



ENVIRONMENTAL MONITORING REPORT, JUNE 2021

PARRAMATTA LIGHT RAIL INFRASTRUCTURE WORKS

5 July 2021

Parramatta
Connect

Contents

1. Introduction	1
1.1. Background	1
1.1.1. Statutory Context	2
1.2. Scope	2
2. Site Activities	4
3. Monitoring Results	6
3.1. Inspections	6
3.2. Weather	7
3.3. Noise and Vibration	8
3.4. Soil and Water	10
3.4.1. Water quality in receiving waters	10
3.4.2. Discharge and dewatering	11
3.5. Air Quality	11
3.5.1. Dust Deposition Monitoring	11
3.5.2. Asbestos Fibre Monitoring	11
3.6. Flora and Fauna	12
3.6.1. Grey-Headed Flying Fox Monitoring	12
3.7. Issues/incidents/non-compliance	12
Appendices	13
A-1 Weather Observations	13
A-2 Noise and Vibration Monitoring Results	15
A-3 Water Sampling and Discharge Results	18
A-4 Air Quality Monitoring Results	20



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1. Introduction

1.1. Background

Parramatta Light Rail Stage 1 ('Stage 1') will connect Westmead to Carlingford via Parramatta Central Business District (CBD) and Camellia. Stage 1 is expected to be operational in 2023.

Stage 1 will create new communities, connect great places and help both local residents and visitors move around and explore what the region has to offer. The route will link Parramatta's CBD and train station to a number of key locations, including the Westmead Precinct, the Parramatta North Growth Centre, the new Western Sydney Stadium, the Camellia Town Centre, the new Powerhouse Museum and Riverside Theatre arts and cultural precinct, the private and social housing redevelopment at Telopea, the Rosehill Gardens Racecourse and the three Western Sydney University campuses.

Key features of Stage 1 include:

- A new dual track light rail network of approximately twelve (12) kilometres in length, including approximately seven (7) kilometres within the existing road corridor and approximately five (5) kilometres within the existing Carlingford Line and Sandown Line, replacing current heavy rail services
- Sixteen (16) stops that are fully accessible and integrated into the urban environment including a terminus stop at each end of Westmead and Carlingford
- High frequency 'turn-up-and-go' services operating seven days a week from 5am to 1am. Weekday services will operate approximately every 7.5 minutes in the peak period between 7am and 7pm
- Modern and comfortable air-conditioned light rail vehicles, nominally 45 metres long and driver-operated, each carrying up to 300 passengers.
- Intermodal interchanges with existing public transport services at Westmead terminus, Parramatta CBD and the Carlingford terminus
- Creation of two light rail and pedestrian zones (no general vehicle access) within the Parramatta CBD along Church Street (generally between Market Street and Macquarie Street) and along Macquarie Street (generally between Horwood Place and Smith Street)
- A Stabling and Maintenance (SaM) Facility located in Camellia for light rail vehicles to be stabled, cleaned and maintained
- New bridge structures along the alignment including over James Ruse Drive and Clay Cliff Creek, Parramatta River (near the Cumberland Hospital), Kissing Point Road and Vineyard Creek, Rydalmere
- Alterations to the existing road network including line marking, additional traffic lanes and turning lanes, new traffic signals, and changes to traffic flows
- Relocation and protection of existing utilities
- Public domain and urban design works along the corridor and at Stop precincts
- Closure of the heavy rail line between Carlingford and Clyde
- Active transport corridors and additional urban design features along sections of the alignment and within Stop precincts
- Integration with the Opal Electronic Ticketing System (ETS)
- Real time information in light rail vehicles and at Stops via visual displays and audio.



1.1.1. Statutory Context

The Parramatta Light Rail is classified as Critical State Significant Infrastructure (CSSI) and was subject to environmental impact assessment under the *Environmental Planning and Assessment Act 1979* (EP&A Act). The EIS assessed impacts for Parramatta Light Rail Stage 1 (Westmead to Carlingford) including the light rail and associated road enabling works.

Stage 1 received Infrastructure Approval from the Minister for Planning under Section 5.19 of the EP&A Act on 29 May 2018 (Critical State Significant Infrastructure Application SSI-8285), subject to the conditions provided in the Instrument of Approval, specifically Schedule B – Ministerial Conditions of Approval.

The Infrastructure Approval was subsequently modified under Section 5.25 of the EP&A Act on 21 December 2018 and 25 January 2019.

The planning approval, modifications and related environmental assessment documents are located at: http://majorprojects.planning.nsw.gov.au/index.pl?action=view_job&job_id=8285.

A Construction Environmental Management Plan (CEMP) has been prepared for the Parramatta Light Rail Package 4 – Infrastructure Works (Infrastructure Works). The purpose of the CEMP and associated Sub-plans is to address the requirements of the:

- Minister’s Conditions of Approval (CoA) SSI-8285
- Revised Environmental Mitigation and Management Measures (REMMMs)
- Environmental Performance Outcomes (EPOs)
- Applicable legislation and contractual requirements, including the PLR Stage 1 Infrastructure Contract Project Deed (ISD-17-6721).

The REMMMs and EPOs are listed in Parramatta Light Rail Stage 1 Westmead to Carlingford via Parramatta CBD and Camellia Environmental Impact Statement (the EIS), as amended by the Parramatta Light Rail (Stage 1) Westmead to Carlingford via Parramatta CBD and Camellia Submissions Report (incorporating Preferred Infrastructure Report) (March 2018) (the SPIR). The CEMP and associated Sub-plans were approved the Secretary on the 21 November 2019.

1.2. Scope

The scope of this report is to present monthly results of the inspection and monitoring programs outlined in the Infrastructure Works CEMP and associated Sub-plans, including the results of the construction monitoring programs referred to in Condition C9 of the Planning Infrastructure Approval.

Environmental inspections and monitoring are undertaken to:

- Validate the predicted impacts of the Infrastructure Works
- Measure the effectiveness of environmental controls
- Track progress against targets and objectives of the CEMP.

The monitoring requirements for nominated aspects are included in the relevant Sub-plans and summarised in **Table 1-1**.

Where relevant, data will be presented on a progressive basis (i.e. monthly summary) to identify trends.

The data of the monitoring programs will also be reviewed annually in the Annual Environment Report.



Table 1-1 Monthly Environmental Monitoring Reporting Requirements

CEMP or Sub-plan	Monitoring program	Distribution
Noise and Vibration Management Sub-plan	<ul style="list-style-type: none"> - Locations and descriptions of monitoring undertaken - Noise monitoring results - Summary of any exceedance of the nominated criteria - Corrective actions 	<ul style="list-style-type: none"> - City of Paramatta Council - Cumberland Council - EPA - NSW Health - TfNSW - IC - ER - AA - Made publicly available
Soil and Water Management Sub-plan	<ul style="list-style-type: none"> - Weather forecasts and observations - Water Quality (Turbidity) monitoring - Discharge and dewatering monitoring 	<ul style="list-style-type: none"> - City of Paramatta Council - Cumberland Council - EPA - DOI Water - TfNSW - IC - Made publicly available
Air Quality and Dust Management Sub-plan	<ul style="list-style-type: none"> - Weather observations - Dust deposition monitoring - Real time aerosol dust monitors - Asbestos fibre air monitoring 	<ul style="list-style-type: none"> - EPA - TfNSW - IC - Made publicly available
Grey-headed Flying-fox (GHFF) Construction Monitoring Program	<ul style="list-style-type: none"> - Weekly visual checks of GHFF camp during high risk periods (1 September to 31 January) 	<ul style="list-style-type: none"> - TfNSW



2. Site Activities

Table 2-1 provides a summary of the site activities for this reporting period (26 May 2021 to 25 June 2021).

Table 2-1 Site Activities During Reporting Period

Precinct	Site Activities
Westmead and North Parramatta	Westmead <ul style="list-style-type: none">– Ongoing property adjustment, drainage, Combined Service Route (CSR), track works– Urban design landscaping works commenced
	Cumberland <ul style="list-style-type: none">– Ongoing property adjustment, drainage, CSR, track works– Urban design landscaping works commenced
	North Parramatta <ul style="list-style-type: none">– Ongoing property adjustment, drainage, CSR, track works– Urban design landscaping works commenced
Parramatta CBD	Area 2 West (CBD) <ul style="list-style-type: none">– Ongoing utility and services installations on Church Street and Macquarie Street– Ongoing electrical and lighting works– Ongoing Multifunction Pole works– Ongoing civil works (tree pits, CSR, footpaths) along Church Street and Macquarie– Drainage works along Church Street and Macquarie Street– Lennox Bridge North drainage– Track works along Church Street and Macquarie Street– Landscaping and paving on Church Street
	Area 2 East (Smith Street to Arthur Street) <ul style="list-style-type: none">– Utility and services installations on Macquarie Street, Charles Street, Harris Street, George Street, Purchase Street, Alfred Street, Tramway Avenue– Ongoing installation of Multifunction Poles– Drainage works on Macquarie Street, Charles Street, Harris Street, George Street, Purchase Street, Alfred Street– Ongoing civil works (pavement, CSR, road works) along Macquarie Street, Harris Street / Robin Thomas Reserve, George Street, Tramway Avenue– Track works along Macquarie Street, George Street and Tramway Avenue– George Street underbore – road, footpath and reinstatement of work area
Camellia and Carlingford line	Camellia <ul style="list-style-type: none">– James Ruse Drive bridge arch lift– James Ruse Drive Pier construction– James Ruse Drive Bridge deck and fit out works– Active Transport Link and track slab / ballast track works from Camellia Junction to Parramatta River



Precinct	Site Activities
	<ul style="list-style-type: none">- CSR, drainage and track works at 13a Grand Ave- CSR and Track slab at Sandown Line and Grand Avenue- Soft landscaping works at Grand Avenue North
	<p>Carlingford Line</p> <ul style="list-style-type: none">- James Hardie, Camellia Bridge, Vineyard Creek, Kissing Point Road & Leamington Road bridge fit out and track works- CSR works from Camellia to Dundas- Stormwater drainage works from Camellia to Carlingford (including Robert Street)- Ballast track from Rydalmere to Carlingford- Track slab works at Telopea- Telopea and Carlingford stop works- Active Transport Link works from Camellia to Carlingford- Overhead wire and lighting works from Camellia to Carlingford- Soft landscaping works from Camellia to Carlingford <hr/>



3. Monitoring Results

Section 3 presents a summary of the environmental inspection and monitoring programs completed during the reporting period (26 May 2021 to 25 June 2021). Detailed monitoring results for each activity are presented in the appendices to this report.

3.1. Inspections

A total of four ER inspections, two AA inspections, one DPIE inspection and four TfNSW inspections were completed during the reporting period in addition to 25 internal inspections. It is noted that TfNSW also attends all ER inspections.

Table 3-1 provides a summary of the number of actions raised and closed within the agreed timeframe.

Table 3-1 Inspections for reporting period

Date	Number of Inspections	Type	Actions	Closed in Time
27/05/21	1	Internal Inspection	2	Yes
28/05/21	1	Internal Inspection	2	Yes
01/06/21	1	ER Inspection	4	Yes
02/06/21	6	Internal Inspection	9	Yes
03/06/21	1	Internal Inspection	4	Yes
04/06/21	1	TfNSW Inspection	8	Yes
07/06/21	3	Internal Inspection	4	Yes
8/06/21	1	AA Inspection	0	N/A
08/06/21	2	Internal Inspection	8	Yes
08/06/21	2	TfNSW Inspection	7	Yes
11/06/21	1	Internal Inspection	2	Yes
11/06/21	1	ER Inspection	7	Yes
15/06/21	5	Internal Inspection	8	Yes
15/06/21	1	ER Inspection	10	Yes
15/06/21	1	DPIE Inspection	4	Yes
17/06/21	1	Internal Inspection	2	Yes
18/06/21	2	Internal Inspection	3	Yes
21/06/21	1	Internal Inspection	2	Yes



Date	Number of Inspections	Type	Actions	Closed in Time
22/06/21	1	ER Inspection	8	Yes
22/06/21	1	TfNSW	2	Yes
25/06/21	1	Internal Inspection	1	Yes
25/06/21	1	AA Inspection	2	Yes
Total	37	-	99	-

3.2. Weather

The total rainfall recorded during the reporting period was 39.4 mm with six days exceeding one millimetre of rain. No events exceeded the 80th percentile (25.8mm).

During the reporting period, there were 20 days where the maximum wind gust recorded was greater than 25km/hr and no days where the maximum wind gust recorded was greater than 50km/hr. There was a total of two days where wind speeds greater than 25km/hr were forecast and, on those days, a notification was issued to the construction team to alert them of the strong winds forecast.

A summary of the weather observations and weather events during the reporting period of relevance to the Soil and Water Management Sub-plan and Air Quality Management Sub-Plan Trigger Action Response Plans (TARPs) are summarised in **Table 7-2**. A comparison between long term monthly means and recorded values can be found in **Figure 3-2**.

Detailed weather observation records for the reporting period are presented in **Appendix A-1**.

Table 3-2 Weather Summary and Trigger Weather Events for reporting period¹

Weather Event	Forecast	Observation
Minimum temperature	4.0°C	3.8°C
Maximum temperature	22.0°C	22.2°C
Total rainfall	55.0 mm	39.4 mm
Number of days with rain (>1mm)	9 days	6 days
>80 th percentile (25.8mm) rain events	No days	No days
>80 th percentile (33.1mm) rain events	No days	No days
Flood warning / events	None	None
>25km/hr wind ²	2 days	20 days
>50km/hr wind	No days	No days
>60km/hr wind	No days	No days

¹Weather summary based on data from the 26 May 2021 to 25 June 2021 (30 days).



²Wind data from Sydney Olympic Park AWS (Archery Centre) {station 066212}. Weather data from Parramatta North (Masons Drive) {station 066124}.

Note: Red text indicates observation greater than forecast.

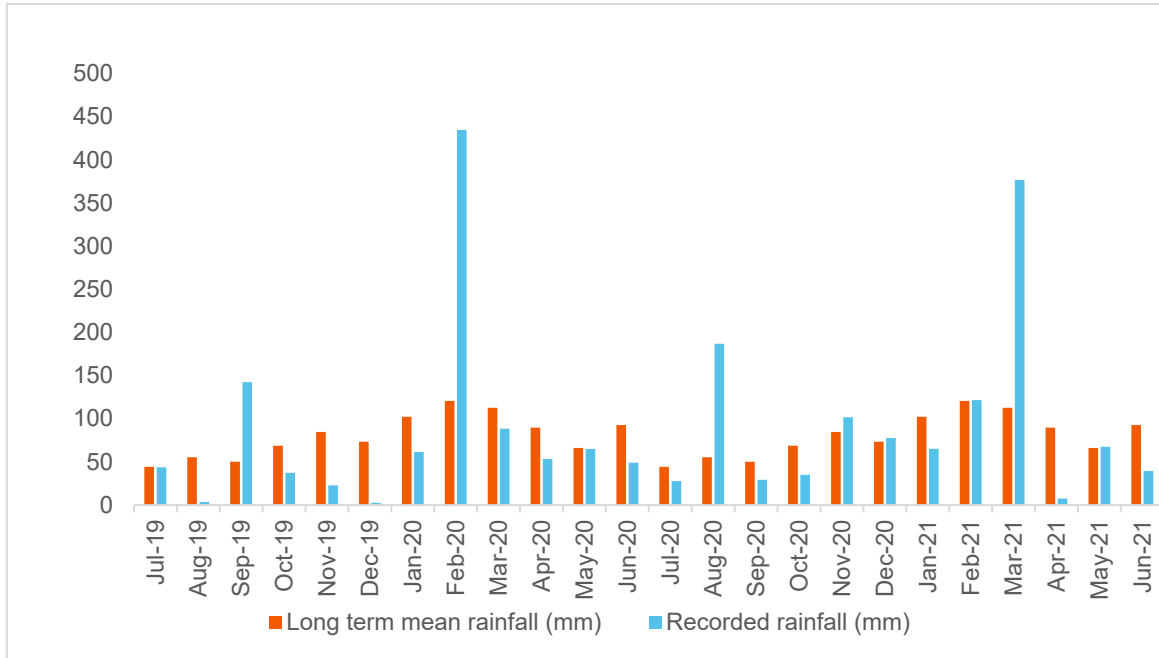


Figure 3-1 Monthly rainfall comparison

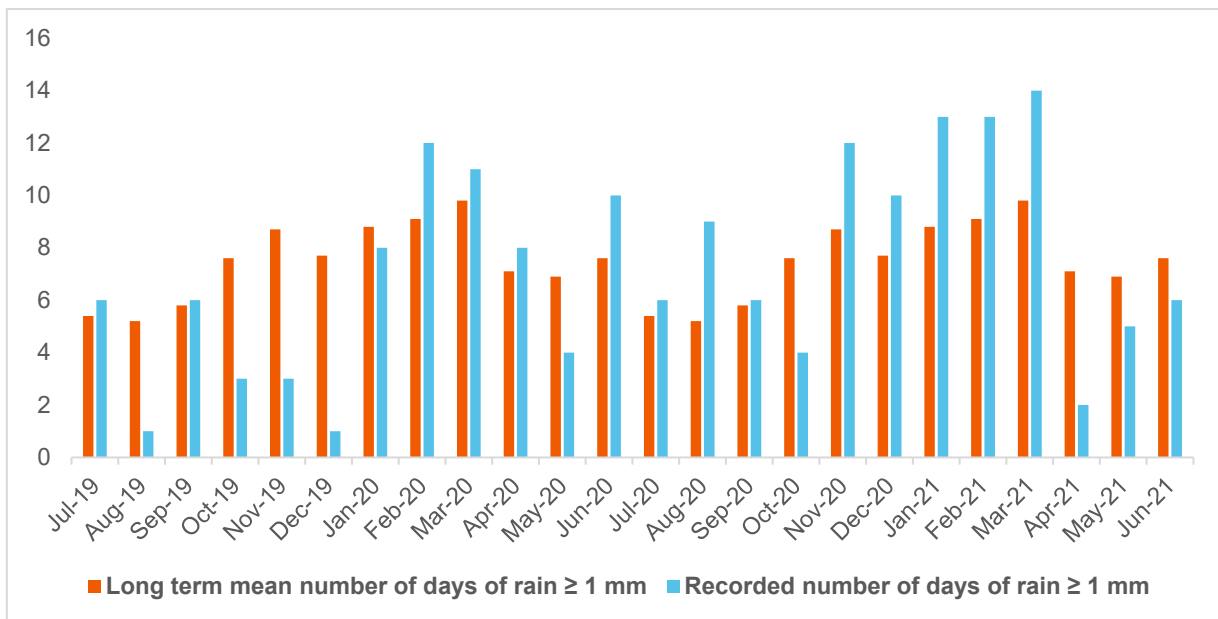


Figure 3-2 Monthly rain days comparison

3.3. Noise and Vibration

Table 3-3 provides a summary of noise monitoring events conducted during the reporting period. Detailed noise monitoring results and comments are presented in Appendix A-2. There were no exceedances of the predicted noise level ($L_{Aeq15min}$) during the reporting period.



Additional information on the hours of works, respite requirements and alternative accommodation is provided in the Noise and Vibration Management Sub-plan (Section 11.3).

Vibration monitoring events completed during the reporting period are summarised in **Table 3-4** and detailed results and comments are presented in **Appendix A-2**. Vibration monitoring undertaken during the reporting period was conducted by Renzo Tonin. All results were compliant.

All noise and vibration monitors used during the reporting period, together with current NATA calibration data, are provided in **Table 3-5**.

Continuous noise and vibration monitoring was undertaken during the reporting period at medical facilities in Westmead that have been identified as sensitive receivers. In consultation with the Health Administration Corporation, monitoring will be ongoing for 12 months. Locations of the noise and vibration monitors are provided in **Table 3-6**.

Table 3-3 Summary of Noise Monitoring for reporting period

Date	Monitoring Location	Attended/Continuous	Description
14/06/2021	157 Hawkesbury Road	Attended	Bulk excavations
14/06/2021	199 Hawkesbury Road	Attended	Bulk earthworks
14/06/2021	Cumberland East	Attended	Bridge concrete pour
14/06/2021	483 Church Street	Attended	Track finishing
14/06/2021	8-12 Alexandra Avenue	Attended	Material movements
14/06/2021	55 O'Connell Street	Attended	Track concrete pour
18/06/2021	14 Dudley Street	Attended	Track works
18/06/2021	22 Adderton Road	Attended	Track works
18/06/2021	89 Marshall Road	Attended	Concrete pour
18/06/2021	Carlingford Station	Attended	Track works
18/06/2021	Dundas Station	Attended	Landscaping works
18/06/2021	Teloepa Station	Attended	Teloepa stop works
18/06/2021	North of Teloepa Stop	Attended	Transporting ballast on hi-rail
23/06/2021	Arthur Phillip High School	Attended	Excavation
23/06/2021	9 Noller Parade	Attended	Truck transporting material
26/06/2020 -ongoing	Westmead Institute for Medical Research (Sleep Lab)	Continuous	General construction
26/06/2020 -ongoing	Westmead Institute for Medical Research (Brain Dynamics Centre)	Continuous	General construction
26/06/2020 -ongoing	Children's Medical Research Institute (Microscopy Labs)	Continuous	General construction
26/06/2020 -ongoing	Cumberland Hospital (Clinical psychology rooms)	Continuous	General construction



Table 3-4 Summary of Vibration Monitoring for reporting period

Date	Monitoring Location	Attended/Continuous	Description
01/06/2021	Lennox Bridge North	Attended	Pneumatic Tools
03/06/2021	Lennox Bridge North	Attended	Pneumatic Tools
26/06/2020	Westmead Institute for Medical Research (HAL incubators)	Continuous	General construction
26/06/2020	Westmead Institute for Medical Research (Microscopy Labs)	Continuous	General construction
26/06/2020	Children's Medical Research Institute (Microscopy Labs)	Continuous	General construction

Table 3-5 Noise and Vibration Monitors and NATA Calibration

Equipment	Serial Number	Calibration Date
Noise Level Meter	00973277	2/12/2021
Noise Level Meter	00661732	01/06/2022
Noise Level Meter	00973275	17/12/2021
Vibration Monitor	BE14639	10/02/2023
Vibration Monitor	BE17441	16/07/2021

Table 3-6 HAC Noise and Vibration Monitor Locations

Organisation	Monitor Type	Location
Westmead Institute for Medical Reach	Vibration Monitor	HAL incubators
		Microscopy Labs
	Noise Monitor	Sleep Lab
Children's Medical Research Institute	Vibration Monitor	Brain Dynamics Centre
	Noise Monitor	Microscopy Labs
Cumberland Hospital	Noise Monitor	Labs (Level 1)
		Clinical psychology rooms

Note: The calibration of the monitoring equipment is checked in the field before and after the noise measurement period per Standards Australia AS/IEC 60942:2004/IEC 60942:2003–Electroacoustic – Sound Calibrators.

3.4. Soil and Water

3.4.1. Water quality in receiving waters

A pre-construction investigation to establish water quality objectives for the project is included within the EIS Technical Paper 6 – Water Quality Assessment.

There were no triggers for water sampling during the reporting period and as such no monitoring was undertaken.



Table 3-7 Water Quality in Receiving Waters

Date	Type	Type of Results	Wet / Dry	Locations
-	-	-	-	-

Table 3-8 Water Monitor Calibration

Equipment ¹	Serial Number	Calibration Date
Water Quality Monitor	DV7F6E7J	21/08/2021

¹All equipment is calibrated by NATA standards.

3.4.2. Discharge and dewatering

There were six discharge events during the reporting period as presented in **Table A-3-2**. All events were compliant with discharge criteria.

3.5. Air Quality

3.5.1. Dust Deposition Monitoring

A dust deposition gauge was installed at 13A Grand Avenue in Camellia in December 2019 in advance of works which commenced at the beginning of February 2020. Baseline data indicated that the value of Total Insoluble Matter (TIM) was 3.9 g/m² before the commencement of construction activities at 13A Grand Avenue.

Additional dust gauges were progressively installed at Rydalmere Station, Dundas Station, Carlingford and Telopea in advance of large-scale earthworks.

From December 2020 onwards, results have been presented as both TIM and Ash Content. The Ash Content method of analysis involves burning the TIM in a furnace to rid the sample of combustible materials such as vegetative matter, coal and insects. The remaining non-combustible material is then weighed to provide a more accurate dust monitoring result.

Dust deposition results are summarised in **Table A-4-1** in **Appendix A-4**, noting that data is received one month in arrears. All results from the previous reporting period had a satisfactory level of TIM with the exception of Dundas Station which was recorded at 4.5 g/m². While the recorded Ash Content of Dundas Station was below the trigger, dust management controls were reviewed at the site and the use of the water cart was subsequently increased.

3.5.2. Asbestos Fibre Monitoring

Asbestos air monitoring is completed in accordance with the Guidance Note on the Membrane Filter Method for Estimating Airborne Asbestos Fibres [NOHSC: 3003(2005)], with NATA certification applying to all sample collection, handling and analytical procedures.

Asbestos Fibre Monitoring results are summarised in **Table A-4-2** in **Appendix A-4**. All reported results were satisfactory and conform with the minimum action level of <0.01 fibres /mL for control monitoring as outlined in Work, Health and Safety (2017) Regulation; and SafeWork NSW (2019) Code of Practice – How to Safely Remove Asbestos.



3.6. Flora and Fauna

3.6.1. Grey-Headed Flying Fox Monitoring

A Grey-Headed Flying Fox (GHFF) camp is located in Parramatta Park which lies approximately 150m from the project boundary at the nearest point.

Under Condition of Approval C9, a GHFF Construction Monitoring Program has been developed by TfNSW. The requirements of this Program have been reflected in the Flora and Fauna Management Sub-plan and include visual inspections on a weekly basis during the ‘high risk’ months of September to January. If distress is observed within the camp, immediate notification must be provided to TfNSW.

In addition, as required by the Environmental Work Method Statement for Bridge Road Bridge, a trained ecologist from Narla Environmental is required to undertake additional inspections of the camp during bridge piling works (**Table 3-9**). As these works have concluded, it was determined that Narla monitoring was not required for the reporting period.

Visual inspections by Parramatta Connect resumed in place of the Narla monitoring. During the reporting period, no indicators of stress or abnormal behaviour were observed during inspections.

Table 3-9 Observations from Visual Monitoring of Grey Headed Flying Fox Camp

Date	Time	Works	Notification Triggers ¹	Comments
01/06/2021	14:32	Cumberland Bridge form-reo pour	None	Calm. No disturbance. No works audible at the colony.
07/06/2021	10:00	Cumberland Bridge form-reo pour and stormwater installation	None	Calm. No disturbance. No works audible at the colony.
14/06/2021	12:00	Cumberland Bridge form-reo pour	None	Calm. No disturbance. Works slightly audible at the colony.
21/06/2021	8:00	Concrete curing	None	Calm. No disturbance. No works audible at the colony.

¹Notification triggers include: >50% of the roost takes flight for over 20 minutes, GHFF leaving the roost in daylight hours, unusual vocalisations, located on or 2m from the ground, panting, saliva spreading, adults moving away from young, GHFF injured or killed on site (including aborted foetuses).

3.7. Issues/incidents/non-compliance

Table 3-10 provides a summary of environmental compliance during the reporting period. There were no environmental incidents or non-compliances identified during the reporting period.

Table 3-10 Issues/incidents/non-compliances

Date	Location	Description
-	-	-



Appendices

A-1 Weather Observations

Table A-1-1 Weather Observations: Parramatta North (Masons Drive) {station 066124}.

Date	Temperatures		Rain mm	Temp °C	RH %	9:00 AM		
	Min	Max				Cld 8th	Dir	Spd km/h
	°C	°C						
26/05/2021	12.8	21.6	0	16.8	66	0	SW	2
27/05/2021	5.4	18.8	0	12.8	62	0	WSW	6
28/05/2021	6	17.8	0	13.6	65	0	SW	11
29/05/2021	4.8	15.5	0	11.5	64	2	SW	19
30/05/2021	9.5	15	0	12.6	68	7	SSW	9
31/05/2021	6.8	19.2	0	11.8	76	0	NW	6
1/06/2021	5.6	19.2	0	9	97	6	W	7
2/06/2021	5.7	22.2	0	10.3	89	4	W	6
3/06/2021	8.3	14.7	0	11.7	94	8	NW	2
4/06/2021	7.8	19.7	8.4	12.8	94	2	NW	2
5/06/2021	5.3	17	0	9.4	93	0	SW	2
6/06/2021	4.4	20	0	11.4	71	0	W	4
7/06/2021	4.8	20.2	0	10.5	86	6	NNW	4
8/06/2021	8.2	19	0	15.2	58	8	NNW	9
9/06/2021	9.2	15	10	11	75	3	NW	11
10/06/2021	4.5	9.5	0.6	8	91	8	ENE	7
11/06/2021	3.8	16.8	5.4	8.2	97	5	NNW	9
12/06/2021	5	17.8	0	10.6	90	3	NW	4
13/06/2021	7.8	18.3	0	11.8	71	0	NW	7
14/06/2021	7.2	17.8	0	10.8	75	7	NNW	6
15/06/2021	8.5	18.3	0	12.5	82	6	WNW	2
16/06/2021	6	20.3	0	10.2	95	0	W	2
17/06/2021	8.2	17.2	8.2	13.4	60	0	W	11
18/06/2021	5.8	18.3	0	13.6	69	0	WSW	4
19/06/2021	10.2	15.2	3.4	14	57	6	SSW	19
20/06/2021	10.2	15.2	1.6	12.2	74	6	SW	6
21/06/2021	10.2	16.5	0.8	12.5	87	7	SW	6
22/06/2021	7	16.8	0.4	11.5	94	6	W	2
23/06/2021	7.6	18.5	0	10.7	97	6	E	2
24/06/2021	10	21.7	0.4	15.4	79	7	NNE	7
25/06/2021	10	19.2	0.2	15.2	66	0	WNW	4



Table A-1-2 Wind Observations: Sydney Olympic Park AWS (Archery Centre) {station 066212}.

Date	Maximum Wind Gusts			9:00 AM		3:00 PM	
	Direction	Speed	Time	Direction	Speed	Direction	Speed
		km/h	local		km/h		km/h
26/05/2021	W	39	20:37	WSW	9	WSW	9
27/05/2021	W	30	12:56	WNW	11	WSW	11
28/05/2021	WSW	39	10:11	W	9	SSW	15
29/05/2021	SSW	43	12:12	WSW	15	SSW	17
30/05/2021	SSW	28	13:19	W	7	SSW	4
31/05/2021	W	17	8:37	W	7	E	7
1/06/2021	WNW	20	9:43	WNW	9	NW	2
2/06/2021	NW	17	9:00	WNW	9	Calm	
3/06/2021	WNW	15	10:00	NW	6	NW	7
4/06/2021	WNW	35	13:21	NW	7	W	13
5/06/2021	SW	26	1:04	WNW	9	NW	7
6/06/2021	WNW	19	10:01	WNW	11	SSW	4
7/06/2021	NW	15	9:03	WNW	9	Calm	
8/06/2021	E	30	20:45	NNW	13	NNE	13
9/06/2021	W	37	13:07	NW	13	NW	19
10/06/2021	NNW	20	0:11	E	2	NNW	7
11/06/2021	NW	28	12:19	NW	9	WNW	13
12/06/2021	NW	33	12:26	NW	11	NW	17
13/06/2021	WNW	28	11:37	NW	7	W	9
14/06/2021	NW	17	8:54	WNW	11	E	2
15/06/2021	NW	19	8:49	NW	9	SE	2
16/06/2021	W	37	22:23	NW	4	SE	9
17/06/2021	WNW	41	10:54	NW	13	WNW	19
18/06/2021	WNW	43	15:19	WNW	6	WNW	17
19/06/2021	SSW	44	15:37	WSW	15	SSW	22
20/06/2021	S	41	11:31	WSW	7	SW	11
21/06/2021	SSW	28	11:41	WNW	6	SE	7
22/06/2021	WNW	15	7:48	SSE	6	Calm	
23/06/2021	N	22	13:10	Calm		N	7
24/06/2021	NNW	39	12:56	N	6	NNW	13
25/06/2021	NW	39	13:01	NW	11	WNW	15

Notes:

Blue text indicates a rain event greater than 1mm of rain.

The orange text indicates a rain event greater than the 80th percentile of 25.8mm, and a wind speed of greater than 25km/hr

Red text indicates a rain event greater than the 85th percentile of 33.1mm, and a wind speed greater than 50km/hr.

* Data was unavailable.

A-2 Noise and Vibration Monitoring Results

Table A-2-1 Noise Monitoring Results

Date	Time	Works Period	Construction Activity	Activity Location	Monitoring Location	NML Predicted (dBA)	Predicted (dBA)	Additional Mitigation Measures	L _{Amax}	Recorded L _{eq, 15min} (dBA)	Exceedance of Predicted (dBA)	Exceedance of Predicted	Comments
14/06/2021	9:00	Standard Hours	Bulk excavations	Hawkesbury Road	157 Hawkesbury Road	61	98	PN, RP, SN	74	65.1	-32.9	No	Monthly verification noise monitoring. Construction noise sometimes audible.
14/06/2021	10:00	Standard Hours	Bulk earthworks	Hawkesbury Road	199 Hawkesbury Road	59	98	PN, RP, SN, RO	83	74	-24.0	No	Monthly verification noise monitoring. Construction noise is dominant noise source.
14/06/2021	11:00	Standard Hours	Bridge concrete pour	Cumberland Bridge	Cumberland East	65	80	PN, V, RP, SN, DR, RO	88	71	-9.0	No	Monthly verification noise monitoring. Construction noise clearly audible.
14/06/2021	12:00	Standard Hours	Track finishing	Pennant Hills Road to Factory	483 Church Street	61	100	-	80	71	-29.0	No	Monthly verification noise monitoring. Construction noise is dominant noise source.
14/06/2021	12:25	Standard Hours	Material movements	28 Railway Parade	8-12 Alexandra Avenue	59	60	PN	69	59	-1.0	No	Monthly verification noise monitoring. Construction noise inaudible.
14/06/2021	7:30	Standard Hours	Track concrete pour	Factory/O'Connell	55 O'Connell Street	52	89	-	78	75	-14.0	No	Monthly verification noise monitoring. Construction noise sometimes audible.
18/06/2021	9:57	Standard Hours	Track works	Dudley Street	14 Dudley Street	55	65	-	80	60.4	-4.6	No	Monthly verification noise monitoring. Construction noise audible at most times.
18/06/2021	8:49	Standard Hours	Track works	Adderton Road	22 Adderton Road	56	70	-	82.8	68.2	-1.8	No	Monthly verification noise monitoring. Construction noise sometimes audible.
18/06/2021	7:56	Standard Hours	Concrete pour	Teloepa	89 Marshall Road	52	70	-	96.5	68.1	-1.9	No	Monthly verification noise monitoring. Construction noise sometimes audible.
18/06/2021	7:22	Standard Hours	Track works	Carlingford	Carlingford Station	62	70	-	95.9	69.2	-0.8	No	Monthly verification noise monitoring. Construction noise audible at most times. Pennant Hills Road traffic was the dominant noise source.
18/06/2021	10:16	Standard Hours	Landscaping	Dundas	Dundas Station	55	60	-	87.9	59.9	-0.1	No	Monthly verification noise monitoring. Construction noise audible at most times.
18/06/2021	8:16	Standard Hours	Teloepa stop works	Teloepa	Teloepa Station	53	70	-	91.3	67.2	-2.8	No	Monthly verification noise monitoring. Construction noise audible at most times.
22/06/2021	9:20	Standard Hours	Transporting ballast on hi-rail	North of Teloepa Stop	North of Teloepa Stop	85 ¹	85 ¹	-	71.8	66.1	-18.9	No	Plant spot check. 10t dump truck used is not listed on TfNSW CNVIS so 15t dump truck SPL was used.
23/06/2021	12:45	Standard Hours	Excavation	Arthur Phillip High School	Arthur Phillip High School	55	78	-	84.0	69.5	-8.5	No	Monthly verification noise monitoring. Construction noise audible at most times.
23/06/2021	13:12	Standard Hours	Truck transporting material	George Street	9 Noller Parade	53	64	-	74.7	56.6	-7.4	No	Monthly verification noise monitoring. Construction noise audible at most times.
26/06/2020 - ongoing	Continuous monitoring	Construction works	Hawkesbury Road works	Westmead Institute for Medical Research (Sleep Lab)		65	*	*	*	*	*	No	Activities are reviewed in response to exceedance alerts. Where the exceedance is attributed to construction, a review is undertaken of works and plant/equipment or methodology is modified where necessary. No exceedances were attributed to Parramatta Connect construction activities.
26/06/2020 - ongoing	Continuous monitoring	Construction works	Hawkesbury Road works	Westmead Institute for Medical Research (Brain Dynamics Centre)		65	*	*	*	*	*	No	
26/06/2020 - ongoing	Continuous monitoring	Construction works	Hawkesbury Road works	Children's Medical Research Institute (Microscopy Labs)		65	*	*	*	*	*	No	

Date	Time	Works Period	Construction Activity	Activity Location	Monitoring Location	NML Predicted (dBA)	Predicted (dBA)	Additional Mitigation Measures	L _{Amax}	Recorded L _{eq, 15min} (dBA)	Exceedance of Predicted (dBA)	Exceedance of Predicted	Comments
26/06/2020 - ongoing		Continuous monitoring	Construction works	Cumberland Hospital	Cumberland Hospital (Clinical psychology rooms)	55	*	*	*	*	*	No	Continuous monitoring values are available on request.

¹Sound Pressure Level (SPL) used instead of NML

Notes:

Standard hours:

- a) All areas excluding Eat Street and Camellia – Monday to Friday 7:00 am to 7:00 pm. Saturday 8:00 am to 6:00 pm
- b) Eat Street (Church Street between Palmer Street and George Street) – Monday to Friday 7:00 am to 6:00 pm. Saturday 8:00 am to 12:00 pm
- c) Camellia, Rosehill and Rydalmere (east of James Ruse Drive to Victoria Road) – 24 hours a day and seven days a week provided that sensitive receivers are not affected by noise levels of greater than 5 dBA above the rating background level at any residence

OOHW Period 1 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).

OOHW Period 2 is defined as:

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

Additional Mitigation Measures

- PN = Project Notification
- V = Verification Monitoring
- RP = Respite Period
- AA = Alternate Accommodation
- SN = Specific Notification / individual briefing or phone call
- DR = Duration Reduction
- RO = Project Specific Respite Offer

Table A-2-2 Vibration Monitoring Results

Date	Time	Works Period	Construction Activity	Activity Location	Monitoring Location	Trigger Value (mm/s)	95 th Percentile PPV (mm/s)	Maximum PPV (mm/s)	Exceedance of Target	Construction Vibration Exceedance	Comments
01/06/2021	13:37	Standard Hours	Pneumatic Tools	Lennox Bridge North	Lennox Bridge	7.5	<0.5	<0.5	No	No	Compliant. Vibration levels produced by the pneumatic tools could not be detected.
03/06/2021	10:01	Standard Hours	Pneumatic Tools	Lennox Bridge North	Lennox Bridge	7.5	<0.5	<0.5	No	No	Compliant. Vibration levels produced by pneumatic tools could not be detected.
26/06/2020	Continuous monitoring	Hawkesbury Road works	Hawkesbury Road	Westmead Institute for Medical Research (HAL incubators)	0.1 mm/s	*		No	No	Activities are reviewed in response to exceedance alerts. Where the exceedance is attributed to construction, a review is undertaken of works and plant/equipment or methodology is modified where necessary.	
26/06/2020	Continuous monitoring	Hawkesbury Road works	Hawkesbury Road	Westmead Institute for Medical Research (Microscopy Labs)	0.1 mm/s	*		No	No		
26/06/2020	Continuous monitoring	Hawkesbury Road works	Hawkesbury Road	Children's Medical Research Institute (Microscopy Labs)	0.1 mm/s	*		No	No		
											Continuous monitoring values are available on request.



A-3 Water Sampling and Discharge Results

Table A-3-1 Water Quality Monitoring - Comments and observations

Location	Waterway	Upstream/ Downstream of Works	Type ³	Date	Time	pH	Elec. Conduct. (µS/cm)	Turbidity (NTU)	Comments and Observations
-	-	-	-	-	-	5.5-8.5 ²	LR ¹ : 125-2200 ² E: None	6-50 ²	-

1. ANZECC Waterway types: Fresh water (PR1, PR2, PR3, PR4, VY1 and VY2); E: Estuarine (CC1, CC2, AC1, AC2, PR5, PR6 and SC1).
2. Trigger values were established by Parramatta Connect within the Pre-Construction Sampling (Baseline Review) Water Quality Monitoring Report (PLR11NF-CPBD-ALL-WA-RPT-000003). **Red text** indicates values outside of the baseline trigger values.
3. Charles Street Weir separates Parramatta River from up and downstream.



Table A-3-2 Discharge Water Quality

Discharge monitoring Point ID	Type of Monitoring Point	Type of Discharge Point	Date	Discharge Permit #	Oil and Grease (Not visible)	pH (6.5 - 8.5)	Turbidity (NTU)	Comments
A1.43, A1.44	Basins and settling containers	Stormwater inlet	28/05/2021	DW-A1-044	Not visible	7.4	10	Discharge to stormwater 1.43, 1.44
A1.43, A1.44	Basins and settling containers	Stormwater inlet	28/05/2021	DW-A1-045	Not visible	7.4	10	Discharge to stormwater 1.43, 1.44
A3.3	Basins and settling containers	Creek	2/06/2021	DW-A3-034	Not visible	8.01	47.3	Discharge into watercourse/creek
A3.27	Basins and settling containers	Stormwater inlet	4/06/2021	DW-A3-035	Not visible	7.73	0.5	Discharge to stormwater 3.27
N/A	Basins and settling containers	Re-use	7/06/2021	DW-A3-036	Not visible	7.17	45.4	Reused for dust suppression
A3.3	Basins and settling containers	Creek	24/06/2021	DW-A3-037	Not visible	8.46	21.6	Discharge into watercourse/creek

A-4 Air Quality Monitoring Results

Table A-4-1 Summary of Dust Deposition Data (Ash Content)

Date	Monitoring Location	Ash Content g/m ² /month	Total Insoluble Matter (g/m ² /month)
May	13a Grand Avenue	0.5	0.5
May	Rydalmere Station	2.8	3.9
May	Dundas Station	3.8	4.5
May	Telopea	2.2	3.1
May	Carlingford	0.9	1.2



Table A-4-2 Summary of Asbestos Fibre Monitoring

Report Number	Date	Location	Start time	End time	Result (Fibres/Fields)	Result (Fibres/mL)
AMR260	26-May	CAMELLIA JUNCTION, ADJACENT TO CAR PARK AREA APPROX 30M SOUTH OF SE GATE	7:27	15:45	0/100	<0.01
AMR260	26-May	CAMELLIA JUNCTION, ADJACENT TO CRIB SHED	7:28	15:44	0/100	<0.01
AMR260	26-May	CAMELLIA JUNCTION, SE GATE	7:29	15:43	0/100	<0.01
AMR260	26-May	RETAINING WALL 3A, SOUTHERN END	7:32	15:40	0/100	<0.01
AMR260	26-May	RETAINING WALL 3A, APPROX 30M NORTH OF SOUTHERN END	7:33	15:39	0/100	<0.01
AMR260	26-May	RETAINING WALL 3A, APPROX 60M NORTH OF SOUTHERN END	7:34	15:38	0/100	<0.01
AMR260	26-May	NORTHERN AREA, EASTERN BOUNDARY NEAR CAR PARKING AREA	7:40	15:31	0/100	<0.01
AMR260	26-May	NORTHERN ARA, JAMES HARDIE BRIDGE NW CORNER	7:41	15:30	0/100	<0.01
AMR260	26-May	NORTHERN AREA, PARRAMATTA RIVER BRIDGE SE CORNER	7:42	15:29	0/100	<0.01
AMR261	27-May	CAMELLIA JUNCTION - EXCAVATION SURROUNDING CALTEX LINE, SW OF EXCAVATION	7:10	15:05	0/100	<0.01
AMR261	27-May	CAMELLIA JUNCTION - EXCAVATION SURROUNDING CALTEX LINE, SOUTH OF EXCAVATION	7:12	15:06	0/100	<0.01
AMR261	27-May	CAMELLIA JUNCTION - EXCAVATION SURROUNDING CALTEX LINE, EAST OF EXCAVATION	7:14	15:07	0/100	<0.01
AMR261	27-May	CAMELLIA JUNCTION - EXCAVATION SURROUNDING CALTEX LINE, NORTH OF EXCAVATION	7:17	15:10	0/100	<0.01



AMR261	27-May	CAMELLIA JUNCTION - MIDDLE GATE, SOUTH OF EXCAVATION	8:10	14:42	0/100	<0.01
AMR261	27-May	CAMELLIA JUNCTION - MIDDLE GATE, EAST OF EXCAVATION	8:12	14:43	1/100	<0.01
AMR261	27-May	CAMELLIA JUNCTION - MIDDLE GATE, NORTH OF EXCAVATION	8:15	14:45	0/100	<0.01
AMR261	27-May	CAMELLIA BRIDGE, NE OF DRAINAGE EXCAVATIONS	8:25	14:49	0/100	<0.01
AMR261	27-May	CAMELLIA BRIDGE, SOUTH OF DRAINAGE EXCAVATIONS	8:26	14:51	1/100	<0.01
AMR262	28-May	CAMELLIA JUNCTION ADJACENT TO CRIB SHED	7:28	16:07	0/100	<0.01
AMR262	28-May	CAMELLIA JUNCTION SE GATE	7:29	16:08	0/100	<0.01
AMR262	28-May	CAMELLIA JUNCTION, CAR PARK, APPROX 20M SOUTH OF SE GATE	7:30	16:05	0/100	<0.01
AMR262	28-May	RETAINING WALL 3A APPROX 60M SOUTH OF MIDDLE GATE	7:34	16:03	0/100	<0.01
AMR262	28-May	RETAINING WALL 3A APPROX 40M SOUTH OF MIDDLE GATE	7:35	16:02	0/100	<0.01
AMR262	28-May	RETAINING WALL 3A APPROX 10M SOUTH OF MIDDLE GATE	7:36	16:01	0/100	<0.01
AMR262	28-May	NORTH AREA, NW CORNER OF JAMES HARDIE BRIDGE	7:40	15:58	0/100	<0.01
AMR262	28-May	NORTH AREA, SE CORNER OF PARRAMATTA RIVER BRIDGE	7:41	15:57	0/100	<0.01
AMR262	28-May	NORTH AREA, EAST BOUNDARY, 10M NORTH OF BALLAST STOCKPILE	7:42	15:56	0/100	<0.01
AMR263	29-May	MIDDLE GATE, ADJACENT TOILETS, EAST FENCE LINE	7:00	13:30	1/100	<0.01
AMR263	29-May	GATE 22 ADJACENT GATE, METAL POLE	7:03	13:32	0/100	<0.01
AMR263	29-May	GATE 22 ADJACENT BRIDGE AND EXCAVATION TRENCH	7:04	13:33	0/100	<0.01
AMR263	29-May	GATE 22 ADJACENT STOCKPILES	7:05	13:34	0/100	<0.01
AMR263	29-May	GATE 22 ADJACENT BRIDGE, TOP OF HILL, TEMPORARY FENCING	7:06	13:35	0/100	<0.01

AMR263	29-May	MIDDLE GATE, 5M SOUTH OF MIDDLE GATE, EAST BOUNDARY FENCING	7:01	13:29	0/100	<0.01
AMR263	29-May	CAMELLIA JUNCTION, WESTERN SECTION, BOUNDARY FENCING NEAR PUMPING STATION	7:10	13:40	0/100	<0.01
AMR263	29-May	CAMELLIA JUNCTION, WEST SECTION, SOUTH BOUNDARY FENCING NEAR BRIDGE	7:11	13:42	0/100	<0.01
AMR263	29-May	SE GATE, ADJACENT CRIB ROOM, FENCE LINE	7:13	13:45	0/100	<0.01
AMR263	29-May	SE GATE, ADJACENT PARKING AREA, ELECTRICITY POLE	7:14	13:47	0/100	<0.01
AMR263	29-May	SE GATE, PARKING AREA, EASTERN FENCING	7:15	13:50	0/100	<0.01
AMR264	31-May	RETAINING WALL 3A, APPROX 60M SOUTH OF MIDDLE GATE	7:08	15:58	0/100	<0.01
AMR264	31-May	RETAINING WALL 3A, APPROX 30M SOUTH OF MIDDLE GATE	7:09	15:57	0/100	<0.01
AMR264	31-May	RETAINING WALL 3A, AT MIDDLE GATE	7:10	15:56	0/100	<0.01
AMR264	31-May	JAMES HARDIE BRIDGE, NW CORNER	7:17	15:50	0/100	<0.01
AMR264	31-May	PARRAMATTA RIVER BRIDGE, SE CORNER	7:18	15:49	0/100	<0.01
AMR264	31-May	NORTHERN AREA, EAST BOUNDARY, APPROX 10M NORTH OF ACM STOCKPILE	7:19	15:48	0/100	<0.01
AMR265	1-Jun	RETAINING WALL 3A, SOUTHERN END	7:35	15:58	0/100	<0.01
AMR265	1-Jun	RETAINING WALL 3A, 30M NORTH OF SOUTHERN END	7:36	15:57	0/100	<0.01
AMR265	1-Jun	RETAINING WALL 3A, 60M NORTH OF SOUTHERN END	7:37	15:56	0/100	<0.01
AMR265	1-Jun	JAMES HARDIE BRIDGE, NW CORNER	7:42	15:47	0/100	<0.01
AMR265	1-Jun	PARRAMATTA RIVER BRIDGE, SE CORNER	7:43	15:46	0/100	<0.01
AMR265	1-Jun	NORTH AREA, EAST BOUNDARY, APPROX 20M NORTH OF ACM STOCKPILE	7:44	15:45	0/100	<0.01

AMR266	2-Jun	RETAINING WALL 3A, APPROX 60M SOUTH OF MIDDLE GATE	7:14	15:56	0/100	<0.01
AMR266	2-Jun	RETAINING WALL 3A, AT MIDDLE GATE	7:15	15:55	0/100	<0.01
AMR266	2-Jun	RETAINING WALL 1, APPROX 40M SOUTH OF MIDDLE GATE	7:16	15:54	0/100	<0.01
AMR266	2-Jun	JAMES HARDIE BRIDGE, NE CORNER	7:17	15:53	0/100	<0.01
AMR266	2-Jun	NORTH AREA, EAST BOUNDARY, APPROX 10M SOUTH OF ACM STOCKPILE	7:23	15:47	0/100	<0.01
AMR266	2-Jun	NORTH AREA, APPROX 10M SW OF ACM STOCKPILE	7:24	15:46	0/100	<0.01
AMR266	2-Jun	NORTH AREA, EAST BOUNDARY, APPROX 30M NORTH OF ACM STOCKPILE	7:25	15:45	1/100	<0.01
AMR266	2-Jun	BLANK	7:26	15:44	0/100	<0.01
AMR267	3-Jun	NEW BRIDGE NORTH	7:03	14:40	0/100	<0.01
AMR267	3-Jun	NEW BRIDGE SOUTH	7:07	14:43	0/100	<0.01
AMR267	3-Jun	NEW BRIDGE EAST	7:09	14:46	0/100	<0.01
AMR267	3-Jun	NEW BRIDGE WEST	7:11	14:49	0/100	<0.01
AMR267	3-Jun	SIDE OF TRACK NORTH EAST	7:13	14:51	0/100	<0.01
AMR267	3-Jun	SIDE OF TRACK NORTH WEST	7:15	14:53	0/100	<0.01
AMR267	3-Jun	SIDE OF TRACK SOUTH EAST	7:18	14:56	0/100	<0.01
AMR267	3-Jun	SIDE OF TRACK SOUTH WEST	7:20	14:59	0/100	<0.01
AMR268	4-Jun	RETAINING WALL 3A, 40M SOUTH OF MIDDLE GATE	7:20	15:54	0/100	<0.01
AMR268	4-Jun	RETAINING WALL 3A, 10M SOUTH OF MIDDLE GATE	7:21	15:53	0/100	<0.01
AMR268	4-Jun	RETAINING WALL 1, 20M NORTH OF MIDDLE GATE	7:22	15:52	0/100	<0.01
AMR268	4-Jun	JAMES HARDIE BRIDGE, N5 CORNER	7:28	15:47	0/100	<0.01
AMR268	4-Jun	GATE 22 CARPARK, NW CORNER	7:29	15:46	0/100	<0.01

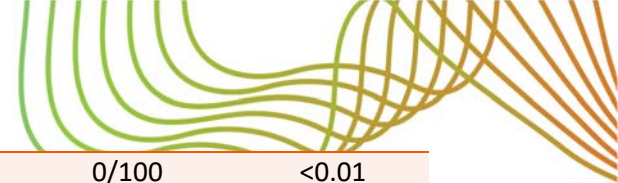
AMR268	4-Jun	NORTH AREA, EAST BOUNDARY, APPROX 10M NORTH OF ACM STOCKPILE	7:30	15:45	0/100	<0.01
AMR268	4-Jun	NORTH AREA, EAST BOUNDARY, APPROX 10M SOUTH OF ACM STOCKPILE	7:31	15:44	0/100	<0.01
AMR269	5-Jun	NORTH AREA, JAMES HORDIE BRIDGE, NE CORNER	7:01	14:44	0/100	<0.01
AMR269	5-Jun	NORTH AREA, PARRAMATTA RIVER BRIDGE, SE CORNER	7:02	14:43	0/100	<0.01
AMR269	5-Jun	NORTH AREA, EAST BOUNDARY, APPROX 10M SOUTH OF ACM STOCKPILE	7:03	14:42	0/100	<0.01
AMR269	5-Jun	NORTH AREA, EAST BOUNDARY, APPROX 10M NORTH OF ACM STOCKPILE	7:04	14:41	0/100	<0.01
AMR269	5-Jun	GRAND AVE, ADJACENT TO VENTIA SITE, SE CORNER OF WORK AREA	7:22	14:59	0/100	<0.01
AMR269	5-Jun	GRAND AVE, ADJACENT TO VENTIA SITE, SW CORNER OF WORK AREA	7:23	15:00	0/100	<0.01
AMR269	5-Jun	GRAND AVE, ADJACENT TO 13A, NW CORNER OF WORK AREA	7:24	15:01	0/100	<0.01
AMR269	5-Jun	GRAND AVE, ADJACENT TO 13A, NE CORNER OF WORK AREA	7:25	15:02	0/100	<0.01
AMR270	7-Jun	NORTH AREA, JAMES HARDIE, NORTH EAST CORNER	7:18	15:55	0/100	<0.01
AMR270	7-Jun	NORTH AREA, CARPARK, NORTH EAST CORNER	7:19	15:54	0/100	<0.01
AMR270	7-Jun	NORTH AREA, EAST BOUNDARY, APPROX 15M SOUTH OF ACM STOCKPILE	7:20	15:53	0/100	<0.01
AMR270	7-Jun	NORTH AREA EAST BOUNDARY, APPROX 10M NORTH OF ACM STOCKPILE	7:21	15:52	0/100	<0.01
AMR271	8-Jun	NORTH AREA, JAMES HARDIE BRIDGE, NE CORNER	7:31	15:43	0/100	<0.01

AMR271	8-Jun	NORTH AREA, CARPARK AREA, NE CORNER	7:32	15:44	0/100	<0.01
AMR271	8-Jun	NORTH AREA, EAST BOUNDARY, APPROX 15M SOUTH OF ACM STOCKPILE	7:33	15:45	0/100	<0.01
AMR271	8-Jun	NORTH AREA EAST BOUNDARY, APPROX 15M NORTH OF ACM STOCKPILE	7:34	15:46	0/100	<0.01
AMR272	9-Jun	NORTH AREA, JAMES HARDIE BRIDGE, NE CORNER	7:09	15:37	0/100	<0.01
AMR272	9-Jun	NORTH AREA, CARPARK, NW CORNER	7:10	15:36	0/100	<0.01
AMR272	9-Jun	NORTH AREA, EAST BOUNDARY, APPROX 10M NORTH OF ACM STOCKPILE	7:11	15:35	0/100	<0.01
AMR272	9-Jun	NORTH AREA, EAST BOUNDARY APPROX 15M SOUTH OF ACM STOCKPILE	7:12	15:34	0/100	<0.01
AMR273	10-Jun	NORTH WEST CORNER	6:00	13:30	0/100	<0.01
AMR273	10-Jun	NORTH EAST CORNER	6:03	13:45	0/100	<0.01
AMR273	10-Jun	SOUTH WEST CORNER	6:07	13:33	0/100	<0.01
AMR273	10-Jun	WEST UNDER BRIDGE	6:11	13:42	0/100	<0.01
AMR273	10-Jun	EAST UNDER BRIDGE	6:12	13:18	0/100	<0.01
AMR274	11-Jun	CAMELLIA JUNCTION - NE CORNER	7:43	15:21	0/100	<0.01
AMR274	11-Jun	CAMELLIA JUNCTION - NORTH BOUNDARY ADJ ACCESS GATE	7:44	15:22	0/100	<0.01
AMR274	11-Jun	CAMELLIA JUNCTION - SOUTH END OF RETAINING WALL 3A	7:45	15:23	0/100	<0.01
AMR274	11-Jun	CAMELLIA JUNCTION - SOUTH BOUNDARY	7:47	15:25	0/100	<0.01
AMR275	15-Jun	CAMELLIA JUNCTION - SE OF TRACKWORK	7:10	14:47	0/100	<0.01
AMR275	15-Jun	CAMELLIA JUNCTION - EAST OF TRACK WORK	7:12	14:49	0/100	<0.01

AMR275	15-Jun	CAMELLIA JUNCTION - NORTH OF TRACK WORK	7:19	14:53	0/100	<0.01
AMR275	15-Jun	CAMELLIA JUNCTION - NE OF TRACK WORK	7:22	14:55	1/100	<0.01
AMR275	15-Jun	JAMES HARDIE BRIDGE - NW OF STORM WATER INSTALL	7:30	14:20	0/100	<0.01
AMR275	15-Jun	JAMES HARDIE BRIDGE - SW OF STORM WATER INSTALL	7:31	14:21	0/100	<0.01
AMR275	15-Jun	JAMES HARDIE BRIDGE - SE OF STORM WATER INSTALL	7:34	14:23	0/100	<0.01
AMR275	15-Jun	JAMES HARDIE BRIDGE - NE OF STORM WATER INSTALL	7:35	14:25	0/100	<0.01
AMR276	16-Jun	JAMES HARDIE BRIDGE - SW BOUNDARY	7:03	15:25	0/100	<0.01
AMR276	16-Jun	JAMES HARDIE BRIDGE - NW BOUNDARY	7:04	15:26	0/100	<0.01
AMR276	16-Jun	JAMES HARDIE BRIDGE - EAST BOUNDARY	7:05	15:27	0/100	<0.01
AMR276	16-Jun	CAMELLIA JUNCTION - NE CORNER	7:20	15:28	0/100	<0.01
AMR276	16-Jun	CAMELLIA JUNCTION - NORTH BOUNDARY ADJ GATE	7:21	15:29	0/100	<0.01
AMR276	16-Jun	CAMELLIA JUNCTION - RETAINING WALL 3A	7:22	15:40	0/100	<0.01
AMR277	17-Jun	CAMELIA JUNCTION, STORM WATER PIPING INSTALLATION, SOUTH EASTERN BOUNDARY	6:57	15:30	0/100	<0.01
AMR277	17-Jun	CAMELIA JUNCTION, STORM WATER PIPING INSTALLATION, NORTH EASTERN BOUNDARY	7:02	15:32	0/100	<0.01
AMR277	17-Jun	CAMELIA JUNCTION, STORM WATER PIPING INSTALLATION, STAFF CAR PARK AREA	7:03	15:35	0/100	<0.01
AMR277	17-Jun	JAMES HARDIE BRIDGE, EASTERN SIDE	7:20	14:25	0/100	<0.01
AMR277	17-Jun	JAMES HARDIE BRIDGE, WESTERN SIDE	7:21	14:28	0/100	<0.01
AMR277	17-Jun	JAMES HARDIE BRIDGE, ACCESS GATE	7:22	14:30	0/100	<0.01
AMR278	18-Jun	CAMELIA JUNCTION, CAR PARK AREA	7:21	15:45	0/100	<0.01
AMR278	18-Jun	CAMELIA JUNCTION, SOUTHERN BOUNDARY FENCE	7:23	15:47	0/100	<0.01
AMR278	18-Jun	CAMELIA JUNCTION, NORTH EASTERN BOUNDARY FENCE	7:25	15:48	0/100	<0.01
AMR278	18-Jun	JAMES HARDIE BRIDGE, NORTHERN BOUNDARY	7:45	15:25	0/100	<0.01

AMR278	18-Jun	JAMES HARDIE BRIDGE, ACCESS GATE 22	7:47	15:28	0/100	<0.01
AMR278	18-Jun	JAMES HARDIE BRIDGE, INSIDE EXCAVATOR CABIN, REGO NO. 46701-D	7:50	15:33	0/100	<0.01
AMR279	19-Jun	SOUTH BOUNDARY OF IMPACTED AREA, OVERPASS	7:10	13:10	0/100	<0.01
AMR279	19-Jun	EAST BOUNDARY OF IMPACTED AREA, OVERPASS	7:12	13:12	0/100	<0.01
AMR279	19-Jun	WEST BOUNDARY OF IMPACTED AREA, OVERPASS	7:14	13:14	0/100	<0.01
AMR279	19-Jun	SOUTH WEST BOUNDARY OF ACM STOCKPILE AREA	7:16	13:16	0/100	<0.01
AMR279	19-Jun	NORTH EAST BOUNDARY OF ACM STOCKPILE AREA	7:18	13:18	0/100	<0.01
AMR279	19-Jun	SOUTH EAST BOUNDARY OF ACM STOCKPILE AREA	7:20	13:20	0/100	<0.01
AMR279	19-Jun	NORTH WEST BOUNDARY OF ACM STOCKPILE AREA	7:22	13:22	0/100	<0.01
AMR280	21-Jun	GRAND AVE STOCKPILE AREA, EASTERN BOUNDARY	7:55	15:30	0/100	<0.01
AMR280	21-Jun	GRAND AVE STOCKPILE AREA, ADJACENT CAR PARK	7:57	15:34	0/100	<0.01
AMR280	21-Jun	GRAND AVE STOCKPILE AREA, NORTHERN BOUNDARY	7:59	15:37	0/100	<0.01
AMR280	21-Jun	CAMELLIA JUNCTION, STAFF CAR PARK	8:07	14:57	0/100	<0.01
AMR280	21-Jun	CAMELLIA JUNCTION, SOUTHERN BOUNDARY FENCE	8:09	15:02	0/100	<0.01
AMR280	21-Jun	CAMELLIA JUNCTION, NORTH EASTERN BOUNDARY FENCE	8:11	15:03	1/100	<0.01
AMR281	22-Jun	GRAND AVE, CARPARK AREA	7:55	15:17	0/100	<0.01
AMR281	22-Jun	GRAND AVE, STOCK PILE AREA, EASTERN BOUNDARY FENCE	7:57	15:19	0/100	<0.01
AMR281	22-Jun	GRAND AVE, STOCK PILE AREA, NORTH EASTERN BOUNDARY FENCE	7:59	15:21	0/100	<0.01

AMR281	22-Jun	GRAND AVE, STOCK PILE AREA, NORTH WESTERN BOUNDARY FENCE	8:03	15:25	0/100	<0.01
AMR281	22-Jun	CAMELIA JUNCTION, STAFF CAR PARK	8:23	15:03	0/100	<0.01
AMR281	22-Jun	CAMELIA JUNCTION, SOUTHERN ENTRY ACCESS	8:25	15:07	0/100	<0.01
AMR281	22-Jun	CAMELIA JUNCTION, NORTH EASTREN BOUNDARY FENCE	8:28	15:10	0/100	<0.01
AMR282	23-Jun	JAMES HARDIE BRIDGE, ACCESS GATE 22	7:57	14:45	0/100	<0.01
AMR282	23-Jun	JAMES HARDIE BRIDGE, LOWER EASTERN BOUNDARY	8:01	14:48	0/100	<0.01
AMR282	23-Jun	JAMES HARDIE BRIDGE, UPPER WESTERN BOUNDARY	8:03	14:57	0/100	<0.01
AMR282	23-Jun	JAMES HARDIE BRIDGE, UPPER EASTERN BOUNDARY	8:05	15:03	0/100	<0.01
AMR282	23-Jun	GRAND AVE STOCKPILE AREA, CARPARK	7:32	15:07	0/100	<0.01
AMR282	23-Jun	GRAND AVE STOCKPILE AREA, EASTERN BOUNDARY FENCE	7:34	15:10	0/100	<0.01
AMR282	23-Jun	GRAND AVE STOCKPILE AREA, NORTH EASTERN BOUNDARY FENCE	7:37	15:12	0/100	<0.01
AMR282	23-Jun	GRAND AVE STOCKPILE AREA, NORTH WESTERN BOUNDARY FENCE	7:39	15:15	0/100	<0.01
AMR283	24-Jun	GRAND AVE STOCKPILE AREA, CARPARK AREA	7:18	15:35	0/100	<0.01
AMR283	24-Jun	GRAND AVE STOCKPILE, EASTERN BOUNDARY FENCE	7:21	15:38	0/100	<0.01
AMR283	24-Jun	GRAND AVE STOCKPILE AREA, NORTH EASTERN BOUNDARY FENCE	7:25	15:39	0/100	<0.01
AMR283	24-Jun	GRAND AREA STOCKPILE AREA, NORTH WESTERN BOUNDARY FENCE	7:27	15:42	0/100	<0.01
AMR283	24-Jun	JAMES HARDIE BRIDGE ACCESS - GATE 22	7:45	15:17	0/100	<0.01



AMR283	24-Jun	JAMES HARDIE BRIDGE ACCESS - EASTERN BOUNDARY	7:47	15:19	0/100	<0.01
AMR283	24-Jun	JAMES HARDIE BRIDGE ACCESS - UPPER WESTERN BOUNDARY	7:51	15:21	0/100	<0.01
AMR283	24-Jun	JAMES HARDIE BRIDGE ACCESS - UPPER EASTERN BOUNDARY	7:55	15:25	0/100	<0.01
AMR283	24-Jun	EXCAVATOR CABIN REGO NO - 79254-D	9:20	15:28	3/100	<0.01