertaken on the following dates during this reporting period:

- 4 April 2023
- 11 April 2023
- 18 April 2023
- 24 April 2023

A review of the data for these monitoring events can be found in Annexure D.



## 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.



**Annexure A Weather Observations**

Table 7: Weather Observations: Penrith Lakes AWS {station 067113}.

Date	Temperatures		Rain	9am		3pm	
	Min	Max		Temperature	Relative Humidity	Min	Max
	°C			°C	%	°C	°C
1/04/2023	14.9	20.5	3.2	17.5	1/04/2023	14.9	20.5
2/04/2023	15.6	23.6	0	18.4	2/04/2023	15.6	23.6
3/04/2023	10.6	27.9	0	20.3	3/04/2023	10.6	27.9
4/04/2023	10.6	29.3	0	20.6	4/04/2023	10.6	29.3
5/04/2023	11.6	27.8	0	19	5/04/2023	11.6	27.8
6/04/2023	18	19	1.6	18	6/04/2023	18	19
7/04/2023	16.8	19.8	11.6	18.4	7/04/2023	16.8	19.8
8/04/2023	16.8	22.9	39.6	17.8	8/04/2023	16.8	22.9
9/04/2023	15.8	24	11.8	19.8	9/04/2023	15.8	24
10/04/2023	16.3	26.6	2	20.9	10/04/2023	16.3	26.6
11/04/2023	16.5	29.7	0	17.9	11/04/2023	16.5	29.7
12/04/2023	17.3	25.1	0	18.9	12/04/2023	17.3	25.1
13/04/2023	16.4	23	0.2	19.4	13/04/2023	16.4	23
14/04/2023	13.6	25.1	0.4	19.2	14/04/2023	13.6	25.1
15/04/2023	12.1	26.2	0	17.4	15/04/2023	12.1	26.2
16/04/2023	12.8	26.7	0	18.9	16/04/2023	12.8	26.7
17/04/2023	13	25.4	0	15.9	17/04/2023	13	25.4
18/04/2023	11.7	28.2	0	17.9	18/04/2023	11.7	28.2
19/04/2023	13.1	29.6	0	19.6	19/04/2023	13.1	29.6
20/04/2023	12.2	26.1	10.2	19.9	20/04/2023	12.2	26.1
21/04/2023	9.2	23.9	0	16.8	21/04/2023	9.2	23.9
22/04/2023	14.7	21.2	1.2	17.5	22/04/2023	14.7	21.2
23/04/2023	14.3	24.7	4.2	19	23/04/2023	14.3	24.7
24/04/2023	13.2	24.4	1	18.4	24/04/2023	13.2	24.4
25/04/2023	14.8	21.9	0	17.3	25/04/2023	14.8	21.9
26/04/2023	13.4	20.6	0.2	16.9	26/04/2023	13.4	20.6
27/04/2023	15.6	18.9	0.6	17.8	27/04/2023	15.6	18.9
28/04/2023	16.4	20.3	5	17.4	28/04/2023	16.4	20.3
29/04/2023	14	27.7	8.2	18.2	29/04/2023	14	27.7
30/04/2023	17.7	21.4	2.4	17.8	30/04/2023	17.7	21.4



**SYDNEY METRO – WESTERN SYDNEY AIRPORT  
STATION BOXES AND TUNNELLING WORKS**

Table 8: Wind Observations: Penrith Lakes AWS {station 067113}.

Date	Maximum wind gusts			9am		3pm	
	Direction	Speed km/h	Time Local	Temperature %	Direction °C	Speed km/h	Time Local
1/04/2023	SSW	46	10:08	1/04/2023	SSW	46	10:08
2/04/2023	SW	33	8:40	2/04/2023	SW	33	8:40
3/04/2023	NW	39	10:48	3/04/2023	NW	39	10:48
4/04/2023	WNW	31	13:48	4/04/2023	WNW	31	13:48
5/04/2023	SE	26	16:54	5/04/2023	SE	26	16:54
6/04/2023	SSW	26	17:53	6/04/2023	SSW	26	17:53
7/04/2023	S	28	17:25	7/04/2023	S	28	17:25
8/04/2023	ESE	20	14:42	8/04/2023	ESE	20	14:42
9/04/2023	E	17	12:48	9/04/2023	E	17	12:48
10/04/2023	NNE	17	12:22	10/04/2023	NNE	17	12:22
11/04/2023	ESE	33	16:07	11/04/2023	ESE	33	16:07
12/04/2023	S	22	1:58	12/04/2023	S	22	1:58
13/04/2023	SSE	37	14:46	13/04/2023	SSE	37	14:46
14/04/2023	NE	15	11:32	14/04/2023	NE	15	11:32
15/04/2023	NNE	22	13:04	15/04/2023	NNE	22	13:04
16/04/2023	ESE	17	16:46	16/04/2023	ESE	17	16:46
17/04/2023	NNE	20	13:27	17/04/2023	NNE	20	13:27
18/04/2023	NE	13	16:21	18/04/2023	NE	13	16:21
19/04/2023	W	52	20:46	19/04/2023	W	52	20:46
20/04/2023	NW	26	1:14	20/04/2023	NW	26	1:14
21/04/2023	ESE	37	14:08	21/04/2023	ESE	37	14:08
22/04/2023	SE	22	13:03	22/04/2023	SE	22	13:03
23/04/2023	ESE	22	17:03	23/04/2023	ESE	22	17:03
24/04/2023	ESE	24	16:51	24/04/2023	ESE	24	16:51
25/04/2023	SSE	19	9:08	25/04/2023	SSE	19	9:08
26/04/2023	SW	15	21:25	26/04/2023	SW	15	21:25
27/04/2023	S	9	3:58	27/04/2023	S	9	3:58
28/04/2023	NNE	22	13:17	28/04/2023	NNE	22	13:17
29/04/2023	SW	13	3:38	29/04/2023	SW	13	3:38
30/04/2023	N	31	10:42	30/04/2023	N	31	10:42



**Annexure B Noise Monitoring Results**

Table 9: Noise Monitoring Results

Date	Time	Works Period	Construction Activity	Activity Location	Monitoring Location	NML (dBA)	Predicted (dBA)	Additional Mitigation Measures	Recorded L <sub>eq, 15min</sub> (dBA)	L <sub>Amx</sub>	L <sub>Amin</sub>	Exceedance of Predicted (dBA)	Exceedance of Predicted	Comments
11/04/2023	6:15pm	OOHW1	TBM Assembly	SBT Orchard Hills	77 Kent Road, Orchard Hills	49	49	LB	42.5	67.2	33.2	-6.5	No	Verification noise monitoring. Extraneous noise was found to be the dominant noise source. Construction activities were inaudible during this monitoring event.
14/04/2023	1:50pm	Day (Standard)	Anchor Drilling	SBT Claremont Meadows	On-site (Inside Hoarding)	47	N/A	-	55.9	66.1	51.6	N/A	N/A	Verification noise monitoring. On-site monitoring causes for the recorded L <sub>eq, 15 min</sub> to be subtracted by 10dB. It is necessary to consider solid barrier (on-site hoarding)
14/04/2023	3:35pm	Day (Standard)	Anchor Drilling	SBT Claremont Meadows	2 Picnic Place, Claremont Meadows	47	47	-	48.9	64.9	41.1	1.9	Yes	Verification noise monitoring. Extraneous noise was found to be the dominant noise source during this monitoring event. Exceedances were caused by local traffic, aircraft, and the local communities' activities.
28/04/2023	10:33am	Day (Standard)	Shaft Excavation	SBT Bringelly	49 Lansdown Road, Bringelly	45	56	-	57.1	86.5	45.2	1.1	Yes	Verification noise monitoring. Construction works were the main source of noise during this monitoring event. Exceedances were caused due to local traffic, and birds chirping.

**OOHW1** is defined as:

- a. 6:00pm to 10:00pm (evenings) Monday to Saturday
- b. 7:00am to 8:00am and 1:00pm to 10:00pm (day & evening) Saturday and
- c. 8:00am to 6:00pm Sunday and public holidays (days).

**OOHW2** is defined as:

- a. 10:00pm to 7:00am (nights) Monday to Saturday and
- b. 6:00pm to 8:00am (nights) Sundays and public holidays.

**Additional Mitigation Measures**

- LB = Letter box drops
- M = Monitoring
- SN = Specific Notification
- RO = Project Specific Respite Offer
- IB = Individual Briefing
- PC = Phone Calls and Emails
- AA = Alternate Accommodation



**Annexure C Discharge to water**

Table 11: SBT Discharge Point Register (electronic file EF22/5394) (Rev 1, submitted 4th of October 2022)

Discharge Monitoring Point ID	Type of Monitoring Point	Type of Discharge Point	Date	Discharge Permit No.	Oil and Grease Visual Inspection	pH (6.5 – 8.5)	Turbidity (50 NTU)
SBT-010	Sediment basin discharge	Discharge into vegetated / stabilized land	4/04/2023	069	Not Visible	8.5	7
SBT-012	Basins & Settling Containers	Discharge into vegetated / stabilized land	13/04/2023	068	Not Visible	8.49	36
SBT-014	Basins & Settling Containers	Discharge into vegetated / stabilized land	13/04/2023	070	Not Visible	8.1	42
SBT-014	Basins & Settling Containers	Discharge into vegetated / stabilized land	13/04/2023	074	Not Visible	7.29	32
SBT-012	Basins & Settling Containers	Discharge into vegetated / stabilized land	13/04/2023	082	Not Visible	7.49	46
SBT-003	Basins & Settling Containers	Discharge into local stormwater system	26/04/2023	075	Not Visible	7.33	45
SBT-014	Basins & Settling Containers	Discharge into vegetated / stabilized land	26/04/2023	077	Not Visible	7.2	14
SBT-014	Basins & Settling Containers	Discharge into vegetated / stabilized land	26/04/2023	078	Not Visible	7.1	12



**Annexure D Surface Water Monitoring at Receiving Waterways**

Table 10: April Surface Water Monitoring Results at Receiving Waterways at SBT 6 (OHE)

Analyte	Post Rain Event	SBT-6U	SBT-6A	SBT-6D	SBT-6U	SBT-6A	SBT-6D	SBT-6U	SBT-6A	SBT-6D	SBT-6U	SBT-6A	SBT-6D
		No			No			No			No		
		4/04/2023			11/04/2023			18/04/2023			24/04/2023		
Unit													
pH	pH	6.95	6.97	6.84	7.86	7.85	7.83	6.19	8.49	8.42	7.17	7.29	7.31
Electrical Conductivity	µS/cm	2430	1690	4580	1740	1670	1650	363	2330	2360	2280	2310	2310
Total Suspended Solids	mg/L	28	43	30	54	69	61	204	36	37	50	48	61
Aluminium	mg/L	1.61	1.5	1.64	0.62	0.85	1.62	6.75	0.51	0.26	0.26	0.24	0.24
Chromium (VI)	mg/L	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.001	0.001	0.001
Copper	mg/L	0.004	0.004	0.004	0.002	0.002	0.002	0.016	0.002	0.002	<0.001	<0.001	<0.001
Zinc	mg/L	0.017	0.019	0.018	0.008	0.008	0.008	0.051	<0.005	0.005	<0.005	0.013	<0.005
Total Phosphorous	mg/L	0.07	0.07	0.07	0.008	0.016	0.008	0.48	0.05	0.04	0.16	0.08	0.11
Total Nitrogen	mg/L	1.5	1.6	1.5	0.9	1.6	1.1	2	0.8	0.7	1.6	1.1	1.3
Ammonia	mg/L	0.07	0.07	0.07	0.02	<0.01	0.04	0.06	0.03	0.03	0.04	0.02	0.03

Table 11: April Surface Water Monitoring Results at Receiving Waterways at SBT 7 (CMF)

Analyte	Post Rain Event	SBT-7U	SBT-7A	SBT-7D	SBT-7U	SBT-7A	SBT-7D	SBT-7U	SBT-7A	SBT-7D	SBT-7U	SBT-7A	SBT-7D
		No			No			No			No		
		4/04/2023			11/04/2023			18/04/2023			24/04/2023		
Unit													
pH	pH	7.12	7.04	6.99	7.85	7.75	7.71	8.34	8.12	8.06	7.68	5.37	7.67
Electrical Conductivity	µS/cm	997	924	1030	4370	2650	4550	1560	4080	4850	1240	921	3060
Total Suspended Solids	mg/L	21	18	18	<5	15	<5	30	6	8	34	47	10
Aluminium	mg/L	0.12	0.24	0.18	0.03	0.36	0.10	1.08	0.06	0.14	0.51	0.50	0.34
Chromium (VI)	mg/L	0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Copper	mg/L	0.004	0.006	0.002	0.003	0.002	0.003	0.005	0.002	0.001	0.006	0.029	<0.001
Zinc	mg/L	0.013	0.014	0.008	0.006	0.013	0.009	0.04	0.007	<0.005	0.024	0.036	0.008
Total Phosphorous	mg/L	0.04	0.04	0.04	0.06	0.015	0.06	0.06	0.06	0.06	0.11	0.15	0.07
Total Nitrogen	mg/L	1.5	0.9	1.0	1.8	1.0	1.7	1.3	0.7	1.6	1.6	1.8	1.2
Ammonia	mg/L	0.1	0.11	0.04	0.18	0.31	0.08	0.26	0.14	0.08	0.21	0.18	0.08



Table 12: April Surface Water Monitoring Results at Receiving Waterways at SBT 8 (STM)

Analyte	Post Rain Event	SBT-8U	SBT-8A	SBT-8D	SBT-8U	SBT-8A	SBT-8D	SBT-8U	SBT-8A	SBT-8D	SBT-8U	SBT-8A	SBT-8D
		No			No			No			No		
		4/04/2023			11/04/2023			18/04/2023			24/04/2023		
Unit													
pH	pH	7.17	7.15	7.07	5.41	7.78	5.15	8.18	8.07	8.15	7.72	7.7	7.69
Electrical Conductivity	µS/cm	1150	1160	1310	1110	1140	1110	1530	1450	1450	1470	1480	1460
Total Suspended Solids	mg/L	28	33	21	28	21	23	19	18	14	15	16	18
Aluminium	mg/L	0.56	1.38	0.68	0.45	0.30	0.34	0.45	0.50	0.39	0.24	0.29	0.11
Chromium (VI)	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Copper	mg/L	0.002	0.006	0.003	0.002	0.002	0.002	0.002	0.002	0.002	<0.001	<0.001	<0.001
Zinc	mg/L	0.008	0.027	0.009	0.01	0.008	0.006	<0.005	<0.005	<0.005	<0.005	<0.005	0.005
Total Phosphorous	mg/L	0.08	0.05	0.08	0.05	0.05	0.07	0.07	0.06	0.04	0.05	0.05	0.06
Total Nitrogen	mg/L	0.9	0.6	0.9	0.8	0.7	2.9	0.8	0.7	0.7	0.8	1.3	0.9
Ammonia	mg/L	0.03	0.02	0.04	0.06	0.06	0.07	0.01	0.01	0.02	0.08	0.06	0.04

Table 13: April Surface Water Monitoring Results at Receiving Waterways at SBT 9 (BSF)

Analyte	Post Rain Event	SBT-9U	SBT-9A	SBT-9D	SBT-9U	SBT-9A	SBT-9D	SBT-9U	SBT-9A	SBT-9D	SBT-9U	SBT-9A	SBT-9D
		No			No			No			No		
		4/04/2023			11/04/2023			18/04/2023			24/04/2023		
Unit													
pH	pH	7.12	7.06	7.61	7.72	7.81	7.69	8.29	8.15	8.08	7.91	7.9	7.89
Electrical Conductivity	µS/cm	2320	1780	1860	3240	3220	3270	2670	2730	2720	2860	2860	2850
Total Suspended Solids	mg/L	18	18	39	7	<5	<5	17	8	8	10	14	10
Aluminium	mg/L	1.7	1.8	1.77	0.27	0.27	0.27	0.81	0.59	0.54	0.31	0.34	0.26
Chromium (VI)	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Copper	mg/L	0.008	0.008	0.008	0.005	0.005	0.005	0.006	0.006	0.001	0.003	0.002	0.002
Zinc	mg/L	0.006	0.005	0.006	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Total Phosphorous	mg/L	0.06	0.05	0.07	0.04	0.04	0.03	0.05	0.04	0.04	0.04	0.05	0.06
Total Nitrogen	mg/L	3	2.3	1.7	1.0	1.0	1.0	0.9	0.7	0.8	0.8	1.0	0.9
Ammonia	mg/L	0.08	0.09	0.09	0.06	0.012	0.03	0.02	0.01	<0.01	0.04	0.02	0.02



Table 14: April Surface Water Monitoring Results at Receiving Waterways at SBT 10 (AEC)

Analyte	Post Rain Event	SBT-10U	SBT-10A	SBT-10D	SBT-10U	SBT-10A	SBT-10D	SBT-10U	SBT-10A	SBT-10D	SBT-10U	SBT-10A	SBT-10D
		No			No			No			No		
		4/04/2023			11/04/2023			18/04/2023			24/04/2023		
pH	pH	7.07	7.12	7.16	5.52	5.83	5.5	6.09	6.2	6.06	5.62	5.61	5.6
Electrical Conductivity	µS/cm	61	532	468	816	860	789	512	536	508	542	541	539
Total Suspended Solids	mg/L	7	6	9	11	8	9	6	8	8	12	12	12
Aluminium	mg/L	0.75	0.96	0.98	0.78	0.59	0.40	0.86	0.75	0.9	1.21	1.19	0.9
Chromium (VI)	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Copper	mg/L	0.002	0.002	0.002	0.002	0.001	0.001	0.001	0.001	0.001	<0.001	<0.001	<0.001
Zinc	mg/L	<0.005	<0.005	0.006	0.012	0.006	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Total Phosphorous	mg/L	0.04	0.04	0.05	0.03	0.05	0.04	0.03	0.04	0.03	0.07	0.05	0.05
Total Nitrogen	mg/L	0.7	0.8	0.7	0.5	0.5	0.5	0.4	0.4	0.4	0.7	0.6	0.6
Ammonia	mg/L	0.01	0.02	0.02	0.02	0.07	0.01	0.02	<0.01	0.01	0.02	0.03	0.02

