



# Construction Monitoring Report March 2021 – August 2021

## Sydney Metro City & Southwest – Line-wide Works

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## 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:

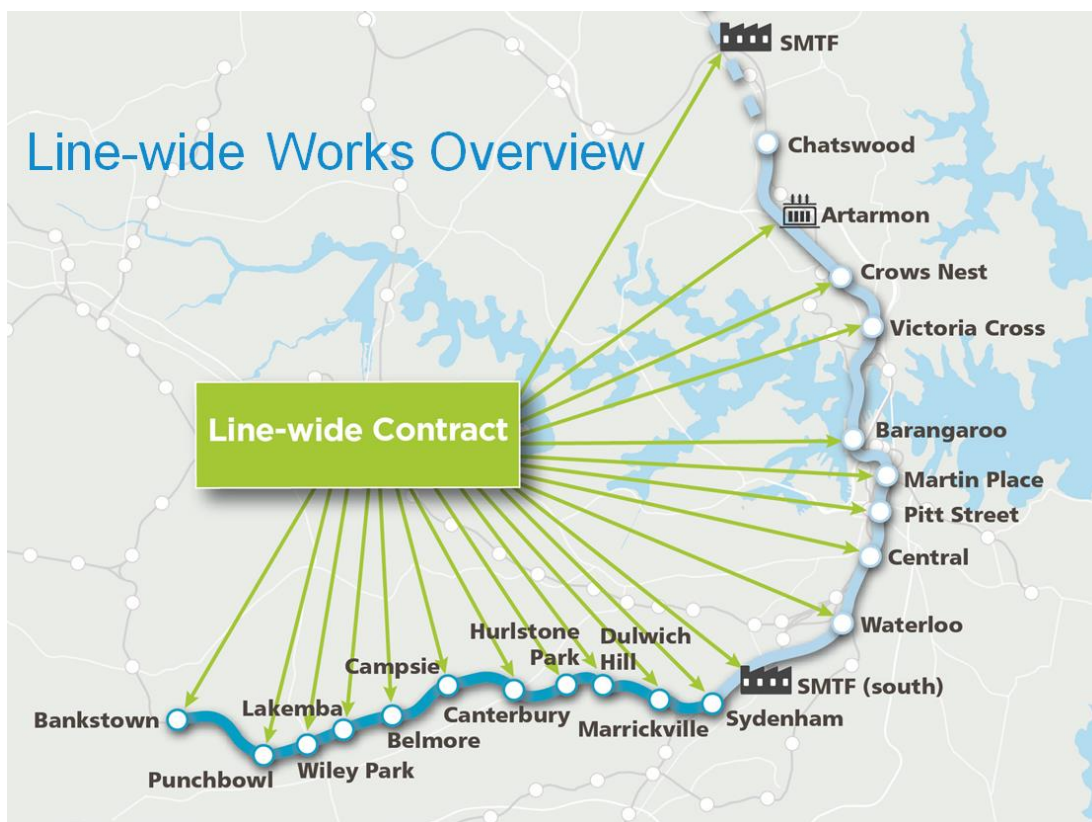


Figure 1: Line-wide Locations

### 1.2 Planning Approval Requirements

The Sydney Metro Authority received planning approval to construct the project from the Department of Planning, Industry and Environment. The Conditions of Approval CSSI 7400 cover the works from Chatswood to Sydenham and the Conditions of Approval CSSI 8256 cover the works from Marrickville to Bankstown.

A Construction Environmental Management Plan and sub-plans were developed for the project to address all environmental aspects, including construction monitoring. Approval of the plans enabled commencement of construction on 04 March 2020. The plans for the Line-wide works were developed to address the requirements of both planning approvals in each plan or sub-plan. Construction monitoring requirements are detailed in the Soil, Water and Groundwater Management Sub-Plan C2B and the Construction Noise and Vibration Management Plan – C2B. The plans can be accessed at the CPB Sydney Metro City & Southwest Line-wide Works Project website:

<https://www.cpbcon.com.au/en/our-projects/2018/sydney-metro-line-wide-works>

The objectives for this report are to provide construction monitoring results for the third 6 months of works on the Line-wide Project, from the start of March 2021 to the end of August 2021. This report is provided for information to the Department of Planning, Industry and Environment. It is intended to address the requirements of Conditions C16 of CSSI 7400 and C14 of CSSI 8256.

## 2. Water Quality Monitoring

The Soil, Water and Groundwater Management Sub-Plan C2B requires that water quality monitoring will be undertaken for controlled discharges offsite to watercourses and stormwater drainage to ensure compliance with discharge criteria. The discharge criteria are shown in Table 1 below:

Table 1: Discharge Criteria

Parameter	Measurement and Assessment			Discharge Criteria
	Percentile Concentration Limit	Sample Method & Frequency	Units	
<b>pH</b>	100	Probe/ grab sample Prior to discharge	pH	6.5-8.5
<b>Total Suspended Solids</b>	100	Probe/ grab sample Prior to discharge	mg/L	<50
<b>Oil and Grease</b>	100	Visual Prior to discharge	mg/L	<10 and no visible trace

### 2.1 Permit to Dewater

Systems Connect have an internal Permit to Dewater system, which ensures compliance with discharge criteria at all times. Monitoring is done prior to each dewatering event. During the reporting period, very small volumes (individual 1000 litre IBCs and skip bins of clean water) were discharged. The Systems Connect Permit to Dewater and Water Quality Monitoring Register is provided in Appendix A. This demonstrates that discharge criteria were met for all discharges.

### 2.2 Water Treatment Plant

On 1 August 2020, Systems Connect took possession of a portion of the Chatswood Dive site from the Tunneling and Station Excavation Contractor. The portion contains the Chatswood Water Treatment Plant, which is now operated by Systems Connect. It collects surface water from the Chatswood Dive site, station box water from Crows Nest station, and tunnel water from between Victoria Cross Station and the Chatswood Dive.

A WTP Checklist is completed by the WTP operator daily (working days), where a range of WTP observations, parameters and chemical levels are noted. This includes water discharge parameters required for regulatory compliance. The compliance results from the checklists completed during the reporting period are described in Table 2 below:

Table 2: WTP Compliance Results

Date	pH	Turbidity (NTU)	Oil and Grease
01/03/21 to 31/08/2021	6.5 – 8.2	0.1 – 7.1	None visible

### 2.3 Receiving Water Monitoring

The Soil, Water and Groundwater Management Sub-Plan C2B requires that monitoring of receiving waters will occur three-monthly, while WTPs are active and in SC control. Monitoring parameters are provided in Table 3 below:

Table 3: Surface Water Quality Parameters

Parameter	Sample Method	Analytical method	ANZECC <sup>1, 2</sup> Criteria (freshwater) <sup>7</sup>	ANZECC <sup>1, 3</sup> Criteria (marine water) <sup>8</sup>	EPL 21423	Trigger Values	Action
Temperature (°C)	Probe	Field Analysis	>80%ile <sup>4</sup> <20%ile <sup>4</sup>			Results are > than the baseline 80th percentile	Environment Coordinators to re-test to confirm results. Environment Coordinator is to undertake an inspection of the Works and propose actions where required Note: There is a delay in receiving the results from grab samples. Environment Coordinator to obtain further grab samples for testing to confirm results. Environment Coordinator to undertake an inspection once results received and establish what activities had been undertaken prior to the tests being undertaken and propose actions where required.
Dissolved Oxygen (%Sat)	Probe	Field Analysis	Lower Limit: 85 Upper Limit: 110	Lower Limit: 90 Upper Limit: 110			
Turbidity (NTU)	Probe	Field Analysis	6-50	0.5-10			
Oil and Grease	Visual analysis, then grab sample if required	Visual Assessment Lab Analysis	-	-	No visible sign of oil and grease	Visible oil and grease	
Conductivity (µS/cm) <sup>6</sup>	Grab Sample and Probe	Field Analysis Lab Analysis	125 – 2200	-		Results are > than the baseline 80th percentile	
Total Suspended Solids (TSS: mg/L)	Grab Sample	Lab Analysis	-	-	50mg/L		
Iron (mg/L)			0.3 <sup>5</sup>	-			
Manganese(mg/L)			1.7	0.8			
pH	Grab Sample and Probe	Field Analysis Lab Analysis	Lower Limit: 6.5 Upper Limit: 8.0	Lower Limit: 8.0 Upper Limit: 8.4	6.5 -8.5		

Notes:

<sup>1</sup> 95% protection level – most commonly applied to ecosystems that could be classified as slightly to moderately disturbed.

<sup>2</sup> ANZECC (2000) guidelines for the protection of freshwater aquatic ecosystems

<sup>3</sup> ANZECC (2000) guidelines for the protection of marine aquatic ecosystems

<sup>4</sup> Default trigger value for each ecosystem-type

<sup>5</sup> There is insufficient data at this stage to derive a reliable value for iron. The current Canadian guideline has been used.

<sup>6</sup> Conductivity will not be tested at monitoring points at estuarine/marine catchments.

- No data available

<sup>7</sup> Applicable to monitoring locations SW-SC-01, SW-FR-02, SW-EC-01

<sup>8</sup> Applicable to monitoring locations SW-SC-01, SW-FR-02, SW-MP-01, SW-BP-01, SW-B-01, SW-FC-01, SW-AC-01

Only the receiving waters downstream of the Chatswood WTP are applicable for monitoring during this period. All other WTPs are being operated by other Sydney Metro contractors. The two monitoring sites are both in the Scotts Creek/Middle Harbour Catchment. Sampling points are described in Table 4 below:

*Table 4: Sampling Point Information*

Site ID	Site interaction	Relative location	Catchment	Sampling address	Easting	Northing	Type
SW-SC-01	Receiving waters from Chatswood worksite discharges.	Downstream	Scotts Creek / Middle Harbour	Muston Park, access via Eden Street, Chatswood	330586	6245923	Freshwater
SW-SC-02	Monitoring location active while the Chatswood WTP is active and in SC control.			Access via North Arm Track, North Arm Road, Chatswood	332788	6246304	Estuarine / Marine

The results of the receiving water monitoring are provided in Appendix B. More sampling was undertaken during this period than quarterly as required by the sampling plan in the Soil, Water and Groundwater Management Sub-Plan C2B. This was due to additional sampling to support a Water Discharge Impact Assessment. The results are included here for completeness. From July, this sampling reverted to quarterly as per the Management Plan.

### 3. Noise and Vibration

The Construction Noise and Vibration Management Plan – C2B includes the Construction Noise and Vibration Monitoring Program. This program requires that the results of construction noise and vibration monitoring will be reported every six months. The results for this monitoring period are included in this report.

#### 3.1 Noise Monitoring

Section 8.1.4 of the CNVMP states that: “Attended monitoring of construction noise levels will be undertaken as follows:

- At the first opportunity following the commencement of construction activity to confirm the effectiveness of actions and measures determined in CNVIS process
- Repeated as described in the CNVIS, as part of the audit cycle to ensure that noise and vibration levels in the adjacent community remain consistent with the predicted levels in the CNVIS
- Where appropriate in response to a noise related complaint(s) (determined on a case-by-case basis)
- During sensitive periods (i.e. night works)
- As directed by an authorised officer of the EPA.

Monitoring would be undertaken at the potentially most exposed receivers in proximity to construction activities. Noise monitoring locations should be consistent with the distances/ locations identified in the CNVIS and will consider factors including:

- The location of previous monitoring sites
- The proximity of the receiver to a worksite
- The sensitivity of the receiver to noise
- Background noise levels
- The expected duration of the impact.”

Summary results of attended noise monitoring conducted by Systems Connect in the reporting period are provided in Appendix C (Systems Connect Noise Monitoring Register), demonstrating compliance with project requirements, including the above extract from the management plan.

Noise monitoring equipment details, including make, model, serial number, last calibration date and NATA testing facility, are provided in Appendix D.

Further details are collected for each field reading, including time, duration, meteorological conditions and extraneous noise sources during reading. Samples of Noise Monitoring Record Sheets are provided in Appendix E. Others are available on request.

#### 3.2 Vibration Monitoring

The Construction Noise and Vibration Management Plan – C2B explains that: “the requirement for real time vibration monitoring will be determined on a site by site basis and identified in the CNVIS for LW worksites between Chatswood and Sydenham. Real time vibration monitoring will be deployed to manage vibration impacts from ‘high risk’ sites, where the CNVIS vibration predictions identify there is a high risk of annoyance (or potential building damage) from construction vibration.”

During the reporting period, there were numerous locations and work campaigns where vibration monitoring was done. Summary results demonstrating compliance with vibration criteria are included in Appendix F (Systems Connect Vibration Monitoring Register).

Samples of Vibration Monitoring Reports are provided in Appendix G. Others are available on request.



## Appendix A: Systems Connect Permit to Dewater and Water Quality Monitoring Register

## Systems Connect LWW Permit to Dewater and Water Quality Monitoring Register

Permit to Dewater	Date	Location	Detailed Monitoring Location	Single or Continuous	Reason	Discharge Point	Water Quality Analyser	pH	Turbidity NTU	Oil & Grease
Permit to Dewater LWW-077	2/03/2021	Artarmon TSS	1000L skip	Single	For discharge approval	Whiting Street stormwater drain	Horiba U-52	7.63	8.2	None visible
Permit to Dewater LWW-078	2/03/2021	Artarmon TSS	1000L skip	Single	For discharge approval	Whiting Street stormwater drain	Horiba U-52	8.32	6.6	None visible
Permit to Dewater LWW-079	3/03/2021	Chatswood Dive	Chatswood WTP	Continuous	For discharge approval	Stormwater pit - CD-2	WTP	NA	NA	NA
Permit to Dewater LWW-080	5/03/2021	Artarmon TSS	1000L skip	Single	For discharge approval	Whiting Street stormwater drain	Horiba U-52	7.38	3.9	None visible
Permit to Dewater LWW-081	10/03/2021	Artarmon TSS	1000L skip	Single	For discharge approval	Whiting Street stormwater drain	Horiba U-52	8.4	53.2	None visible
Permit to Dewater LWW-082	10/03/2021	Artarmon TSS	1000L skip	Single	For discharge approval	Whiting Street stormwater drain	Horiba U-52	8.08	49.4	None visible
Permit to Dewater LWW-083	11/03/2021	Artarmon TSS	1000L skip	Single	For discharge approval	Whiting Street stormwater drain	Horiba U-52	7.4	12	None visible
Permit to Dewater LWW-084	11/03/2021	Artarmon TSS	1000L skip	Single	For discharge approval	Whiting Street stormwater drain	Horiba U-52	8.04	37.1	None visible
Permit to Dewater LWW-085	11/03/2021	Artarmon TSS	1000L skip	Single	For discharge approval	Whiting Street stormwater drain	Horiba U-52	7.44	43	None visible
Permit to Dewater LWW-086	15/03/2021	Artarmon TSS	1000L skip	Single	For discharge approval	Whiting Street stormwater drain	Horiba U-52	7.14	37	None visible
Permit to Dewater LWW-087	15/03/2021	Artarmon TSS	1000L skip	Single	For discharge approval	Whiting Street stormwater drain	Horiba U-52	8.26	43.7	None visible
Permit to Dewater LWW-088	15/03/2021	Artarmon TSS	1000L skip	Single	For discharge approval	Whiting Street stormwater drain	Horiba U-52	8.11	44.6	None visible
Permit to Dewater LWW-089	16/03/2021	Artarmon TSS	1000L skip	Single	For discharge approval	Whiting Street stormwater drain	Horiba U-52	7.85	18.3	None visible
Permit to Dewater LWW-090	17/03/2021	Artarmon TSS	1000L skip	Single	For discharge approval	Whiting Street stormwater drain	Horiba U-52	7.99	18.6	None visible
Permit to Dewater LWW-090	17/03/2021	Artarmon TSS	1000L skip	Single	For discharge approval	Whiting Street stormwater drain	Horiba U-52	8.10	20.3	None visible
Permit to Dewater LWW-090	17/03/2021	Artarmon TSS	1000L skip	Single	For discharge approval	Whiting Street stormwater drain	Horiba U-52	8.11	15.7	None visible
Permit to Dewater LWW-090	17/03/2021	Artarmon TSS	1000L skip	Single	For discharge approval	Whiting Street stormwater drain	Horiba U-52	7.61	14.9	None visible
Permit to Dewater LWW-091	18/03/2021	Artarmon TSS	1000L skip	Single	For discharge approval	Whiting Street stormwater drain	Horiba U-52	7.87	11.4	None visible
Permit to Dewater LWW-091	18/03/2021	Artarmon TSS	1000L skip	Single	For discharge approval	Whiting Street stormwater drain	Horiba U-52	7.72	12.7	None visible
Permit to Dewater LWW-093	19/03/2021	Artarmon TSS	1000L skip	Single	For discharge approval	Whiting Street stormwater drain	Horiba U-52	8.03	51.2	None visible
Permit to Dewater LWW-093	19/03/2021	Artarmon TSS	1000L skip	Single	For discharge approval	Whiting Street stormwater drain	Horiba U-52	7.09	42.0	None visible
Permit to Dewater LWW-093	19/03/2021	Artarmon TSS	1000L skip	Single	For discharge approval	Whiting Street stormwater drain	Horiba U-52	8.39	55.1	None visible
Permit to Dewater LWW-093	19/03/2021	Artarmon TSS	1000L skip	Single	For discharge approval	Whiting Street stormwater drain	Horiba U-52	7.96	42.6	None visible
Permit to Dewater LWW-093	19/03/2021	Artarmon TSS	1000L skip	Single	For discharge approval	Whiting Street stormwater drain	Horiba U-52	7.37	32.9	None visible
Permit to Dewater LWW-093	19/03/2021	Artarmon TSS	1000L skip	Single	For discharge approval	Whiting Street stormwater drain	Horiba U-52	7.71	38.7	None visible
Permit to Dewater LWW-094	22/03/2021	Artarmon TSS	1000L skip	Single	For discharge approval	Whiting Street stormwater drain	Horiba U-52	8.32	7.2	None visible
Permit to Dewater LWW-094	22/03/2021	Artarmon TSS	1000L skip	Single	For discharge approval	Whiting Street stormwater drain	Horiba U-52	7.88	7.0	None visible
Permit to Dewater LWW-094	22/03/2021	Artarmon TSS	1000L skip	Single	For discharge approval	Whiting Street stormwater drain	Horiba U-52	8.10	6.2	None visible
Permit to Dewater LWW-094	22/03/2021	Artarmon TSS	1000L skip	Single	For discharge approval	Whiting Street stormwater drain	Horiba U-52	7.85	6.9	None visible
Permit to Dewater LWW-094	22/03/2021	Artarmon TSS	1000L skip	Single	For discharge approval	Whiting Street stormwater drain	Horiba U-52	8.17	10.7	None visible
Permit to Dewater LWW-094	22/03/2021	Artarmon TSS	1000L skip	Single	For discharge approval	Whiting Street stormwater drain	Horiba U-52	8.17	7.6	None visible
Permit to Dewater LWW-095	23/03/2021	Artarmon TSS	1000L skip	Single	For discharge approval	Whiting Street stormwater drain	Horiba U-52	7.55	44.0	None visible
Permit to Dewater LWW-095	23/03/2021	Artarmon TSS	1000L skip	Single	For discharge approval	Whiting Street stormwater drain	Horiba U-52	7.84	44.2	None visible
Permit to Dewater LWW-095	23/03/2021	Artarmon TSS	1000L skip	Single	For discharge approval	Whiting Street stormwater drain	Horiba U-52	7.14	29.5	None visible
Permit to Dewater LWW-095	23/03/2021	Artarmon TSS	1000L skip	Single	For discharge approval	Whiting Street stormwater drain	Horiba U-52	8.3	38.3	None visible
Permit to Dewater LWW-095	23/03/2021	Artarmon TSS	1000L skip	Single	For discharge approval	Whiting Street stormwater drain	Horiba U-52	7.91	43.8	None visible
Permit to Dewater LWW-095	23/03/2021	Artarmon TSS	1000L skip	Single	For discharge approval	Whiting Street stormwater drain	Horiba U-52	7.52	38.5	None visible
Permit to Dewater LWW-095	23/03/2021	Artarmon TSS	1000L skip	Single	For discharge approval	Whiting Street stormwater drain	Horiba U-52	7.65	42.8	None visible
Permit to Dewater LWW-096	24/03/2021	Artarmon TSS	1000L skip	Single	For discharge approval	Whiting Street stormwater drain	Horiba U-52	8.33	23.7	None visible
Permit to Dewater LWW-096	24/03/2021	Artarmon TSS	1000L skip	Single	For discharge approval	Whiting Street stormwater drain	Horiba U-52	8.45	28.1	None visible
Permit to Dewater LWW-096	24/03/2021	Artarmon TSS	1000L skip	Single	For discharge approval	Whiting Street stormwater drain	Horiba U-52	8.32	20.7	None visible
Permit to Dewater LWW-096	24/03/2021	Artarmon TSS	1000L skip	Single	For discharge approval	Whiting Street stormwater drain	Horiba U-52	7.91	22.1	None visible
Permit to Dewater LWW-096	24/03/2021	Artarmon TSS	1000L skip	Single	For discharge approval	Whiting Street stormwater drain	Horiba U-52	7.65	27.5	None visible
Permit to Dewater LWW-096	24/03/2021	Artarmon TSS	1000L skip	Single	For discharge approval	Whiting Street stormwater drain	Horiba U-52	8.21	20.1	None visible
Permit to Dewater LWW-096	24/03/2021	Artarmon TSS	1000L skip	Single	For discharge approval	Whiting Street stormwater drain	Horiba U-52	8.40	22.8	None visible
Permit to Dewater LWW-097	24/03/2021	Artarmon TSS	1000L skip	Single	For discharge approval	Whiting Street stormwater drain	Horiba U-52	8.31	53.5	None visible
Permit to Dewater LWW-097	24/03/2021	Artarmon TSS	1000L skip	Single	For discharge approval	Whiting Street stormwater drain	Horiba U-52	8.42	32.5	None visible
Permit to Dewater LWW-097	24/03/2021	Artarmon TSS	1000L skip	Single	For discharge approval	Whiting Street stormwater drain	Horiba U-52	7.54	42.1	None visible
Permit to Dewater LWW-097	24/03/2021	Artarmon TSS	1000L skip	Single	For discharge approval	Whiting Street stormwater drain	Horiba U-52	8.47	42.8	None visible

## Systems Connect LWW Permit to Dewater and Water Quality Monitoring Register

Permit to Dewater	Date	Location	Detailed Monitoring Location	Single or Continuous	Reason	Discharge Point	Water Quality Analyser	pH	Turbidity NTU	Oil & Grease
Permit to Dewater LWW-097	24/03/2021	Artarmon TSS	1000L skip	Single	For discharge approval	Whiting Street stormwater drain	Horiba U-52	7.28	47.1	None visible
Permit to Dewater LWW-098	25/03/2021	Artarmon TSS	Excavated Pit	Single	For discharge approval	Whiting Street stormwater drain	Horiba U-52	7.98	16.3	None visible
Permit to Dewater LWW-099	25/03/2021	Artarmon TSS	1000L skip	Single	For discharge approval	Whiting Street stormwater drain	Horiba U-52	7.32	12.5	None visible
Permit to Dewater LWW-099	25/03/2021	Artarmon TSS	1000L skip	Single	For discharge approval	Whiting Street stormwater drain	Horiba U-52	7.26	20.4	None visible
Permit to Dewater LWW-099	25/03/2021	Artarmon TSS	1000L skip	Single	For discharge approval	Whiting Street stormwater drain	Horiba U-52	7.87	23.3	None visible
Permit to Dewater LWW-099	25/03/2021	Artarmon TSS	1000L skip	Single	For discharge approval	Whiting Street stormwater drain	Horiba U-52	8.21	18.9	None visible
Permit to Dewater LWW-099	25/03/2021	Artarmon TSS	1000L skip	Single	For discharge approval	Whiting Street stormwater drain	Horiba U-52	7.92	16.1	None visible
Permit to Dewater LWW-099	25/03/2021	Artarmon TSS	1000L skip	Single	For discharge approval	Whiting Street stormwater drain	Horiba U-52	7.63	20.9	None visible
Permit to Dewater LWW-099	25/03/2021	Artarmon TSS	1000L skip	Single	For discharge approval	Whiting Street stormwater drain	Horiba U-52	7.29	16.1	None visible
Permit to Dewater LWW-100	25/03/2021	Artarmon TSS	1000L skip	Single	For discharge approval	Whiting Street stormwater drain	Horiba U-52	8.34	41.0	None visible
Permit to Dewater LWW-100	25/03/2021	Artarmon TSS	1000L skip	Single	For discharge approval	Whiting Street stormwater drain	Horiba U-52	7.25	48.9	None visible
Permit to Dewater LWW-100	25/03/2021	Artarmon TSS	1000L skip	Single	For discharge approval	Whiting Street stormwater drain	Horiba U-52	7.46	46.6	None visible
Permit to Dewater LWW-100	25/03/2021	Artarmon TSS	1000L skip	Single	For discharge approval	Whiting Street stormwater drain	Horiba U-52	7.77	38.8	None visible
Permit to Dewater LWW-100	25/03/2021	Artarmon TSS	1000L skip	Single	For discharge approval	Whiting Street stormwater drain	Horiba U-52	8.38	50.5	None visible
Permit to Dewater LWW-100	25/03/2021	Artarmon TSS	1000L skip	Single	For discharge approval	Whiting Street stormwater drain	Horiba U-52	7.49	41.9	None visible
Permit to Dewater LWW-101	26/03/2021	Artarmon TSS	1000L skip	Single	For discharge approval	Whiting Street stormwater drain	Horiba U-52	7.67	16.4	None visible
Permit to Dewater LWW-101	26/03/2021	Artarmon TSS	1000L skip	Single	For discharge approval	Whiting Street stormwater drain	Horiba U-52	8.49	13.7	None visible
Permit to Dewater LWW-101	26/03/2021	Artarmon TSS	1000L skip	Single	For discharge approval	Whiting Street stormwater drain	Horiba U-52	8.23	17.0	None visible
Permit to Dewater LWW-101	26/03/2021	Artarmon TSS	1000L skip	Single	For discharge approval	Whiting Street stormwater drain	Horiba U-52	8.29	45.0	None visible
Permit to Dewater LWW-101	26/03/2021	Artarmon TSS	1000L skip	Single	For discharge approval	Whiting Street stormwater drain	Horiba U-52	8.05	18.7	None visible
Permit to Dewater LWW-101	26/03/2021	Artarmon TSS	1000L skip	Single	For discharge approval	Whiting Street stormwater drain	Horiba U-52	8.41	14.2	None visible
Permit to Dewater LWW-101	26/03/2021	Artarmon TSS	1000L skip	Single	For discharge approval	Whiting Street stormwater drain	Horiba U-52	7.77	19.1	None visible
Permit to Dewater LWW-102	26/03/2021	Artarmon TSS	1000L skip	Single	For discharge approval	Whiting Street stormwater drain	Horiba U-52	7.68	36.0	None visible
Permit to Dewater LWW-102	26/03/2021	Artarmon TSS	1000L skip	Single	For discharge approval	Whiting Street stormwater drain	Horiba U-52	6.91	33.6	None visible
Permit to Dewater LWW-102	26/03/2021	Artarmon TSS	1000L skip	Single	For discharge approval	Whiting Street stormwater drain	Horiba U-52	7.40	37.6	None visible
Permit to Dewater LWW-102	26/03/2021	Artarmon TSS	1000L skip	Single	For discharge approval	Whiting Street stormwater drain	Horiba U-52	7.48	22.6	None visible
Permit to Dewater LWW-104	29/03/2021	Artarmon TSS	1000L skip	Single	For discharge approval	Whiting Street stormwater drain	Horiba U-52	7.28	15.3	None visible
Permit to Dewater LWW-104	29/03/2021	Artarmon TSS	1000L skip	Single	For discharge approval	Whiting Street stormwater drain	Horiba U-52	7.98	13.9	None visible
Permit to Dewater LWW-104	29/03/2021	Artarmon TSS	1000L skip	Single	For discharge approval	Whiting Street stormwater drain	Horiba U-52	6.90	14.8	None visible
Permit to Dewater LWW-104	29/03/2021	Artarmon TSS	1000L skip	Single	For discharge approval	Whiting Street stormwater drain	Horiba U-52	8.36	10.7	None visible
Permit to Dewater LWW-104	29/03/2021	Artarmon TSS	1000L skip	Single	For discharge approval	Whiting Street stormwater drain	Horiba U-52	7.64	9.9	None visible
Permit to Dewater LWW-104	29/03/2021	Artarmon TSS	1000L skip	Single	For discharge approval	Whiting Street stormwater drain	Horiba U-52	7.27	34.9	None visible
Permit to Dewater LWW-105	3/04/2021	Chatswood Dive	Chatswood WTP	Continuous	For discharge approval	Stormwater pit - CD-2	WTP	NA	NA	NA
Permit to Dewater LWW-106	9/04/2021	Artarmon TSS	Skips on site	Single	For discharge approval	Whiting Street stormwater drain	Horiba U-52	8.15	16.5	None visible
Permit to Dewater LWW-106	9/04/2021	Artarmon TSS	Skips on site	Single	For discharge approval	Whiting Street stormwater drain	Horiba U-52	7.55	53.1	None visible
Permit to Dewater LWW-106	9/04/2021	Artarmon TSS	Skips on site	Single	For discharge approval	Whiting Street stormwater drain	Horiba U-52	6.66	23.5	None visible
Permit to Dewater LWW-107	3/05/2021	Chatswood Dive	Chatswood WTP	Continuous	For discharge approval	Stormwater pit - CD-2	WTP	NA	NA	NA
Permit to Dewater LWW-108	7/05/2021	Artarmon TSS	Skips on site	Single	For discharge approval	Whiting Street stormwater drain	Horiba U-52	7.01	30.1	None visible
Permit to Dewater LWW-108	7/05/2021	Artarmon TSS	Skips on site	Single	For discharge approval	Whiting Street stormwater drain	Horiba U-52	8.49	55.1	None visible
Permit to Dewater LWW-108	7/05/2021	Artarmon TSS	Skips on site	Single	For discharge approval	Whiting Street stormwater drain	Horiba U-52	7.57	33.3	None visible
Permit to Dewater LWW-109	10/05/2021	Artarmon TSS	Skips on site	Single	For discharge approval	Whiting Street stormwater drain	Horiba U-52	7.06	18.8	None visible
Permit to Dewater LWW-109	10/05/2021	Artarmon TSS	Skips on site	Single	For discharge approval	Whiting Street stormwater drain	Horiba U-52	6.95	29.1	None visible
Permit to Dewater LWW-109	10/05/2021	Artarmon TSS	Skips on site	Single	For discharge approval	Whiting Street stormwater drain	Horiba U-52	6.90	38.9	None visible
Permit to Dewater LWW-110	11/05/2021	Artarmon TSS	Skips on site	Single	For discharge approval	Whiting Street stormwater drain	Horiba U-52	7.15	8.7	None visible
Permit to Dewater LWW-110	11/05/2021	Artarmon TSS	Skips on site	Single	For discharge approval	Whiting Street stormwater drain	Horiba U-52	6.96	4.6	None visible
Permit to Dewater LWW-111	11/05/2021	Artarmon TSS	Skips on site	Single	For discharge approval	Whiting Street stormwater drain	Horiba U-52	6.94	40.8	None visible
Permit to Dewater LWW-111	11/05/2021	Artarmon TSS	Skips on site	Single	For discharge approval	Whiting Street stormwater drain	Horiba U-52	6.68	15.2	None visible
Permit to Dewater LWW-111	11/05/2021	Artarmon TSS	Skips on site	Single	For discharge approval	Whiting Street stormwater drain	Horiba U-52	6.52	34.8	None visible
Permit to Dewater LWW-112	12/05/2021	Artarmon TSS	Skips on site	Single	For discharge approval	Whiting Street stormwater drain	Horiba U-52	7.57	20.7	None visible

**Systems Connect LWW Permit to Dewater and Water Quality Monitoring Register**

Permit to Dewater	Date	Location	Detailed Monitoring Location	Single or Continuous	Reason	Discharge Point	Water Quality Analyser	pH	Turbidity NTU	Oil & Grease
Permit to Dewater LWW-113	12/05/2021	Artarmon TSS	Skips on site	Single	For discharge approval	Whiting Street stormwater drain	Horiba U-52	6.68	45.7	None visible
Permit to Dewater LWW-113	12/05/2021	Artarmon TSS	Skips on site	Single	For discharge approval	Whiting Street stormwater drain	Horiba U-52	7.15	41	None visible
Permit to Dewater LWW-114	13/05/2021	Campsie TSS	8000 Litre skip	Single	For discharge approval	Trackside drainage swale	Horiba U-52	7.51	41.6	None visible
Permit to Dewater LWW-115	14/05/2021	SMTF-South	Skips on site	Single	For discharge approval	Stormwater pit into culvert	Horiba U-53	7.63	20.8	None visible
Permit to Dewater LWW-115	14/05/2021	SMTF-South	Skips on site	Single	For discharge approval	Stormwater pit into culvert	Horiba U-53	7.75	16.1	None visible
Permit to Dewater LWW-117	17/05/2021	Artarmon TSS	Skips on site	Single	For discharge approval	Whiting Street stormwater drain	Horiba U-52	8.21	22.2	None visible
Permit to Dewater LWW-118	17/05/2021	SMTF-South	Skips on site	Single	For discharge approval	Stormwater pit into culvert	Horiba U-52	7.32	12.5	None visible
Permit to Dewater LWW-118	17/05/2021	SMTF-South	Skips on site	Single	For discharge approval	Stormwater pit into culvert	Horiba U-52	7.32	14.7	None visible
Permit to Dewater LWW-119	17/05/2021	Artarmon TSS	Skips on site	Single	For discharge approval	Whiting Street stormwater drain	Horiba U-52	7	36.7	None visible
Permit to Dewater LWW-119	17/05/2021	Artarmon TSS	Skips on site	Single	For discharge approval	Whiting Street stormwater drain	Horiba U-52	7.71	47.6	None visible
Permit to Dewater LWW-120	18/05/2021	Artarmon TSS	Skips on site	Single	For discharge approval	Whiting Street stormwater drain	Horiba U-52	7.91	22.91	None visible
Permit to Dewater LWW-121	18/05/2021	Artarmon TSS	Skips on site	Single	For discharge approval	Whiting Street stormwater drain	Horiba U-52	8.49	46.7	None visible
Permit to Dewater LWW-122	2/06/2021	Chatswood Dive	Chatswood WTP	Continuous	For discharge approval	Stormwater pit - CD-2	WTP	NA	NA	NA
Permit to Dewater LWW-123	2/07/2021	Chatswood Dive	Chatswood WTP	Continuous	For discharge approval	Stormwater pit - CD-2	Stormwater pit - CD-2	NA	NA	NA
Permit to Dewater LWW-125	3/08/2021	Chatswood Dive	Chatswood WTP	Continuous	For discharge approval	Stormwater pit - CD-2	WTP	NA	NA	NA
Permit to Dewater LWW-126	26/08/2021	Campsie TSS	Campsie TSS cement slab trench	Single	For discharge approval	Trackside drainage swale	Horiba U-52	8.19	2.3	None visible

## Appendix B: Receiving Water Monitoring Results

## Quarterly Surface Water Quality Monitoring

Date	Time	Sample ID	Field Results						Lab Results				
			Temperature (C)	Dissolved Oxygen (%)	Turbidity (NTU)	Conductivity (µS/cm)	pH	Oil & Grease (Y/N)	Total Suspended Solids (mg/L)	Iron (Fe)	Manganese (Mn)	pH	Oil & Grease (mg/L)
26/03/2021	10:40:00 AM	SW-SC-01	19.6	183.3	9.2	830	7.83	N	5	0.05	0.012	7.52	Not tested
26/03/2021	11:15:00 AM	SW-SC-02	18.41	331.2	7.9	1010	7.58	N	<5	0.27	0.016	7.45	Not tested
14/04/2021	8:33:00 AM	SW-SC-01	17.99	160.1	8.9	699	7.55	Y	<5	0.08	0.002	7.78	<5
14/04/2021	9:17:00 AM	SW-SC-02	17.74	201.9	6.0	32000	7.22	N	<5	<0.05	0.017	7.76	<5
27/05/2021	8:20:00 AM	SW-SC-01	14.05	253	16.8	1790	7.51	N	<5	0.05	0.012	7.82	Not tested
27/05/2021	9:00:00 AM	SW-SC-02	16.11	124.1	11.4	41100	7.19	N	<5	<0.05	0.019	7.66	Not tested
23/06/2021	12:27:00 PM	SW-SC-01	15.33	204	8.2	4420	7.28	N	<5	0.08	0.011	6.93	Not tested
23/06/2021	13:03:00 PM	SW-SC-02	14.04	151.7	5.3	33300	7.13	N	<5	0.05	0.006	6.98	Not tested
22/07/2021	12:42:00 PM	SW-SC-01	12.68	120	8.1	4690	7.7	N	<5	0.12	0.03	7.7	Not tested
22/07/2021	14:37:00 PM	SW-SC-02	11.3	108	4.5	8840	7.44	N	<5	0.14	<0.01	7.6	Not tested

## Appendix C: Systems Connect Noise Monitoring Register

Systems Connect LWW Noise Monitoring Register						
Date	Location	Detailed Monitoring Location	NCA	Predicted Noise Level	Measured L <sub>Aeq</sub>	Comments
2/03/2021	BPS Surry Hills	39 Belmore Street, Surry Hills	CS_G	89	69.3	LW works compliant
2/03/2021	BPS Surry Hills	57 Foveaux Street, Surry Hills	CS_G	93	76.6	LW works compliant
7/03/2021	Northern Connection	15 Nelson Street, Chatswood, southern façade	NA	80	69.9	LW works compliant
7/03/2021	Northern Connection	15 Nelson Street, Chatswood, southern façade	NA	80	62.8	LW works compliant
7/03/2021	Northern Connection	15 Nelson Street, Chatswood, southern façade	NA	80	68.6	LW works compliant
9/03/2021	BPS Surry Hills	106 Albion Street, Surry Hills	CS_G	101	81.1	LW works compliant
9/03/2021	BPS Surry Hills	83 Albion Street, Surry Hills	CS_G	83	78.7	LW works compliant
11/03/2021	Northern Connection	49 Elizabeth Street, Artarmon	CDS_05	59	52.8	LW works compliant
11/03/2021	Northern Connection	14 Hawkins Street, Artarmon	CDS_05	61	49.5	LW works compliant
11/03/2021	Northern Connection	6 Drake Street, Artarmon	CDS_05	59	55.7	LW works compliant
26/03/2021	BPS Surry Hills	17-51 Foveaux Street, Surry Hills	CS_G	87	75.0	LW works compliant
26/03/2021	BPS Surry Hills	229 Commonwealth Street, Surry Hills	CS_G	76	64.4	LW works compliant
26/03/2021	BPS Surry Hills	229 Commonwealth Street, Surry Hills	CS_G	76	65.3	LW works compliant
1/04/2021	BPS Surry Hills	308 Elizabeth Street, Surry Hills	OSR	86	77.5	LW works compliant
1/04/2021	BPS Surry Hills	1-15 Foveaux Street, Surry Hills	OSR	75	74.1	LW works compliant
22/04/2021	Victoria Cross Station	39 McLaren Street, North Sydney	N13	73	55.4	LW works compliant
22/04/2021	Victoria Cross Station	243 Miller Street, North Sydney	N21b	81	54.8	LW works compliant
22/04/2021	Victoria Cross Station	79-81 Berry Street, North Sydney	S10b	81	59.4	LW works compliant
22/04/2021	Victoria Cross Station	243 Miller Street, North Sydney	N21b	81	54	LW works compliant
26/04/2021	Northern Connection	13 Drake Street, Artarmon	CDS_05	84	56	LW works compliant
26/04/2021	Northern Connection	2 Nelson Street, Chatswood	CDS_03	75	49.1	LW works compliant
26/04/2021	Northern Connection	2 Nelson Street, Chatswood	CDS_03	75	53.2	LW works compliant
28/04/2021	BPS Surry Hills	30 - 34 Chalmers Street, Surry Hills	CS_G	71	59.9	LW works compliant
28/04/2021	BPS Surry Hills	38 Chalmers Street, Surry Hills	CS_G	69	61.1	LW works compliant
28/04/2021	BPS Surry Hills	1-5 Randle Street, Surry Hills	CS_G	82	67.1	LW works compliant
28/04/2021	BPS Surry Hills	30 - 34 Chalmers Street, Surry Hills	CS_G	71	60.6	LW works compliant
28/04/2021	BPS Surry Hills	38 Chalmers Street, Surry Hills	CS_G	71	62.4	LW works compliant
7/05/2021	BPS Surry Hills	57 Foveaux Street, Surry Hills	CS_G	88	72.8	LW works compliant
7/05/2021	BPS Surry Hills	40 Belmore Street, Surry Hills	CS_G	74	64.8	LW works compliant
11/05/2021	BPS Surry Hills	1-5 Randle Lane, Surry Hills	CS_G	96	81.4	LW works compliant
11/05/2021	BPS Surry Hills	38 Chalmers Street, Surry Hills	CS_G	74	66.5	LW works compliant
11/05/2021	BPS Surry Hills	30-34 Chalmers Street, Surry Hills	CS_G	79	62.3	LW works compliant
14/05/2021	Chatswood Dive	344 Mowbray Road, Chatswood	CDS_06	63	71.1	LW Works compliant, traffic dominant noise source
21/05/2021	BPS Surry Hills	19-51 Foveaux Street, Surry Hills	OSR	97	72.1	LW works compliant
21/05/2021	BPS Surry Hills	39 Belmore Street, Surry Hills	CS_G	78	74.2	LW works compliant
21/05/2021	BPS Surry Hills	40 Belmore Street, Surry Hills	CS_G	74	65.7	LW works compliant
25/05/2021	BPS Surry Hills	328-342 Elizabeth Street, Surry Hills	CS_G	74	69.2	LW works compliant
25/05/2021	BPS Surry Hills	310 Elizabeth Street, Surry Hills	CS_G	83	75.4	LW works compliant
25/05/2021	BPS Surry Hills	310 Elizabeth Street, Surry Hills	CS_G	83	74	LW works compliant
30/05/2021	Southwest Corridor	75 Ewart Street, Dulwich Hill	CS_G	56	51	LW works compliant
30/05/2021	Southwest Corridor	75 Ewart Street, Dulwich Hill	CS_G	56	62	Review completed. Modelling methodology adjusted to improve accuracy. Adjustments made to management of stationary plant.



Systems Connect LWW Noise Monitoring Register						
Date	Location	Detailed Monitoring Location	NCA	Predicted Noise Level	Measured L <sub>Aeq</sub>	Comments
30/05/2021	Southwest Corridor	98 Ewart Street, Dulwich Hill	CS_G	51	60	LW Works compliant, traffic dominant noise source
1/06/2021	Chatswood Dive	344 Mowbray Road, Chatswood	CDS_06	63	71.1	LW Works compliant, traffic dominant noise source
1/06/2021	Chatswood Dive	340A Mowbray Road, Chatswood	CDS_06	55	71.4	LW Works compliant, traffic dominant noise source
5/06/2021	Northern Connection	14 Raleigh Street, Artarmon	CDS_05	79	70	LW works compliant
5/06/2021	Northern Connection	11 Nelson Street, Chatswood	CDS_03	76	57.2	LW works compliant
5/06/2021	Southwest Corridor	2 Keir Ave, Hurlstone Park	S2B_03	61	55	LW works compliant
5/06/2021	Southwest Corridor	21 Kilbride Street, Hurlstone Park	S2B_03	56	46	LW works compliant
5/06/2021	Southwest Corridor	5 Foord Avenue, Hurlstone Park	S2B_03	57	57	LW works compliant
7/06/2021	BPS Artarmon	23 Barton Road, Artarmon	AS_01	60	54.5	LW works compliant
7/06/2021	BPS Artarmon	2 Parkes Road, Artarmon	AS_01	60	54.3	LW works compliant
12/06/2021	BPS Surry Hills	310 Elizabeth Street, Surry Hills	CS_G	83	71	LW works compliant
12/06/2021	BPS Surry Hills	312 Elizabeth St, Surry Hills	CS_G	85	78	LW works compliant
12/06/2021	BPS Surry Hills	302-306 Elizabeth Street, Surry Hills	OSR	92	78	LW works compliant
18/06/2021	Northern Connection	9 Hopetoun Avenue, Chatswood	CDS-04	N/A	74	Daytime noise monitoring in response to a complaint. LW works compliant.
20/06/2021	BPS Surry Hills	40 Belmore Street, Surry Hills	CS_G	77	64	LW works compliant
20/06/2021	BPS Surry Hills	81 Foveaux Street, Surry Hills	CS_G	75	68	LW works compliant
20/06/2021	BPS Surry Hills	57 Foveaux Street, Surry Hills	CS_G	88	84	LW works compliant
20/06/2021	BPS Surry Hills	33 Belmore Street, Surry Hills	CS_G	77	64	LW works compliant
23/06/2021	Southern Dive	76 Unwins Bridge Road, Marrickville	MDS_04	59	66	LW Works compliant, traffic dominant noise source
23/06/2021	Southern Dive	344 Edgeware Road, Marrickville	MDS_02	55	55	LW Works compliant, traffic dominant noise source
23/06/2021	Southern Dive	3 Bourne Street, Marrickville	MDS_01	51	62	LW Works compliant, traffic dominant noise source
29/06/2021	Southwest Corridor	5 East Parade, Campsie	S2B_05	57	48	LW works compliant
29/06/2021	Southwest Corridor	10-12 Broughton Street, Canterbury	S2B_04	55.9	47	LW works compliant
2/07/2021	BPS Artarmon	23 Barton Road, Artarmon	AS_01	60	56	LW works compliant
2/07/2021	BPS Artarmon	15 Barton Road, Artarmon	AS_01	58	46	LW works compliant
2/07/2021	BPS Artarmon	2 Parkes Road, Artarmon	AS_01	58	56	LW works compliant
3/07/2021	Northern Connection	14 Raleigh Street, Artarmon	CDS-05	79	69	LW works compliant
3/07/2021	Northern Connection	7 Raleigh Street, Artarmon	CDS-05	74	63	LW works compliant
3/07/2021	Northern Connection	7 Raleigh Street, Artarmon	CDS-05	57	53	LW works compliant
3/07/2021	Northern Connection	14 Raleigh Street, Artarmon	CDS-05	62	61	LW works compliant
3/07/2021	Northern Connection	9 Hopetoun Avenue, Chatswood	CDS-04	75	65	LW works compliant
7/07/2021	Southwest Corridor	3 South Parade, Canterbury	S2B_05	59.7	52	LW works compliant
7/07/2021	Southwest Corridor	5 East Parade, Campsie	S2B_05	53.2	46	LW works compliant
7/07/2021	Southwest Corridor	24 Bellombi Street, Campsie	S2B_05	54.3	43	LW works compliant
7/07/2021	Southwest Corridor	21 South Parade, Canterbury	S2B_05	57.3	50	LW works compliant
7/07/2021	Punchbowl TSS	105 Stansfield Ave, Bankstown	S2B_11	66	57	LW works compliant
7/07/2021	Punchbowl TSS	62 South Terrace, Punchbowl	S2B_10	69	69	LW Works compliant, traffic dominant noise source
7/07/2021	Punchbowl TSS	68 South Terrace, Punchbowl	S2B_10	67	66	LW works compliant
8/07/2021	Surry Hills BPS	302-306 Elizabeth Street, Surry Hills	OSR	92	68	LW works compliant
8/07/2021	Surry Hills BPS	310 Elizabeth Street, Surry Hills	CS_G	83	69	LW works compliant
8/07/2021	Surry Hills BPS	1-15 Foveaux Street, Surry Hills	OSR	75	65	LW works compliant

Systems Connect LWW Noise Monitoring Register						
Date	Location	Detailed Monitoring Location	NCA	Predicted Noise Level	Measured L <sub>Aeq</sub>	Comments
5/08/2021	Blues Point Temporary Site	1 Henry Lawson Ave, McMahons Pont	BP_02	55	56.9	LW Works compliant, traffic dominant noise source
5/08/2021	Blues Point Temporary Site	Near 1 Warung St, McMahons Point (Next to the property - at intersection of Henry Lawson Ave and Blues Point Road)	BP_02	55	56.2	LW Works compliant, traffic dominant noise source
5/08/2021	Blues Point Temporary Site	42 Blues Point Rd, McMahons Point	BP_01	48	54.8	LW Works compliant, traffic dominant noise source
6/08/2021	BPS Artarmon	19 Reserve Road, Artarmon	AS_01	67	58	LW works compliant
6/08/2021	BPS Artarmon	19 Reserve Road, Artarmon	AS_01	67	58	LW works compliant
6/08/2021	BPS Artarmon	19 Reserve Road, Artarmon	AS_01	67	58	LW works compliant
9/08/2021	BPS Artarmon	19 Reserve Road, Artarmon	AS_01	69	65	LW works compliant
9/08/2021	BPS Artarmon	19 Reserve Road, Artarmon	AS_01	69	65	LW works compliant
11/08/2021	Blues Point Temporary Site	14-28 Blues Point tower, McMahons Point	BP_01	57	51.7	LW works compliant
11/08/2021	Blues Point Temporary Site	Near 1 Warung St, McMahons Point (Next to the property - at intersection of Henry Lawson Ave and Blues Point Road)	BP_02	55	59.3	LW Works compliant, traffic dominant noise source
11/08/2021	Blues Point Temporary Site	1 Henry Lawson Ave, McMahons Pont	BP_02	55	53.4	LW works compliant
11/08/2021	Blues Point Temporary Site	14-28 Blues Point tower, McMahons Point	BP_01	42	46.9	LW Works compliant, traffic dominant noise source
11/08/2021	Blues Point Temporary Site	Near 1 Warung St, McMahons Point (Next to the property - at intersection of Henry Lawson Ave and Blues Point Road)	BP_02	43	53.3	LW Works compliant, traffic dominant noise source
11/08/2021	Blues Point Temporary Site	1 Henry Lawson Ave, McMahons Pont	BP_02	41	54.2	LW Works compliant, traffic dominant noise source
15/08/2021	Dulwich Hill Traction Substation	18 Randall Street, Marrickville	S2B_02	75	72.2	LW works compliant
15/08/2021	Dulwich Hill Traction Substation	20 Randall Street, Marrickville	S2B_02	73	62.1	LW works compliant
15/08/2021	Dulwich Hill Traction Substation	7 Randall Street, Marrickville	S2B_02	72	64.4	LW works compliant
17/08/2021	Blues Point Temporary Site	14-28 Blues Point tower, McMahons Point	BP_01	61	56.7	LW works compliant
17/08/2021	Blues Point Temporary Site	Near 1 Warung St, McMahons Point (Next to the property - at intersection of Henry Lawson Ave and Blues Point Road)	BP_02	53	59	LW Works compliant, traffic dominant noise source
17/08/2021	Blues Point Temporary Site	1 Henry Lawson Ave, McMahons Pont	BP_02	52	59.4	LW Works compliant, traffic dominant noise source
17/08/2021	Blues Point Temporary Site	14-28 Blues Point tower, McMahons Point	BP_01	59	46.6	LW works compliant
17/08/2021	Blues Point Temporary Site	Near 1 Warung St, McMahons Point (Next to the property - at intersection of Henry Lawson Ave and Blues Point Road)	BP_02	50	51.3	LW Works compliant, traffic dominant noise source
17/08/2021	Blues Point Temporary Site	1 Henry Lawson Ave, McMahons Pont	BP_02	51	49.7	LW works compliant
26/08/2021	Surry Hills BPS	100 Albion Street, Surry Hills	CS_G	92	72.8	LW works compliant
26/08/2021	Surry Hills BPS	85 Albion Street, Surry Hills	CS_G	83	72.3	LW works compliant
26/08/2021	Surry Hills BPS	106 Albion Street, Surry Hills	CS_G	91	79.4	LW works compliant

## Appendix D: Noise Monitoring Equipment Details

## RION Tracking and Calibration Records

Bag No.	Make	Model	Device Serial Number	Portable Calibrator Serial Number	Previous Calibration Date	External Calibration Date 2021	Place of Calibration 2020
1	RION	NL-42	00509242		15/07/2020	7/09/2021	Acoustic Research Lab
		NC-75 - Portable Calibrator		34202225	13/07/2020	7/09/2021	Acoustic Research Lab
2	RION	NL-42	01000278		Purchased 18/03/2021	18/03/2021	Acoustic Research Lab
		NC-75 - Portable Calibrator		34212953	Purchased 18/03/2021	18/03/2021	Acoustic Research Lab
3	RION	NL-42	00269685		24/07/2020	9/07/2021	Acoustic Research Lab
		NC-75 - Portable Calibrator		00970021	24/07/2020	8/07/2021	Acoustic Research Lab
4	RION	NL-42	00469907		24/07/2020	27/07/2021	Acoustic Research Lab
		NC-75 - Portable Calibrator		34502426	15/07/2020	27/07/2021	Acoustic Research Lab
5	RION	NL-21	00877037		11/09/2020	11/09/2021	Acu-Vib Electronics
	Pulsar	100B - Portable Calibrator		42184	11/09/2020	11/09/2021	Acu-Vib Electronics

## Appendix E: Noise Monitoring Record Sheet Samples

## Noise Monitoring Record Sheet

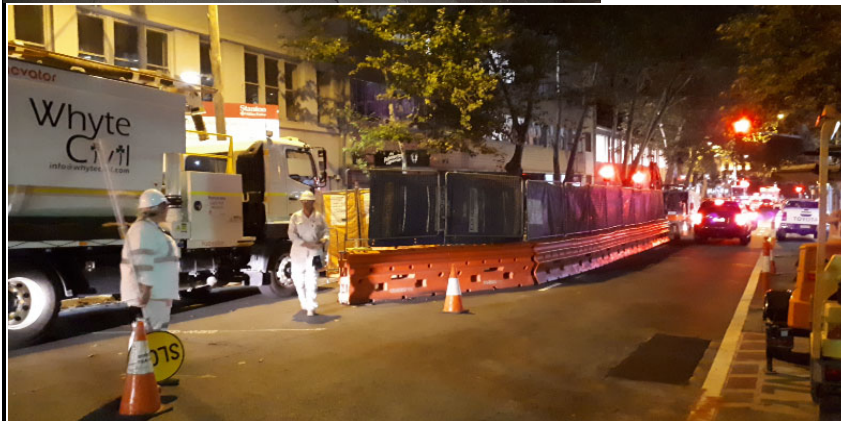
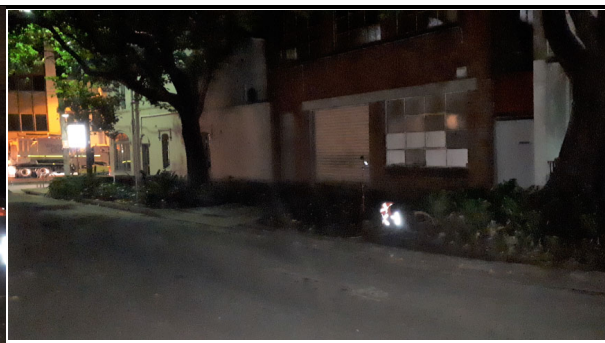
<b>DATE:</b>	02-March-2021	<b>MAIN ACTIVITY</b>	Surry Hills BPS potholing / services investigation
<b>CONDUCTED BY:</b>	Chris Riley	<b>LOCATION OF WORKS:</b>	Foveaux Street, Surry Hills
<b>METEROLOGICAL CONDITIONS:</b>	Fine, clear, calm		
<b>DAY, EVENING OR NIGHT PERIOD?</b>	Evening		
<b>MAKE / MODEL:</b>	Rion NL-42	<b>SERIAL NUMBER:</b>	469907
<b>TIME WEIGHTING:</b>	FAST / SLOW	<b>FREQUENCY WEIGHTING:</b>	A / G / FLAT
<b>FIELD CALIBRATION:</b>	94	<b>POST CALIBRATION CHECK:</b>	93.9
<b>COMMUNITY NOTIFICATIONS GONE OUT FOR THE WORKS?</b>		YES / <del>NO</del>	
<b>LIGHT SPILL into residences?</b>	No.		
<b>Are noise mitigation measures installed?</b>	Yes. Noise barriers in place along both sides and eastern end of work area. Squawker alarms on all plant.		

MONITORING LOCATION 1				
<b>LOCATION:</b>	39 Belmore Street. On footpath 3.5m in front of building.			
<b>ACTIVITIES:</b>	Road surface cutting with roadsaw			
<b>PLANT:</b>	Walk-behind roadsaw, trailer-mounted vacuum cleaner, tool truck			
<b>START TIME</b>	<b>END TIME</b>	<b>RBL (dBA)</b>	<b>E41/E42 NML (dBA)</b>	<b>NCA</b>
20:50	21:05	53	N/A	CS_G
<b>L<sub>aeq</sub></b>	<b>L<sub>max</sub></b>	<b>L<sub>min</sub></b>	<b>L<sub>A10</sub></b>	<b>L<sub>A90</sub></b>
69.3	76.5	57.2	72.3	58.5
<b>PREDICTED NOISE LEVEL (dBA):</b>		89		
<b>L<sub>aeq</sub> ABOVE PREDICTED NOISE LEVEL:</b>		Nil		
<b>Measured noise level with no construction activity (if applicable)</b>			N/A	
<b>Calculated construction contribution</b>			69.3	
<b>Construction contribution above predicted noise level</b>			Nil	
<b>MONITORING COMMENTS</b>	<p>Moderate slow traffic on Foveaux Street. One noisy truck, otherwise not a significant noise source.</p> <p>Noise barriers located between monitoring point and work area.</p> <p>Max noise = loud truck on Foveaux Street</p> <p>Road saw idling 68</p> <p>Road saw cutting 70-73</p> <p>Road saw operating on Foveaux St, 10m west of Belmore St. Shielded from monitoring point by building on corner.</p> <p>Tool truck idling. Not audible at monitoring point.</p> <p>Vacuum truck present. Turned off.</p>			

## DIAGRAMS AND PHOTOS

### Insert:

- Photo of works being monitored
- Map showing monitoring location or Screenshot of GPS Location



MONITORING LOCATION 2				
LOCATION:	57 Foveaux Street (on footpath 3m from corner of building closest to work area)			
ACTIVITIES:	Road surface breaking with hammer attachment			
PLANT:	5T excavator with hammer attachment, diesel-powered lighting tower, tool truck			
START TIME	END TIME	RBL (dBA)	E41/E42 NML (dBA)	NCA
21:21	21:36	45	N/A	CS_G
L <sub>aeq</sub> (dBA)	L <sub>max</sub> (dBA)	L <sub>min</sub> (dBA)	L <sub>A10</sub> (dBA)	L <sub>A90</sub> (dBA)
76.6	89.5	63.0	81.8	65.7
PREDICTED NOISE LEVEL (dBA):		93		
L <sub>aeq</sub> ABOVE PREDICTED NOISE LEVEL:		Nil		
Measured noise level with no construction activity (if applicable)			N/A	
Calculated construction contribution			76.6	
Construction contribution above predicted noise level			Nil	
MONITORING COMMENTS	Moderate slow traffic on Foveaux Street. Not a significant noise source.			
	Noise barriers located between monitoring point and work area.			
	Max noise = rock hammer			
	Rock hammer at nearest work point (8m) 83 - 85 typical			
	Rock hammer at furthest work point (15m) 78-80 typical			
	5T excavator maneuvering with no hammering, and light tower operating 68 - 70			
	Light tower only operating 64			
	Tool truck idling. Not audible at monitoring point.			
	Vacuum truck present. Turned off.			



## DIAGRAMS AND PHOTOS

### Insert:

- Photo of works being monitored
- Map showing monitoring location or Screenshot of GPS Location



## Noise Monitoring Record Sheet

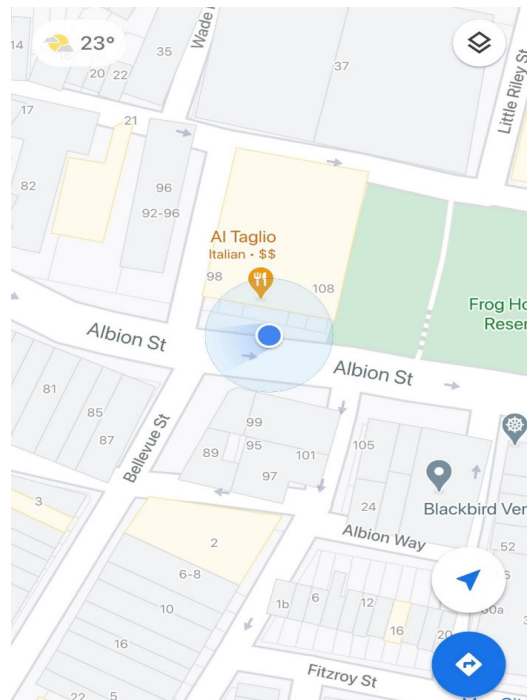
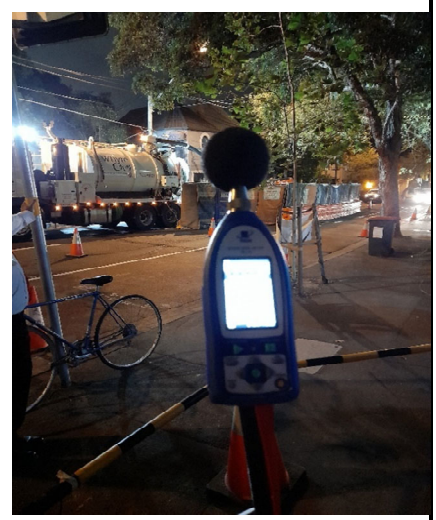
<b>DATE:</b>	09-March-2021	<b>MAIN ACTIVITY</b>	Surry Hills BPS potholing / services investigation
<b>CONDUCTED BY:</b>	Evelyn Cardona	<b>LOCATION OF WORKS:</b>	Albion Street, Surry Hills
<b>METEROLOGICAL CONDITIONS:</b>	Fine, light breeze.		
<b>DAY, EVENING OR NIGHT PERIOD?</b>	Evening and Night		
<b>MAKE / MODEL:</b>	Rion NL-42	<b>SERIAL NUMBER:</b>	509242
<b>TIME WEIGHTING:</b>	FAST / SLOW	<b>FREQUENCY WEIGHTING:</b>	A / G / FLAT
<b>FIELD CALIBRATION:</b>	93.9	<b>POST CALIBRATION CHECK:</b>	93.9
<b>COMMUNITY NOTIFICATIONS GONE OUT FOR THE WORKS?</b>		YES / <del>NO</del>	
<b>LIGHT SPILL into residences?</b>	No.		
<b>Are noise mitigation measures installed?</b>	Yes. Noise barriers/mats surrounding the works. Squawker alarms on all plant.		

MONITORING LOCATION 1				
<b>LOCATION:</b>	In between 102-104 and 106 Albion Street Surry Hills			
<b>ACTIVITIES:</b>	Road surface cutting with roadsaw and vacuuming.			
<b>PLANT:</b>	Roadsaw, vacuum truck, generator, diesel powered lighting tower.			
<b>START TIME</b>	<b>END TIME</b>	<b>RBL (dBA)</b>	<b>E41/E42 NML (dBA)</b>	<b>NCA</b>
21:48	22:03	53	N/A	CS_G
<b>L<sub>aeq</sub></b>	<b>L<sub>max</sub></b>	<b>L<sub>min</sub></b>	<b>L<sub>A10</sub></b>	<b>L<sub>A90</sub></b>
81.1	89.5	71.1	83.2	78.4
<b>PREDICTED NOISE LEVEL (dBA):</b>		101		
<b>L<sub>aeq</sub> ABOVE PREDICTED NOISE LEVEL:</b>		N/A		
<b>Measured noise level with no construction activity (if applicable)</b>			N/A	
<b>Calculated construction contribution</b>			N/A	
<b>Construction contribution above predicted noise level</b>			N/A	
<b>MONITORING COMMENTS</b>	Vac Truck - 78, 79, 80, 82, 84 Traffic passing & vac truck - 80, 79, 83 Bus passing - 82, 81, 83 Motorbike passing - 85 Road saw & vacuum truck - 84, 82, 83, 86 People chatting close by & vacuum truck - 80, 84, 82, 83 Ute beeping - 83 Road saw only - 76, 82, 72			

## DIAGRAMS AND PHOTOS

### Insert:

- Photo of works being monitored
- Map showing monitoring location or Screenshot of GPS Location



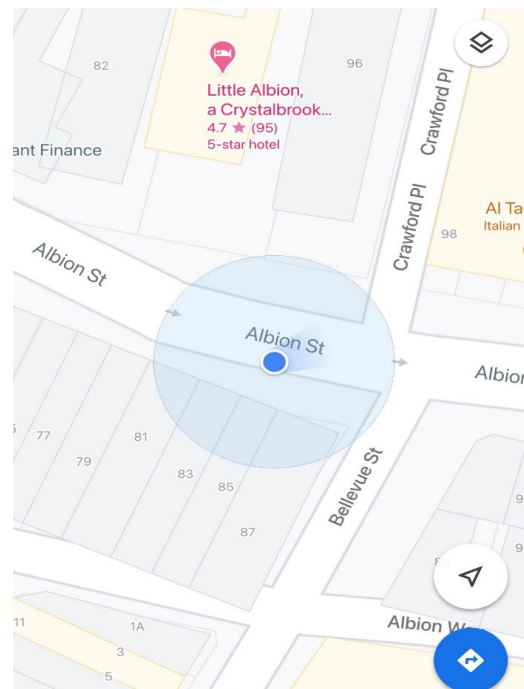
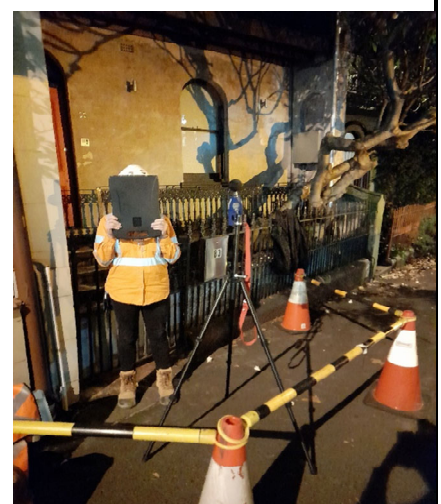
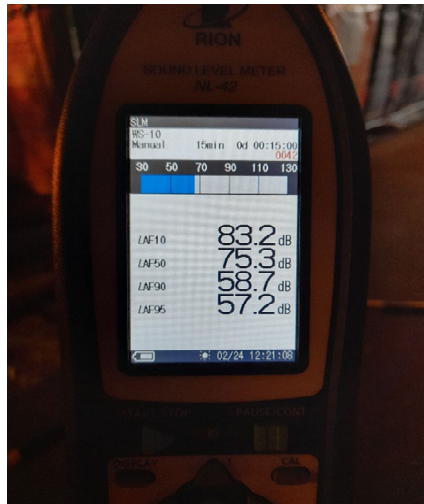
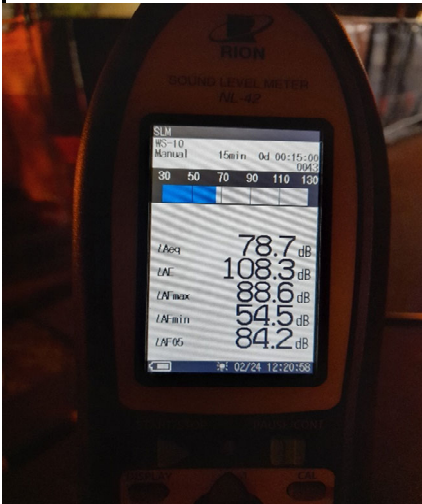
MONITORING LOCATION 2				
LOCATION:	83 Albion Street Surry Hills			
ACTIVITIES:	Vacuuming, road sawing and excavating.			
PLANT:	Road saw, vacuum truck, excavator with hammer attachment (5t/8t), generator, diesel powered lighting tower.			
START TIME	END TIME	RBL (dBA)	E41/E42 NML (dBA)	NCA
22:24	22:39	45	N/A	CS_G
L <sub>aeq</sub> (dBA)	L <sub>max</sub> (dBA)	L <sub>min</sub> (dBA)	L <sub>A10</sub> (dBA)	L <sub>A90</sub> (dBA)
78.7	88.6	54.5	83.2	58.7
PREDICTED NOISE LEVEL (dBA):		83		
Laeq ABOVE PREDICTED NOISE LEVEL:		N/A		
Measured noise level with no construction activity (if applicable)			55	
Calculated construction contribution			N/A	
Construction contribution above predicted noise level			NIL	
MONITORING COMMENTS	Road saw - 81, 84, 85, 79, 86, 88		No works - 55, 57	
	Generator only - 65, 67, 66, 68		Truck driving pass - 70, 71	
	Vac truck - 78, 79, 83, 81, 76, 75		Ute idling - 67, 68	
	Plant Idling - 74, 76, 75, 78			
	Car beeping - 75			
	5t/8t excavator with hammer attachment - 80, 81, 75, 79, 81, 83			
	Cars driving pass - 68, 67, 70, 64, 60			
	Plant moving with squawker on - 67, 68, 66			
Construction worker radio chatter - 58				



## DIAGRAMS AND PHOTOS

Insert:

- Photo of works being monitored
- Map showing monitoring location or Screenshot of GPS Location



## Noise Monitoring Record Sheet

<b>DATE:</b>	07-March-2021	<b>MAIN ACTIVITY</b>	Tamper float
<b>CONDUCTED BY:</b>	Amy Taylor	<b>LOCATION OF WORKS:</b>	Northern Connection
<b>METEROLOGICAL CONDITIONS:</b>			
<b>DAY, EVENING OR NIGHT PERIOD?</b>	Night		
<b>MAKE / MODEL:</b>	Rion NL-42	<b>SERIAL NUMBER:</b>	269685
<b>TIME WEIGHTING:</b>	FAST / SLOW	<b>FREQUENCY WEIGHTING:</b>	A / C / FLAT
<b>FIELD CALIBRATION:</b>	94.1	<b>POST CALIBRATION CHECK:</b>	94.1
<b>COMMUNITY NOTIFICATIONS GONE OUT FOR THE WORKS?</b>	YES	AA offered	
<b>LIGHT SPILL into residences?</b>	No		
<b>Are noise mitigation measures installed?</b>	None visible - corridor wall blocking noise from corridor		

MONITORING LOCATION 1				
<b>LOCATION:</b>	15 Nelson St			
<b>ACTIVITIES:</b>	Tamper float			
<b>PLANT:</b>	Truck mounted crane, prime mover / float			
<b>START TIME</b>	<b>END TIME</b>	<b>RBL (dBA)</b>	<b>E41/E42 NML (dBA)</b>	<b>NCA</b>
23:18	23:33	45	NA	NA - Residential Urban
<b>L<sub>aeq</sub></b>	<b>L<sub>max</sub></b>	<b>L<sub>min</sub></b>	<b>L<sub>A10</sub></b>	<b>L<sub>A90</sub></b>
69.9	83.2	57.6	73.2	59.5
<b>PREDICTED NOISE LEVEL (dBA):</b>	80			
<b>L<sub>aeq</sub> ABOVE PREDICTED NOISE LEVEL:</b>	NA - Below predicted			
<b>Measured Construction Contribution (dBA)</b>	Construction noise was dominant noise source			
<b>Measured Construction Contribution Above Predicted Noise Level</b>	NA			
<b>MONITORING COMMENTS</b>	Truck idling next to crane - 73 Hooking up chains to plant ready for lift - 75-76 max Start lifting at 23:22 - 75 (with truck idling too) Truck drives out - 76 Crane only: Rotating - 63-64, lowering - 65-66 Instantaneous noise (worker dropping something on truck) - ~80 Other noise sources: radios, traffic control talking (61), crickets (60) Crane moving back around - 68-70			

MONITORING LOCATION 2				
LOCATION:	15 Nelson St			
ACTIVITIES:	Tamper float			
PLANT:	Truck mounted crane, prime mover / float			
START TIME	END TIME	RBL (dBA)	E41/E42 NML (dBA)	NCA
23:35	23:51	45	NA	NA - Residential Urban
L <sub>aeq</sub> (dBA)	L <sub>max</sub> (dBA)	L <sub>min</sub> (dBA)	L <sub>A10</sub> (dBA)	L <sub>A90</sub> (dBA)
62.8	81.9	42.6	66.0	56.1
PREDICTED NOISE LEVEL (dBA):		80		
Laeq ABOVE PREDICTED NOISE LEVEL:		NA - below predicted		
Measured Construction Contribution (dBA)		Construction noise was dominant noise source		
Measured Construction Contribution Above Predicted Noise Level			NA	
MONITORING COMMENTS	Starting to pack up crane and counter weights Crane movements - 58, 59, 62, 66, 67 Crane lifting (chains audible) - 68-69 Crane just idling - 56 Crane engine turns off briefly at 23:47 - 44, engine turns back on within a minute and goes back up to 56. Car drives into 7-11 Nelson St. Truck reversing crane and past monitor - 65-67 Truck air brakes - 77.6 (Out of measurement: truck continues to reverse - 85)			

MONITORING LOCATION 3				
LOCATION:	15 Nelson St			
ACTIVITIES:	Tamper float			
PLANT:	Truck mounted crane, prime mover / float			
START TIME	END TIME	RBL (dBA)	E41/E42 NML (dBA)	NCA
23:58	0:13	45	NA	NA - Residential Urban
L <sub>aeq</sub> (dBA)	L <sub>max</sub> (dBA)	L <sub>min</sub> (dBA)	L <sub>A10</sub> (dBA)	L <sub>A90</sub> (dBA)
68.6	75.5	58.6	70.8	65.8
PREDICTED NOISE LEVEL (dBA):		80		
L <sub>aeq</sub> ABOVE PREDICTED NOISE LEVEL:		NA - below predicted		
Measured Construction Contribution (dBA)		Construction noise was dominant noise source		
Measured Construction Contribution Above Predicted Noise Level			NA	
MONITORING COMMENTS	Removing of counter weights onto trucks: Truck for counter weights arrives and reverses in (no alarms at all) - 69, 70, 71, 74 (engine next to monitor) Truck idling - 65 Air brakes - 70-71 Removing counter weights - 68-70, 72.6 max Chains - 71.5 Idling + chains - 66-67 Weights placed on truck inaudible over crane / truck idling - 65			


## Appendix F: Systems Connect Vibration Monitoring Register



## Systems Connect Vibration Monitoring Register

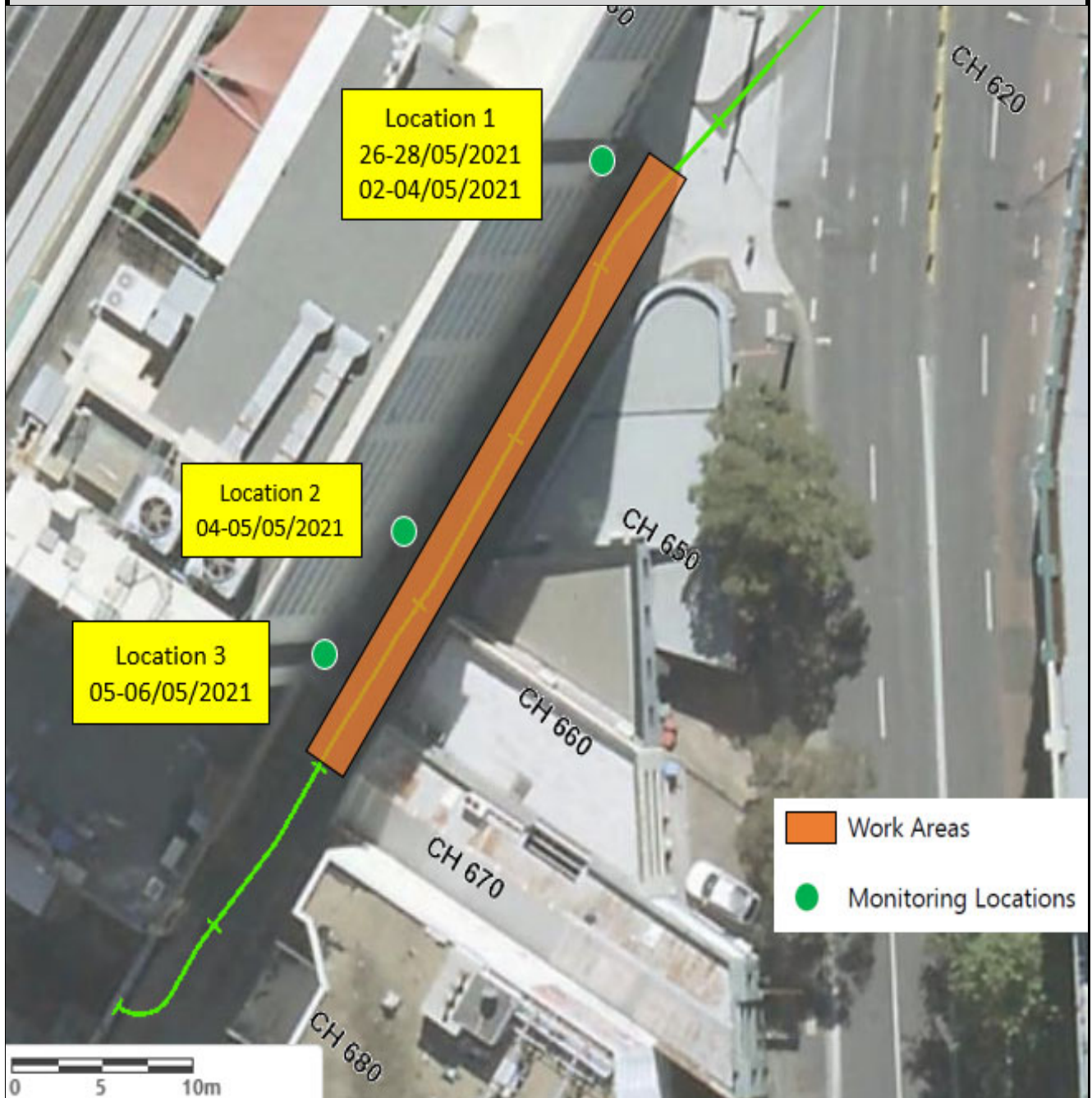
Start Date	End Date	Location	Detailed Monitoring Location	Attended or Continuous	Vibration Criteria mm/s	Compliant with Vibration Criteria or Monitorong Protocol Y/N
26/04/2021	6/05/2021	BPS Surry Hills	2-18 Chalmers St, Surry Hills	Attended	25	Y
10/05/2021	13/05/2021	BPS Surry Hills	2-18 Chalmers St, Surry Hills	Attended	25	Y
3/06/2021	10/06/2021	BPS Campsie	Pat O'Connor Reserve / Cup and Saucer Creek	Attended	10	Y
21/06/2021	22/06/2021	Dulwich Hill TSS	Rear of 19 Albmermarle St, Marrickville	Attended	7.5	Y
22/06/2021	2/07/2021	Dulwich Hill TSS	Rear of 19 Albmermarle St, Marrickville	Attended	7.5	Y

## Appendix G: Vibration Monitoring Report Samples

		<b>Vibration Monitoring Record Sheet</b>	
<b>START DATE:</b>	26/04/2021	<b>PROJECT AREA:</b>	Surry Hills BPS
<b>FINISH DATE:</b>	6/05/2021	<b>MAIN ACTIVITY</b>	BPS Trenching
<b>CONDUCTED BY:</b>	Jad Gannon and Dean Kellet	<b>LOCATION OF WORKS:</b>	Randle Lane Surry Hills
<b>DAY, EVENING OR NIGHT PERIOD:</b>	Evening and Night		
<b>MONITORING EQUIPMENT:</b>	Sigicom INFRA C12 vibration monitor (supplied by Renzo Tonin)		
<b>VIBRATION MONITORING PLAN:</b>	TK685-03-05F02 BPS Surry Hills monitoring plan, dated: 14 .12.2020, revision 1		

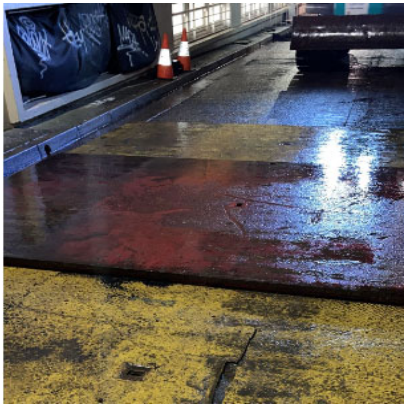
MONITORING LOCATIONS 1, 2 AND 3					
LOCATION:	2-18 Chalmers Street (Dental Hospital Building)				
DATES:	26 April to 06 May 2021				
ACTIVITIES:	Road surface cutting, breaking and removal, trenching, conduit installation and backfilling				
PLANT:	Road saw; 5T excavator with hammer; 15T excavator with bucket; 3T vibratory roller; tipper trucks; road plates, bins				
STRUCTURE TYPE:	Heritage building, classified as structurally sound commercial building				
VIBRATION CRITERIA:	Reinforced building (commercial): 25 mm/s				
APPLICABLE MWD:	5m	ACTUAL WORKING DISTANCE:		2m minimum	
VIBRATION MONITOR MOUNTING METHOD:		Steel baseplate bolted to concrete footpath or building alcove surfaces			
EXCEEDENCES OF VIBRATION CRITERIA (Refer to monitoring data for all results)					
Date	Time	V (mm/s)	T (mm/s)	L (mm/s)	Reason
27/04/2021	3:10:20	17.4	30.7	51.1	Monitor turn off
2/05/2021	19:45:39	18.7	19	39.2	Monitor turn on
3/05/2021	20:19:46	35.9	40.6	44.8	Vibration monitor tapped for test
3/05/2021	20:20:20	25.5	42.2	50.4	Vibration monitor tapped for test
4/05/2021	19:49:53	32.4	33.4	31.9	Machine movement and road plate removal
5/05/2021	1:32:10	16.4	10.2	32.8	unloading of conduit and equipment striking vibration monitor
5/05/2021	1:32:21	41.4	35.1	48.1	unloading of conduit and equipment striking vibration monitor
5/05/2021	1:33:50	30.6	30.9	45	unloading of conduit and equipment striking vibration monitor
5/05/2021	1:34:00	34.7	13.8	43.3	unloading of conduit and equipment striking vibration monitor
5/05/2021	1:34:21	45.3	39.1	48.6	unloading of conduit and equipment striking vibration monitor
5/05/2021	19:50:12	22.4	14	36.2	Vibration monitor tapped for test
5/05/2021	19:50:14	36.3	20	40.6	Vibration monitor tapped for test
5/05/2021	19:51:44	26	45.2	43.2	Vibration monitor tapped for test
5/05/2021	19:51:46	28.1	46.4	65.5	Vibration monitor tapped for test
5/05/2021	19:51:48	31.5	57.6	42.2	Vibration monitor tapped for test
5/05/2021	19:51:50	26	39.8	40.9	Vibration monitor tapped for test
5/05/2021	20:59:03	24.5	23.4	38.5	Landing hook-lift bin on ground and storing equipment near monitor
COMPLIANT WITH VIBRATION CRITERIA:			Yes		
MONITORING COMMENTS OR ACTIONS TAKEN TO ADDRESS EXCEEDENCES OF VIBRATION CRITERIA					
Location 2: 04 - 05 May		Monitor located on concrete strip between building and work. The concrete strip is closer to the work than the building is, and can be expected to have more movement than the building. Plant tracking to within 0.5m of monitor.			
All locations		No exceedances due to operation of vibratory equipment			

## DIAGRAMS



PHOTOS				
27/04/2021	19:40			
02/05/2021	19:48			
03/05/2021	19:27			
04/05/2021	19:43		19:44	



04/05/2021	19:51		20:01	
4-May	21:11			
5-May	1:34		19:39	
5-May	21:03		21:03	



## Vibration Monitoring Record Sheet

START DATE:	10/05/2021	PROJECT AREA:	Surry Hills BPS
FINISH DATE:	13/05/2021	MAIN ACTIVITY	BPS Trenching
CONDUCTED BY:	Jad Gannon and Dean Kellet	LOCATION OF WORKS:	Randle Lane Surry Hills
DAY, EVENING OR NIGHT PERIOD:	Evening and Night		
MONITORING EQUIPMENT:	Sigicom INFRA C12 vibration monitor (supplied by Renzo Tonin)		
VIBRATION MONITORING PLAN:	TK685-03-05F02 BPS Surry Hills monitoring plan, dated: 14 .12.2020, revision 1		

### MONITORING LOCATIONS 1

LOCATION:	2-18 Chalmers Street (Dental Hospital Building)		
DATES:	10 to 13 May 2021		
ACTIVITIES:	Road surface cutting, breaking and removal, trenching, conduit installation and backfilling		
PLANT:	Road saw; 5T excavator with hammer; 15T excavator with bucket; 3T vibratory roller; tipper trucks; road plates, bins		
STRUCTURE TYPE:	Heritage building, classified as structurally sound commercial building		
VIBRATION CRITERIA:	Reinforced building (commercial): 25 mm/s		
APPLICABLE MWD:	5m	ACTUAL WORKING DISTANCE:	2m minimum
VIBRATION MONITOR MOUNTING METHOD:	Steel baseplate bolted to concrete building alcove surface		

### EXCEEDENCES OF VIBRATION CRITERIA (Refer to monitoring data for all results)

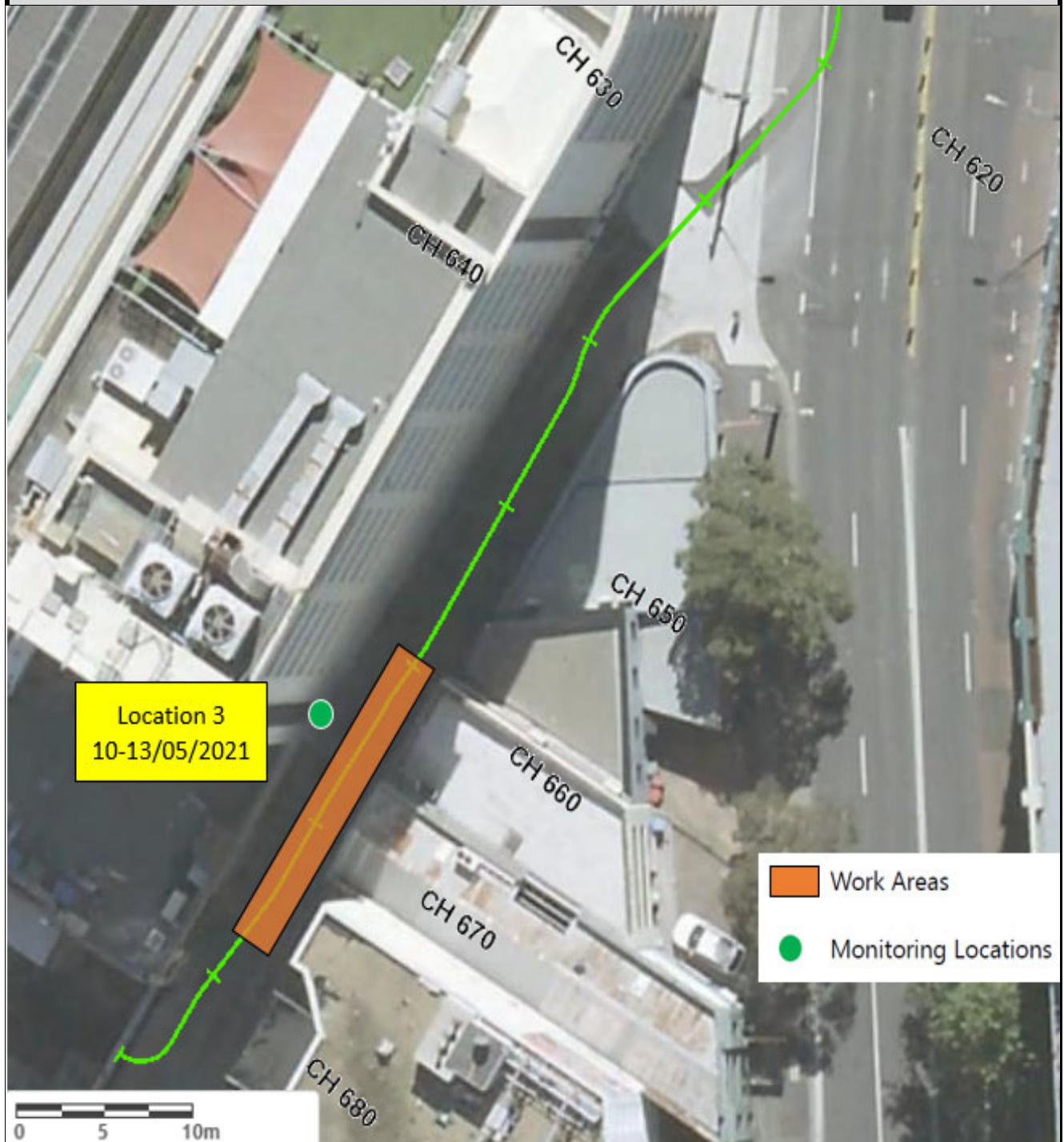
Date	Time	V (mm/s)	L (mm/s)	T (mm/s)	Reason
11/05/2021	8:02:40 PM	31.2	21.5	41.9	Putting materials on ground very close to monitor

COMPLIANT WITH VIBRATION CRITERIA:	Yes
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### MONITORING COMMENTS OR ACTIONS TAKEN TO ADDRESS EXCEEDENCES OF VIBRATION CRITERIA

--	--

## DIAGRAMS





PHOTOS			
10/05/2021	20:17		
11/05/2021	0:32		19:15 
11/05/2021	19:40		20:04 
12/05/2021	20:25		



## Vibration Monitoring Record Sheet

<b>START DATE:</b>	3/06/2021	<b>PROJECT AREA:</b>	Campsie BPS Bridge (Pat O'Connor Reserve)
<b>FINISH DATE:</b>	10/06/2021	<b>MAIN ACTIVITY</b>	Piling Works
<b>CONDUCTED BY:</b>	Dean Kellet	<b>LOCATION OF WORKS:</b>	Pat O'Connor Reserve / Cup and Saucer Creek
<b>DAY, EVENING OR NIGHT PERIOD:</b>	Day		
<b>MONITORING EQUIPMENT:</b>	Sigicom INFRA C12 vibration monitor (supplied by Renzo Tonin)		
<b>VIBRATION MONITORING PLAN:</b>	TK685-151-100-3-03F01 BPS Campsie Piling Works monitoring plan, dated: 31.05.2021, revision 1		

MONITORING LOCATION 1					
LOCATION:	Pat O'Connor Reserve / Cup and Saucer Creek				
DATES:	3 to 10 June 2021				
ACTIVITIES:	Piling works for bridge foundations				
PLANT:	20t excavator with auger attachment				
STRUCTURE TYPE:	Channel structure for Cup and Saucer and Creek				
VIBRATION CRITERIA:	Unreinforced structure: 10 mm/s				
APPLICABLE MWD:	5m	ACTUAL WORKING DISTANCE:		1.5 m	
VIBRATION MONITOR MOUNTING METHOD:		Steel baseplate stuck with adhesive to concrete channel surface			
EXCEEDENCES OF VIBRATION CRITERIA (Refer to monitoring data for all results)					
Date	Time	V (mm/s)	T (mm/s)	L (mm/s)	Reason
3/06/2021	9:53:00 AM	10.2	14.3	4.94	Testing monitor / mounting
3/06/2021	1:47:00 PM	9.93	5.16	8.26	Auger changed to larger size meaning the part struggled to bite initially and could not stay central in the bore hole
8/06/2021	10:28:00 AM	34.1	17.7	35	Testing tranmission by tapping monitor
8/06/2021	1:18:00 PM	5.44	2.23	8.89	Auger withdrawal then reinsertion and centering
8/06/2021	4:26:00 PM	10.4	10.2	5.71	Vibration monitor turned off
COMPLIANT WITH VIBRATION CRITERIA:			Yes		
MONITORING COMMENTS OR ACTIONS TAKEN TO ADDRESS EXCEEDENCES OF VIBRATION CRITERIA					
3/06/2021 13:47:00 PM	Stopped piling work following alarm. Photo taken of channel façade				
8/06/2021 13:18	Stopped piling work following alarm. Photo taken of channel façade				

## DIAGRAMS



- Pile Locations
- Vibration Monitor Location



PHOTOS

3/06/2021

1:47:00 PM

