

Cross River Rail Project

Monthly Environmental Report

July 2020



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Appendix A – RIS Monthly Report

Appendix B – TSD Monthly Report

Executive Summary

This Monthly Environmental Report (MER) has been produced for Project Works undertaken on site for July 2020 for the Rail, Integration and Systems (RIS), and Tunnel, Stations and Development (TSD) packages. The report addresses the obligations outlined in the Coordinator-General's change reports – condition change (hours of works) 2019 (CGCR, October 2019) and Temporary change of certain work hours May 2020 (effective 7 May) and the individual contractor's Construction Environmental Management Plans (CEMPs) which have been developed generally in accordance with the Project's Outline Environmental Management Plan. The Delivery Authority, as the Proponent of the Cross River Rail Project, is required to submit a monthly report to the Coordinator-General to demonstrate compliance with the imposed conditions.

Section 1 of this report provides a background to the project and the Coordinator-General's conditions. Section 2 provides a review of the contractor's reports contained in **Appendix A** (Rail, Integration and Systems) and **Appendix B** (Tunnel, Stations and Development). Non-Compliance Event Reports (if any) are attached in **Appendix C**.

The Environmental Monitor has reviewed and endorsed this MER. This endorsement follows ongoing and new document reviews, and surveillance across the construction sites (taken place through surveillance officers designated to single sites in response to the COVID-19 restrictions and other means).

The CEMPs prepared by both Unity Alliance (RIS Contractor) and CBGU JV (TSD Contractor) for their Relevant Project Works were endorsed by the Environmental Monitor (EM) and submitted to the Coordinator-General in accordance with Condition 4 (a) and 4 (b) respectively.

The table below presents a summary of compliance status against each condition with a short comment against each condition:

CG Condition	Requirement Summary	Compliance Met (Yes/No/NA)	Comment
1.	General conditions – compliance with the Project Changes relevant to the Contractor's scope	Yes	The CEMP and site plans are in accordance with the Project Changes.
2.	Outline Environmental Management Plan – timely submission to the Coordinator-General including required sub plans	Yes	The OEMP has been updated to incorporate changes associated with RfPC-7 and submitted to the Coordinator-General on 8 July.
3.	Design - achievement of the Environmental Design Requirements	NA	Documents continue to be reviewed related to compliance with the environmental design standards.
4.	Construction Environmental Management Plan – all relating to Relevant Project Works	Yes	<p>TSD - CEMP Rev 6 for tunnelling and ongoing activities in the Central area was endorsed by the Environment Monitor, submitted to the Coordinator-General in June and became effective on 5 July 2020.</p> <p>RIS — CEMP Rev 1 for Northern Portal (Stage 1), RNA Showgrounds (Stage 1) and Mayne Yard North (Stage 1 and 2) works was endorsed by the Environment</p>

CG Condition	Requirement Summary	Compliance Met (Yes/No/NA)	Comment
			Monitor on 14 July 2020 and submitted to the Coordinator-General on 16 July 2020.
5.	Compliance and Incident management - Non-compliance events, notifications and reporting	Yes	Refer to Section 2.5 of this report.
6.	Reporting – Monthly and Annual reporting	Yes	The Annual report was submitted to the Coordinator-General and the Environmental Monitor on the 31 July 2020.
7.	Environmental Monitor - engaged and functions resumed	Yes	Ongoing
8.	Community Relations Monitor - engaged and functions resumed	Yes	Ongoing
9.	Community Engagement Plan - developed and endorsed by Environmental Monitor	Yes	CEMP's endorsed with Community Engagement Plan.
10.	Hours of work – works undertaken during approved hours	Yes	This has been achieved through standard working hours, Extended work hours and Managed Work.
11.	Noise – Work must aim to achieve internal noise goals for human health and well-being	Yes	Refer to Appendix A (Table 2) and Appendix B (Table 3) .
	Vibration - Works must aim to achieve vibration goals for cosmetic damage, human comfort and sensitive building contents.	Yes	Refer to Appendix A (Figures 2 and 3) and Appendix B (Table 2) .
12.	Property damage relating to ground movement	Yes	Vibration modelling has been prepared and is ongoing and where required, building condition survey reports (for heritage and residential buildings) and Property damage sub plans completed.
13.	Air quality - Works must aim to achieve air quality goals for human health and nuisance.	Yes	Refer to Appendix A (Table 4, Figures 4-6 and Section 4.1.2) and Appendix B (Table 4) .
14.	Traffic and transport - Works must minimise adverse impacts on road safety and traffic flow.	Yes	Traffic Management Plans covered in the CEMP and sub plans for all active worksites were reviewed by the Environment Monitor.
15.	Water quality - Works must not discharge groundwater from the construction site above the relevant	Yes	No groundwater discharges occurred for the month.

CG Condition	Requirement Summary	Compliance Met (Yes/No/NA)	Comment
	environmental values and water quality objectives.		
16.	Water resources – evaluate potential impact, plan works, implement controls and monitor inflow of groundwater associated with drawdown.	Yes	Ongoing
17.	Surface water - Must be designed to avoid inundation from stormwater due to a 2-year (6hr) ARI rainfall event and flood waters due to a 5-year ARI rainfall event and constructed to avoid afflux or cause the redirection of uncontrolled surface water flows, including stormwater flows, outside of worksites.	Yes	Contractors continue to consider this condition in their site planning and design.
18.	Erosion and sediment control - Provisions for erosion and sediment control must be consistent with the Guidelines for Best Practice Erosion and Sediment Control (International Erosion Control Association, 2008) and the Department of Transport and Main Roads' Technical Standard MRTS52.	Yes	Site specific ESC plans for all active work sites have been certified and reviewed by the Environmental Monitor and implemented on site on all active worksites. Surface water discharge from project worksites met project discharge criteria requirements.
19.	Acid sulfate soils managed as per the Queensland Acid Sulfate Soil Technical Manual.	Yes	Acid Sulfate Soil Management Plans for all active worksites are in place.
20.	Landscape and open space – general requirement to minimise impacts on landscapes and open space values and specific requirements around Victoria Park	Yes	Victoria Park Access Road work has now been completed under the Site Environmental Plan and Heritage Exemption Certificate.
21.	Worksite rehabilitation – worksites rehabilitated as soon as practicable upon completion of works or commissioning, and in consultation with Brisbane City Council.	NA	N/A

Non-Compliance Events

There were no Non-Compliance Events (NCE) raised in July.

Definitions

Acronym	Definition
ARI	Average Recurrence Interval - The average or expected value of the periods between exceedances of a given rainfall total accumulated over a given duration.
CEMP	Construction Environmental Management Plan
CG	Coordinator-General
CGCR	Coordinator-General's Change Report
Community Relations Monitor	The Community Relations Monitor engaged in accordance with Imposed Condition 8
Contractor	The Contractors appointed to design, construct and commission the Project
Coordinator-General	The corporation sole preserved, continued and constituted under section 8 of the SDPWO Act
CRR	Cross River Rail
EIS	Environmental Impact Statement
Environmental Monitor	The Environmental Monitor engaged in accordance with Imposed Condition 7
ESC	Erosion and sediment control
Imposed condition/s	A condition/s imposed by the Coordinator-General under section 54B of the SDPWO Act for the Project
MRTS52	Transport and Main Roads Specifications MRTS52 Erosion and Sediment Control
NCE	Non-Compliance Event
OEMP	Outline Environmental Management Plan
Project	The Cross River Rail Project
Project Works	As defined in the Imposed Conditions
Proponent	The Cross River Rail Delivery Authority
QR	Queensland Rail
RfPC	Request for Project Change
RIS	Rail, Integration and Systems
SDPWO Act	<i>State Development and Public Works Organisation Act 1971</i>
Sub-plan	Any sub-plan of the CEMP
The Delivery Authority	The Cross River Rail Delivery Authority
TSD	Tunnel, Stations and Development

1. Introduction

1.1 Background

The Cross River Rail Project (the Project) is a declared coordinated project under the *State Development and Public Works Organisation Act 1971* (SDPWO Act). The CRR Environmental Impact Statement (EIS) was evaluated by the Coordinator-General who recommended the Project proceed, subject to Imposed Conditions and recommendations. Since the evaluation of the EIS, six Requests for Project Change (RfPCs) have been evaluated by the Coordinator-General, at the time of writing this report.

The Coordinator-General has imposed conditions on the Project that apply throughout the design, construction and commissioning phases. These are referred to as the Imposed Conditions. In addition, the Coordinator-General has approved the Project's Outline Environmental Management Plan (OEMP) which outlines the environmental management framework for the Project. The OEMP includes environmental outcomes and performance criteria which must be achieved for the Project.

Imposed Conditions 5 and 6 nominate the compliance and reporting requirements for the Project. This monthly report addresses these requirements.

1.2 Project Delivery

The Delivery Authority is responsible for planning and delivering the Project. The Project established environmental management plans and secured some of the secondary environmental approvals in addition to enabling works.

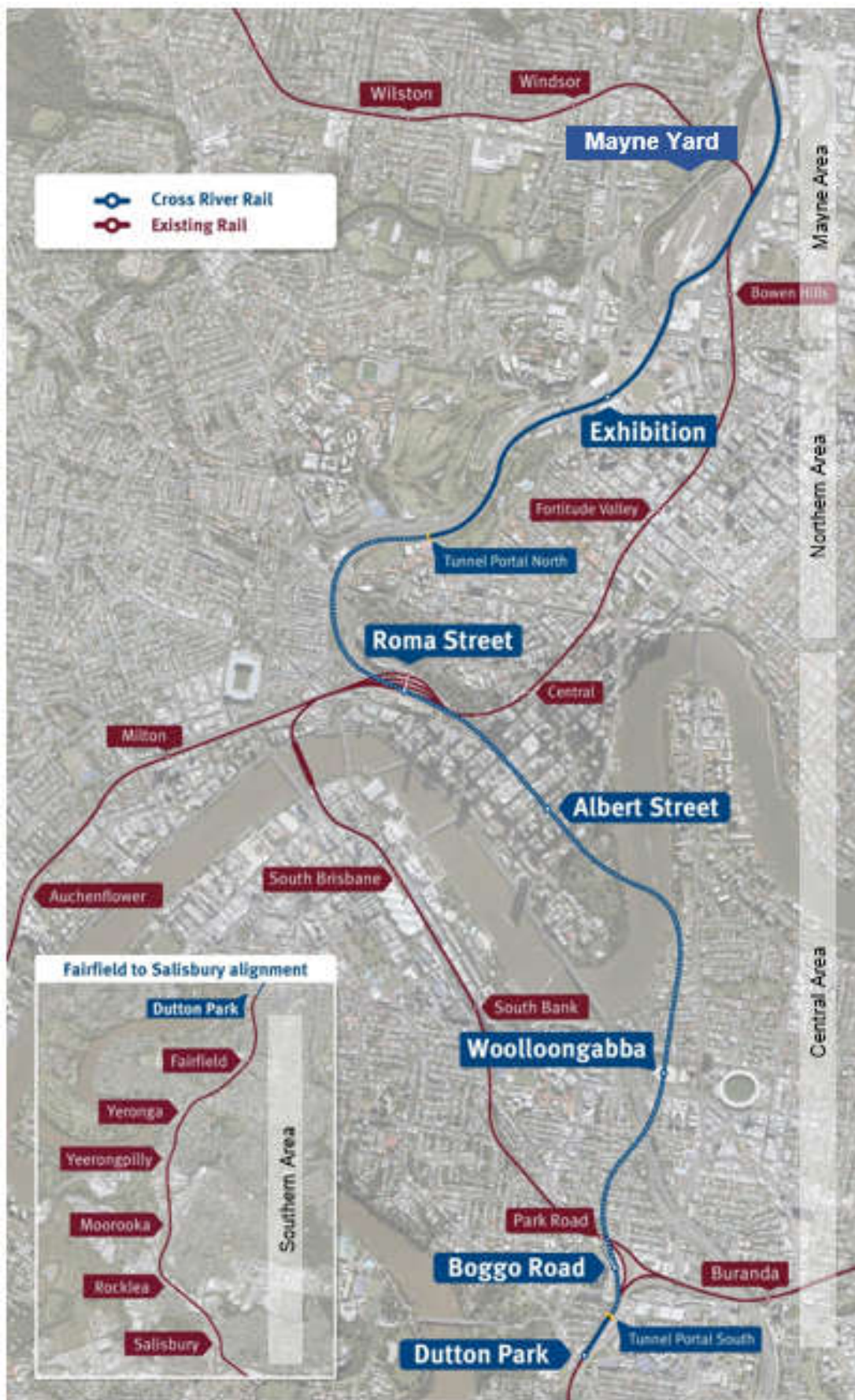
The two main delivery packages which require reporting under the Coordinator-General's imposed conditions are:

- Tunnel, Stations and Development (TSD) being delivered by CBGU JV; and
- Rail, Integration and Systems (RIS) being delivered by Unity Alliance.

The Project is geographically divided into four areas:

- Mayne Area
- Northern Area
- Central Area
- Southern Area

These are shown in the figures below.



1.3 Reporting Framework

This MER has been prepared to comply with Conditions 6 and 7 of the Coordinator-General Change Report (CGCR) and includes:

- Monitoring data and associated interpretation of the results required by the imposed conditions and Construction Environmental Management Plan (CEMP);
- Details of any Non-Compliance Event (NCE), including incidents, corrective actions and preventative actions; and
- Details of any complaints, including description, responses and corrective actions.

Reporting on environmental elements captured in each monthly environmental report, including the annual environmental report, will be reviewed and endorsed by the Environmental Monitor.

1.4 Monthly Environment Report Endorsement

This MER has been endorsed by the Environment Monitor and the endorsement provided to the Coordinator-General.

2.Compliance Review

This Monthly Report has been reviewed and endorsed by Environmental Monitor as per Condition 7 of the Coordinator-General Change Report (CGCR).

2.1 Relevant Project Works

The following Project Works were undertaken in July 2020:

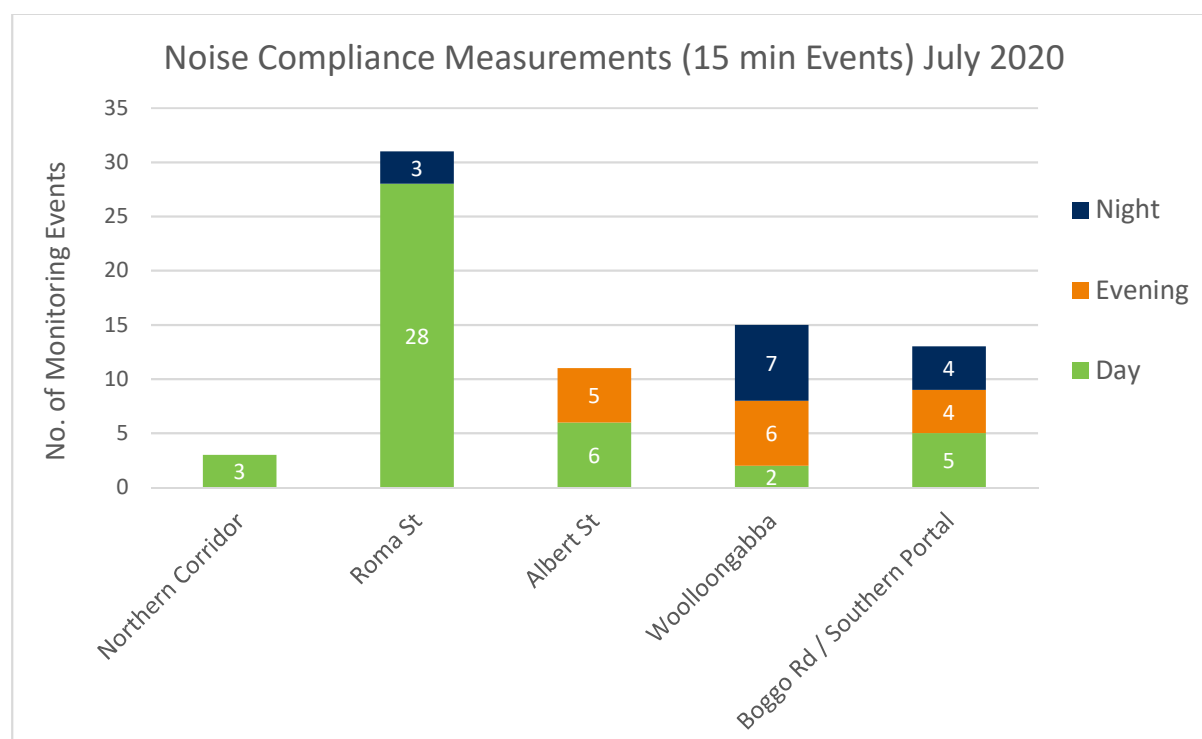
Area	Project Works
Mayne Area	<ul style="list-style-type: none">• Removal of unsuitable material off-site.• Demolition and removal of Mayne Yard North buildings and facilities and satellite office set-up.• Installation of under-track crossings at Breakfast Creek.• Mayne Yard North drainage works on main trunk line 100.
Northern Area	<ul style="list-style-type: none">• Enabling earthworks with removal and replacement of unsuitable material and subgrade improvement.• Retaining wall works near Brisbane Grammar School.• Drainage works south of Land Bridge.• Piling for pier protection of Land Bridge.• Site possession of BCC Lanham Street compound.• Fig tree removal works and western interwar toilet block demolition at RNA showgrounds.
Central Area	<ul style="list-style-type: none">• Roma Street - Continued demolition of the Brisbane Transit Centre and Hotel Jen; Tower crane removal from site; Demolition of former BTC Coach Ramp; Shaft and adit excavation; Inner Northern Busway temporary platform preparation works and ongoing site establishment work across the site.• Albert Street - Excavation on Lot 1; shaft excavation on Lot 2 and completion of acoustic shed construction, site investigation and establishment on Lot 3.• Woolloongabba – Drilling and anchoring of piles within station box; site establishment including site offices, worker facilities and the spoil shed; ongoing decline and shaft excavation and haulage of excavated material• Boggo Road – Continued site establishment; piling, capping beam installation and excavation works; commencement of busway retaining wall demolition; and service and ground condition investigations
Southern Area	<ul style="list-style-type: none">• Completion of site establishment at Fairfield Station.

2.2 Key Environmental Elements

2.2.1 Noise

Noise monitoring was undertaken to validate predictive modelling during piling works at the Land Bridge for pier protection works in the Northern Corridor. Noise levels did not exceed the project noise goals for out of hours works.

In the Central area, noise monitoring was undertaken on 70 occasions during the month as summarised in the graph below and detailed in **Appendix B**. Where internal monitoring was not possible for the contractors, they have undertaken external monitoring at nominated locations. The contractors noise consultants have then used suitable façade attenuation corrections, considering receiver property type, to determine compliance against the project's noise goals and to provide further calibration of the completed modelled predictions. The contractors have reported that the project noise requirements have been met during this reporting month. A breakdown of the monitoring events across the project by time of day and location is shown below.



2.2.2 Vibration

Vibration monitoring was undertaken at the RNA Members Stand and John MacDonald Stand during demolition of the western interwar toilet block. There were no exceedances of the vibration goals for human comfort or for vibration limits for cosmetic damage of heritage buildings prescribed by the Property Damage Mitigation Sub-Plan.

Vibration monitoring took place on a further 13 occasions across Roma Street, Albert Street, Woolloongabba and Boggo Road sites where major construction activities were being undertaken. The contractor reported the results were within the project's nominated goals for all receiver types.

2.2.3 Air Quality

2.2.3.1 Dust Deposition

Dust deposition monitoring was conducted at Mayne Yard, Northern Corridor, RNA Showgrounds, Albert Street, Boggo Road, Roma Street and Woolloongabba sites during the month. All monitoring results met the Coordinator-General's air quality goals except for dust deposition from 12 June to 13 July at Brisbane Girls Grammar School in the Northern Corridor, with levels of 143 mg/m²/day.

Works undertaken in the Northern Corridor during the monitoring period included excavation works involving the removal and replacement of material and subgrade improvement works, soil nail installation during retaining wall works and drainage works. Unity's Certified Air Quality Professional (CAQP) reviewed the findings taking into consideration potential contributing activities and wind direction during the time of these works. The wind direction was upwind of the dust deposition gauge for 60% of the construction hours. It was confirmed the scope of works completed during the monitoring period did not cause the exceedance. However, further mitigation measures have been implemented on site to mitigate any potential dust impacts. The Environmental Monitor has reviewed this information and accepted the CAQP's determination.

A summary of air quality monitoring undertaken is shown in the table below.

Air Quality – Dust Deposition Monitoring			
Area	Active Site*	Monitoring Location	Comments
Mayne Yard	Mayne Yard	Mayne Yard (Eastern Air Shed)	Results met air quality goal
Northern Area	Northern Corridor	BGGS	Results did not meet air quality goal, however it was determined the scope of works completed during the monitoring period did not cause the exceedance.
		Centenary Pool	Results met air quality goal
	RNA/Exhibition	RNA Showgrounds	Results met air quality goal
Central Area	Albert St	Mary Street	Results met air quality goal
	Boggo Rd / Southern Portal	Leukemia Foundation Peter Doherty Street	Results met air quality goal
	Roma St	Platform 3 Roma Street Station	Results met air quality goal
	Woolloongabba	Russian Orthodox Cathedral	Results met air quality goal
		Woolloongabba Busway	Results met air quality goal

* Fairfield to Salisbury had no active high-risk activities

2.2.3.2 Particulate Matter (PM10 / TSP)

PM10 and TSP were monitored in the Northern Corridor and at Mayne Yard with results meeting the Coordinator-General's air quality goals. Components from the monitoring unit near 6 Tufton Street was stolen resulting in an incomplete data set recorded for the reporting period at this location.

Whilst dispersion modelling for the TSD packages does not indicate any exceedances of PM10 or TSP at any active worksite, monitoring of PM10 and TSP was undertaken at the Roma Street, Albert Street and Woolloongabba sites throughout the reporting period using mobile air quality units. The air quality monitoring station at Boggo Road was vandalised on 30 June 2020 restricting the contractor's ability to record TSP or PM10 data for the month.. The Contractor noted no exceedances of the air quality goals.

The TSD Contractor reviewed air quality results for PM10 from the DES monitoring stations in Brisbane CBD, South Brisbane and Woolloongabba, and no exceedances were identified.

A summary of particulate matter monitoring is shown below:

Air Quality – PM10/ TSP Monitoring			
Area	Active Site*	Monitoring Location	Comments
Mayne Yard	Mayne Yard	Mayne Yard (Eastern Air Shed)	Contractor confirmed PM10 and TSP results met air quality goals.
Northern Area	Northern Corridor	Northern Corridor (Near Centenary Pool)	Contractor confirmed PM10 and TSP results met air quality goals
	RNA/Exhibition works	6 Tufton Street	No results provided - Components from monitoring unit were stolen.
Central Area	Albert St	Mary Street QUT Gardens Point	15 days of data reported for PM10 and TSP. Results for period monitored met air quality goals.
	Boggo Rd / Southern Portal	DES Monitoring Station O'Keefe Street, PA Hospital	No results available Monitoring unit was vandalised on 30 June 2020. Nearby DES Monitoring Station recorded PM10 levels below the air quality goal.
	Roma St	Roma Street Station	Contractor confirmed PM10 and TSP results met air quality goals.
	Woolloongabba	TMR / DES monitoring Station South Brisbane	18 days of data reported for PM10 and TSP. Results met air quality goals.

*Fairfield to Salisbury had no active high-risk activities

2.2.4 Water Quality

There were no groundwater discharges from Project Works.

Monitoring and reporting on surface water quality was undertaken in accordance with RIS and TSD Water Quality Management Plans. See Section 2.25.

2.2.5 Erosion and Sediment Control

The maximum monthly rainfall was 34mm over a 24hr period on 26 July in Brisbane. Post rainfall discharge monitoring was triggered at Breakfast Creek and Barrambin (York's Hollow) and active dewatering of stormwater was undertaken at Boggo Rd, Roma St and Woolloongabba. The rainfall event did not exceed the design standard for the sediment controls or the project discharge criteria prescribed by Department of Transport and Main Roads Technical Standards MRTS51 and MRTS52 and Guidelines for Best Practice Erosion and Sediment Control (IECA,2008).

Surface Water – Discharge Monitoring			
Area	Active Site	Discharge monitoring triggered	Comments
Mayne Yard	Mayne Yard North	Yes	Post rain discharge monitoring at Breakfast Creek. Results met water quality discharge criteria.
Northern Area	Northern Corridor	Yes	Post rain discharge monitoring at Barrambin (York's Hollow). Results met water quality discharge criteria.
	RNA	Yes	Passive discharge from site. Receiving water monitoring not required.
Central Area	Albert St	No	No active discharge from site
	Boggo Rd / Southern Portal	Yes	Four active discharges from site. Results met water quality discharge criteria.
	Roma St	Yes	Nine active discharges from site. Results met water quality discharge criteria.
	Woolloongabba	Yes	One active discharge from site. Results met water quality discharge criteria.

Site specific Erosion and Sediment Control (ESC) Plans have been prepared, updated and implemented at Mayne Yard North, Northern Corridor, RNA Showgrounds, Roma Street, Albert Street, Woolloongabba, Boggo Road and Fairfield.

2.3 Complaints Management

The Cross River Rail project received ten complaints during the month. Seven complaints were in relation to works at the Roma Street, Boggo Road and Albert Street worksites. Three complaints were in relation to works occurring in the Northern Corridor. The complaints included noise, dust, traffic management and worker behaviour. (See **Appendix A and B**).

Where attended noise monitoring was in response to a complaint, the contractor confirmed that the works undertaken at the time of the complaint adhered to project requirements. For dust related complaints, the contractor advised stakeholders that air quality monitoring is ongoing and dust mitigation measures are used effectively on site with works adhering to project requirements. All complaints were closed out by the Contractors.

For scheduled Out of Hours works, community notification was provided in all instances, as well as regular project updates.

2.4 New Upcoming Project Works

The key new planned Project Works for the coming months include:

Area	New planned works in the coming months
Mayne Area	<ul style="list-style-type: none"> Lower capping earthworks for rail formation. Temporary OHLE works to facilitate Ferny Grove flyover pier strengthening. Breakfast Creek Bridge re-decking.
Northern Area	<ul style="list-style-type: none"> O'Connell Terrace rock excavation works at RNA/ Exhibition. Signalisation of Gregory Terrace intersection with Victoria Park access road.
Central Area	<ul style="list-style-type: none"> Roma Street – Enabling works for Services Building, building of temporary busway platform to the east of platform 1 and modifying Platforms 2 and 3. Albert Street – Excavation of station box on Lot 1 to continue to mid-2021, completion of the acoustic shed means 24hr tunnelling will commence within the acoustic enclosure. Lot 3 demolition, early works and site investigations to commence in August. Blasting occurrences on Lot 2 in the tunnel shaft. Woolloongabba – Controlled blasting in station box from late August onwards, cavern excavation and spoil shed construction to occur from July onwards and 24-hour work to become operational for shaft excavation, earthworks and utility investigations and relocation. Boggo Road – Demolition of busway retaining wall and station box excavation to occur until August; temporary car park construction to commence in late August.
Southern Area	<ul style="list-style-type: none"> Site establishment works at Yeronga Station. Shed demolition works at Fairfield station.

2.5 Non-Compliance Events

No new NCEs have been raised.

A summary of Non-Compliance Events to date is shown in the table below.

Status	Date of event	Category	Area as on the Report	Conditions affected	Gate 1	Gate 2	Gate 3	Gate 4	Gate 5
Open									
Closed									
CRRDA-001-RIS-001	11/09/19	Noise	Yeronga Station	4, 10, 11	11/10/19	14/11/19	26/11/19	18/12/19	01/10/20
CRRDA-002-TSD-001	27/03/20	ESC	Woolloongabba	4, 15, 18	30/03/20	31/03/20	22/04/20	06/11/20	31/05/20
CRRDA-003-TSD-002	27/03/20	ESC	Boggo Rd	4, 15, 18	30/03/20	31/03/20	22/04/20	06/11/20	31/05/20
CRRDA-005-TSD-004	27/03/20	Reporting	Albert St, Boggo Rd, Roma St, Woolloongabba	4, 6, 11, 13	30/03/20	31/03/20	22/04/20	06/11/20	31/05/20
CRRDA-006-TSD-005	27/03/20	Air Quality	Albert St, Boggo Rd, Roma St, Woolloongabba	13	30/03/20	31/03/20	22/04/20	06/11/20	31/05/20
CRRDA-004-TSD-003	28/03/20	Traffic	Boggo Rd	4, 10, 14	30/03/20	31/03/20	22/04/20	06/11/20	31/05/20
Withdrawn									
CRRDA-007-RIS-002	04/01/20	Air Quality	Mayne Yard, Victoria Park, Yeronga, Fairfield	13	28/04/20	30/04/20	Withdrawn		
CRRDA-008-TSD-006	04/08/20	Working Hours	Roma Street	4,10	28/04/20	30/04/20	Withdrawn		
Gate 1 - EM notification to contractor. NCE confirmed Gate 2 - 48 hour NCE notification submitted to CG Gate 3 - 14 day report submitted Gate 4 - 14 day report uploaded to CRR website Gate 5 - Records of mitigation / preventative measures submitted to the CG					Complete				

Throughout construction activities, events and incidents are routinely investigated to verify compliance with the conditions and that there are management plans in place and required management measures implemented.

Appendix A – RIS Monthly Report

Monthly CGCR Report – July 2020

**Cross River Rail – Rail, Integration and Systems
Alliance**

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1 Progress Summary

1.1 Summary of Project Works

The following *Project Works* continued in July 2020

- Mayne Yard North
 - Removal of surplus and unsuitable soils has continued and is mostly complete
- Northern Corridor
 - Enabling earthworks south of land bridge with removal and replacement of unsuitable material and subgrade improvement
 - Retaining wall RW290 works near Brisbane Grammar School
 - Drainage works south of the Land Bridge
- RNA
 - Site possession of the BCC street sweeper yard
- F2S
 - Completion of the site establishment at Fairfield Station

The following *Project Works* started in July 2020

- Mayne Yard North
 - Demolition and removal of Mayne Yard North Buildings & Facilities, with Block F being completed and Block I demolition 30% complete. Block E has been relocated to be utilised as satellite offices in the yard
 - Installation of UTXs adjacent Up & Down Suburban lines at Breakfast Creek.
 - Drainage scope in MYN has commenced on trunk line # 100
- Northern Corridor
 - Micro-tunnelling
 - Piling for RC24 pier protection of Land Bridge
- RNA
 - Fig tree removal works
 - Western Toilet Block demolition
- F2S
 - Service location investigations

The following *Project Works* are proposed in August 2020

- Mayne Yard North
 - Temporary OHLE works to facilitate Ferny Grove Flyover Pier Strengthening
 - Continue drainage works, predominately the main trunk line 100
 - Continue demolition and removal of Mayne Yard North Buildings & Facilities
- Northern Corridor
 - Stone Pitching (RW280-2) under Land Bridge
- RNA
 - O'Connell Terrace rock excavation works

2 Complaints

The below section summarises the complaints relating to the Project Works to be reported in accordance with condition 6(b)(iii) of the CGCR.

Table 1: Summary of Complaints

Date	Location	Issue	Unity Response	Status
17/07/20	Gregory Terrace	A member of the public observed a truck and dog undertake an illegal u-turn on Gregory Terrace. The complaint was made directly with the Community Relations Monitor	The complaint could not be verified as no registration details were provided. Unity however reminder the workforce of their obligations through prestart notice.	Closed
17/07/20	Victoria Park bikeway	A cyclist riding home on Thursday evening observed that the shared user path was still closed around 5:00pm	The project informed the cyclist that the path was closed to undertake emergency works adjacent to the path. The path was reopened shortly after 5:00pm.	Closed
29/07/20	Brisbane Girls Grammar School	Brisbane Girls Grammar School contacted the Project to request a meeting to discuss their observation of dust depositing near their pool undercroft	The project provided an initial written feedback to the enquiry pertaining to dust and subsequently met with representatives of the School to further discuss the matter	Closed

3 Environmental Monitoring Results

The below section summarises the monitoring results to be reported in accordance condition 6(b)(i) of the CGCR.

3.1 Acoustics

Condition 11(b) of the CGCR requires that during construction, monitoring and reporting on noise and vibration in accordance with the Noise and Vibration Management Plan, a sub-plan of the Construction Environmental Management Plan occurs.

3.1.1 Noise Monitoring

Attended Noise Monitoring was triggered based on the predictive noise assessments for

- Piling works undertaken at the land bridge for pier protection works

This work was undertaken during standard and outside of standard working hours.

In accordance with the C-EMP, attended outdoors monitoring was undertaken to validate the predictive assessment.

Monitoring was undertaken at the start of the activities (during standard working hours) in order to validate and to confirm that out of hours works could proceed as planned.

The monitoring validated that the activities were not going to generate noise levels in exceedance of the upper noise goal for out of hours works. On this basis no further monitoring was undertaken out of hours.

The results from the monitoring are presented in the following section. T

Noise monitoring because of complaints was not triggered. No complaints related to noise occurred during the reporting period.

3.1.2 Noise monitoring Results

The below table summarises the Noise Monitoring results for reporting period.

Table 2: Summary of Noise Monitoring Data

Location and Receiver type	Type of Monitoring ⁽¹⁾	Working Hours	Noise Type	Purpose of Monitoring	Performance Criterion LA10 (dB) – external ⁽²⁾	Predictive model (LA10 external) ⁽²⁾	Measured LA10 (dB) – external ⁽²⁾	Measured LAeq (dB) – external ⁽²⁾	Was performance criterion exceeded?
Centenary Pool - Commercial	Attended - External	Standard Hours Friday 24/7/20 09:35	Intermittent	Construction Monitoring at Sensitive Places - Model Verification	90 ¹	55-60	59	58	No exceedance
Centenary Pool - Commercial	Attended - External	Standard Hours Friday 24/7/20 9:51	Intermittent	Construction Monitoring at Sensitive Places - Model Verification	90	55-60	62	59	No exceedance
N/A - Northern corridor	Attended - External	Standard Hours Friday 24/7/20 10:08	Intermittent	Buffer Distance Test - Model Verification	N/A	N/A	72	69	N/A

- Note (1) - Monitoring Method
 - Note 2 of Imposed Condition 11 Table 2 states *Where internal noise levels are unable to be measured or monitored, the typical noise reductions presented in Guideline Planning for Noise Control, Ecoaccess, DEHP, January 2017 (PFNC) apply.*
 - Internal noise measurements were not undertaken as the majority of receivers at this location (outdoor pool) would be external.
 - The monitoring was undertaken to validate the model therefore external noise measurements are appropriate to determine the impact of construction noise.
- Note (2) – Façade Attenuation
 - Note 2 of Imposed Condition 11 Table 2 states *Where internal noise levels are unable to be measured or monitored, the typical noise reductions presented in Guideline Planning for Noise Control, Ecoaccess, DEHP, January 2017 (PFNC) apply.*
 - The PFNC guideline can no longer be accessed. The Department of Environment and Science (DES) website still states this guideline is under review and is yet to release an alternative guideline
 - Former revisions of the PFNC, in particular Table 7 stated the following regarding typical noise reductions through the building façade:
 - 5 dB – Window wide open
 - 10 dB – Partially closed
 - 20 dB – single glazed, closed
 - 25 dB – Thermal double glazing, closed
 - The RIPC-4 Technical Report considered that all receptors had closed external single glazing for the assessment of construction noise impacts.
 - The Queensland Ombudsman assessed this assumption for the Airport Link Project and recommended that 10dB be adopted for major infrastructure projects in Queensland².
 - Additionally, a number of acoustic studies have shown that 10 dB is a suitable assumption for open windows. Most importantly this requirement only applies to temporary rail works within the project footprint and does not apply to long term operational rail noise exposure.
 - Accordingly, it is considered appropriate to consider a 10 dB reduction on this basis. This assumption can be used for predictive modelling and for noise measurements, where indoor noise measurements are not practicable.

¹ AS2107 does not have a design sound level for outdoors pool, therefore the maximum design sound level for indoor pools was used as the noise goal (standard working hours)

² https://www.ombudsman.qld.gov.au/ArticleDocuments/218/Airport_Link_Ombudsman_Statement.pdf.aspx, pages 208-210, Section 9.8.6

3.1.3 Vibration Monitoring

Demolition works commenced at the RNA showgrounds, starting with the Interwar toilet block.

Consistent with Imposed Condition 12(b), the C-EMP and the Property Damage Mitigation Sub-Plan vibration monitoring was undertaken at the RNA Members Stand and John MacDonald Stand which are identified State Heritage Buildings susceptible to vibration impact. The monitoring results are presented in the following section.

There were no exceedances of any of the vibration limits set for each of the buildings.

Vibration monitoring because of complaints was not triggered. No complaints related to vibration occurred during the reporting period.

3.1.4 Vibration Monitoring Results

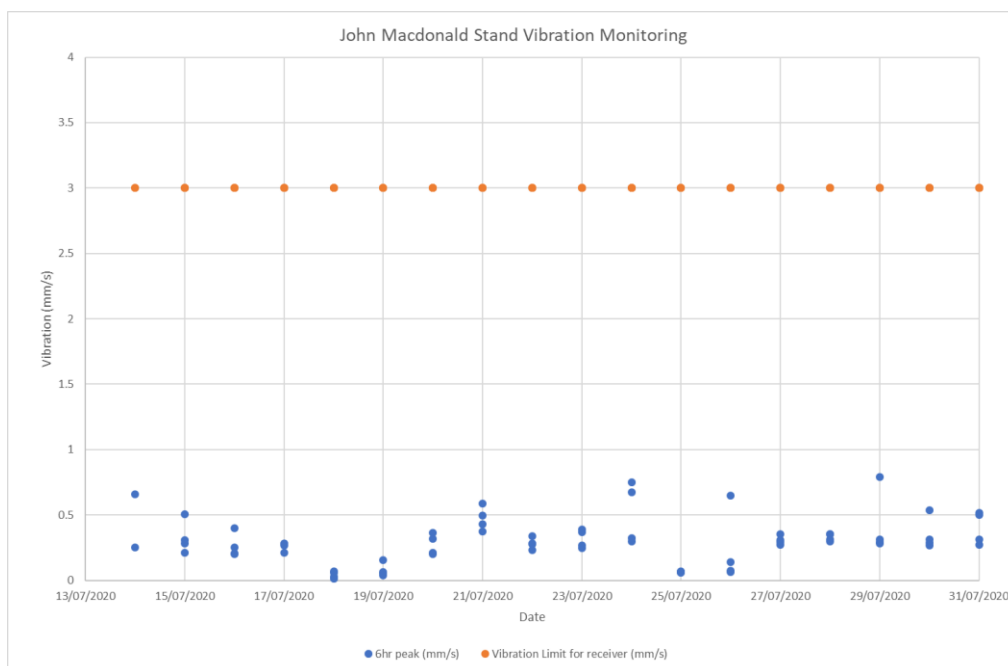


Figure 2: Vibration Monitoring – John MacDonald Stand

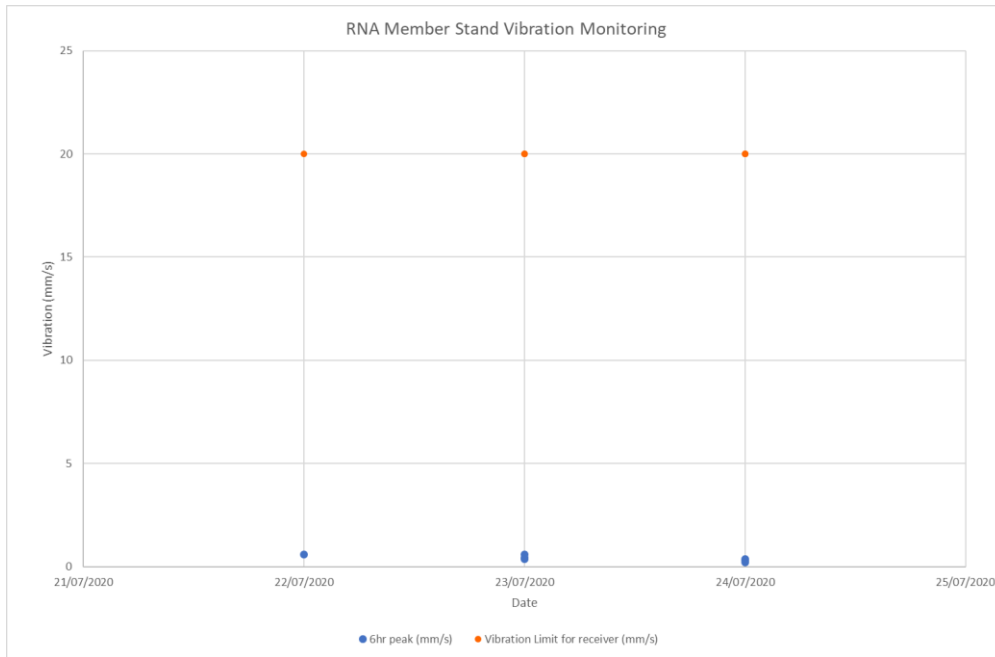


Figure 3: Vibration Monitoring – RNA Members Stand

3.1.5 Interpretation

3.1.5.1 Noise Monitoring

Monitoring of piling for pier protection works at the Northern Corridor was undertaken as close as possible to the nearest DAP (Centenary Pool, multistorey brick building), approximately 10m from façade of the building. The measured LA_{10} and $Laeq$ readings were compliant with the imposed conditions for works during and outside of standard working hours.

The RIS scope of works is achieving the outcomes set out by the CGCR and OEMP.

3.1.5.2 Vibration Monitoring

Monitoring of both the John MacDonald Stand and RNA members stand was taken as close as possible to the buildings (refer Attachment 3). The measured vibration results were lower than the predicted vibration limits specified in the Property Damage Sub Plan.

The RIS scope of works is achieving the outcomes set out by the CGCR and OEMP.

3.2 Air Quality

Condition 13(b) of the CGCR requires that during construction, monitoring and reporting on air quality in accordance with the Air Quality Management Plan, a sub-plan of the Construction Environmental Management Plan occurs.

Visual Monitoring was undertaken during routine environmental inspections. A total of fifteen (15) inspections were undertaken by the environment team.

UNITY has installed the following Air Quality Monitoring devices, therefore data collected from these devices, when active, is reported on in the monthly report regardless of the Project Works occurring.

Table 3: Summary of Air Quality devices

Monitoring Device Installed by UNITY	Area	Name	Date Installed	Status for the Month of July
Dust Deposition Gauge	RNA Showgrounds	AQ-01	13 December 2019	Active
Dust Deposition Gauge	Northern Corridor (near BGGS)	AQ-02	13 December 2019	Active
Dust Deposition Gauge	Northern Corridor (near Centenary Pool)	AQ-03	13 January 2020	Active
Dust Deposition Gauge	Mayne Yard (Eastern Air Shed)	AQ-04	13 February 2020	Active
TSP / PM ₁₀ Monitor	Mayne Yard (Eastern Air Shed)	UNI324	23 April 2020	Active
TSP / PM ₁₀ Monitor	Northern Corridor (Eastern Air Shed)	UNI327	23 April 2020	Active
TSP / PM ₁₀ Monitor	RNA (Eastern Air Shed)	UNI319	01 July 2020	Components stolen – location of the monitor is to be changed and the stolen components replaced Only partial data is therefore available for this month (up to 10 July 20)

3.2.1 Dust results

Since passive dust deposition gauges are analysed on a monthly basis, results span from 12 June 2020 to 13 July 2020.

The dust deposition gauges result for the reporting period are detailed below and complied with Condition 13(b) of the CGCR.

Table 4: Dust deposition gauge results for period 12 June 2020 to 13 July 2020.

CGCR Goal (mg/m ² /day)	AQ-01 Results - RNA Showgrounds (mg/m ² /day)	AQ-02 Results - BGGS (mg/m ² /day)	AQ-03 Centenary Pool (mg/m ² /day)	AQ-04 Abbotsford Rd (E Mayne) (mg/m ² /day)
120	23	143	30	13
Total Rainfall during Period	30.2mm	30.2mm	30.2mm	32mm

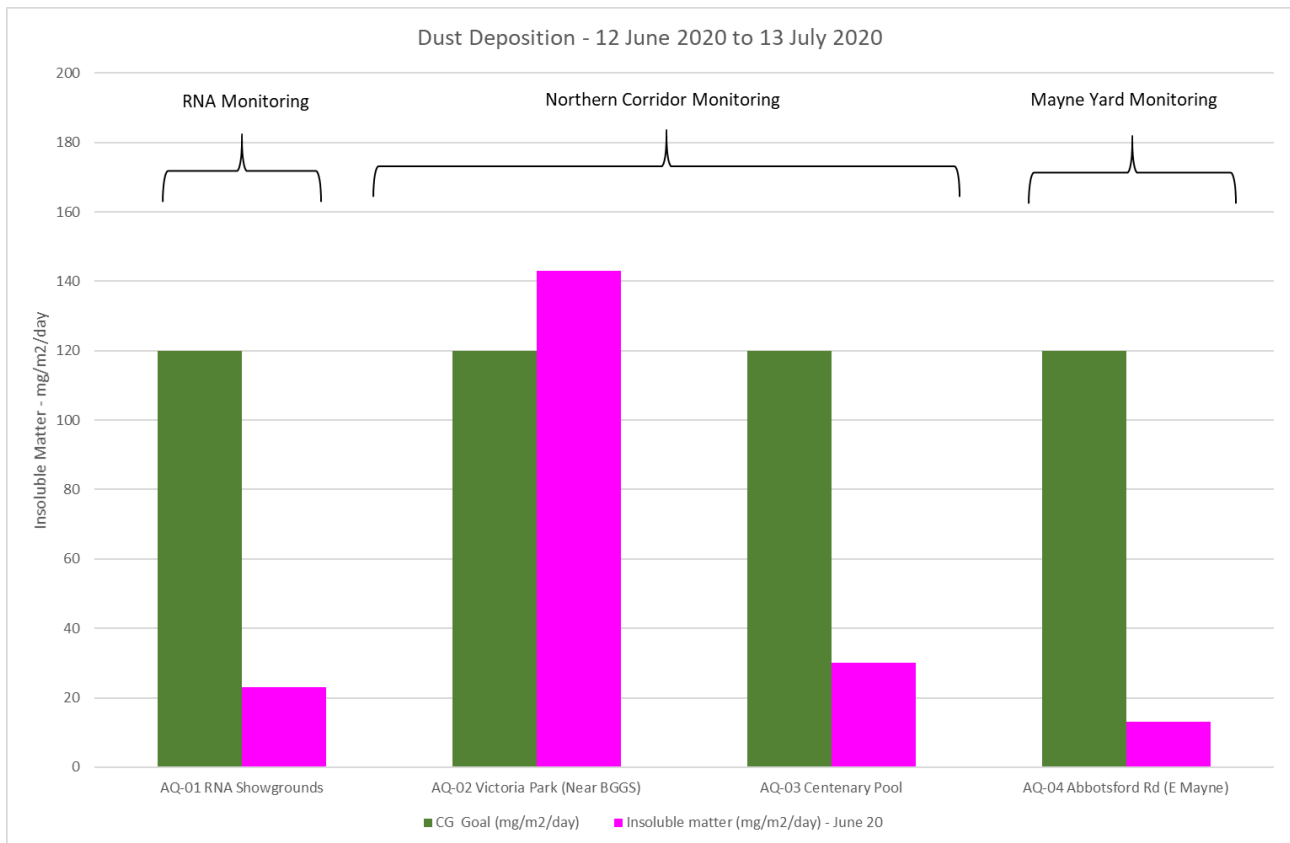


Figure 4: Air Quality Monitoring (Deposited Dust) –12 June – 13 July 2020 Results

3.2.2 Interpretation

Please refer to section 4.1.2 for a detailed discussion on the exceedance of the deposited dust air quality goal at AQ-02.

3.2.3 Particulates results

3.2.3.1 UNITY Air Quality Monitoring Stations

Unity had two operational Air Quality monitoring stations set up for the reporting period. A third station was set up near 6 Tufton Street to monitor the air quality for the RNA Showgrounds works.

The solar unit (Solar panels and battery pack) was stolen and therefore an incomplete data set is available for the reporting period.

The theft has been reported to the Police and the stolen equipment is in the process of being replaced.

The station will need to be relocated to a more secure location once the replacement components are received.

External Ambient Air Quality data was collected for total suspended particles (TSP), and particulate matter less than 10 μm (PM₁₀).

PM₁₀ is one of the indicators for which the Coordinator General has imposed a goal of 50 $\mu\text{g}/\text{m}^3$ (over an averaging period of 24 hours) the project must aim to achieve under Imposed Condition 13(a).

TSP is one of the indicators for which the Coordinator General has imposed a goal of 80 $\mu\text{g}/\text{m}^3$ (over an averaging period of 24 hours) the project must aim to achieve under Imposed Condition 13(a).

These stations have been set up on site as per AS/NZS 3850 1.1 following consultation with UNITY Air Quality Professionals.

The results are represented in the below figures.

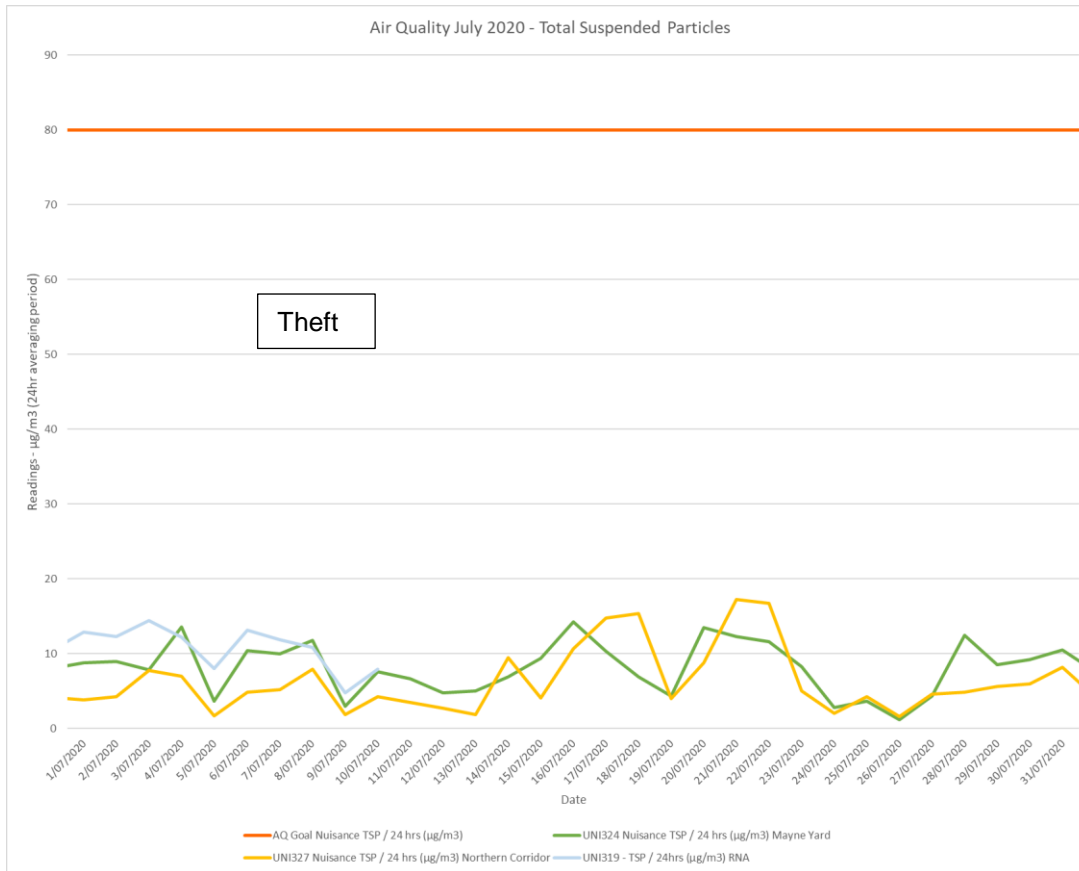


Figure 5: Air Quality Monitoring (TSP) - July 2020 Results

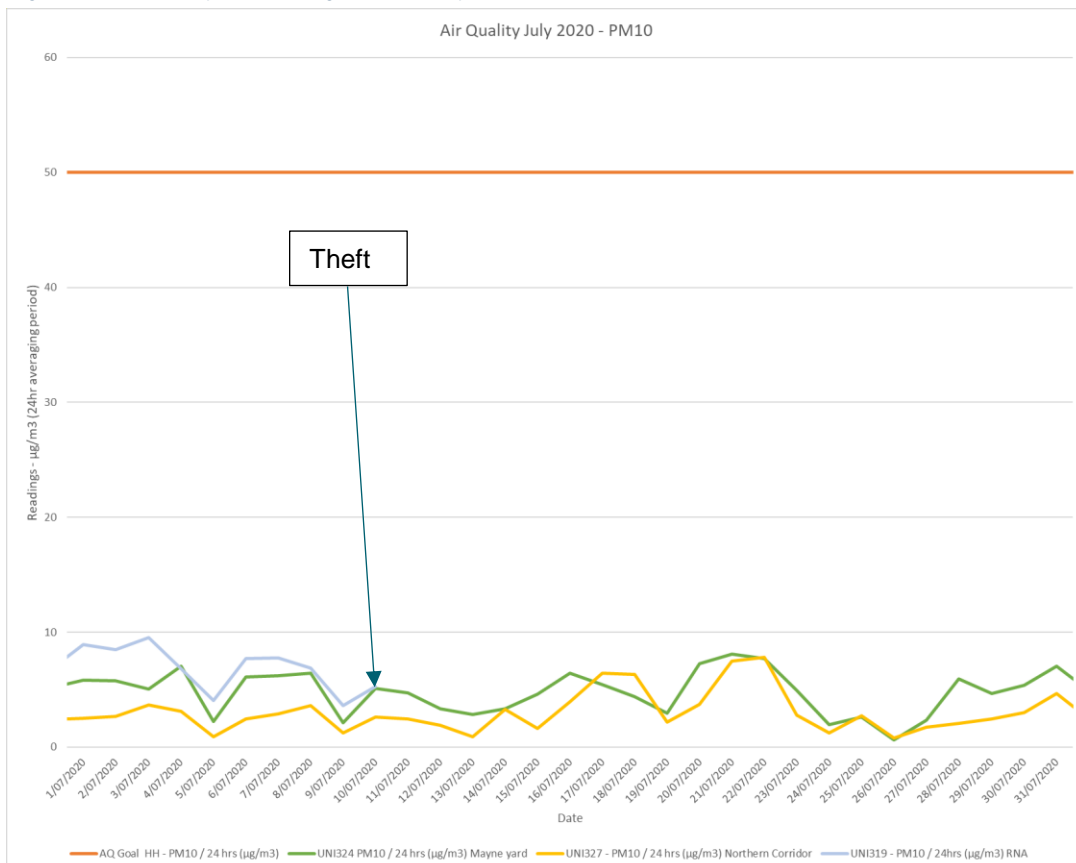


Figure 6: Air Quality Monitoring (PM10) - July 2020 Results

3.2.4 Interpretation

All particulate monitoring results were less than the relevant air quality goals the Project must aim to achieve.

The C-EMP and the AQMP recognise that particulate matter monitoring can be a lag indicator. Therefore, the monitoring regime detailed in the C-EMP consists of a combination of surveillance regimes via inspections at the time the works are occurring and particulate matter monitoring to validate the surveillance regime findings and potential complaints.

Site inspections by the environment team confirmed that:

- There was no visible dust leaving the site boundaries,
- Waters carts were on site and used for dust suppression / fill conditioning
- Stabilised egress was in place and in functioning order at each access points

The RIS scope of works therefore achieved the outcomes set out by the CGCR and OEMP.

3.3 Water Quality – Surface Water

Condition 15(a) requires that discharges of groundwater from Project Works within the Breakfast Creek catchment must comply with the Brisbane River Estuary environmental values and water quality objectives (Basin no.143 – mid-estuary) in the Environment Protection (Water) Policy 2009.

Condition 15(a) requires that discharges of groundwater from Project Works within Moolabin Creek, Yeerongpilly – Oxley Creek catchment must comply with the Brisbane River Estuary environmental values and water quality objectives (Basin no.143 –(part) – including all tributaries of the creek) in the Environment Protection (Water) Policy 2009.

Water Quality monitoring to demonstrate compliance with Condition 18 was triggered on the weekend of the 25th-26th July with post-rainfall sampling undertaken on the 27th July.

There were no active surface water discharges during July (e.g. dewatering through pumping, sediment basin release). Visible passive (through temporary or permanent stormwater drainage) site water discharges occurred during the 25th-26th July rain event.

There were no groundwater discharges.

Condition 15(b) of the CGCR requires that during construction, monitoring and reporting on water quality in accordance with the Water Quality Management Plan, a sub-plan of the Construction Environmental Management Plan occurs.

A maximum monthly rain record of 29mm over a 24-hour period recorded at the Bowen Hills weather station, which exceeds the default trigger for post rainfall monitoring.

Site inspections at the active sites (Mayne Yard North, RNA and Northern Corridor) confirmed that while run-off had left site, it had occurred through a series of Erosion and Sediment Control devices installed in accordance with the Site-Specific ESC-Ps.

Subsequent visual inspections of Breakfast Creek did not identify any visual evidence of construction related run -off (e.g. no obvious discoloured discharges from discrete drainage outlets entering the water bodies). This was confirmed by the in-situ surface water monitoring

The inspection of Barrambin (York's Hollow) identified discolouration that may have been evidence of construction run-off. The discoloration was investigated and in-situ as well as laboratory water sampling was undertaken. The investigation and sampling results are summarised in section 3.3.5

In-situ monitoring of physico-chemical parameters results for all monitoring undertaken during the reporting period are presented below

3.3.1 Rainfall Records

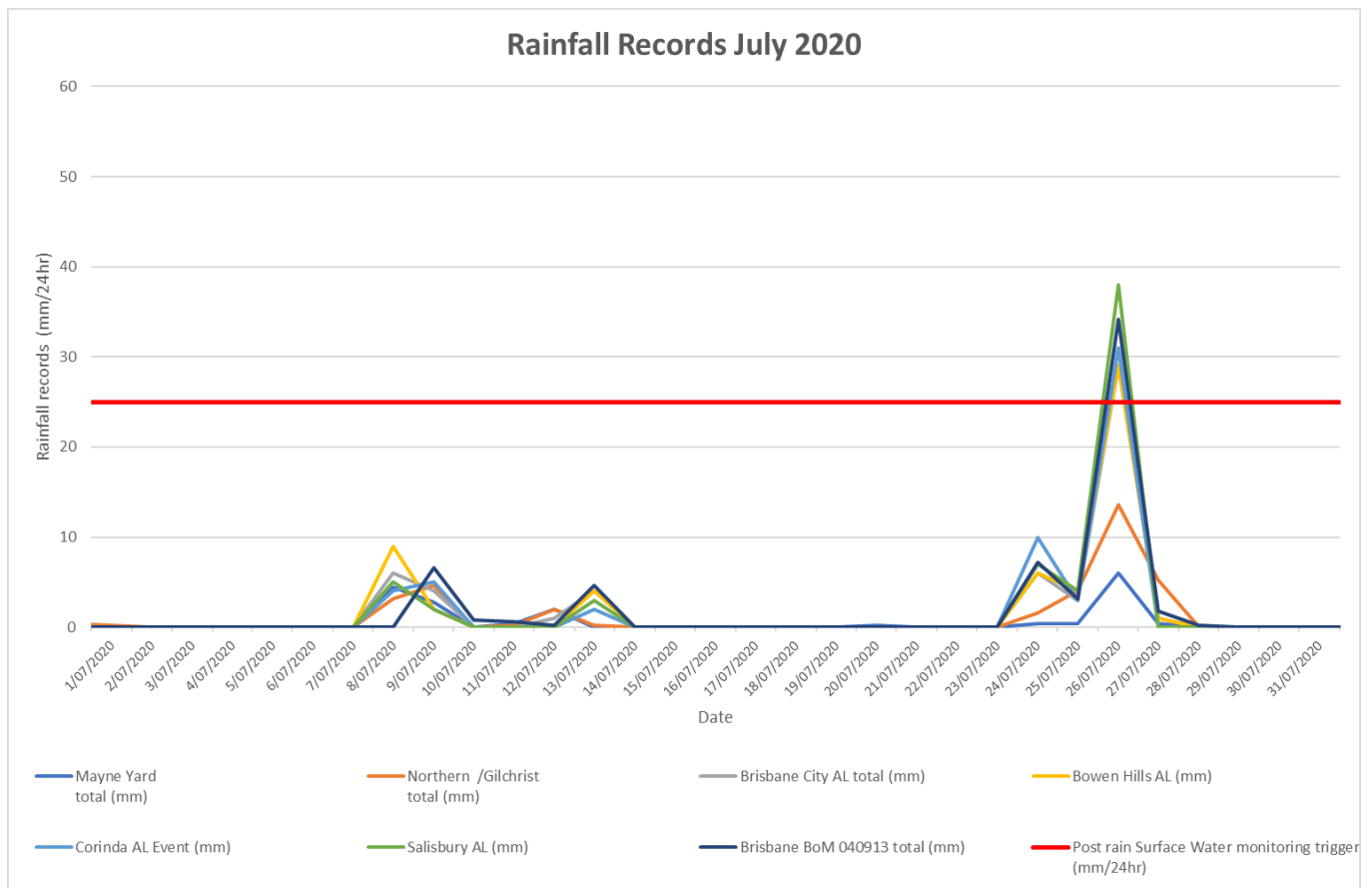


Figure 7: Rainfall - June 2020 Results

3.3.2 Discharge Monitoring / Post Rainfall Monitoring

Post Rainfall monitoring was undertaken in response to the 25-26th July Rainfall event. Only Breakfast Creek and Barrambin triggered discharge monitoring as there were no active worksites within the catchment of the other waterways. The results are presented in the following sections.

3.3.3 C-EMP Monitoring

During the reporting period, UNITY also undertook one (1) surface water routine monthly monitoring event. This monitoring is being undertaken as it may inform the Dis-1 Credit for the ISCA Excellent Rating the Project is pursuing.

3.3.4 Monitoring Results

3.3.4.1 Breakfast Creek

The below table summarises the in-situ records collected during one (1) round of routine surface water monitoring and one (1) round of post rainfall event monitoring at Breakfast Creek, the relevant surface water receiver for Mayne Yard.

Results highlighted in yellow exceed / do not meet the Water Quality Objectives nominated in the relevant Environmental Protection Policy (Water and Wetland Biodiversity) 2019 documentation (EPP Water) as referenced in imposed Condition 15a.

Results highlighted in red exceed / do not meet the Project Discharge Criteria for Compliance with Imposed Conditions 15 and 18.

Table 5: Breakfast Creek

Date	Location	Tide	Sampling Purpose	Turbidity (NTU)	TSS (mg/L)	DO (%)	pH (pH Unit)
WQO (EPP Water)				8	20	85-105% saturation	7.0-8.4
Discharge Criteria				Nil until Turbidity / TSS correlation achieve	50	Nil	Stable pH reading; and General sites: 6.5 – 8.5, or Wallum/Acidic Ecosystems: 5.0 – 7.0
09/07/2020	SW 1 – Upstream of Mayne Yard	Falling Brackish to Marine conditions	Monthly Dis-1 Monitoring	14	10	88	7.3
09/07/2020	SW 2 – Adjacent to Mayne Yard	Falling Brackish to Marine conditions	Monthly Dis-1 Monitoring	22	23	84	7.6
09/07/2020	SW 3 – Downstream of Mayne Yard	Falling Brackish to Marine conditions	Monthly Dis-1 Monitoring	33	30	88	7.5
27/07/2020	SW 1 – Upstream of Mayne Yard	Rising Brackish to marine conditions	Discharge / post rainfall Monitoring	8	<5	90	7.2
27/07/2020	SW 2 – Adjacent to Mayne Yard	Rising Brackish to marine conditions	Discharge / post rainfall Monitoring	14	10	93	7.7
27/07/2020	SW 3 – Downstream of Mayne Yard	Rising Brackish to marine conditions	Discharge / post rainfall Monitoring	19	15	95	7.3

3.3.4.2 Barrambin (York's Hollow)

The below table summarises the in-situ records collected during one (1) round of surface water monitoring and one (1) round of post rainfall event monitoring at Barrambin (York's Hollow), the surface water receiver for the Northern Corridor.

Results highlighted in yellow exceed / do not meet the Water Quality Objectives nominated in the relevant Environmental Protection Policy (Water and Wetland Biodiversity) 2019 documentation (EPP Water) as referenced in imposed Condition 15a.

Results highlighted in red exceed / do not meet the Project Discharge Criteria for Compliance with Imposed Conditions 15 and 18.

Table 6: Barrambin (York's Hollow)

Date	Location	Sampling Purpose	Turbidity (NTU)	TSS (mg/L)	DO (%)	pH (pH Unit)
WQO (EPP Water)			50	6	85-110% saturation	6.5-8.0
Discharge Criteria			Nil until Turbidity / TSS correlation achieve	50	Nil	Stable pH reading; and General sites: 6.5 – 8.5, or Wallum/Acidic Ecosystems: 5.0 – 7.0
09/07/2020	SW 4 – Downstream of Northern Corridor	Monthly Dis-1 Monitoring	11	7	82	7.4
27/07/2020	SW 4 – Downstream of Northern Corridor	Discharge Monitoring	45	21	87	7.9

3.3.4.3 Moolabin Creek, Rocky Water Holes Creek and Stable Swamp Creek

The below tables summarise the in-situ records collected during one (1) round of routine surface water monitoring at Moolabin Creek, Rocky Water Holes Creek and Stable Swamp Creek, the relevant surface water receivers for the Southern Corridor (F2S).

Results highlighted in yellow exceed / do not meet the Water Quality Objectives nominated in the relevant Environmental Protection Policy (Water and Wetland Biodiversity) 2019 documentation (EPP Water) as referenced in imposed Condition 15a.

Results highlighted in red exceed / do not meet the Project Discharge Criteria for Compliance with Imposed Conditions 15 and 18.

Table 7: Moolabin Creek

Date	Location	Sampling Purpose	Turbidity (NTU)	TSS (mg/L)	DO (%)	pH (pH Unit)
WQO (EPP Water)			50	6	85-110% saturation	6.5-8.0
Discharge Criteria			Nil until Turbidity / TSS correlation achieve	50	Nil	Stable pH reading; and General sites: 6.5 – 8.5, or Wallum/Acidic Ecosystems: 5.0 – 7.0
09/07/2020	SW 5 – Upstream rail corridor	Monthly Dis-1 Monitoring	15	5	78	7.26
09/07/2020	SW 6 – Downstream rail corridor	Monthly Dis-1 Monitoring	19	6	80	7.54

Table 8: Rocky Water Holes Creek

Date	Location	Sampling Purpose	Turbidity (NTU)	TSS (mg/L)	DO (%)	pH (pH Unit)
WQO (EPP Water)			50	6	85-110% saturation	6.5-8.0
Discharge Criteria			Nil until Turbidity / TSS correlation achieve	50	Nil	Stable pH reading; and General sites: 6.5 – 8.5, or Wallum/Acidic Ecosystems: 5.0 – 7.0
09/07/2020	SW 7 – Upstream Rail corridor	Monthly Dis-1 Monitoring	10	<5	100	7.34
09/07/2020	SW 8 – Downstream Rail corridor	Monthly Dis-1 Monitoring	9	<5	84	7.28

Table 9: Stable Swamp Creek

Date	Location	Sampling Purpose	Turbidity (NTU)	TSS (mg/L)	DO (%)	pH (pH Unit)
WQO (EPP Water)			50	6	85-110% saturation	6.5-8.0
Discharge Criteria			Nil until Turbidity / TSS correlation achieve	50	Nil	Stable pH reading; and General sites: 6.5 – 8.5, or Wallum/Acidic Ecosystems: 5.0 – 7.0
09/07/2020	SW 9 – Downstream Rail corridor	Monthly Dis-1 Monitoring	9	<5	89	7.4

3.3.5 Interpretation

Review of the Barrambin (York's Hollow) post rainfall inspection and monitoring confirmed the following

- The erosion and sediment controls within the Project Boundary were either installed in accordance with the ESC-P requirements and interim and compensatory measures were place where the work areas were being actively worked.
- None of the drainage controls or sediment controls (Type 2 and Type 3) were damaged by the rainfall
- The rainfall event did not exceed the design standard for the sediment controls (0.5 x the 1 in 1 year critical storm or 4 EY) therefore the Project discharge criteria (as per MRTS51 and MRTS52) which are nominated in the ESC-P developed in accordance with Imposed Condition 18 are
 - Suspended Solids: < 50mg/L for relevant design criteria
 - pH: 6.5-8.5
 - Hydrocarbons: No Visible Trace
 - Waste: no waste or litter
- The Total Suspended Solid (TSS) results at the discharge point are less than 50mg/L (discharge limit) and
- No litter of hydrocarbons were visible ay the discharge point
- The pH reading was 7.9 pH Units

On this basis

- Environmental harm has not occurred or was not likely to occur.
- The event is therefore not notifiable to the DES
- The event is not a noncompliance event (NCE) against the Imposed conditions (Condition 18 and Condition 15).

Therefore, it has been concluded that the RIS scope of works is achieving the outcomes set out by the CGCR and OEMP.

4 Compliance Review

4.1 Non-Compliance Events

The below section summarises the events to be reported in accordance with condition 5 and condition 6(b)(ii) of the CGCR.

A Non-Compliance Event is defined as Project Works that do not comply with the Imposed Conditions.

4.1.1 Non - Compliance Events Summary

Table 10: Summary of Non-Compliance Events

Event Title	Location, Date and time of event	Date the Event was Formally Notified to CG/IEM	Conditions Affected	Date the Event Report Formally Sent to CG/IEM	Status of Event
None for this reporting period					

4.1.2 Review of Dust deposition gauge AQ-02 Exceedance

4.1.2.1 Issues Summary

As presented in Section 3.2 the dust deposition results at AQ-02 (BGGs) located near the northern corridor exceeded the CGCR Air Quality objective of 120 mg/m²/day.

The dust deposition results span the period of 12 June 2020 to 13 July 2020, UNITY reviewed the following information to ascertain whether the exceedance of the CG Air Quality Goal for Deposited Dust (Nuisance) is likely related to UNITY's Project Works:

- Location of the gauges and compliance with AS3580.10.1
- Main potential contributing activities that were likely to generate dust (e.g. earthworks)
- Prevalent wind conditions during the aforementioned activities
- Field observation for visible dust during routine surveillance undertaken during the monitoring period.
- Complaints (residents, workers, Victoria Park users) related to air quality during the monitoring period.
- Other monitoring data available (PM10, TSP other dust deposition gauge data)

4.1.2.2 Findings

Unity engaged a Certified Air Quality Professional (CAQP) to assess the exceedance of the Deposited Dust Goal.

The findings of the review as per the below

- Location of the gauges and compliance with AS3580.10.1
 - AQ-03 (Northern Corridor) was sited in accordance with AS3580.10.1
 - AQ-02 (Brisbane Girls Grammar School) was sited in accordance with AS3580.10.1
- Potential contributing activities during the monitoring period:
 - Drainage works south of the land bridge
 - Remove and Replace as well as subgrade improvement works
 - Retaining wall works along batters (soil nail installation)
 - No other activities undertaken by UNITY in the northern corridor was identified as a potential contributing activity

- The prevalent wind conditions between 12 June and 13 July 2020 are presented in Plate 1 and 2 and summarised in Figure 3.

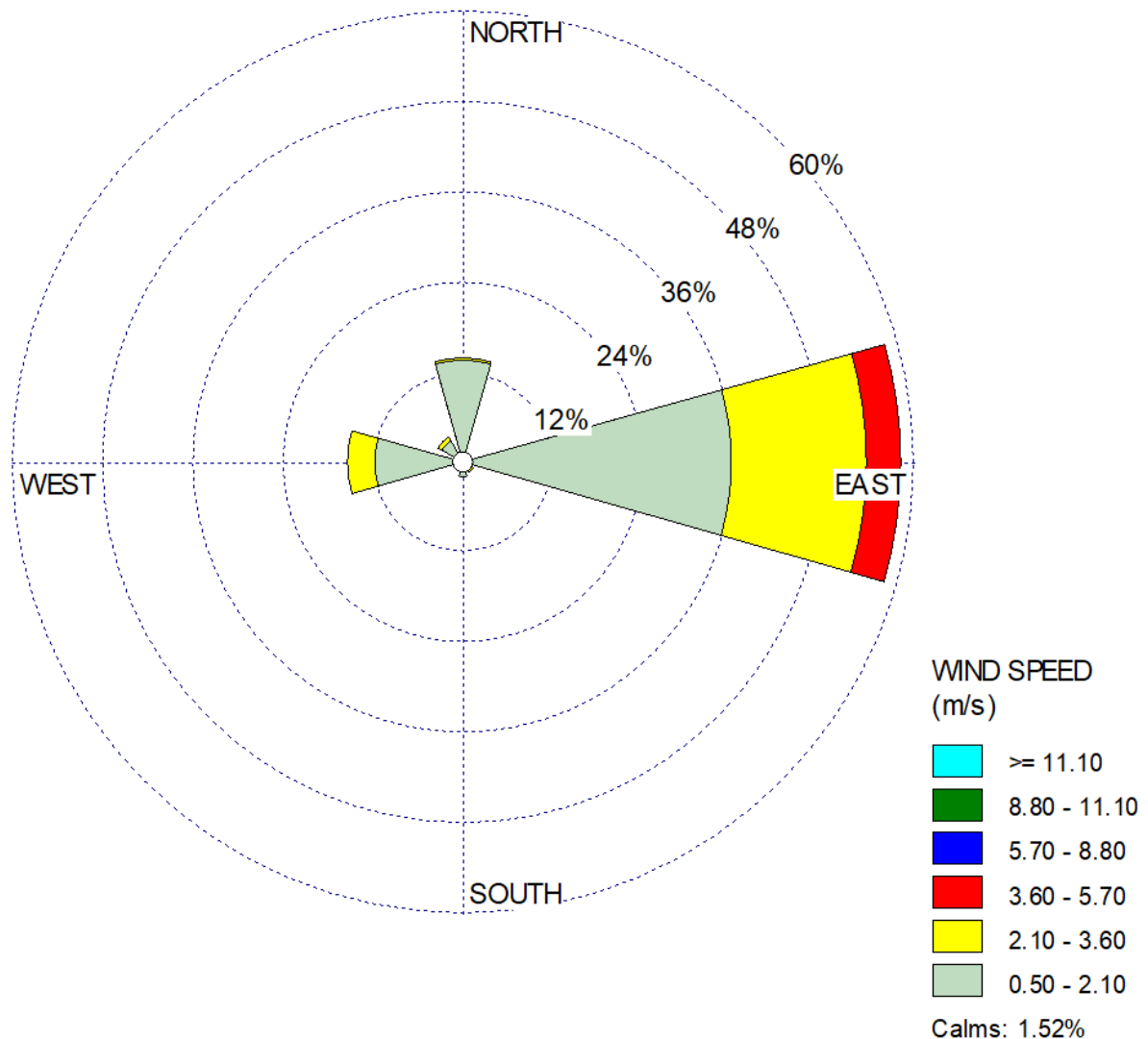


Plate 1: Prevalent Wind Conditions during monitoring period – Construction hours

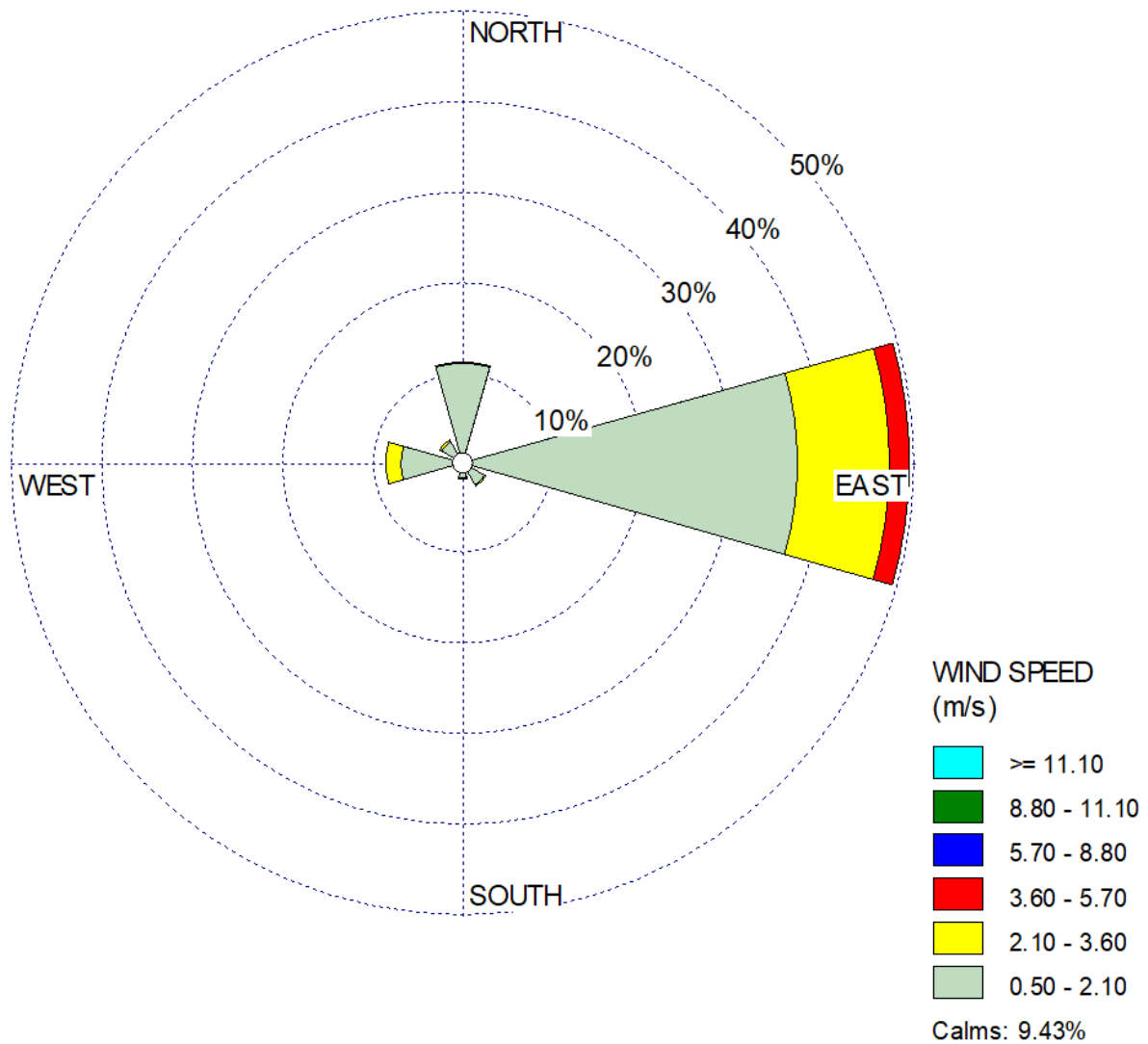


Plate 2: Prevalent Wind Conditions during monitoring period – All hours

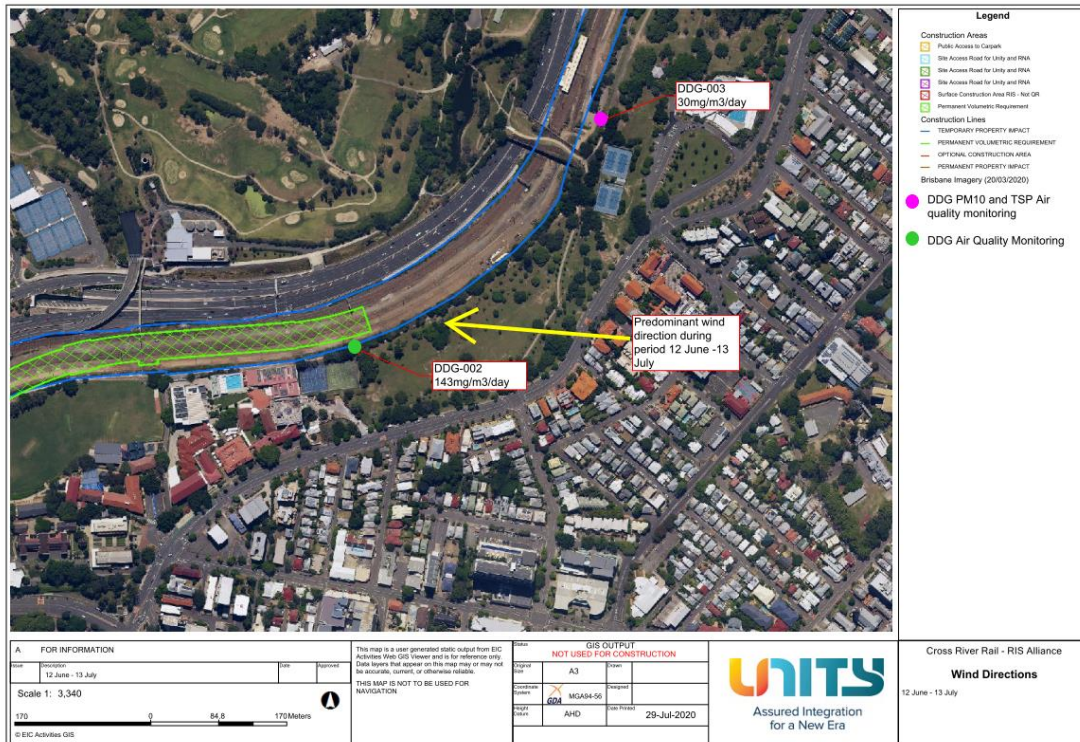


Figure 3: Prevalent Winds - Northern Corridor

- Field observations for visible dust during routine environmental inspections did not identify visible dust beyond the project boundaries.
- It is noted Brisbane Girls Grammar School made an enquiry to the Project relating to Project Works in the vicinity of the outdoor pool located on their grounds and Air Quality on 29 July 2020.
 - At the time of the enquiry soil nail works activities were the key scope of works that was being undertaken in the proximity of the BGGGS pool.
 - A review of the program identified that
 - soil nail works had commenced during the monitoring period and had occurred for a total period of two (2) days during the dust deposition monitoring period (06 and 07 July 2020), and
 - earthworks activities consisting of excavation and haulage of unsuitable material occurred for a total period of 13 days during the dust deposition monitoring period
- Taking into consideration the prevalent wind direction on these production days,
 - the soil nail works were only upwind of the AQ-02 dust deposition gauge for less than 0.5% of the exposure period
 - The winds were predominantly from the Eastern quadrant, meaning the AQ-02 dust deposition gauge was upwind of the potential contributing for the majority of this reporting period (approximately 60% of construction hours)
 - For the remaining 40% of the time it is highly likely that Unity works did contribute some of the dust loading measured in AQ-02.
- The majority of measured wind speeds were a gentle breeze or less under the Beaufort Scale.
- Other available data were
 - The results from the dust deposition gauge AQ-03, did not exceed the Deposited Dust Air Quality Goal (120 mg/m²/day) with a measured rate of 30 mg/m²/day.
 - There were no recorded exceedances of the daily TSP or PM₁₀ Air Quality Goal during the reporting period.

4.1.2.3 Conclusion

The CAQP took into consideration the data presented above. Their conclusion is as follows:

The monitoring method, as set out in the Australian standard, has its limitations and does not allow anyone to be quantitatively definitive about contributions to measured results.

What can be determined from the measured results and the supporting data is that it is very likely Unity Works would not have caused the exceedance alone.

It is very likely that there are other dust sources in the area that contributed enough dust to AQ-02 to cause to the exceedance.

On this basis there is no Non-Compliance Event with Imposed Condition 13a.

UNITY however identified, that BGGs being a sensitive place, it would be prudent to relocate the dust deposition gauge and the real-time particulate monitor within their grounds. UNITY received confirmation on 20 August 2020 that BGGs is amenable to UNITY installing the air quality monitoring stations on their ground. The relocation of the TSP / PM10 can occur prior to the end of August. The DDG will be relocated mid-September 2020 during the planned exchange of the collection bottle.

4.2 C-EMP Compliance

The below table summarise compliance status with the C-EMP and relevant Subplans monitoring requirements for the reporting period.

Table 11: C-EMP and relevant Subplans monitoring requirements – Compliance Status for the reporting period

Aspect	Monitoring requirement	Activities Risk profile	Monitoring undertaken	Compliance status with C-EMP / CEMP Subplan	Effect of the non-compliance
Air Quality	Visual monitoring program + Additional particulate monitoring as required based on the outcomes of the predictive assessment / risk profile	Moderate to High	Yes – visual monitoring undertaken as part of routine inspections Additional monitoring for TSP, PM10 and Deposited Dust also undertaken	Compliant	Not Applicable
Noise	Buffer Distance Tests based on the outcomes of the predictive assessment based / risk profile of activities	Moderate to High	Yes	Compliant	Not Applicable
Noise	Plant Noise Audits for Noisy Plant to validate models input as required	-	Not required	Compliant	Not Applicable
Noise	Complaints response	-	Not triggered – no complaints	Compliant	Not Applicable
Vibration	Construction Monitoring at Sensitive Places / DAPs - Model Verification based on the outcomes of the predictive assessment based / risk profile of activities	Moderate to High	Yes, at RNA showground for Property Damage	Compliant	Not Applicable
Vibration	Complaints response	-	Not triggered – no complaints	Compliant	Not Applicable
Water Quality	Monthly monitoring	-	Yes	Compliant	Not Applicable
Water Quality	Post Rainfall	Moderate to High	Yes	Compliant	Not Applicable
Water Quality	Dewatering	-	Not triggered – no dewatering to receiving water systems	Compliant	Not Applicable

5 Good News Stories

- No Non-Compliance events occurred during the reporting period.

Attachment 1 CGCR Non-Compliance Event Report (if required)

None for this reporting period.

Attachment 2 Monitoring Locations – Noise



Legend

- Construction Areas
- Public Access to Carpark
 - Site Access Road for Unity and RNA
 - Site Access Road for Unity and RNA
 - Site Access Road for Unity and RNA
 - Surface Construction Area RIS - Not QR
 - Permanent Volumetric Requirement

- Construction Lines
- TEMPORARY PROPERTY IMPACT
 - PERMANENT VOLUMETRIC REQUIREMENT
 - OPTIONAL CONSTRUCTION AREA
 - PERMANENT PROPERTY IMPACT

Brisbane Imagery (25/06/2020)

- Construction Monitoring at Sensitive Places
- Model Verification

A FOR INFORMATION			
Issue	Description	Date	Approved
	Noise Monitoring		
Scale 1: 1,649			
84	0	41.9	84Meters
© EIC Activities GIS			

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THIS MAP IS NOT TO BE USED FOR NAVIGATION

Status	GIS OUTPUT NOT USED FOR CONSTRUCTION		
Original Size	A3	Drawn	
Coordinate System	GDA MGA94-56	Designed	
Height Datum	AHD	Date Printed	18-Aug-2020



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Monthly CG Report - July

Noise Monitoring

Attachment 3 Monitoring Locations – Vibration




Legend

- Brisbane Imagery (25/06/2020)
- Vibration Monitoring at sensitive
recievers

A FOR INFORMATION			
Issue	Description	Date	Approved
	Vibration Monitoring		
Scale 1: 1,649			
84	0	41.9	84Meters
© EIC Activities GIS			

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Status	GIS OUTPUT NOT USED FOR CONSTRUCTION		
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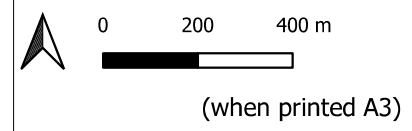
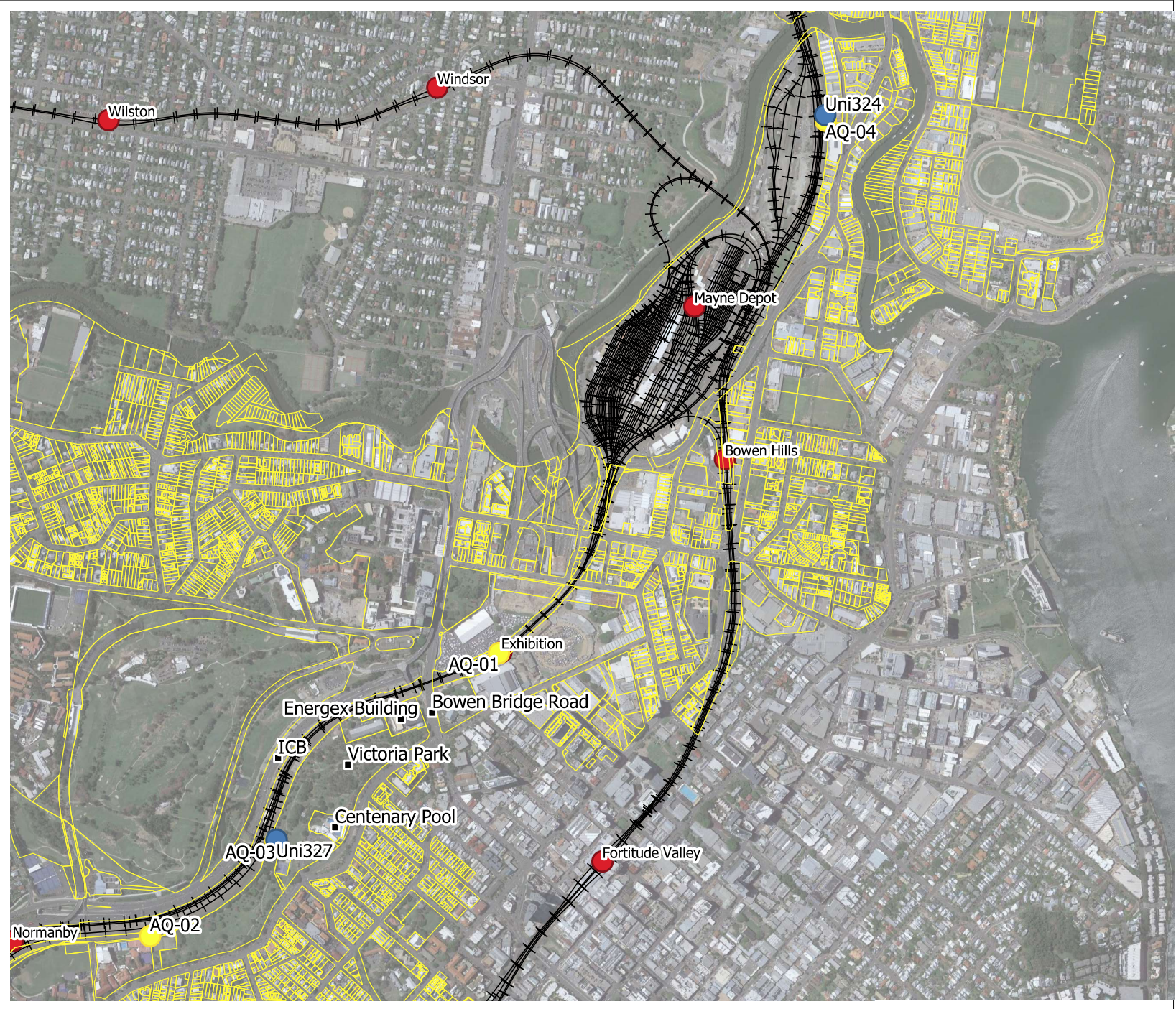
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for a New Era

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Vibration Monitoring

Attachment 4 Monitoring Locations – Air Quality



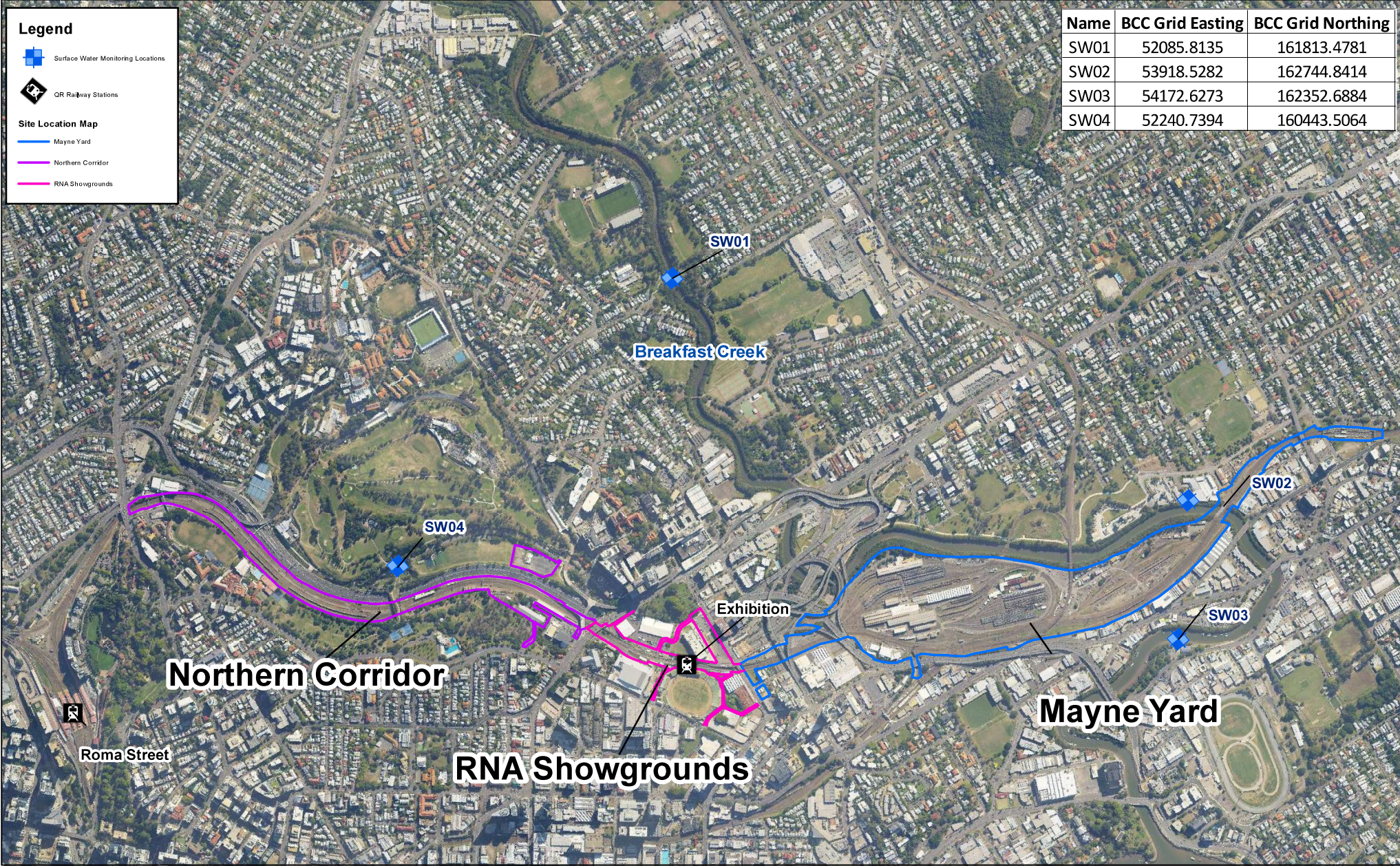
- LEGEND**
- CRR RIS Landmarks
 - Air Quality Monitoring**
 - DDG
 - TSP & PM10
 - DCBD_10May20
 - Rail**
 - Stations Railway_stations_and_sid
 - Rail Network Rail_network

Data Sources
DES
Qld Government
UNITY Alliance
Google Satellite Imagery

**CROSS RIVER RAIL
Air Quality
Monitoring Locations**

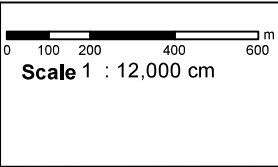
Figure 01	July 2020
Project ID: Q01080 Created By: KG Last Modified: 14-July-20 Version: 00	

Attachment 5 Monitoring Locations – Surface Water

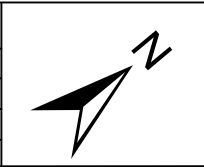


Name	BCC Grid Easting	BCC Grid Northing
SW01	52085.8135	161813.4781
SW02	53918.5282	162744.8414
SW03	54172.6273	162352.6884
SW04	52240.7394	160443.5064

1	Overview Map	17/09/2019	J Perry
Rev	Description	Date	Approved



Status	Issued for Information		
Original Size	A3	Drawn	GIS
Coordinate System	GDA 1994 BCSG02	Designed	J Clothier
Height Datum	AHD	Date Printed	2/13/2020
Filename:	Surface_Water_Northern_Area_Map.mxd		



Project Wide Surface Water Investigation				
Figure 1 - Surface Water Monitoring Locations				
Project Number	Discipline	Document	Document Number	Rev
	ENV	PL	002	1

Appendix B – TSD Monthly Report

COORDINATOR GENERAL MONTHLY REPORT: July 2020

Prepared in accordance with Coordinator-General Imposed Condition 6 - Reporting.

1. Monthly Monitoring Summary

It is the project's intent to aim for the Goals and Objectives relevant to vibration, noise, air quality and water monitoring within the practical extent of delivering the project.

Vibration monitoring was conducted on thirteen (13) occasions, and noise monitoring was conducted on seventy (70) occasions during July 2020. Each vibration and noise monitoring event confirmed works adhered to project requirements.

Ambient air quality monitoring was conducted at the Roma Street, Albert St, Woolloongabba and Boggo Rd precinct sites during July 2020. Air quality monitoring confirmed works adhered to project requirements.

Water quality monitoring was conducted before the release of water from the site on fourteen (14) occasions. Each monitoring event confirmed project requirements were adhered to. One (1) round of surface water quality monitoring was also conducted that confirmed no impacts were generated by the project.

2. CG Monthly Report – Compliance Assessment Against Imposed Conditions

Whilst not a requirement of Imposed Condition 6, CBGU offers the below Compliance Status Table as a good-will gesture to demonstrate the project's ongoing environmental performance.

Table 1: Compliance Status – CG Imposed Conditions

CG Condition	Requirement Summary	Compliance Met (Yes/No/NA)	Comment
1.	General conditions – compliance with the Project Changes relevant to the Contractor's scope.	Yes	Project works have been conducted compliant with the Imposed Conditions.
2.	Outline Environmental Management Plan – timely submission to the Coordinator-General, including required sub plans.	N/A	The OEMP is not an obligation of the CBGU Joint Venture.
3.	Design – the achievement of the Environmental Design Requirements.	Yes	Design and implementation proceeded in accordance with the Environmental Design Requirements.
4.	Construction Environmental Management Plan – all relating to Relevant Project Works.	Yes	Construction Environmental Plan (CEMP) (Rev 6) was endorsed by the Environmental Monitor in July 2020 and continues to manage Relevant Project Work.
5.	Compliance and Incident management – Non-compliance events, notifications and reporting.	Yes	Nil non-compliances occurred during the monitoring period (refer to Section 4).
6.	Reporting – Monthly and Annual reporting.	Yes	All reporting requirements are completed in accordance with Imposed Condition 6.
7.	Environmental Monitor – engaged and functions resumed.	Yes	An Environmental Monitor (EM) is appointed to the Project and CBGU is committed to working collaboratively to aid the EM's functions under Imposed Condition 7.
8.	Community Relations Monitor – engaged and functions resumed.	Yes	A Community Relations Monitor (CRM) is appointed to the project, and CBGU is committed to working collaboratively to aid the CRM's functions under Imposed Condition 8.
9.	Community engagement plan – developed and endorsed by Environmental Monitor.	Yes	A Community Engagement Plan (CEP) has been developed and implemented in accordance with Imposed Condition 9. The CEMP has been endorsed with the CEP.
10.	Hours of work – works undertaken during approved hours.	Yes	Project works have been conducted in accordance with the approved hours of work.

11.	Noise – Work must aim to achieve internal noise goals for human health and well-being.	Yes	Project work has aimed to achieve internal noise goals for human health and well-being. Where internal noise levels have been unable to be measured, suitable noise reductions have been applied in accordance with Imposed Condition 11. Noise monitoring data is provided within Section 3.2.
	Vibration – Works must aim to achieve vibration goals for cosmetic damage, human comfort and sensitive building contents.	Yes	Project work has aimed to achieve vibration goals for cosmetic damage, human comfort and sensitive buildings. Vibration monitoring data is provided within Section 3.1.
12.	Property damage relating to ground movement	Yes	The management of potential impacts relating to property damage has been completed in accordance with Imposed Condition 12.
13.	Air quality – Works must aim to achieve air quality goals for human health and nuisance.	Yes	Project works have aimed to achieve air quality goals. Air quality monitoring data is provided within Section 3.3.
14.	Traffic and transport – Works must minimise adverse impacts on road safety and traffic flow.	Yes	Project works have been conducted in a manner that has minimised adverse impacts on road safety and traffic flow.
15.	Water quality – Works must not discharge surface water and groundwater from the construction site above the relevant environmental values and water quality objectives.	Yes	The project possesses processes that ensure water quality is managed in accordance with Imposed Condition 15.
16.	Water resources – evaluate potential impact, plan works, implement controls and monitor the inflow of groundwater associated with drawdown.	Yes	Project works are managed in accordance with Imposed Condition 16.
17.	Surface water – Must be designed to avoid inundation from stormwater due to a 2-year (6hr) ARI rainfall event and flood waters due to a 5-year ARI rainfall event and constructed to avoid afflux or cause the redirection of uncontrolled surface water flows, including stormwater flows, outside of worksites.	Yes	Design of the Project considers the requirements of Imposed Condition 17.
18.	Erosion and sediment control – Provisions for erosion and sediment control must be consistent with the Guidelines for Best Practice Erosion and Sediment Control (International Erosion Control Association, 2008) and the Department of Transport and Main Roads' Technical Standard MRTS52.	Yes	The project possesses processes that ensure erosion & sediment control is managed in accordance with Imposed Condition 18.
19.	Acid Sulfate Soils managed as per the <i>Queensland Acid Sulfate Soil Technical Manual</i> .	Yes	The project possesses processes that ensure erosion & sediment control is managed in accordance with Imposed Condition 19.

20.	Landscape and open space – general requirement to minimise impacts on landscapes and open space values and specific requirements around Victoria park	Yes	Project works are designed and implemented in accordance with Condition 20.
21.	Worksite rehabilitation – worksites rehabilitated as soon as practicable upon completion of works or commissioning, and in consultation with Brisbane City Council.	Yes	Project works are designed and implemented in accordance with Condition 21.

1. Environmental Monitoring Results

Monitoring data is provided below in accordance with Imposed Condition 6(b)(i).

3.1 Vibration

Vibration requirements (levels) are defined as goals within Imposed Condition 11. The goals are to be aimed for.

The Coordinator-General Change Report – Whole of Project Refinements 2019 acknowledges instances exist that these goals may not be achieved.

Thirteen (13) vibration monitoring sessions were conducted during July 2020.

All vibration monitoring adhered to project requirements and is detailed in the table below.

Table 2: Vibration Monitoring Data

Start Date	Time (AM/PM)	Finish Date	Location (Street Name) (Construction Precinct)	Average Vibration level (mm/s)	Max Vibration Level (mm/s)	Vibration Goal (mm/s)	Receiver / Goal Type	Adhered to Project Requirements (Yes / No)
7/07/2020	10:52	7/07/2020	Albert Street (Albert Street Precinct)	0.51	9.83	25	Residential	Yes
08/07/2020	7:38	08/07/2020	Mary Street (Albert Street Precinct)	NA	4.82	50	Controlled Blast	Yes
8/07/2020	8:25	8/07/2020	Roma Street (Roma Street Precinct)	0.085	0.18	2	Heritage Structure	Yes
10/07/2020	11:22	10/07/2020	Albert Street (Albert Street Precinct)	0.15	0.43	25	Residential	Yes
10/07/2020	11:22	10/07/2020	Albert Street (Albert Street Precinct)	0.08	0.43	0.5	Residential	Yes
10/07/2020	9:51	10/07/2020	Vulture Street (Woolloongabba Precinct)	0.13	0.9	5	Residential	Yes

14/07/2020	14:15	14/07/2020	Roma Street (Roma Street Precinct)	0.087	0.21	2	Heritage Structure	Yes
18/07/2020	07:38	18/07/2020	Mary Street (Albert Street Precinct)	NA	4.79	50	Controlled Blast	Yes
22/07/2020	11:02	22/07/2020	Vulture Street (Woolloongabba Precinct)	0.1	0.13	5	Residential	Yes
24/07/2020	15:10	24/07/2020	Roma Street (Roma Street Precinct)	0.1	1.01	25	Structure	Yes
29/07/2020	7:32	29/07/2020	Mary Street (Albert Street Precinct)	NA	4.89	50	Controlled Blast	Yes
31/07/2020	11:48	31/07/2020	Joe Baker Street (Boggo Road Precinct)	0.18	0.33	0.5	Commercial	Yes
31/07/2020	16:01	31/07/2020	Mary Street (Albert Street Precinct)	NA	7.13	50	Controlled Blast	Yes

3.2 Noise

Noise requirements (levels) are defined as goals within Imposed Condition 11. The goals are to be aimed for.

The Coordinator-General Change Report – Whole of Project Refinements 2019 acknowledges instances exist that these goals may not be achieved.

Noise monitoring was conducted on seventy (70) occasions during July 2020.

All noise monitoring data adhered to project requirements and is provided in the table below.

Table 3: Noise Monitoring Data

Date	Time (AM / PM)	Location (Street Name) (Construction Precinct)	Purpose of Monitoring	Internal or External ^[3] Monitoring	Activity	Noise Goal LA10 ^[1]	Noise level LA10 ^[1]	Noise Goal LAeq ^[2]	Noise level LAeq ^[2]	Adhered to Project Requirements (Yes / No)
1/07/2020	12:30:00AM	Elliott Street (Boggo Road Precinct)	Construction Monitoring at Sensitive Places	External	Demolition	49	48.5	42	45	Yes
2/07/2020	7:48:00 AM	George Street (Roma Street Precinct)	Construction Monitoring at Sensitive Places	External	Stage 2 Demolition and Tunnel Construction	72	73.2	62	70.5	Yes
2/07/2020	8:10:00 AM	George Street (Roma Street Precinct)	Construction Monitoring at Sensitive Places	External	Stage 2 Demolition and Tunnel Construction	72	83.2	62	79.7	Yes
2/07/2020	8:31:00 AM	Roma Street (Roma Street Precinct)	Construction Monitoring at Sensitive Places	Internal	Stage 2 Demolition and Tunnel Construction	60	73.8	50	69.5	Yes
2/07/2020	8:49:00 AM	Roma Street (Roma Street Precinct)	Construction Monitoring at Sensitive Places	External	Stage 2 Demolition and Tunnel Construction	72	69.9	62	66.7	Yes
6/07/2020	4:34:00 PM	Albert Street (Albert Street Precinct)	Construction Monitoring at Sensitive Places	External	Construction Stage 3	72	83.5	62	80.5	Yes

6/07/2020	4:52:00 PM	Albert Street (Albert Street Precinct)	Construction Monitoring at Sensitive Places	External	Construction Stage 3	72	83.4	62	80.4	Yes
6/07/2020	6:33:00 PM	Albert Street (Albert Street Precinct)	Construction Monitoring at Sensitive Places	External	Construction Stage 3	67	72.3	57	70.1	Yes
6/07/2020	7:28:00 PM	Albert Street (Albert Street Precinct)	Construction Monitoring at Sensitive Places	External	Construction Stage 3	67	69.4	57	67.2	Yes
6/07/2020	7:47:00 PM	Albert Street (Albert Street Precinct)	Construction Monitoring at Sensitive Places	External	Construction Stage 3	67	63.6	57	62.3	Yes
7/07/2020	9:53:00 AM	Roma Street (Roma Street Precinct)	Construction Monitoring at Sensitive Places	External	Stage 2 Demolition and Tunnel Construction	67	71.4	57	69.2	Yes
7/07/2020	10:46:00 AM	Roma Street (Roma Street Precinct)	Construction Monitoring at Sensitive Places	External	Stage 2 Demolition and Tunnel Construction	72	73.6	62	70.2	Yes
7/07/2020	11:06:00 AM	Roma Street (Roma Street Precinct)	Construction Monitoring at Sensitive Places	Internal	Stage 2 Demolition and Tunnel Construction	60	69.6	50	67.2	Yes
7/07/2020	11:26:00 AM	Roma Street (Roma Street Precinct)	Construction Monitoring at Sensitive Places	External	Stage 2 Demolition and Tunnel Construction	72	74.7	62	72.2	Yes
8/07/2020	07:38:00 AM	Mary Street (Albert Street Precinct)	Construction Monitoring at Sensitive Places	External	Controlled Blast	NA	NA	130 ^[4]	120.0 ^[4]	Yes
10/07/2020	9:45:00 PM	Roma Street (Roma Street Precinct)	Construction Monitoring at Sensitive Places	External	Stage 2 Demolition and Tunnel Construction	62	72.7	52	69.6	Yes

10/07/2020	10:21:00 PM	Herschel Street (Roma Street Precinct)	Construction Monitoring at Sensitive Places	External	Stage 2 Demolition and Tunnel Construction	59	66.3	52	62.9	Yes
10/07/2020	10:42:00 PM	George Street (Roma Street Precinct)	Construction Monitoring at Sensitive Places	External	Stage 2 Demolition and Tunnel Construction	59	71.7	52	69.7	Yes
10/07/2020	5:06:00 AM	Vulture Street (Woolloongabba Precinct)	Construction Monitoring at Sensitive Places	External	Earthworks & Soil Anchoring	54	68	47	63.2	Yes
10/07/2020	9:08:00 PM	Vulture Street (Woolloongabba Precinct)	Construction Monitoring at Sensitive Places	External	Earthworks & Soil Anchoring	62	69.4	52	66.1	Yes
13/07/2020	11:07:00 AM	Roma Street (Roma Street Precinct)	Construction Monitoring at Sensitive Places	Internal	Stage 2 Demolition and Tunnel Construction	60	70.8	50	68.5	Yes
13/07/2020	11:25:00 AM	Roma Street (Roma Street Precinct)	Construction Monitoring at Sensitive Places	External	Stage 2 Demolition and Tunnel Construction	72	72.6	62	69.5	Yes
13/07/2020	11:45:00 AM	George Street (Roma Street Precinct)	Construction Monitoring at Sensitive Places	External	Stage 2 Demolition and Tunnel Construction	72	75	62	72.9	Yes
13/07/2020	7:10:00 PM	Peter Doherty Street (Boggo Road Precinct)	Construction Monitoring at Sensitive Places	External	Site Establishment	59	63.5	52	60.2	Yes
13/07/2020	8:25:00 PM	Peter Doherty Street (Boggo Road Precinct)	Construction Monitoring at Sensitive Places	External	Site Establishment	59	52.6	52	51.2	Yes
14/07/2020	8:57:00 AM	Roma Street (Roma Street Precinct)	Construction Monitoring at Sensitive Places	External	Stage 2 Demolition and Tunnel Construction	72	75.6	62	72.5	Yes

14/07/2020	8:35:00 AM	Stanley Street (Woolloongabba Precinct)	Construction Monitoring at Sensitive Places	External	Earthworks & Soil Anchoring	72	67.8	62	66.7	Yes
15/07/2020	8:02:00 PM	Peter Doherty Street (Boggo Road Precinct)	Construction Monitoring at Sensitive Places	External	Site Establishment	59	58.6	52	55.2	Yes
16/07/2020	12:01:00 PM	George Street (Roma Street Precinct)	Construction Monitoring at Sensitive Places	External	Stage 2 Demolition and Tunnel Construction	72	76.8	62	74.3	Yes
16/07/2020	12:19:00 PM	George Street (Roma Street Precinct)	Construction Monitoring at Sensitive Places	External	Stage 2 Demolition and Tunnel Construction	62	72.7	52	70.6	Yes
16/07/2020	4:32:00 PM	Peter Doherty Street (Boggo Road Precinct)	Model Verification	External	Station box Excavation	59	59.9	52	58.9	Yes
16/07/2020	9:40:00 PM	Elliot Street (Boggo Road Precinct)	Construction Monitoring at Sensitive Places	External	Demolition	49	48.3	42	46.7	Yes
17/07/2020	1:30:00 PM	Joe Baker Street (Boggo Road Precinct)	Construction Monitoring at Sensitive Places	External	Site Establishment	77	71.7	67	75	Yes
17/07/2020	5:23:00 AM	Reid Street (Woolloongabba Precinct)	Construction Monitoring at Sensitive Places	External	Earthworks & Soil Anchoring	49	56.7	42	55.2	Yes
18/07/202	7:38:00 AM	Marry Street (Albert Street Precinct)	Construction Monitoring at Sensitive Places	External	Controlled Blast	NA	NA	130 ^[4]	119.6 ^[4]	Yes
20/07/2020	11:32:00 AM	Roma Street (Roma Street Precinct)	Construction Monitoring at Sensitive Places	Internal	Stage 2 Demolition and Tunnel Construction	60	75.8	50	71.9	Yes

20/07/2020	11:50:00 AM	Roma Street (Roma Street Precinct)	Construction Monitoring at Sensitive Places	External	Stage 2 Demolition and Tunnel Construction	72	75.2	62	70.4	Yes
20/07/2020	6:52:00 PM	Albert Street (Albert Street Precinct)	Construction Monitoring at Sensitive Places	Internal	Construction Stage 3	67	66.5	57	63.2	Yes
21/07/2020	11:23:00 AM	Roma Street (Roma Street Precinct)	Construction Monitoring at Sensitive Places	Internal	Stage 2 Demolition and Tunnel Construction	60	72.8	50	69.2	Yes
21/07/2020	11:40:00 AM	Roma Street (Roma Street Precinct)	Construction Monitoring at Sensitive Places	External	Stage 2 Demolition and Tunnel Construction	72	73.3	62	70.1	Yes
21/07/2020	10:21:00 PM	Elliott Street (Boggo Road Precinct)	Construction Monitoring at Sensitive Places	External	Demolition	49	49.1	42	47.3	Yes
22/07/2020	12:42:00 AM	Elliott Street (Boggo Road Precinct)	Construction Monitoring at Sensitive Places	External	Demolition	49	48.4	42	46.5	Yes
22/07/2020	1:27:00 AM	Elliott Street (Boggo Road Precinct)	Construction Monitoring at Sensitive Places	External	Demolition	49	50.9	42	49	Yes
22/07/2020	1:08:00 PM	Peter Doherty Street (Boggo Road Precinct)	Construction Monitoring at Sensitive Places	External	Station box Excavation	59	61.4	52	58.2	Yes
22/07/2020	11:08:00 AM	Vulture Street (Woolloongabba Precinct)	Construction Monitoring at Sensitive Places	External	Earthworks & Soil Anchoring	67	70.5	57	67.8	Yes
22/07/2020	9:01:00 PM	Reid Street (Woolloongabba Precinct)	Construction Monitoring at Sensitive Places	External	Earthworks & Soil Anchoring	57	55.8	47	56.7	Yes

23/07/2020	10:55:00 AM	George Street (Roma Street Precinct)	Construction Monitoring at Sensitive Places	External	Stage 2 Demolition and Tunnel Construction	72	77.6	62	75.1	Yes
23/07/2020	11:27:00 AM	George Street (Roma Street Precinct)	Construction Monitoring at Sensitive Places	Internal	Stage 2 Demolition and Tunnel Construction	60	55.2	50	52.3	Yes
23/07/2020	11:47:00 AM	George Street (Roma Street Precinct)	Construction Monitoring at Sensitive Places	External	Stage 2 Demolition and Tunnel Construction	72	78.1	62	75.6	Yes
28/07/2020	8:59:00 AM	Roma Street (Roma Street Precinct)	Construction Monitoring at Sensitive Places	Internal	Stage 2 Demolition and Tunnel Construction	60	69.1	50	65.7	Yes
28/07/2020	8:59:00 AM	Roma Street (Roma Street Precinct)	Construction Monitoring at Sensitive Places	External	Stage 2 Demolition and Tunnel Construction	72	67.3	62	64.9	Yes
28/07/2020	9:19:00 AM	Roma Street (Roma Street Precinct)	Construction Monitoring at Sensitive Places	Internal	Stage 2 Demolition and Tunnel Construction	60	70.8	50	68	Yes
28/07/2020	9:38:00 AM	Roma Street (Roma Street Precinct)	Construction Monitoring at Sensitive Places	External	Stage 2 Demolition and Tunnel Construction	67	70.9	57	67.5	Yes
23/07/2020	7:26:00 PM	Reid Street (Woolloongabba Precinct)	Construction Monitoring at Sensitive Places	External	Earthworks & Soil Anchoring	57	57.7	47	56.9	Yes
28/07/2020	7:50:00 PM	Reid Street (Woolloongabba Precinct)	Construction Monitoring at Sensitive Places	External	Stage 2 Station Excavation, Tunnelling Excavation North, Spoil Shed Construction	57	56.3	47	55.1	Yes
28/07/2020	9:27:00 PM	Stanley Street (Woolloongabba Precinct)	Construction Monitoring at Sensitive Places	External	Stage 2 Station Excavation, Tunnelling Excavation	62	66	52	62.6	Yes

					North, Spoil Shed Construction					
28/07/2020	9:48:00 PM	Stanley Street (Woolloongabba Precinct)	Complaint response	External	Stage 2 Station Excavation, Tunnelling Excavation North, Spoil Shed Construction	62	63.6	52	60.8	Yes
29/07/2020	1:10:00 AM	Reid Street (Woolloongabba Precinct)	Construction Monitoring at Sensitive Places	External	Stage 2 Station Excavation, Tunnelling Excavation North, Spoil Shed Construction	49	53.4	42	51.3	Yes
29/07/2020	1:32:00 AM	Vulture Street (Woolloongabba Precinct)	Construction Monitoring at Sensitive Places	External	Stage 2 Station Excavation, Tunnelling Excavation North, Spoil Shed Construction	54	63.9	47	63.1	Yes
28/07/2020	9:30:00 PM	Albert Street (Albert Street Precinct)	Construction Monitoring at Sensitive Places	External	Construction Stage 3	67	77.8	57	75.5	Yes
29/07/2020	11:47:00 AM	Roma Street (Roma Street Precinct)	Construction Monitoring at Sensitive Places	External	Stage 2 Demolition and Tunnel Construction	72	79.4	62	76.7	Yes
29/07/2020	12:00:00 AM	George Street (Roma Street Precinct)	Construction Monitoring at Sensitive Places	External	Stage 2 Demolition and Tunnel Construction	72	76.7	62	76	Yes
29/07/2020	12:27:00 PM	George Street (Roma Street Precinct)	Construction Monitoring at Sensitive Places	Internal	Stage 2 Demolition and Tunnel Construction	60	54.7	50	52.3	Yes
29/07/2020	04:01 PM	Mary Street (Albert Street Precinct)	Construction Monitoring at Sensitive Places	External	Controlled Blast	NA	NA	130 ^[4]	Not triggered ^[5]	Yes

30/07/2020	10:00:00 PM	Reid Street (Woolloongabba Precinct)	Construction Monitoring at Sensitive Places	External	Stage 2 Station Excavation, Tunnelling Excavation North, Spoil Shed Construction	57	57.6	47	58.6	Yes
30/07/2020	10:15:00 PM	Reid Street (Woolloongabba Precinct)	Construction Monitoring at Sensitive Places	External	Stage 2 Station Excavation, Tunnelling Excavation North, Spoil Shed Construction	57	55.3	47	54.4	Yes
30/07/2020	10:37:00 PM	Stanley St (Woolloongabba Precinct)	Complaint response	External	Stage 2 Station Excavation, Tunnelling Excavation North, Spoil Shed Construction	62	62.7	52	59.8	Yes
31/07/2020	1:00:00 PM	Peter Doherty Street (Boggo Road Precinct)	Other	External	Station Box Excavation	59	70.4	52	68.4	Yes
31/07/2020	1:20:00 PM	Peter Doherty Street (Boggo Road Precinct)	Other	External	Station Box Excavation	59	70.9	52	70.8	Yes
31/07/2020	04:01:00 PM	Mary Street (Albert Street Precinct)	Construction Monitoring at Sensitive Places	External	Controlled Blast	NA	NA	130 ^[4]	128 ^[4]	Yes

- [1] Intermittent noise goal (LA10)
- [2] Continuous noise goal (LAeq)
- [3] In accordance with Imposed Condition 11 where internal noise levels were unable to be measured, external noise goals were developed by an acoustic specialist using the following standards: ISO 140-5:1998 Acoustics – Measurement of Sound Insulation in Buildings and of Building Elements, Part 5: Field measurements of airborne sound insulation of façade elements and facades and ISO 354:1985 Acoustics – Measurement of sound absorption in a reverberation room.
- [4] Blasting is measured in dB Linear Peak.
- [5] Overpressure monitor was set to record results >110dB. Overpressure did not occur over the trigger level.

3.3 Air Quality

3.3.1 Deposited Dust Results

Air quality requirements (levels) are defined as goals within Imposed Condition 13. The goals are to be aimed for.

The Coordinator-General Change Report – Whole of Project Refinements 2019 acknowledges instances exist that these goals may not be achieved.

Dust deposition monitoring was performed during July 2020.

The dust deposition gauges result for the reporting period are detailed below, and all monitoring data adhered to project requirements.

Table 4: Air Quality Monitoring – Deposited Dust Data

Location	Project Wide Air Quality Criteria & Goals ^[1]			Monitoring results	Comments
	Criterion	Air Quality Indicator	Goal		
Roma Street Precinct/ Northern Portal	Nuisance	Deposited dust	120 mg/m ² /day	16.67 mg/m ² /day	Air quality monitoring was performed during the reporting period. All results adhered to project requirements.
Albert Street Precinct				16.67 mg/m ² /day	
Woolloongabba Precinct				20.0 mg/m ² /day 6.67 mg/m ² /day	
Boggo Road Precinct/ Southern Portal				10.0 mg/m ² /day 26.67 mg/m ² /day	

- [1] Project works must aim to achieve construction air quality goals. The Coordinator-General Change Report – Whole of Project Refinements 2019 acknowledges instances exist that these goals may not be achieved.

3.3.2 Particulates and Ambient Air Quality Results

Total Suspended Particulates (TSP) and particulate matter less than 10 µm (PM10) monitoring was conducted during July 2020.

TSP and PM10 are monitored using portable air quality units, as well as nearby Government air quality stations. Targeted monitoring of potential dust-generating activities is conducted by the portable air quality units and was completed at the Roma Street, Albert Street, and Woolloongabba Precincts during July 2020. Monitoring would have also occurred at the Boggo Rd precinct however the monitoring unit was vandalised on 30 June 2020 and a replacement was being sought. Three (3) Government air quality stations near to the Construction Precincts are also utilised. All monitoring data confirmed TSP and PM10 monitoring data adhered to project requirements and is provided below.

Table 5: Targeted Air Quality Monitoring – Total Suspended Particles and PM10 Data

Woolloongabba					Roma Street				Albert Street			
Date	TSP GOAL	TSP	PM10 GOAL	PM10	TSP GOAL	TSP	PM10 GOAL	PM10	TSP GOAL	TSP	PM10 GOAL	PM10
	(µg/m3/24 hr)				(µg/m3/24 hr)				(µg/m3/24 hr)			
1-July-20	80	-	50	-	80	12.56	50	12.41	80	-	50	-
2-July-20	80	-	50	-	80	20.11	50	19.95	80	-	50	-
3-July-20	80	-	50	-	80	25.59	50	25.4	80	-	50	-
4-July-20	80	-	50	-	80	5.1	50	4.9	80	-	50	-
5-July-20	80	-	50	-	80	9.17	50	8.93	80	-	50	-
6-July-20	80	-	50	-	80	12.86	50	12.66	80	-	50	-
7-July-20	80	-	50	-	80	15.54	50	15.32	80	-	50	-
8-July-20	80	-	50	-	80	10.02	50	9.83	80	-	50	-
9-July-20	80	-	50	-	80	6.02	50	5.97	80	-	50	-
10-July-20	80	-	50	-	80	14.83	50	14.72	80	-	50	-
11-July-20	80	-	50	-	80	16.11	50	16	80	-	50	-
12-July-20	80	-	50	-	80	12.12	50	12.02	80	-	50	-
13-July-20	80	-	50	-	80	6.16	50	6.02	80	-	50	-
14-July-20	80	4.55	50	4.53	80	3.47	50	3.24	80	-	50	-
15-July-20	80	5.36	50	5.29	80	3.68	50	3.7	80	-	50	-
16-July-20	80	3.51	50	3.42	80	2.45	50	2.34	80	2.96	50	2.95
17-July-20	80	9.57	50	9.52	80	10.73	50	10.45	80	9.74	50	9.72

18-July-20	80	14.48	50	14.39	80	15.57	50	15.38	80	8.16	50	8.14
19-July-20	80	14.41	50	14.36	80	14.33	50	14.25	80	8.79	50	8.77
20-July-20	80	11.66	50	11.58	80	12.47	50	12.16	80	8.18	50	8.14
21-July-20	80	11.01	50	10.95	80	13.55	50	13.11	80	8.90	50	8.86
22-July-20	80	8.37	50	8.27	80	9.74	50	9.51	80	6.86	50	6.83
23-July-20	80	9.80	50	9.75	80	13.38	50	13.25	80	7.54	50	7.50
24-July-20	80	7.54	50	7.50	80	10.22	50	9.98	80	5.40	50	5.39
25-July-20	80	5.58	50	5.25	80	7.45	50	7.41	80	5.50	50	5.49
26-July-20	80	2.89	50	2.85	80	4.04	50	3.98	80	4.41	50	4.39
27-July-20	80	6.37	50	6.27	80	4.03	50	3.98	80	4.93	50	4.89
28-July-20	80	6.51	50	6.42	80	5.32	50	6	80	3.04	50	3.01
29-July-20	80	7.89	50	7.82	80	10.55	50	10.23	80	9.32	50	9.29
30-July-20	80	8.65	50	8.62	80	9.79	50	9.61	80	11.79	50	11.74
31-July-20	80	11.07	50	11.06	80	10.64	50	10.38	80	-	50	-

CBGU also utilises three (3) Government air quality monitoring stations to monitor PM10 near to the project sites. The results during this reporting period were as follows:

- Brisbane CBD: PM₁₀ daily Maximum average: **21.5 µg/m³** (<https://apps.des.qld.gov.au/air-quality/chart/?station=cdb¶meter=18&date=1/07/2020&timeframe=month>)
- South Brisbane: PM₁₀ daily Maximum average: **39.5 µg/m³** (<https://apps.des.qld.gov.au/air-quality/chart/?station=sbr¶meter=18&date=1/07/2020&timeframe=month>)
- Woolloongabba: PM₁₀ daily Maximum average: **23.2 µg/m³** (<https://apps.des.qld.gov.au/air-quality/chart/?station=woo¶meter=18&date=1/07/2020&timeframe=month>)

The graphical representation of the Government air quality data is presented in the below charts (refer to Figure 1-3).

There were no exceedances of the PM10 daily criterion recorded at the air quality stations for which the Brisbane CBD, Woolloongabba and Boggo Rd worksites operate near to.

Particle PM₁₀ at Brisbane CBD, 1–31 July 2020 [about Particle PM₁₀](#)

[Brisbane CBD station overview](#)

The guideline for Particle PM₁₀ is 50 µg/m³ (24hr avg).

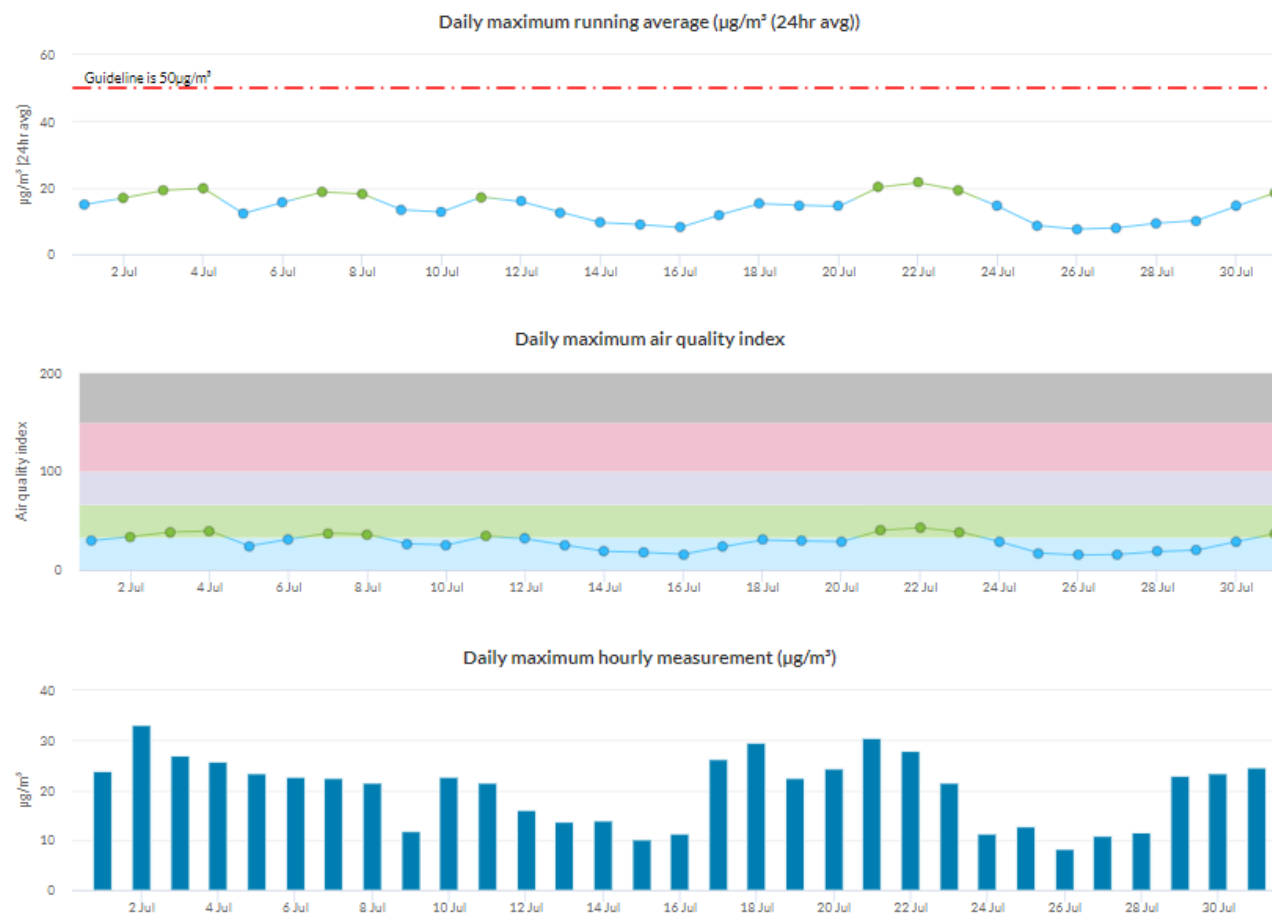


Figure 1: Brisbane CBD – DES Station - PM₁₀ graph for July 2020 (reproduction from the DES website accessed August 2020)

Particle PM₁₀ at South Brisbane, 1–31 July 2020 [about Particle PM₁₀](#)

 [South Brisbane station overview](#)

 The guideline for Particle PM₁₀ is 50µg/m³ (24hr avg).

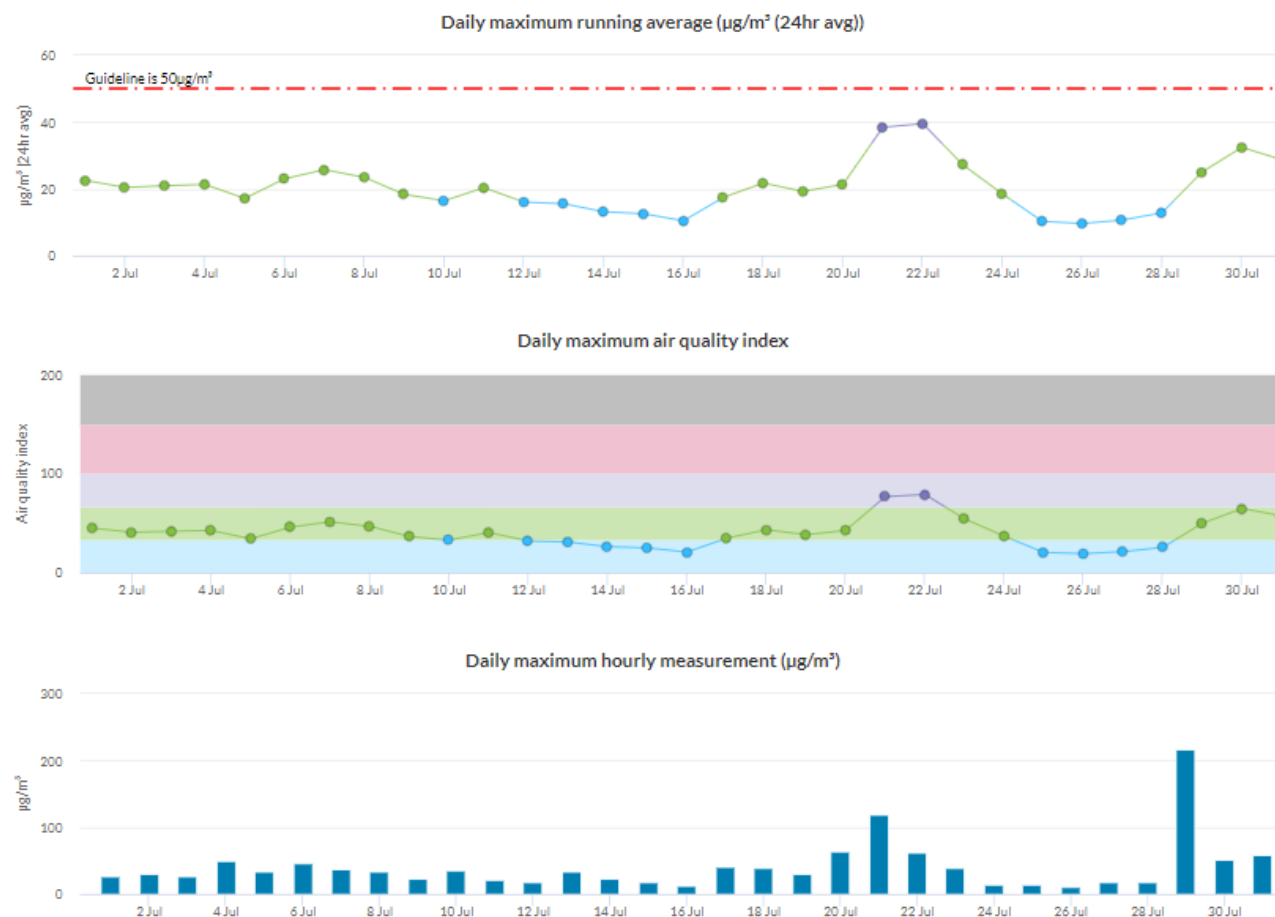


Figure 2: South Brisbane – DES Station - PM₁₀ graph for July 2020 (reproduction from the DES website accessed August 2020)

Particle PM10 at Woolloongabba, 1–31 July 2020 [about Particle PM10](#)

[Woolloongabba station overview](#)

The guideline for Particle PM₁₀ is 50µg/m³ (24hr avg).

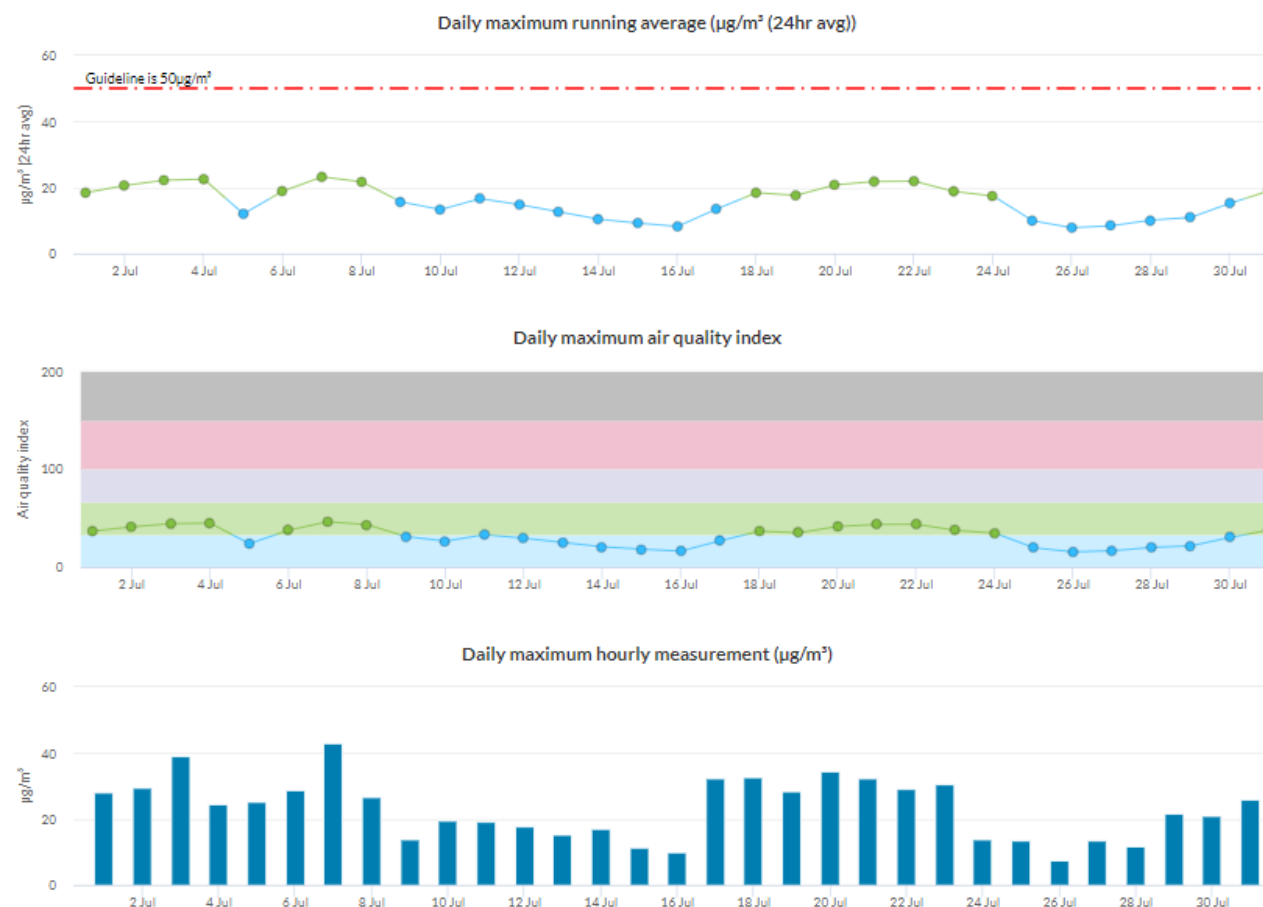


Figure 3: Woolloongabba – DES Station - PM10 graph for July 2020 (reproduction from the DES website accessed August 2020)

3.4 Water Quality – Discharge

CBGU undertook fourteen (14) water quality monitoring events prior to the release from site during July 2020.

Water quality monitoring data is provided in the table below.

Table 6: Water Quality Monitoring Data

Location	Date	Water Quality Objectives ^[6]											Adhered to Project Requirements (Yes / No)
		Turbidity (NTU)	Suspended solids (mg/L)	Chlorophyll a (µg/L)	Total nitrogen (µg/L)	Oxidised N (µg/L)	Ammonia N (µg/L)	Organic N (µg/L)	Total phosphorus (µg/L)	Filterable reactive phosphorus (FRP) (µg/L)	Dissolved oxygen (µg/L) ^[1]	pH(µg/L)	
Roma Street	13/07/2020	0.70	<5	<1	7900.00	180.00	150.00	7600.00	20.00	<10	95.61	8.30	Yes
Roma Street	13/07/2020	0.70	<5	<1	7500.00	160.00	140.00	7200.00	30.00	<10	118.61	7.93	Yes
Roma Street	15/07/2020	0.01	<5	<1	7200.00	160.00	140.00	6900.00	30.00	<10	102.88	7.53	Yes
Boggo Road	15/07/2020	6.34	<5	<1	1100.00	570.00	60.00	400.00	10.00	<10	59.31	7.70	Yes
Woolloongabba	15/07/2020	1.98	<5	<1	1.00	0.20	0.25	0.60	0.02	<10	100.46	7.20	Yes
Roma Street	20/07/2020	0.01	<5	<1	5800.00	140.00	160.00	5500.00	10.00	<10	107.72	7.83	Yes
Roma Street	21/07/2020	0.01	<5	<1	6600.00	160.00	120.00	6300.00	<10	<10	113.77	7.65	Yes
Woolloongabba	21/07/2020	5.63	13.00	<1	1.00	0.11	0.51	0.40	0.01	<10	94.40	7.64	Yes
Roma Street	22/07/2020	0.01	<5	<1	6800.00	160.00	150.00	6400.00	10.00	<10	105.30	7.48	Yes
Roma Street	24/07/2020	0.01	<5	<1	6500.00	140.00	230.00	6300.00	10.00	<10	96.82	7.34	Yes
Roma Street	27/07/2020	0.01	<5	<1	5900.00	160.00	300.00	5400.00	<10	<10	114.98	7.56	Yes

Woolloongabba	28/07/2020	7.85	14.00	<1	4100.00	1300.00	940.00	1900.00	10.00	<10	91.98	8.03	Yes
Roma Street	29/07/2020	0.01	18.0	<1	8500.00	190.00	230.00	8300.00	50.00	<10	116.19	7.53	Yes
Woolloongabba	30/07/2020	At the time of preparation of this report, the laboratory samples had not been received. The results will be presented in next month's report.											

- The project's discharge procedure is designed to minimise environmental impact and aim to achieve the water quality objectives. Water quality objectives are defined as goals within the Brisbane River estuary environmental values and water quality objectives document.
- [1] Adhered to project requirements regarding aiming to achieve the water quality objective. The dissolved oxygen samples were acquired prior to discharge from the site. Pumping of the water will have inadvertently aerated the water, thus influencing the dissolved oxygen level.

3.5 Water Quality – Surface Water

During July 2020, CBGU JV undertook one (1) round of surface water sampling at five (5) locations (upstream and downstream).

Results from the below monitoring locations reflect the condition of the broader catchment (not just the influence of the Project). Water quality appears generally good, and water discharge from the Project would not have had an impact on the catchment considering the results provided within the section 3.4 above.

Table 7: Offsite Upstream & Downstream Water Quality Data

Location	Date	Purpose of Monitoring	Turbidity (NTU)	Suspended solids (mg/L)	EC (µS/cm)	Dissolved oxygen (%)	pH
Albert Street - Upstream	15/07/2020	Monthly	8.57	14	>3999	95.41	6.70
Albert Street - Downstream	15/07/2020	Monthly	12.17	15.1	>3999	95.75	6.71
Boggo Road ^[1]	15/07/2020	Monthly	16.87	<5	>3999	94.43	7.35
Gabba - Upstream	15/07/2020	Monthly	15.73	14.8	>3999	93.41	7.65
Gabba - Downstream	15/07/2020	Monthly	14.61	15.5	>3999	101.1	7.84
Roma Street - Upstream	17/07/2020	Monthly	21.2	16	>3999	98.3	7.84
Roma Street - Downstream	17/07/2020	Monthly	14.2	17.2	>3999	96.54	7.86

- [1] Monitoring at the Boggo Rd site occurs at a pipe outlet at the beginning of the surface catchment. There is no upstream/downstream monitoring point as such. The pipe outlet receives water released from the site, as well as a broader stormwater catchment.

4 Non-Compliances

Details of non-compliances are provided in accordance with Imposed Condition 6(b)(ii).

A Non-Compliance Event is defined as project works that do not comply with the Imposed Conditions. Nil non-compliances occurred during the monitoring period.

Table 8: Non-Compliance Events

Event Title	Location, Date and time of the event	Date the Event was Formally Notified to CG/IEM	Conditions Affected	Date the Event Report Formally Sent to CG/IEM	Status of Event
Nil for this reporting period					

5 Complaints

Reporting of complaints is provided below in accordance with Imposed Condition 6(b)(iii).

During July 2020, seven (7) complaints relating to the project were received as detailed in Table 9 below.

Table 9: Summary of Complaints

No.	Date	Location	Description of Issue	Responses	Status of Event
1	6/7/20	Charlotte Street (Albert Street Precinct)	Traffic management	A stakeholder called the project hotline regarding the traffic control setup. The project reviewed the traffic control plan and made some minor changes to help the stakeholder.	Closed
2	15/07/2020	Peter Doherty Street (Boggo Road Precinct)	Noise	A stakeholder called the project hotline regarding noise at the Boggo Road Precinct. The project reviewed the circumstances, and advised the stakeholder that monitoring confirmed works adhered to project noise requirements.	Closed

3	17/07/2020	Dutton Park State School (Boggo Road Precinct)	Workforce behaviour	Complaint received about workers crossing the road at the Boggo Road site. The project team toolboxed workers.	Closed
4	24/07/2020	Quarry Street (Boggo Road Precinct)	Noise	A stakeholder called the project hotline regarding noise at the Boggo Road Precinct. The project reviewed the circumstances, and advised the stakeholder that monitoring confirmed works adhered to project noise requirements.	Closed
5	24/07/2020	(Roma Street Precinct)	Worker behaviour	Stakeholder emailed the project to report worker behaviour. A toolbox talk was rolled out project wide about acceptable behaviours.	Closed
6	29/07/2020	Hubert Street (Woolloongabba Precinct)	Noise	A stakeholder called the project hotline regarding noise at the Woolloongabba Precinct. The project reviewed the circumstances, and advised the stakeholder that monitoring confirmed works adhered to project noise requirements.	Closed
7	30/07/2020	Hubert Street (Woolloongabba Precinct)	Noise	A stakeholder called the project hotline regarding noise at the Woolloongabba Precinct. The project reviewed the circumstances, and advised the stakeholder that monitoring confirmed works adhered to project noise requirements.	Closed
8	31/07/20	Mary Street (Albert Street Precinct)	Vibration	A Stakeholder called the project hotline regarding their building condition. The project reviewed the circumstances, and advised the stakeholder that monitoring confirmed works adhered to project noise requirements.	Closed