



EPL 21423 Pollution Monitoring Report – March 2023

Sydney Metro City & Southwest – Line-wide Works

Document number:	SCLWW-SYC-CSW-EM-REP-000034
Revision:	0

Document Approval

Rev.	Date	Prepared by	Approved by	Remarks
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Revision Details

Revision	Details
0	For Information

Contents

1. Introduction.....	3
1.1 Project Summary	3
1.2 Scope of this report	3
2. Reporting Requirements.....	4
3. Water Quality (Condition M2.1)	5
4. Noise and Vibration (Condition M4.1).....	9
4.1 Noise Monitoring (M4.1)	9
4.2 Vibration Monitoring (M4.1)	9
5. Noise and Vibration (Condition M4.4).....	10
5.1 Noise Monitoring (M4.4)	10
5.2 Vibration Monitoring (M4.4)	10
6. Weather (Condition M5.1)	11
7. Noise and Vibration (Condition M7.5).....	14
7.1 Noise Monitoring (M7.5)	14
7.2 Vibration Monitoring (M7.5)	14
8. Correction log.....	14

1. Introduction

1.1 Project Summary

The Sydney Metro City & Southwest (SMCSW) is the second portion of the new standalone rail network known as the Sydney Metro, which is Australia's largest public transport infrastructure project and a priority rail project for the NSW Government. The project will extend Sydney Metro Northwest to the CBD and beyond to Bankstown. The project is being delivered through a suite of contracts for the tunnels, stations, Line-wide infrastructure and systems. Line-wide is a key component of the SMCSW, with works taking place over the full length of the project as shown in Figure 1 below:

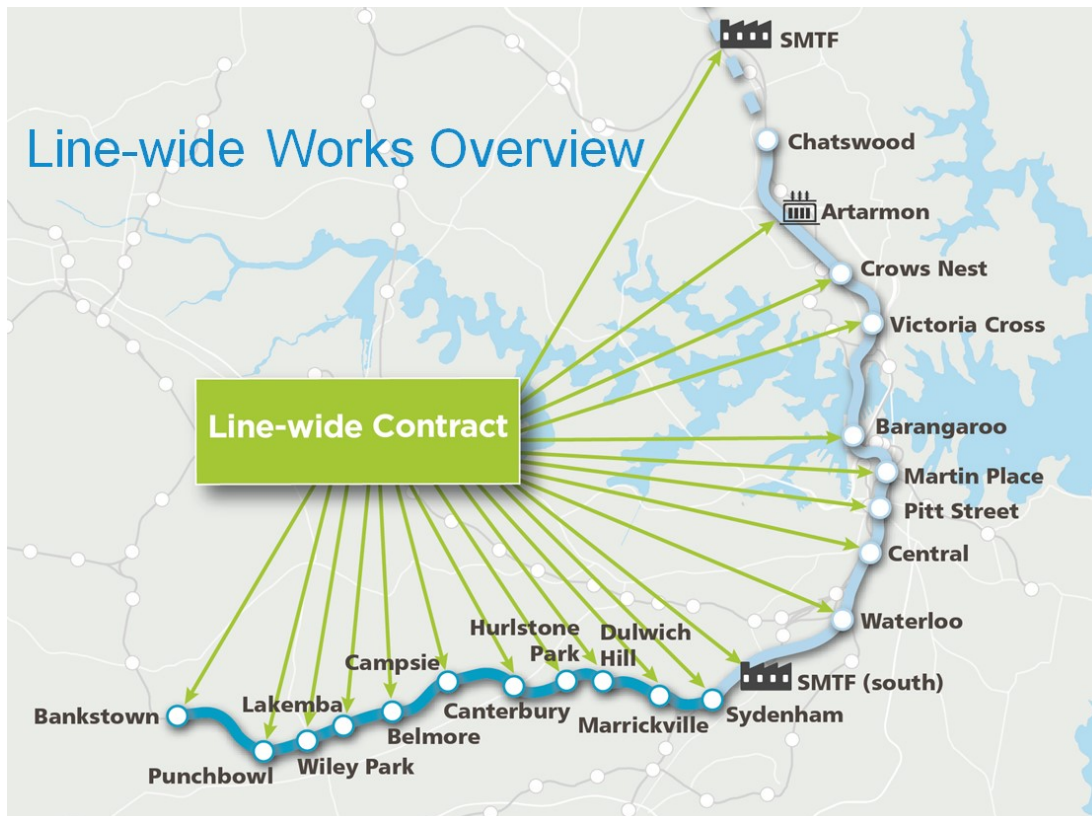


Figure 1: Line-wide Locations

1.2 Scope of this report

CPB Contractors Pty Ltd obtained the Environment Protection Licence (EPL No. 21423) from the NSW Environment Protection Authority for the Line wide (LW) Works on behalf of the Systems Connect CPB and UGL (SCLWW) Joint Venture. The licence is for construction works relating to Rail Systems Activities as defined under Schedule 1 of the Protection of the Environment Operations Act, 1997 (POEO Act). EPL No. 21423 covers the Line-wide works under CSSI 7400 between Chatswood and Sydenham.

The licence describes monitoring and reporting requirements for the LW Works, and specifically provides discharge criteria for water treatment plant and sediment basin discharge water quality.

This EPL Pollution Monitoring Report provides the results of all pollution monitoring required to be measured or monitored by the licensee of EPL 21423 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)

EPL 21423 can be found by following the link below to the EPA's website:

<https://apps.epa.nsw.gov.au/prpoeoapp/Detail.aspx?instid=21423&id=21423&option=licence&searchrange=licence&range=POEO%20licence&prp=no&status=Issued>

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

“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 Line wide 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. Any data that may appear to be missing is because there is no discharge, or the level of pollutant is 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 8).

Table 1: Summary of the monitoring requirements of EPL 21423

EPL Condition	Requirement	Report Reference
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.	Section 2
M4.1	The licensee must monitor noise and vibration from construction work and especially during work undertaken out of hours specified in Condition L4.1	Section 3
M4.4	Noise and vibration monitoring as directed by an authorised officer of the EPA	Section 4
M5.1	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 Australian Bureau of Meteorology	Section 5
M7.5	In response to noise and vibration complaints	Section 6

3. Water Quality (Condition M2.1)

EPL#21423 Condition M2.1 requires that water quality monitoring will be undertaken for discharge points specified in EPL Condition P1 for the concentration limits identified in EPL Condition L2.4 and for the pollutants identified in EPL Condition M2.2.

Systems Connect had two discharge points active in March 2023. Discharge Point 1 is the storm water pit immediately northeast of the Water Treatment Plant located at the Chatswood Dive Site. Discharge Point 2 is the storm water pit immediately west of the Water Treatment Plant located at the Marrickville Southern Dive Site. Construction water is treated by the water treatment plant before being discharged to the stormwater pit.

Discharge limits in condition L2.4 are provided in Table 2 below.

Table 2: L2.4 Concentration Limits

Identifier	pH	Turbidity (NTU)	Oil and Grease	Chromium (hexavalent) mg/L	Copper (dissolved) mg/L
Point 1	6.5 - 8.5	35 (NTU equivalent of 50mg/L TSS)	None Visible	Not Applicable	Not Applicable
Point 2	6.5 - 8.5	100 percentile concentration limit: 35 90 percentile concentration limit: 10	None Visible	0.02	0.003

To address the concentration limits specified in EPL Condition L2.4, monthly discharge water monitoring data for March 2023 has been provided in Table 3 below.

Table 3: Monthly Discharge Water Monitoring Data – March 2023

Identifier	Date	pH	Turbidity (NTU)	Oil and Grease	Chromium (hexavalent) mg/L	Copper (dissolved) mg/L	Comments
Point 1	1/03/2023 to 31/03/2023	6.9 - 8.5	0.2 - 16.2	None visible	Not Applicable	Not Applicable	Compliant
Point 2	1/03/2023 to 31/03/2023	7.4 - 8.1	0.3 - 4.5	None visible	<0.001	<0.001	Compliant

To address the monitoring requirements specified in EPL Condition M2.2, quarterly discharge water monitoring data has been provided in Table 4 below. Quarterly discharge water monitoring at Point 1 was conducted in March 2023. No quarterly discharge water monitoring was conducted at Point 2 in March 2023, as this is due to occur in April 2023.

Table 4: Point 1 Quarterly Discharge Water Monitoring Results, sampled 22/03/2023

Pollutant	Units of measure	LOR*	Value
pH:			
pH Value	pH Unit	0.01	7.95
Total Suspended Solids:			
Suspended Solids (SS)	mg/L	5	<5
Turbidity:			
Turbidity	NTU	0.1	2
Alkalinity:			
Hydroxide Alkalinity as CaCO ₃	mg/L	1	<1
Carbonate Alkalinity as CaCO ₃	mg/L	1	<1
Bicarbonate Alkalinity as CaCO ₃	mg/L	1	202
Total Alkalinity as CaCO ₃	mg/L	1	202
Sulfate (Turbidimetric) as SO₄ 2			
Sulfate as SO ₄ - Turbidimetric	mg/L	1	343
Chloride:			
Chloride	mg/L	1	2410
Dissolved Major Cations:			
Calcium	mg/L	1	53
Magnesium	mg/L	1	85
Sodium	mg/L	1	1430
Potassium	mg/L	1	96
Dissolved Metals			
Aluminium	mg/L	0.01	<0.01
Arsenic	mg/L	0.001	<0.001
Cadmium	mg/L	0.0001	<0.0001

Chromium	mg/L	0.001	0.002
Copper	mg/L	0.001	0.002
Lead	mg/L	0.001	<0.001
Manganese	mg/L	0.001	0.002
Nickel	mg/L	0.001	0.001
Zinc	mg/L	0.005	<0.005
Iron	mg/L	0.05	<0.05
Fluoride:			
Fluoride	mg/L	0.1	0.4
Ammonia as N:			
Ammonia as N	mg/L	0.01	0.03
Nitrite as N:			
Nitrite as N	mg/L	0.01	0.06
Nitrate as N:			
Nitrate as N	mg/L	0.01	2.29
Nitrite plus Nitrate as N:			
Nitrite + Nitrate as N	mg/L	0.01	2.35
Total Kjeldahl Nitrogen:			
Total Kjeldahl Nitrogen as N	mg/L	0.1	0.8
Total Nitrogen as N:			
Total Nitrogen as N	mg/L	0.1	3.2
Total Phosphorus as P:			
Total Phosphorus as P	mg/L	0.01	<0.01
Reactive Phosphorus as P:			
Reactive Phosphorus as P	mg/L	0.01	0.01
Ionic Balance:			
Total Anions	meq/L	0.01	79.2
Total Cations	meq/L	0.01	74.3

Ionic Balance	%	0.01	3.17
Total Petroleum Hydrocarbons (TPH):			
C6 - C9 Fraction	µg/L	20	<20
C10 - C14 Fraction	µg/L	50	<50
C15 - C28 Fraction	µg/L	100	<100
C29 - C36 Fraction	µg/L	50	<50
C10 - C36 Fraction (sum)	µg/L	50	<50
Total Recoverable Hydrocarbons – NEPM 2013 Fractions:			
C6 - C10 Fraction	µg/L	20	<20
C6 - C10 Fraction minus BTEX (F1)	µg/L	20	<20
>C10 - C16 Fraction	µg/L	100	<100
>C16 - C34 Fraction	µg/L	100	<100
>C34 - C40 Fraction	µg/L	100	<100
>C10 - C40 Fraction (sum)	µg/L	100	<100
>C10 - C16 Fraction minus Naphthalene (F2)	µg/L	100	<100
BTEXN:			
Benzene	µg/L	1	<1
Toluene	µg/L	2	<2
Ethylbenzene	µg/L	2	<2
meta- & para-Xylene	µg/L	2	<2
ortho-Xylene	µg/L	2	<2
Total Xylenes	µg/L	2	<2
Sum of BTEX	µg/L	1	<1
Naphthalene	µg/L	5	<5
TPH(V)/BTEX Surrogates:			
1,2-Dichloroethane-D4	%	0.1	110

Toluene-D8	%	0.1	103
4-Bromofluorobenzene	%	0.1	105
Oil and Grease			
Oil and Grease	Visible	-	None visible

*LOR: Limit of Reporting

4. Noise and Vibration (Condition M4.1)

EPL#21423 Condition M4.1 requires that the licensee conducts noise and vibration monitoring of construction work, particularly during works outside of the hours specified in Condition L4.1.

Condition L4.1 state that unless permitted by another condition of this licence, construction works and activities must:

- only be undertaken between the hours of 7:00 am and 6:00 pm Monday to Friday;
- only be undertaken between the hours of 8:00 am and 6:00 pm Saturday; and
- not be undertaken on Sundays or Public Holidays.

4.1 Noise Monitoring (M4.1)

Table 5: Monthly Noise Monitoring – March 2023

Date	Location	Detailed Monitoring Location	NCA	Predicted Noise Level (dB(A))	Measured L _{Aeq} (dB(A))	Comments
10/03/2023	Barangaroo Shaft	1-5 Towns Place, Millers Point	BN_02	80	68	Below predicted, LW works compliant
10/03/2023	Barangaroo Shaft	1-5 Towns Place, Millers Point	BN_02	69	77	Traffic noise dominant, LW works compliant
26/03/2023	Northern Connection	13 Hopetoun Avenue, Chatswood	CDS_04	74	53	Below predicted, LW works compliant
26/03/2023	Northern Connection	2A Gordon Avenue, Chatswood	CDS_03	68	51	Below predicted, LW works compliant
29/03/2023	SMTF-S	76 Unwins Bridge Road, Marrickville	MDS_04	53	67.5	Traffic noise dominant, LW works compliant
29/03/2023	SMTF-S	76 Unwins Bridge Road, Marrickville	MDS_04	53	67.7	Traffic noise dominant, LW works compliant

4.2 Vibration Monitoring (M4.1)

No vibration monitoring was undertaken by Systems Connect for EPL #21423 in March 2023.

5. Noise and Vibration (Condition M4.4)

EPL#21423 Condition M4.4 requires that the licensee must undertake noise and vibration monitoring as directed by an authorised officer of the EPA.

5.1 Noise Monitoring (M4.4)

Systems Connect was not directed by an authorised officer of the EPA to undertake noise monitoring in March 2023.

5.2 Vibration Monitoring (M4.4)

Systems Connect was not directed by an authorised officer of the EPA to undertake vibration monitoring in March 2023.

6. Weather (Condition M5.1)

EPL #21423 Condition M5.1 requires that 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 Australian Bureau of Meteorology. Monitoring must:

- a) be representative of each catchment;
- b) be undertaken 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.

Meteorological data is not considered to be pollution data and therefore does not have to be published. However, the meteorological data is published with the pollution monitoring data to provide additional context to the water discharge data.

The nominated Australian Bureau of Meteorology weather station for the project is Sydney (Observatory Hill) {station 066214}.

Temperature, humidity and rainfall observations are from Sydney (Observatory Hill) {station 066214}.

Wind observations are from Fort Denison {station 066022}.

Table 6: Monthly Weather Data – March 2023

Date	Minimum temp (°C)	Maximum temp (°C)	Rainfall (mm)	9am Temp (°C)	9am relative humidity (%)	9am wind direction	9am wind speed (km/h)	3pm Temp (°C)	3pm relative humidity (%)	3pm wind direction	3pm wind speed (km/h)
1/03/2023	21.5	28.1	0	22.7	89	W	15	26.9	60	SSW	35
2/03/2023	19.4	27.1	0	20.3	94	NNW	6	26	67	E	15
3/03/2023	19.3	25.2	2.2	21	94	SSE	4	22.5	90	S	24
4/03/2023	19.5	28.1	20	20.7	99	W	11	25.6	62	E	13
5/03/2023	18.3	28.1	0	19.8	91	WNW	9	27.8	62	ENE	24
6/03/2023	19.7	37.9	0	23.8	72	ENE	4	36.8	28	NNW	28
7/03/2023	22.3	34	0	24.2	70	WNW	11	28.4	52	E	22
8/03/2023	18.8	30	0	20.1	58	W	11	27.2	41	E	24
9/03/2023	16.7	28.4	0	18.7	61	W	15	26.8	45	ESE	22

Date	Minimum temp (°C)	Maximum temp (°C)	Rainfall (mm)	9am Temp (°C)	9am relative humidity (%)	9am wind direction	9am wind speed (km/h)	3pm Temp (°C)	3pm relative humidity (%)	3pm wind direction	3pm wind speed (km/h)
10/03/2023	16.6	27.4	0	18.7	83	WNW	15	26.8	59	ENE	24
11/03/2023	18.7	28.6	0	20.4	88	W	13	28	66	ENE	17
12/03/2023	20.4	27	0	23.1	81	SSW	22	25.6	70	SSE	26
13/03/2023	21.4	24.9	0	22.4	71	ESE	28	23.2	66	ESE	19
14/03/2023	20.4	23.8	0.6	21.7	91	E	13	21.6	89	NE	7
15/03/2023	18.4	28.5	9.8	19.9	100	WNW	13	26.5	70	E	19
16/03/2023	18.9	36.2	0	20.1	99	WNW	11	35.5	32	W	11
17/03/2023	20	31.6	0	24.1	48	W	13	28.2	61	ESE	28
18/03/2023	20.7	29.1	0	22.7	92	NNE	4	28.6	65	ENE	24
19/03/2023	20.7	28.9	0	21.6	100	W	13	28.4	70	ESE	19
20/03/2023	21.6	23.6	0	23.5	82	SSE	28	22.5	71	SSE	31
21/03/2023	18.1	22.9	0.6	20.2	68	ESE	20	22.4	60	ESE	15
22/03/2023	18.7	24.2	0.2	20.2	83	W	11	23.4	72	NE	13
23/03/2023	19.4	27.3	1.2	20.9	92	W	13	25.4	71	S	13
24/03/2023	17.5	25.5	4.6	18.9	93	W	19	24.9	73	SE	17
25/03/2023	18.9	24.6	0	22.2	72	ESE	20	23.5	64	ESE	19
26/03/2023	19.1	26.1	1.8	20.1	89	WNW	7	24.8	69	ENE	20
27/03/2023	19.4	24.6	8.2	19.6	98	N	13	23.4	86	W	19
28/03/2023	19.5	24.8	0.6	21.4	90	W	11	23.2	81	WNW	11

Date	Minimum temp (°C)	Maximum temp (°C)	Rainfall (mm)	9am Temp (°C)	9am relative humidity (%)	9am wind direction	9am wind speed (km/h)	3pm Temp (°C)	3pm relative humidity (%)	3pm wind direction	3pm wind speed (km/h)
29/03/2023	19.6	27.1	4.2	20.7	88	NNW	31	24.3	69	NNW	26
30/03/2023	15.6	25.7	0	17.2	69	W	24	24.1	34	SW	24
31/03/2023	14.3	25.7	0	15.5	63	W	20	25	38	ESE	15

7. Noise and Vibration (Condition M7.5)

EPL#21423 Condition M7.5 requires that in the event of a noise and vibration complaint the licensee must include an offer to the complainant to undertake attended noise or vibration monitoring at their premises if:

- i) any investigation referred to in this condition identifies works or activities being undertaken on the licensed premises as the likely source of the complaint; and
- ii) the licensee is not in possession of noise monitoring data representative of the complainant's location and of the subject works and activities being undertaken on the licensed premises.

7.1 Noise Monitoring (M7.5)

Noise monitoring was not undertaken in response to a complaint in March 2023.

7.2 Vibration Monitoring (M7.5)

Vibration monitoring was not undertaken in response to a complaint in March 2023.

8. Correction log

It is possible from time to time that incorrect data be 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.