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Executive Summary

This Monthly Environmental Report (MER) has been produced for Project Works undertaken on site for October 2023 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 report – *Coordinator-General's change report – no. 13 (March 2022).* Plus, the individual contractor's Construction Environmental Management Plans (CEMPs), which have been developed generally in accordance with the Project's Outline Environmental Management Plan (OEMP). The Cross River Rail Delivery Authority (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** (RIS Monthly Report) and **Appendix B** (TSD Monthly Report).

The Environmental Monitor (EM) has reviewed and endorsed this MER. This endorsement follows ongoing and new document reviews, and surveillance across the relevant project worksites.

The CEMPs prepared by both Unity Alliance (RIS Contractor) and CBGU JV on behalf of Pulse (TSD Contractor) for their Relevant Project Works were endorsed by the 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 for each:

Imposed 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 management plans are in accordance with the Project Changes.
2.	Outline Environmental Management Plan – timely submission to the Coordinator- General including required sub- plans		OEMP dated June 2020 is effective for the reporting period.
3.	Design – achievement of the Environmental Design Requirements	NA	Ongoing progress with design packages.
4.	4. Construction Environmental Management Plan – all relating to Relevant Project Works.		RIS – CEMP Revision 13 covering full scope of RIS works is effective from 14 March 2022. TSD – CEMP Revision 11 covering full scope of TSD works is effective from 24 November 2022.
5.	Compliance and Incident management – Non-compliance events, notifications and reporting.	Yes	No Non-Compliance Event (NCE) were reported in October 2023.





Imposed Condition	Requirement Summary	Compliance Met (Yes/No/NA)	Comment
6.	Reporting – Monthly and Annual reporting.	Yes	This MER, including RIS and TSD Monthly Reports, has been submitted in accordance with the conditioned requirements. Refer to Appendix A and Appendix B .
7.	Environmental Monitor (EM) – engaged and functions resumed.	Yes	Ongoing weekly site inspections and document reviews continue to take place.
8.	Community Relations Monitor (CRM) – engaged and functions resumed	Yes	Ongoing.
9.	Community Engagement Plan – developed and endorsed by Environmental Monitor.	Yes	CEMPs endorsed with Community Engagement Plan.
10.	Hours of work – Project Works undertaken during approved hours.	Yes	Project Works have been undertaken in accordance with project requirements. This has been achieved through Standard Working Hours, Extended work hours and Managed Work.
11.	Noise – Project Works must aim to achieve internal noise goals for human health and well-being.	Yes	Noise monitoring met project noise requirements at Sensitive Places. RIS – Noise monitoring was not triggered for the reporting period. Noise monitoring for the Yeerongpilly SCAS September and October SCAS was undertaken in late September 2023 and reported in the September Report. TSD – Noise monitoring was undertaken to validate predicted noise modelling and monitoring at sensitive places. Noise monitoring confirmed project requirements were met. Refer to Appendix B (Table 3 and Section 3.2).
	Vibration – Project Works must aim to achieve vibration goals for cosmetic damage, human comfort and sensitive building contents.	Yes	Vibration monitoring met project vibration requirements at Sensitive Places. RIS – Vibration monitoring was undertaken to validate predicted vibration modelling. The results met the requirements of the endorsed CEMP. Refer to Appendix A (Table 5 and section 3.1.7) TSD – Vibration monitoring was not triggered





Imposed Condition	Requirement Summary	Compliance Met (Yes/No/NA)	Comment
12.	Property damage – relating to ground movement.	Yes	RIS – Vibration modelling has been undertaken for Relevant Project Works, and Property Damage Sub-plans have been developed and implemented. Precondition surveys have been completed at heritage, commercial and residential buildings at RNA, Northern Corridor and Dutton Park to Salisbury stations. TSD – Vibration modelling has been prepared and is ongoing. Where required, building condition survey reports are completed for heritage and residential buildings. No enquiries relating to property damage were received during October 2023.
13.	Air quality – Works must aim to achieve air quality goals for human health and nuisance.	Yes	Air quality monitoring met Project air quality requirements. RIS – Exceedances recorded at Mayne Yard North for dust deposition and at Clapham Yard for TSP and PM10. An incident recorded Mayne Yard North for dust deposition relating an exceedance of the air quality goals, the need to review the dust gauge location and the requirement for appropriate review and endorsement of updated dust monitoring locations, as per the Outline Environmental Management Plan. Data gaps experienced at Mayne Yard West for TSP and PM10. Contractor confirmed they continued to meet the requirements under Condition 13 and the OEMP with the exception of the incident mentioned above. Refer to Section 2.2.3 below and Appendix A (Tables 7, 8 and 9 and Section 3.1.11, plus Figures 1, 2, 3, 4, 5, 6 and 7). TSD – Data gaps experienced for TAP and PM10 at Boggo Road. Contractor confirmed they continued to meet the requirements under Condition 13 and the OEMP. Refer to Section 2.2.3 below and Appendix B (Tables 4.2.2, 5 and Section 3.3).
14.	Traffic and transport – Works must minimise adverse impacts on road safety and traffic flow.	Yes	Traffic Management Plans are covered in the CEMPs. Sub-plans for all active worksites have been reviewed by the EM.





15.	Water quality – Works must not discharge groundwater from the construction site above the relevant environmental values and water quality objectives. Monitor and report on water quality in accordance with CEMP and Sub-plans.	Yes	Monitoring and reporting on groundwater and surface water quality was undertaken in accordance with RIS and TSD Water Quality Management Plans. RIS – No groundwater discharges occurred during October 2023. Post rainfall monitoring was triggered as per Condition 15(b). The contractor confirmed the project outcomes were met. TSD – Active discharge of groundwater occurred from Roma Street, Albert Street, Woolloongabba and Boggo Road worksites. Monitoring results of groundwater quality prior to discharge is consistent with the pre-construction water quality levels. Refer to Appendix B (Table 6) for groundwater monitoring results. Surface water discharges occurred at the Northern Portal. The monitoring results demonstrated surface water discharges met project water quality discharge criteria. Refer to Appendix B (Table 7) for surface water monitoring results. Routine surface water monitoring occurred across RIS and TSD project sites. Refer to Appendix A (Section 3.1.14 and Table 10) and Appendix B (Section 3.5 and Table 8) for further details.
16.	Water resources – Evaluate potential impact, plan works, implement controls and monitor inflow of groundwater associated with drawdown.	Yes	RIS – There is no sustained groundwater extraction involved in the RIS scope of works so predictive modelling of groundwater drawdown is not required. Collection of hydrological data to model potential inflow rates into excavations during construction has been undertaken. TSD – Inflow of groundwater into the worksites is being continuously monitored to validate the predictive modelling.
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 reviewed by the EM and implemented on site.
19.	Acid sulfate soils – managed as per the Queensland Acid Sulfate Soil Technical Manual.	Yes	Acid Sulfate Soil Management Plans have been prepared and implemented for all active worksites.
20.	Landscape and open space – general requirement to minimise impacts on landscapes and open space values and specific requirements around Victoria Park.	Yes	The construction of a temporary access road through Victoria Park was undertaken under a Heritage Exemption Certificate approved by the Department of Environment and Science (DES) on 24 July 2021. Consideration has been taken to minimise loss of trees and the area of park impacted during these temporary works.
21.	Worksite rehabilitation — worksites rehabilitated as soon as practicable upon completion of works or commissioning, and in consultation with Brisbane City Council.	N/A	N/A

Non-Compliance Events

There were no NCE raised in October 2023.





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
CGCR	Coordinator-General's Change Report
CRM	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
DES	Department of Environment and Science
EIS	Environmental Impact Statement
EM	The Environmental Monitor engaged in accordance with Imposed Condition 7
ESC	Erosion and sediment control
IECA	International Erosion Control Association
Imposed condition/s	A condition/s imposed by the Coordinator-General under section 54B of the SDPWO Act for the Project
MER	Monthly Environment Report
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
RfPC	Request for Project Change
RIS	Rail, Integration and Systems
SDPWO Act	State Development and Public Works Organisation Act 1971
Sub-plan	Any sub-plan of the CEMP
The Delivery Authority	The Cross River Rail Delivery Authority
TSD	Tunnel, Stations and Development





1. Introduction

Background 1.1.

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, several Requests for Project Change (RfPC) submissions have been evaluated by the Coordinator-General. RfPC 13 was endorsed in March 2022 by the Coordinator-General.

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 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.

Project Delivery 1.2.

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.

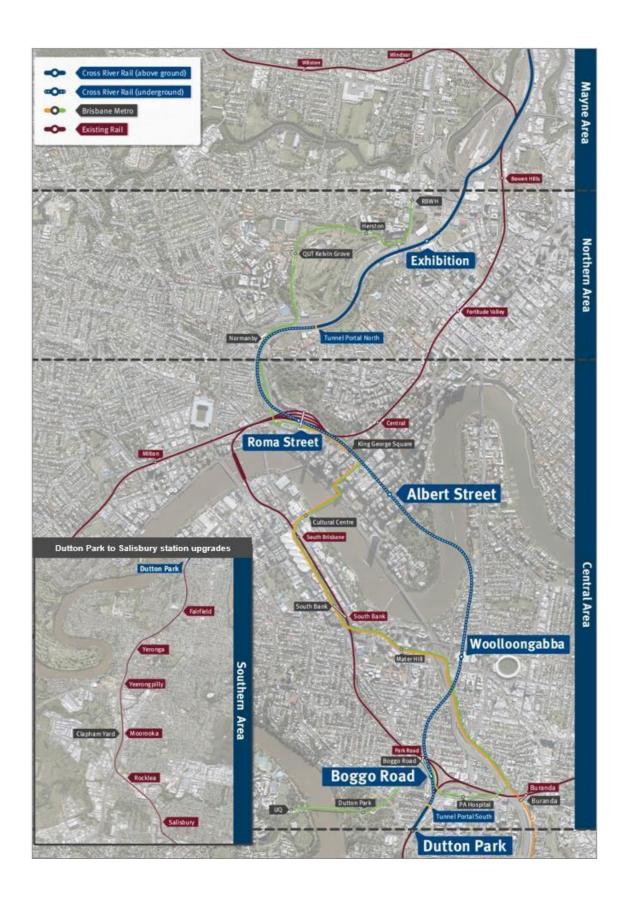
The Project is geographically divided into four areas:

- Mayne Area
- Northern Area
- Central Area: and
- Southern Area.

These areas and delivery packages are shown in the figure below.









1.3. Reporting Framework

This MER has been prepared to comply with Imposed 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 NCEs, 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, is reviewed and endorsed by the EM.

1.4. Monthly Environment Report Endorsement

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

2. Compliance Review

This MER has been reviewed and endorsed by the EM as per Imposed Condition 7 of the CGCR.

2.1. Relevant Project Works

The following Project Works were undertaken in October 2023:

Area	Project Works
Mayne Area	Mayne Yard North — Stab Yard Fence rectification has been completed. Completions documentation being compiled for SP01 (Northern Stabling Yard). Mayne Yard East / West — Balloon Loop decommissioning and Shunt Rd commissioning on schedule; Access Change on schedule. Lighting, road furniture and TP&C commenced; Shunter Shed commissioning on schedule. Building nearing completion, focus on service install and CER; and Mayne East reconfiguration on schedule with drainage, CSR, hydraulics and bulk earthworks ongoing as planned.
Northern Area	 RNA/ Northern Corridor – FRP BR44 nearing completion; Service installation progressing on schedule; Plaza area underground services and slab prep on schedule; and Normanby – TSD vacated Northern Portal site 27 Oct. HV hand-over occurred and CSR handover imminent. Northern Portal – Walkway install is progressing; Luminaire termination is ongoing; LV cable pull is ongoing; Electrification fence install is ongoing; Sump works are yet to commence; and Hydrostatic testing successfully completed.
Central Area	Roma Street — Main Station Building Entry roof slab complete, including vent structure, service installation progressing B4 through L2 and RA3, pavilion slab progressing; M&E Building roof slab waterproof ongoing, services installation and fit-out continues B4 through L3 including RA6 and Lift Shaft fit out works commenced; and Cavern track slab mass concrete commenced, under track services commenced.





Albert Street -

- Lot 1 B10 basement sab, internal stairwells and landings struck are complete, southern concrete placing boom removed;
- Lot 2 BOH North MEP fit-out commenced, B6 platform precast culvert installation and topping slabs are 75% complete; and
- Lot 3 FRP all internal walls from B4 to B1 and B1 to B0.5 are complete, all
 external walls below ground are also complete. Block work in progress at B4,
 B1 and B0.5 level.

Woolloongabba -

- External wall pours continue to progress;
- Last of the remaining culvert topping slabs between P16 and P17 in progress;
- Lift shafts 1 & 2 installation commencing in the Atrium;
- Framing for aluminium soffit ceilings in caverns has commenced; and
- M&E building services ongoing in South Cavern BOH and platform culverts; B6 platform electrical earthing is ongoing.

Tunnel fit-out -

- BR2G MC01 cable ladder installation completed, walkway install ongoing;
 and MC02 rail damper installation is ongoing;
- G2A MC01 and MC02 raised emergency access and egress walkway installation is ongoing and LV cable pulling is ongoing;
- A2R MC01 rising main pipe install ongoing and MC02 walkway installation ongoing;
- R2NP MC01 and MC02 hydrostatic test successfully completed and fire cable pulling ongoing; and
- Ongoing M&E fit-out works in the cross passages.

Boggo Road -

- Concrete to insitu structure 87% complete;
- Reinforcement to insitu structure 87% complete;
- Mezzanine precast trusses 230 of 230 installed;
- Precast platform culverts and planks 457 of 461 installed;
- Super T's 39 of 39 installed;
- Goods Lift 2 commissioned and operational;
- M&E fit-out continuing in northern and southern Back of House; and
- Hydrants installed to B7.

Southern Portal -

- Continue FRP works to Eastern and Western Approach Bridges substructures;
- Continued eastern approach bridge girder installation;
- Commenced post and frame install to cable stay bridge;
- Continued HV Traction Power and CSR Conduit install within rail corridor;
- Completed concrete suspended slab to close final FFO roof void penetration to Cut & Cover.

Southern Area

Southern / Dutton Park -

- Progressed work on PL1, PL2, Kent Street entry, and Noble Street entry.
- predominately structural foundations, piling, inground services, platform slabs, structural steel, and roofing;
- Installed first module of the pedestrian overpass, lift 1 structural steel and precast concrete lift shaft walls; and
- Progressed work external to the station including CSR / TFR progress throughout the corridor however predominately focused at Park Road TSC area

Fairfield station -

- During October Fairfield station received an unconditional and final building occupancy certificate; and
- QR took over operational use of the station on 26 October.

Yeronga station -

Progressed defect items, weekly certification walkthroughs to closeout
items.





Yeerongpilly station -

- Following station closure on 18 September, the station demolition, excavation, lower-level services install, precast wall installation occurred during RIS_S002 SCAS;
- Existing DN suburban track was realigned to suit the future platform widening; and
- Site establishment at 90% including Wilkie Street traffic barriers, cribbing facilities, and offices.

Clapham Yard -

- Moolabin Creek Bridge Maintenance Access Walkway installation continues.
- BR94 nearing completion;
- BR93 Stage 1 nearing completion; and
- OHW Foundation and Structure install.

Rocklea station -

- Installation of structural steel elements (stair 1, complete platform canopies);
- Commence installation of lifts;
- Installation of roofing to station buildings and platform canopies;
- Progress final platform slabs and entry slabs on Brookes Street / Station Street: and
- Excavation for new Brookes Street carpark earthworks.

2.2. Key Environmental Elements

2.2.1. Noise

The Coordinator-General's conditions establish a framework for managing the impacts of noise. The Imposed Conditions do not establish noise limits. Compliance with the Imposed Conditions noise requirements involves demonstrating the implementation of the endorsed CEMP and associated Noise and Vibration Management Plan. This establishes the management measures to be applied which aims to achieve the identified noise goals as far as reasonably practicable. The CEMP also includes requirements for the provision of the required community notifications of upcoming work, potential impacts, and how the project team can be contacted in relation to any potential impacts.

For Project Works where potential noise impacts are modelled to be above the noise goal but below the noise goal plus 20dBA, this work is authorised where the endorsed CEMP and associated Noise and Vibration Management Plan is being implemented, including communicating construction activities to potential and actual Directly Affected Persons (DAPs). For Project Works where potential noise impacts are predicted to be more than 20dBA above the relevant noise goal, specific engagement is required with DAPs for these works.

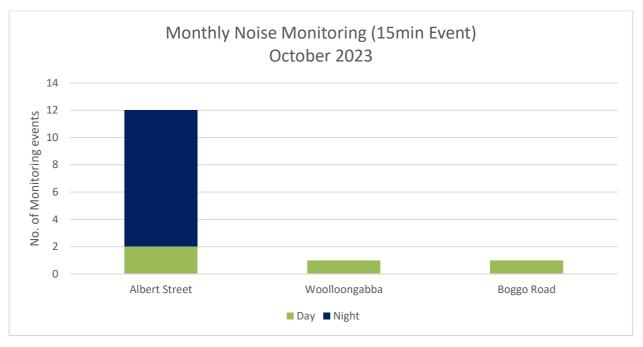
Where internal monitoring was not possible, contractors have undertaken external monitoring at nominated locations. To assess external monitoring and determine compliance with the project's noise requirements, the project applies recommended façade attenuation corrections, which considers receiver property type.

In the Central Area, noise monitoring was undertaken for model verification and in response to noise complaints at Roma Street, Albert Street, Woolloongabba and Boggo Road. The TSD contractors reported that the project noise requirements have been met during this reporting month. Monitoring results for the Central Area are detailed in **Appendix B** (Table 3).

A summary of noise monitoring events for the month is provided in the chart below.







As shown above chat, the TSD contractor undertook several monitoring sessions in non-standard hours (10:00pm - 6:30am) in response to noise complaints received from nearby receivers residing in neighbouring residential buildings. Internal and external monitoring sessions were undertaken to determine compliance with the noise goals as per the Imposed Conditions. Appropriate engagement has occurred with all stakeholders surrounding the Albert Street worksites in accordance with the requirements of the Imposed Conditions.

2.2.2. Vibration

In the Northern Area, vibration monitoring occurred at the State heritage listed John MacDonald Stand located in proximity to the Exhibition Station worksite. The RIS contractor reported the vibration requirements have been met, monitoring results are detailed in **Appendix A** (Table 5).

In the Southern Area, vibration monitoring occurred at Yeerongpilly beside the Helix Triathlon building and at Sampson Street for the Dutton Park SCAS works. The RIS contractor reported the vibration requirements have been met, monitoring results are detailed in **Appendix A** (Table 5).

2.2.3. Air Quality

2.2.3.1. Dust Deposition

Dust deposition monitoring was conducted at Mayne, Northern, Central and Southern Areas. Results met the project air quality goal¹ for all active worksites.

At Mayne Yard, an incident occurred with an exceedance of the dust deposition goal recorded at Mayne Yard North. The recent air quality assessment was for the commencement of bulk earthworks to establish the structural foundation of Bridge 08. Due to the tight constraints of the site, the gauge was located only 15m from the bulk earthworks activities. Metrological conditions experienced during the reporting period confirmed the gauge was located downwind of the works for over half of the reporting period and due to the close proximity of the gauge to the bulk earthworks, the results were skewed and would not be representative of dust levels experienced by surrounding stakeholders.

A review of the works and the gauge's location is being undertaken by Unity to ensure representative data will be captured moving forward. Given this review, the exceedance of the goals experienced and the need to review and update of the dust monitoring locations to go through appropriate review and endorsement, as per the Outline Environmental Management Plan, this has been noted as an incident.





The siting of the dust gauge will undergo review as noted above.

Importantly though, site management practices were implemented as per the CEMP and sub-plans. No air quality complaints have been received to date. Demonstrating the overall requirements of the imposed Conditions have generally been met. For further details see **Appendix A** (Section 3.1.8.1 and Figure 1).

A summary of the dust deposition results for the month are in the table below.

Air Quality	 Dust Deposition 	n Monitoring	
Area	Worksite	Monitoring Location	Comments
Mayne Area	Mayne Yard	Mayne Yard North	 Exceedance of air quality goal due to the gauge's close proximity to bulk earthworks and wind conditions resulting in dust levels that are not representative of the levels experienced by surrounding stakeholders. Contractor demonstrated project outcomes were met through the implementation of site management practices as per the CEMP and Sub-Plans, however an incident was recorded relating to the need for appropriate review and endorsement of updated dust monitoring locations, as per the Outline Environmental Management Plan.
Northern	RNA / Exhibition	RNA Showgrounds	- Results met air quality goal
Area	Northern Portal	Northern Portal (near Brisbane Girls Grammar School)	- Results met air quality goal
	Albert Street	Mary Street	- Results met air quality goal
	Albert Street	Elizabeth Street	- Results met air quality goal
		Quarry Street (north of the site)	- Results met air quality goal
Central	Boggo Road	Peter Doherty Street/Leukemia Foundation	- Results met air quality goal
Area	Southern Portal	Dutton Park Station	- Results met air quality goal
	Oddinem i Oitai	PA Hospital - Central Energy Unit along Kent Street	- Results met air quality goal
	Roma Street	Roma Street Station	- Results met air quality goal
	Woolloongabba	Russian Orthodox Cathedral	- Results met air quality goal
	. 700110011gabba	Woolloongabba Busway	- Results met air quality goal
Southern	Dutton Park	Dutton Park	- Results met air quality goal
Area	Clapham Yard	Clapham Yard	- Results met air quality goal

¹ CG air quality goal for dust deposition - 120µg/m² (over an averaging period of 30 days).





2.2.3.2. Particulate Matter and Total Suspended Particulates

Monitoring for particulate matter (PM10) and total suspended particulates (TSP) was conducted at Northern, Central and Southern Area worksites for portions of the reporting period. Results obtained met the project goals at all active worksites.

At Mayne Yard, works were ongoing with the Dust Monitor Pro (DMP) to resolve the mechanical issues impacting its ability to validly measures for particulate matter less than 10µm (PM10) and TSP. Due to this, Unity reported only eight (8) valid days of PM10 and TSP data at Mayne Yard. The air quality monitor was sent back to the supplier for further repairs. A hire air quality monitor was being procured and will be installed on site at Mayne Yard West in November 2023.

In the absence of monitoring data, UNITY undertook an investigation to provide supplementary information to confirm the RIS scope of works has met the project outcomes set out by the CGCR and the OEMP. This consisted of investigating the scope of works, meteorological conditions, site observations and complaints received. The investigation confirmed that UNITY's scope of works and implementation of their Air Quality Management Plan has met the project outcomes. Refer to **Appendix A** (Figures 3, 5 and section 3.1.11.2).

In the Northern Area, the RNA DMP was removed from site on 7 September 2023 for its annual calibration and was still with the supplier at the end of the monitoring period. Additional hire air quality monitor was being procured and installed on site in November 2023. The Northern Portal air quality monitor was decommissioned at the start of the reporting period as the Northern Portal site was handed over from the TSD contractor to the RIS contractor. Advice had been provided by the Unity CAQP that ongoing site condition and activities no longer triggered the need for PM10 and TSP monitoring.

In the Central Area, the TSD contractor confirmed that the Boggo Road air quality monitoring unit experienced technical difficulties between 1 – 19 October 2023 and was also required to be sent to the manufacturer for repair. As soon as practicable, the unit was reinstated on-site. The nearby (Woolloongabba) DES air quality monitoring station confirmed air quality levels were below the air quality goals during these outage periods. Refer to **Appendix B** (Table 5 and Section 3.3.2).

In the Southern Area, the Clapham Yard DMP was found to be set up to record PM10 only. Additional analysis was required to calculate TSP data which was completed and included in this Report. September TSP data was included in this October Report as it was not available at the finalization of the September Report.

During the September reporting period, there was one exceedance of the TSP levels at Clapham Yard. The exceedance that occurred on 21 September was likely related to regional bushfire events in and around the Brisbane area that affected air quality in the wider airshed. The RIS contractor confirmed project requirements were being met through the implementation of on-site controls as per the CEMP and Sub-plans. Refer to **Appendix A** (Section 3.1.11.3 and Figure 4)

During the October Monitoring period, the Clapham Yard monitor recorded TSP and PM10 levels above the project Air Quality goals on 1 and 2 October 2023. Upon further investigation into project scope, meteorological conditions, site observations and complaints received, the RIS contractor confirmed the elevated levels were most likely attributed to the regional bushfire impacts affecting the wider airshed plus on-site stockpile mixing near the air quality monitor. At the time of the exceedance, the Clapham Yard site was being used as a staging area for the Clapham Yard to Salisbury SCAS works. The Clapham Yard site is mostly capped and sealed with polymer sprays and binders. Haul roads, active stockpiles and laydown areas are treated with water carts. No air quality complaints were received in relation to the activities onsite during the October 2023. The project continues to meet the project requirements through the implementation of site controls as per their CEMP and Sub-plans. Refer to **Appendix A** (Section 3.1.11.3 and Figure 5). Refer to **Appendix A** (section 3.1.11.3 and





Figures 3 and 5).

A summary of particulate monitoring is provided in the table below.

Air Quality	Air Quality – PM10 / TSP Monitoring						
Area	Worksite	Monitoring Location	Comments				
	Mayne Yard	Mayne Yard North	Monitoring not required as per Project's CAQP advice.				
Mayne Area	Mayne Yard	Mayne Yard East	DMP reinstated onsite, however experienced mechanical and technical difficulties recording only 8 days of valid data.				
			Investigation into supplementary information confirmed the Project outcomes had been met.				
Northern Area	RNA / Exhibition	RNA showgrounds	- Monitor removed from site for annual calibration on 7 September 2023.				
	Northern Portal	Brisbane Girls Grammar School	- Monitor decommissioned				
	Albert Street	iStay River City and Capri (Corner of Mary Street and Albert Street)	- Results met air quality goals.				
Central Area	Boggo Road /	North-east of Boggo Road worksite	- Technical difficulties encountered and monitor sent off for repair. No TSP or PM10 data capture during 1-19 October 2023.				
7 11 001	Southern Portal		Investigation into supplementary information confirmed the Project outcomes had been met				
	Woolloongabba	Place Park, Woolloongabba	- Results met air quality goals.				
			- Exceedance of TSP on 21 September 2023 likely due to regional bushfire impacts around Brisbane area.				
Southern Area	Clapham Yard	Clapham Yard	- Exceedances of TSP and PM10 recorded on 1 and 2 October 2023 likely due to regional bushfire impacts around Brisbane Area and onsite stockpile mixing activities next to the monitor. RIS contractor confirmed project requirements were being met through the implementation of on-site controls as per the CEMP and Sub-plans.				

2.2.4. Water Quality

Water quality monitoring and reporting was undertaken in accordance with the contractors CEMP and Water Quality Management Plans.

2.2.4.1. Surface Water

During October 2023, active surface water discharges occurred in the Northern Area. Post-rainfall water quality monitoring was triggered for Moolabin Creek and Rocky Water Holes Creek.





In the Northern Area, active surface water discharge monitoring occurred on 19 occasions at Northern Portal. The monitoring results demonstrated active surface water discharges met project water quality discharge criteria. Refer to **Appendix B** (Table 7) for further details.

In the Southern Area, post rainfall monitoring was triggered in receiving waters of Clapham Yard including Moolabin Creek and Rocky Water Holes Creek.

Routine surface water monitoring was undertaken across the TSD worksites during the reporting period. Results from the locations reflect the condition of the broader catchment upstream from the worksites. Refer to **Appendix B** (Table 8 and Section 3.5) for further details.

Surface water quality monitoring is summarised in the table below:

Surface W	Surface Water Quality Monitoring					
Area	Worksite	Discharge	Post-Rain Monitoring	Routine Monitoring	Comments	
Mayne Area	Mayne Yard North	No	No	No	- ESC was implemented in accordance with site specific ESC Plan.	
	Exhibition/ RNA	No	No	No	- ESC was implemented in accordance with site specific ESC Plan.	
Northern Area	Northern Portal	Yes	No	Yes	 Active surface water discharge met water quality investigation criteria. Routine in-stream monitoring undertaken in accordance with WQMP 	
	Northern Corridor	No	No	N/A	- ESC was implemented in accordance with site specific ESC Plan.	
	Albert Street	No	No	Yes	Routine in-stream monitoring undertaken in accordance with WQMP	
	Boggo Road	No	No	Yes	Routine in-stream monitoring undertaken in accordance with WQMP.	
Central Area	Roma Street	No	No	Yes	Routine in-stream routine monitoring undertaken in accordance with WQMP.	
	Woolloongabba	No	No	Yes	- Routine in-stream monitoring undertaken in accordance with WQMP.	
	Southern Portal	No	No	Yes	Routine in-stream monitoring undertaken in accordance with WQMP.	
Southern	Dutton Park	No	No	No	- ESC was implemented in accordance with site specific ESC Plan.	
Area	Fairfield station	No	No	No	- ESC was implemented in accordance with site specific ESC Plan.	



	Yeronga	No	No	No	- ESC was implemented in accordance with site specific ESC Plan.
	Clapham Yard	No Yes	Vac	Yes	 ESC was implemented in accordance with site specific ESC Plan. Post-rainfall monitoring
			Yes	Yes	undertaken Routine in-stream monitoring undertaken in accordance with WQMP.
	Rocklea station No	No Ye	Yes	Yes	- ESC was implemented in accordance with site specific ESC Plan.
					 Post-rainfall monitoring undertaken.
					 Routine in-stream monitoring undertaken in accordance with WQMP.

2.2.4.2. Groundwater

Groundwater discharge occurred at Albert Street, Boggo Road, Roma Street and Woolloongabba worksites. The groundwater discharge results exceeded relevant water quality objectives (WQOs)² for several water quality parameters. However, these results are consistent with the receiving environment baseline monitoring pre-construction data. The contractor confirmed no changes have occurred onsite to the construction methodologies that would have affected the groundwater results. Refer to **Appendix B** (Table 6) for further details.

There were no groundwater discharges at Mayne, Northern or Southern Area worksites.

Groundwater quality monitoring is summarised in the table below:

Groundwater Quality Monitoring											
Area	Worksite	Discharge	Comments								
Mayne Area	Mayne Yard North	No	- No groundwater discharges.								
Northern Area	RNA/Exhibition	No	- No groundwater discharges.								
	Northern Portal	No	- No groundwater discharges.								
	Albert Street	Yes	Discharge of groundwater met Project requirements								
Central Area	Boggo Road / Southern Portal	Yes	Discharge of groundwater met Project requirements								
	Roma Street	Yes	Discharge of groundwater met Project requirements								





	Woolloongabba	Yes	-	Discharge of groundwater met Project requirements
Southern Area	Clapham Yard	No	- 1	No groundwater discharges.

² The Brisbane River Estuary environmental values and water quality objectives (Basin no 143 – mid-estuary) in the Environmental Protection (Water) Policy 2009

2.2.5. Erosion and Sediment Control

Site specific Erosion and Sediment Control (ESC) Plans have been prepared, updated, and implemented at Mayne Yard, RNA Showgrounds, Northern Portal, Normanby, Roma Street, Albert Street, Woolloongabba, Boggo Road, Southern Portal, Dutton Park, Fairfield, Yeronga, Yeerongpilly, Clapham Yard, Rocklea and Salisbury worksites.

2.3. Complaints Management

A total of nineteen (19) complaints were received during the month, of which sixteen (16) were project related.

RIS works received eleven (11) complaints related to project works in October 2023 relating to Out of Hours noise, worker behaviour and construction traffic impacts generated from the SCAS works at Yeerongpilly, construction traffic impacts at Dutton Park, noise impacts at Fairfield and air quality impacts at the Northern Portal. For further details and breakdown of complaints, refer to **Appendix A** (Table 3).

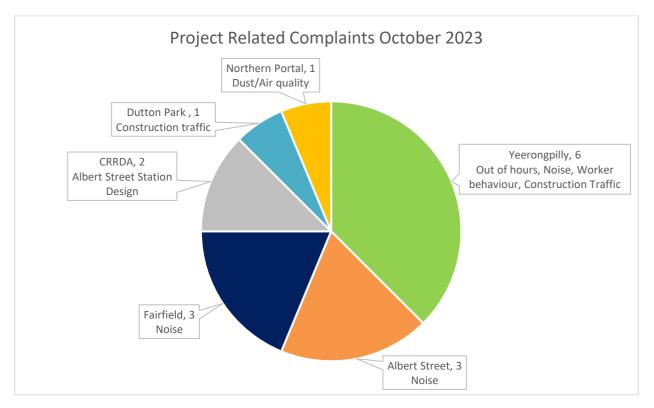
TSD works received three (3) project related complaints, all related to noise at Albert Street. TSD received an additional three (3) complaints however upon further investigation into the complaints, it was confirmed the complaints were not related to Project Works. For further details and a breakdown of complaints, refer to **Appendix B** (Table 10).

Two complaints were received relating to current noise impacts and future impacts of the Albert Street Station design and its proximity to Festival Towers. The two complaints were received in late October 2023 and have since been addressed by CRRDA and the TSD contractor.

The Project Works complaints summary for the month is provided in the following chart.







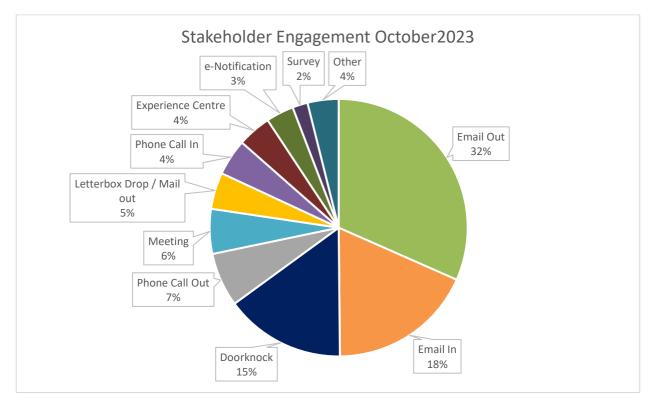
When attended noise monitoring was undertaken in response to a complaint, the contractor confirmed on all occasions that works undertaken at the time of the complaint adhered to project requirements. In some instances, previously attended noise monitoring data, representative of the relevant construction activities was used to confirm the works adhered to the project noise requirements.

To close out a complaint, the monitoring data is reviewed (where applicable) against compliance with the CEMP, site environmental management plans and permits, and checks that required community notification has taken place. Contractors have also confirmed that planned mitigation to reduce the impact was implemented. This is reviewed together to verify if project requirements have been met.

For scheduled out of hours works, community notification was provided, as well as regular project updates. Stakeholder engagement undertaken on the project during the month is in the chart below.







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	 Mayne Yard North – Bridge 08 Span 4 (P3-P4, North) girder install late November; Traction power cable hauling; and TFR pit Earthing and cable Support structure installation. Mayne Yard East / West – RIS-7A.1 (Western Yard facility Roads 37 – 40) QR shunter paths on hold due to pending QR possession approval until Easter 2024; RIS-6C.2 (QR Access Change), asphalt, lighting, DBs; N-18 (MY-E Shunter Shed) services and finishing trades; Commence Air-Compressor works; Axillary Buildings; Submain cabling route site measurements; Submain installation; and DB installation.
Northern Area	 RNA / Exhibition – Canopy roofing being lifted in position in EXT-22 (mid Nov); and Structural Steel Spans 8 + 9 (BR44) being lifted in place late Nov. Northern Corridor – Normanby – civil handover to track on 18 December; and Victoria Park ROS installation ongoing, Energex VPFS pre-commissioning. Northern Portal – Ongoing handover the site from TSD to RIS.
Central Area	Roma Street – Commence installation of escalators in cavern and station building; Commence canopy structural frame installation; Complete handover of all RIS equipment rooms to UNITY; Finalise chimney structure in both services building and station building;





Albert Street -

- Lot 1 Continue slip cycle 16 perimeter walls;
- Lot 2 complete platform culvert installation; and
- Lot 3 Complete ground slab.

Woolloongabba -

- Continue station box perimeter walls to ground level;
- Commence sewer stage 2 installation works along East/West Road;
- Commence stormwater works connection along Leopard Street;
- Placement of precast deck units and Super Ts in southern section of the station hox:
- Completion of span 7 mezzanine beams installation, stressing and grouting works;
- Commence installation of glass fibre reinforced concrete (GFRC) panels and steel frames for lift shafts on Basement 4 FOH.

Boggo Road -

- Unity to commence installation of traction power equipment in the TCU rooms;
- SER/SPER and CER rooms to be available for Unity and Sequence commencement;
- Continue station box deck units and buttress plank installation;
- Commence station box above-ground structure;
- Completion of mezzanine in-situ stich sections;
- First RIS Rooms handover (Signalling Power Equipment Room (SPER) and SER);
- Continue Platform Screen Door (PSD) structure steel header frame installation.

Southern Portal -

- Bridge main span FRP for topping slabs;
- Bridge eastern and western approach FRP for topping slabs; and
- Track slab installation within portal.

Southern Area

Southern / Dutton Park -

• November will see further progress of the station construction including structural steel elements, roofing, piling, soil nails, platform slabs, and platform walls.

Fairfield Station -

• Completions documentation compilation.

Yeronga Station -

- Final document submission for unconditional and final building occupancy certificate; and
- Application for SP8 practical completion will occur for end of November.

Yeerongpilly Station -

- Finalise site establishment in early November;
- Continue lower-level services installation, backfill, lower-level foundations; and
- Foundation installation for overhead gantry structure.

Clapham Yard -

- Driveways and stone pitching along Fairfield Road;
- Civil Works CSR works ongoing;
- Electrical / Comms Procurement and Planning stage.

Rocklea Station -

- Stair installation:
- Continue installation of lifts;
- Continue platform canopy and buildings; and
- Brookes Street carpark works.





2.5 Non-Compliance Events

No NCEs were recorded in October 2023. A summary of NCE's to date is shown in the table below.

Status	Date of Event	Category	Area as on the Report	Relevant Condition	Gate 1	Gate 2	Gate 3	Gate 4
⊞ Open								
□ Closed								
CRRDA-001-RIS-001	9/11/19	Noise	Yeronga Station	4, 10, 11	10/11/19	14/11/19	26/11/19	18/12/19
CRRDA-002-TSD-001	27/03/20	ESC	Woolloongabba	4, 15, 18	30/03/20	31/03/20	22/04/20	11/06/20
CRRDA-003-TSD-002	27/03/20	ESC	Boggo Rd	4, 15, 18	30/03/20	31/03/20	22/04/20	11/06/20
CRRDA-005-TSD-004	27/03/20	Reporting	Multiple sites	4, 6, 11, 13	30/03/20	31/03/20	22/04/20	11/06/20
CRRDA-006-TSD-005	27/03/20	Air Quality	Multiple sites	13	30/03/20	31/03/20	22/04/20	11/06/20
CRRDA-004-TSD-003	28/03/20	Traffic	Boggo Rd	4, 10, 14	30/03/20	31/03/20	22/04/20	11/06/20
CRRDA-009-RIS-003	6/05/22	ESC	Clapham Yard	4	28/10/22	28/10/22	12/12/22	12/12/22
CRRDA-010-RIS-004	10/05/22	Acid Sulphate Soils Managem ent	Clapham Yard	4, 19	28/10/22	28/10/22	12/12/22	12/12/22
CRRDA-11-RIS-005	23/11/22	Out Of Hours Works	Fairfield Station	4,10	14/07/23	14/07/23	14/07/23	12/09/23
□ Withdrawn								
CRRDA-007-RIS-002	1/04/20	Air Quality	Multiple sites	13	28/04/20	30/04/20	Withdrawn	
CRRDA-008-TSD-006	8/04/20	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



Appendix A RIS Monthly Report





Monthly CGCR Report October 2023

Cross River Rail – Rail, Integration and Systems Alliance





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1 Progress Summary - Relevant Project Works

The following Project Works were undertaken during the reporting period:

Table 1: Summary of Project Works completed during the reporting period

Area	Project Works							
Mayne Area	Mayne Yard North							
	 Stab Yard Fence rectification has been completed. Completions documentation being compiled for SP01 (Northern Stabling Yard). 							
	Mayne Yard East / West							
	 Balloon Loop decommissioning and Shunt Rd commissioning on schedule. 							
	Access Change on schedule. Lighting, road furniture and TP&C commenced.							
	 Shunter Shed commissioning on schedule. Building nearing completion, focus on service install and CER. 							
	 Mayne East reconfiguration on schedule with drainage, CSR, hydraulics and bulk earthworks ongoing as planned. 							
Northern Area	RNA / Exhibition							
	FRP BR44 nearing completion.							
	Service installation progressing on schedule.							
	Plaza area underground services and slab prep on schedule.							
	Northern Corridor							
	 Normanby – TSD vacated Northern Portal site 27 Oct. HV hand-over occurred and CSR handover imminent. 							
Southern Area	Southern Portal / Dutton Park							
	 Progressed work on PL1, PL2, Kent St entry, and Noble St entry. Predominately structural foundations, piling, inground services, platform slabs, structural steel, and roofing. 							
	 Installed first module of the pedestrian overpass, lift 1 structural steel and precast concrete lift shaft walls. 							
	 Progressed work external to the station including CSR / TFR progress throughout the corridor however predominately focused at Park Road TSC area. 							
Southern Area	Fairfield Station							
	 During October Fairfield station received an unconditional and final building occupancy certificate. 							
	QR took over operational use of the station on 26-October.							
Southern Area	Yeronga Station							
	Progressed defect items, weekly certification walkthroughs to closeout items.							
Southern Area	Yeerongpilly Station							
	 Following station closure on 18-Sep, the station demolition, excavation, lower-level services install, precast wall installation occurred during RIS_S002. 							
	 Existing DN suburban track was realigned to suit the future platform widening. Site establishment at 90% including Wilkie St traffic barriers, cribbing facilities, and offices. 							
Southern Area	Clapham Yard							
23411011171104	 Moolabin Creek Bridge Maintenance Access Walkway installation continues. 							
	 BR94 nearing completion. 							
	BR93 Stage 1 nearing completion.							



Area	Project Works
Southern Area	Rocklea Station
	 Installation of structural steel elements (stair 1, complete platform canopies).
	Commence installation of lifts
	 Installation of roofing to station buildings and platform canopies.
	 Progress final platform slabs and entry slabs on Brookes St / Station St.
	 Excavation for new Brookes Street carpark earthworks.
Southern Area	Salisbury
	Preliminary planning & procurement

Acronyms:

CIP - Cast in Situ Piles

CSR - Combined Services Route

DL - Drainage Line

FRP – Form Reo Pour

HV – High Voltage

OHLE - Overhead Line Equipment

OTV – On Track Vehicle

PUP - Public Utility Plant

RNA - Royal National Agricultural and Industrial Association of Queensland

R&R - Remove and Replace

RSS – Reinforced Soil Slopes

RW - Retaining Wall

SCAS - Scheduled Corridor Access Schedule

UTX - Under Track Crossing

The following table summarises the upcoming Project Works:

Table 2: Summary of upcoming Project Works

Table 2: Summary	of upcoming Project Works									
Area	Project Works									
Mayne Area	Mayne Yard North									
	BR08 Span 4 (P3-P4, North) girder install late Nov.									
	Traction power cable hauling.									
	TFR pit Earthing and cable Support structure installation.									
	Mayne Yard East / West									
	 RIS-7A.1 (Western Yard facility Roads 37 – 40) QR shunter paths on hold due to pending QR possession approval until Easter '24 (nil impact to UNITY). 									
	 RIS-6C.2 (QR Access Change), asphalt, lighting, DBs. 									
	 N-18 (MY-E Shunter Shed) services and finishing trades. 									
	Commence Air-Compressor works.									
	Axillary Buildings.									
	Submain cabling route site measurements.									
	Submain installation.									
	DB installation.									
Northern Area	RNA / Exhibition									
	 Canopy roofing being lifted in position in EXT-22 (mid Nov). 									
	 Structural Steel Spans 8 + 9 (BR44) being lifted in place late Nov. 									
	Northern Corridor									
	Normanby – civil handover to track on 18 December.									
	 Victoria Park ROS installation ongoing, Energex VPFS pre-commissioning. 									
Southern Area	Southern Portal / Dutton Park									
	 November will see further progress of the station construction including structural steel elements, roofing, piling, soil nails, platform slabs, and platform walls. 									



Area	Project Works
Southern Area	Fairfield Station
	Completions documentation compilation.
Southern Area	Yeerongpilly
	Finalise site establishment in early November.
	Continue lower-level services installation, backfill, lower-level foundations.Foundation install for overhead gantry structure.
Southern Area	Yeronga Station
	 Final document submission for unconditional and final building occupancy certificate. Application for SP8 practical completion will occur for end of November.
Southern Area	Moorooka
	Nil Specific.
Southern Area	Rocklea
	Stair installation.
	Continue installation of lifts.
	 Continue platform canopy and buildings. Brookes St carpark works.
Southern Area	Clapham Yard
	Driveways and stone pitching along Fairfield Road.
	Civil Works – CSR works ongoing.
	Electrical / Comms – Procurement and Planning stage. Callebourge
Southern Area	Salisbury
	Preliminary planning and procurement



2 Complaints

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

Table 3: Summary of Complaints

Date Received	Location	Issue	Project Works / Activity source of the concern	Reporting Period	Complaint Detail	Unity Response	Status
Sunday 1 October	Yeerongpilly	Traffic Management	Complaint on traffic – site set up.	October	Stakeholder called with a complaint regarding multiple trucks parking on local streets around Yeerongpilly station for up to 2-4 hours at a time.	Site team and traffic manager to address with sub-contractor. Team to visit site this morning to inspect local roads and traffic movements and parking.	Closed
Sunday 1 October	Yeerongpilly	Noise	Complaint about out of hours noise	October	Resident approach team on site to complain about noise from night works. Provided details to add to the email database and accepted the offer of formable ear plugs. Also mentioned lights were facing properties on Wilkie Street last night but that was resolved quickly.	Comms team provided an update on program and explained the nature of the remaining works. Team offered formable earplugs to assist with sleep at night. Personal details collect to add the resident to the email database to receive further works notifications and alerts.	Closed
Sunday 1 October	Yeerongpilly	Noise	Complaint about out of hours noise	October	Stamford Street resident called to complain about the use of rock breakers at 2:30am in the morning.	Comms team provided an update of the works and took personal details to add to the email database.	Closed
Sunday 1 October	Yeerongpilly	Traffic Management	Complaint on traffic – site set up.	October	Stakeholder called again with a complaint regarding multiple trucks parking on local streets around Yeerongpilly station. Stanford Street and Biarra Street.	Site team and traffic manager to address with sub-contractor. Team to visit site this morning to inspect local roads and traffic movements and parking.	Closed
Wednesday 4 October	Dutton Park	Traffic Management	Construction vehicle giving way to pedestrian	October	Stakeholder emailed to complain about a vehicle not giving way at Dutton Park to a cyclist crossing the Annerley Road access gate while riding on the footpath.	The comms team has notified the site team to remind works to be mindful of pedestrians and cyclists while exiting the site.	Closed
Thursday 5 October	Yeerongpilly	Noise/Behaviour	Workforce Behaviour and plant movement noise	October	Stakeholder emailed to complain about noise from Yeerongpilly station works including plant beeping (loading) and workforce language.	Stakeholder advised that feedback has been passed onto supervision and workgroups and reminding the team of UNITY Alliance's expected behaviours.	Closed



						for a New	Era
Date Received	Location	Issue	Project Works / Activity source of the concern	Reporting Period	Complaint Detail	Unity Response	Status
Friday 6 October	Fairfield	Noise	Out of Hour Noise – Completions and Cleaning activities	October	Stakeholder emailed to complain about noise from Fairfield station workers' radio volume (too loud) and continued 'out of service' announcements every two minutes (day and night) from the station lifts.	Stakeholder advised that her feedback will be passed onto Fairfield station workgroups to address expected behaviours and resolved the lift announcement issue with the lift contractor.	Closed
Monday 16 October	Yeerongpilly	Behaviour/Parking	Work vehicle parking in private resident property (traffic control)	October	Stakeholder emailed to complain about traffic control vehicle parking on a footpath in front of the station and then parking within a visitor's parking space within a unit complex on the corner of Green and Wilkie streets.	The comms team notified the Traffic Manager for the south, who in turn addressed this with the traffic controller sub-contractor.	Closed
Monday 16 October	Northern Portal	Dust	Dust Deposition – Residential 500m away from nearest project location	October	Stakeholder details passed on via CRRDA. Stakeholder lives in Kelvin Grove (Village Centre building) over 500 metres away. UNITY Team reached out and stakeholder believes Normanby rail corridor works are the cause of increased levels of dust at their apartment.	The comms team have been in contact with the stakeholder via email and explained how the project manages dust during construction. Dust monitoring results from BGGS, RNA and Mayne were provided. Brisbane air quality information was also provided to show that their issue is most likely associated with a boarder SEQ decline in air quality due to drier weather, prevailing winds and widespread bushfires.	Closed
Wednesday 25 October	Fairfield	Noise	Out of Hour Noise – Completions and Cleaning activities	October	Stakeholder emailed UNITY Alliance regarding noise from Fairfield station platform cleaning night works and advised that she had not been informed of the works.	Team emailed Stakeholder additional information to the works notice, and referred to the database distribution, letterbox drop and reminder notification regarding the works.	Closed
Wednesday 25 October	Fairfield	Noise	Out of Hour Noise – Completions and Cleaning activities	October	Stakeholder emailed UNITY Alliance regarding noise from Fairfield station platform cleaning night works, and workforce behaviour (shouting).	Team emailed Stakeholder information about the works including the construction notice and advised that his feedback has been passed onto the team to address workforce behaviour.	Closed

3 Environmental Monitoring Results

The below section summarises the monitoring results to be reported in accordance with Imposed Condition 6(b)(i).

Acoustics

Imposed Condition 11(b) 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 (C-EMP) occurs.

3.1.1 Noise Monitoring

Attended noise monitoring was not triggered during the reporting period. Out of hours works was undertaken during SCAS works. These have previously been assessed as part of the analysis under the conditions of approval to verify the assessments undertaken.

Noise monitoring was undertaken at the end of September as part of the SCAS commencing on 28 September at Yeerongpilly which carried over into October. Other SCAS works undertaken over the reporting period were consistent with previous monitoring and assessment undertaken for the project.

The operation of a rock breaker was utilised on the period between 28 September and 1 October, which resulted in two noise complaints on the first of October. Works associated with the operation of the rock breaker were completed on 1 October and no longer required for that activity. Remaining works were associated with bulk load out etc, rather than the rock breaking related to the complaints.

As such complaint-based monitoring of the rock breaking operation was not undertaken at the time as these works had been completed. The operation of the jack hammer was captured in the OOH for the Yeerongpilly SCAS.

The other noise complaints associated with the monitoring period related to either a complainant not being aware of the notification completed for their premises or to associated works that were completed at the time of the complaint being made. Specifically, rock breaking was completed the day of the complaint and not undertaken further (as such complaint-based monitoring was not undertaken for this equipment.)

3.1.2 Noise Monitoring Results

Noise monitoring was not undertaken during the reporting period.



3.1.3 Vibration Monitoring

Vibration monitoring to validate the predictive model was triggered for:

- John MacDonald Stand based on the proximity to the works. The results are presented in the below Table.
- Vibration monitoring at Yeerongpilly for the project site works during the SCAS works for model verification.
- · Vibration monitoring was undertaken at Dutton Park to verify the model for potential property damage.

Complaint-based vibration monitoring was not triggered. No complaints related to vibration were received during the reporting period.

Vibration monitoring to address property damage was not triggered by the predictive assessment. An identified exceedance at Dutton Park was not attributed to the operation of vibration intensive equipment and did not occur during the SCAS. It is not clear on the cause of this exceedance it may have related to inadvertent movement of the vibration meter during operation.

3.1.4 Vibration Monitoring Results

Table 4 Summary of Vibration Data

Location	Date (Start and Finish)	Time of day	Closest DAP / Sensitive Place	Receiver Type (table 3 – Imposed Condition 11(e))	Purpose of Monitoring	Vibration intensive equipment	Maximum predicted vibration level	Shortest distance between Equipment and Sensitive Place @Time of Monitoring"	Maximum recorded vibration level (mm/s)	Vibration goal for receiver	Exceedance of vibration limit?	Comments
John MacDonald Stand	1/10/2023 - 31/10/2023	24hrs/7days	John MacDonald Stand	Heritage - DIN4150 Group 1	Construction Monitoring at Sensitive Places - Model Verification	n/a	n/a - Background monitoring	n/a	0.008	3mm/s Prop damage> Heritage	No Exceedance	Monitor permanently located in the John Mac Stand - no vibration intensive equipment in use during the monitoring period. Background monitoring only
Yeerongpilly Station Wilkie Street	30/09/2023 - 06/10/2023	24hrs/7days	Helix Triathlon	Commercial	Construction Monitoring at Sensitive Places - Model Verification	1.56	50t excavator with 5t hammer (if required for demo works)	39m	2.72	10mm/s human Comfort	No Exceedance	Monitor installed beside the Helix Triathlon building. Monitor was approx. 39m from the demo of the platform. The recorded peak of 2.72mm/s can be attributed to the hammer being used during the demo of the old platform.
Dutton Park	30/09/2023-11/10/2023	24hrs/7days	15 Sampson Street	Residential	Construction Monitoring at Sensitive Places - Model Verification	11.5	8t Roller (based on 12t model)	8m	0.9	15mm/s Property Damage	Exceedance (Not attributed to vibration intensive works)	Monitor was installed at 15 Sampson Street for the duration of RIS_002 SCAS to monitor the use of an 8t vibratory roller. 15 Sampson St is unoccupied and was used as a proxy for 12 Sampson St (opposite) - 12 Sampson St has raised concerns about damage to their property in the past. Exceedances of the vibration limit occurred on 30/09 (135mm/s - attributed to installation of monitor) and 10/10 (24mm/s – Note the SCAS concluded on 6/10 – this vibration level does not appear to be attributed to our works). During SCAS works there were no exceedances of the 15mm/s property damage limit - the highest measurement recorded was 0.9mm/s - recorded on 6/10



3.1.5 Interpretation

The RIS scope of works continues to achieve the outcomes set out by the Imposed Conditions and OEMP.

3.1.6 Noise Monitoring

The RIS scope of works continues to achieve the outcomes set out by the CGCR and OEMP. Monitoring was not triggered during the reporting period related to the activities undertaken.

3.1.7 Vibration Monitoring

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

Vibration monitoring was undertaken at the State Heritage listed John MacDonald Stand, Dutton Park and Yeerongpilly.

No vibration intensive equipment was in use during the reporting period at RNA.

Background monitoring of the John MacDonald Stand is ongoing.

Monitoring set up for the Yeerongpilly SCAS during 30 September and part of October did not record an exceedance of the vibration goals. As noted above the vibration exceedance recorded at Dutton Park was not associated with vibration intensive equipment during the SCAS, no complaints were received, this may have been associated with movement of the monitor itself or other external interference. Vibration intensive equipment was utilised during the SCAS but did not trigger an exceedance.

Air Quality

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

Visual monitoring was undertaken during routine environmental inspections. A total of 36 inspections were undertaken by the Environment Team across Mayne Yard, RNA Showgrounds, Northern Corridor, Southern Area, Yeerongpilly, Clapham Yard, Rocklea and Salisbury station.

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 5 Summary of Air Quality monitoring devices

Monitoring Device Installed by UNITY	Area	Name	Date Installed	Status for the Reporting Period	
Dust Deposition Gauge	RNA Showgrounds	AQ-01	13 December 2019	Active	
Dust Deposition Gauge	Mayne Yard (Eastern Air Shed)	AQ-04	13 February 2020	Relocated to Mayne Yard North	
Dust Deposition Gauge	Clapham Yard (Eastern Air Shed)	AQ-06	1 February 2021	Active	
Dust Deposition Gauge	Yeronga station	AQ-07	12 August 2021	Inactive DDG was decommissioned on 10 December 2021 following the completion of earthworks. This was moved to Yeerongpilly and will be reported during the next monitoring period.	
Dust Deposition Gauge	Dutton Park	AQ-08	8 July 2022	Active	



Monitoring Device Installed by UNITY	Area	Name	Date Installed	Status for the Reporting Period	
Dust Deposition Gauge	Mayne Yard North (Eastern Air Shed)	AQ-04 Mayne Yard North	26 August 2022	Active	
TSP / PM ₁₀ Monitor	Mayne Yard East (Eastern Air Shed)	Mayne Yard East	26 August 2022	Partially active during reporting period. Monitor was reinstated however had battery and airflow issues preventing adequate data being captured during this period	
TSP / PM ₁₀ Monitor	Clapham Yard (Eastern Air Shed)	Clapham Yard	9 August 2021	Active	
TSP / PM ₁₀ Monitor	RNA (Western Air Shed)	RNA	25 August 2020	Out for calibration	

3.1.8 Dust results

As passive dust deposition gauges (DDG) are analysed monthly, results cover the last half of September and the first half of October.

The results are detailed below and compared against Imposed Condition 13(b). The monitoring results for the Mayne Yard North Dust Deposition Gauge at Grafton Street exceeded the CGCR Goal of 120mg/m²/day.

Table 6 Dust deposition gauge results for the reporting period

CGCR Goal (mg/m²/day)	AQ-01 - RNA Showgrounds (mg/m²/day)	AQ-04 Grafton Street (E Mayne) (mg/m²/day)	AQ-06- Clapham Yard (mg/m²/day)	AQ-08 – Dutton Park (mg/m²/day)
120	37	220	27	47
Total Rainfall during Period (mm)	11	20.6	50.2	15.4

Note: Results recorded in red indicate an exceedance of the CGCR Goal



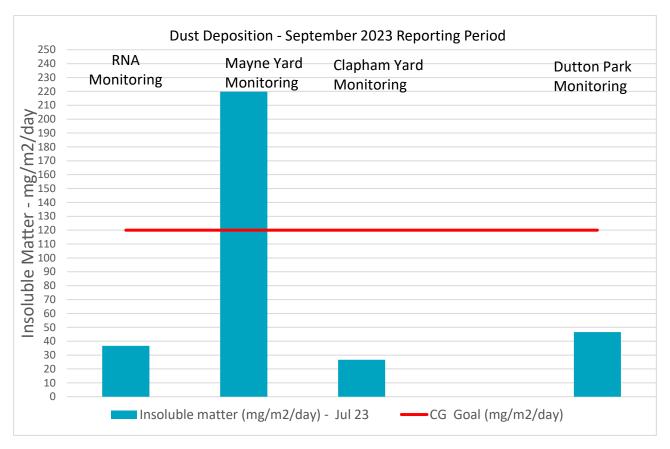


Figure 1 Air Quality Monitoring (Deposited Dust) Results

3.1.8.1 Interpretation

3.1.8.1.1 Mayne Yard North Elevated Result

A predictive air quality assessment was carried out by the Project's certified air quality professional (CAQP) prior to relevant project works commencing.

The assessment triggered dust deposition monitoring during bulk earthworks at the Mayne Yard North construction site. The dust deposition gauge relevant to Mayne Yard North was established adjacent to the Grafton Street site location in October 2022. The site was selected to provide representative ambient monitoring related to sensitive receivers.

Over the period of the past twelve months, construction work was undertaken on the northern abutment of Breakfast Creek for the purpose of the establishment of structural concrete elements of the bridge. On the southern section of Breakfast Creek bulk earthworks related to the bridge construction of the southern abutment and the extension of the pre-load for this abutment was underway.

In the 2023 September to October monitoring period, bulk earthworks commenced on the northern bridge abutment. This dust deposition gauge is located approximately 15 m from the bulk earthworks location at the Northern bridge abutment. This location is substantially closer to the earthworks than the sensitive receivers this monitoring location is to represent.

Monitoring data for this dust deposition gauge recorded a value of 220 mg/m²/day this is 1.8 times the air quality goal of 120 mg/m²/day, and therefore has been recorded as an exceedance of the goal. The data recorded includes all insoluble matter from the recorded results. Of note all clearing for the project site was completed in 2020.

The results excluding organic contamination, (taken as the ash content of the reportable dust) recorded a value of 180 mg/m²/day. This is above the air quality goal.



The nearest sensitive receivers to the site are commercial/industrial receivers located directly adjacent to the dust deposition gauge. The nearest residential receivers are located approximately 130 m to the west of the dust deposition gauge. Due to the location of the dust deposition gauge, and relative position of sensitive receivers, these results only encompass a limited proportion of the sensitive receivers for this site.

The results recorded for the dust deposition gauge over the preceding 12 months at this location have not exceeded the air quality goal. The proximity of the construction of the northern bridge abutment and the associated bulk earthworks in close proximity to dust deposition gauge appear likely to have resulted in the exceedance of the air quality goal.

The wind rose (Figure) identified the predominant winds during the measurement period and whether abnormal wind conditions occurred during the period.

Wind Rose Weather Station N 0% NW NE E W SW SE S DAY WEEK MONTH 0-3 km/h 6-10 km/h > 32 km/h 16 - 32 km/h

Figure 2 Mayne Yard North Windrose

The wind rose confirmed that:

• The DDG was adjacent to the construction site and Wind conditions were high for approximately 15% of the measurement period from the north northwest.



Based on the wind rose, the recorded data and the associated location of the dust deposition
gauge it appears likely that the recorded data was due to the proximity of bulk earthworks
associated with the construction at this location.

During the reporting period there were no complaints from nearby sensitive receptors regarding air quality for the Mayne Yard works.

While there was an exceedance recorded for the reporting period at Mayne Yard North. As outlined above the exceedance does not appear representative of the impact for the area of Mayne Yard, rather a localised impact associated with close proximity of the site to the bulk earthworks at the northern abutment at Mayne Yard north within 15 metres of the earthworks associated with this location.

A review of the works and this location is being undertaken to assess the scope of works through this area. Dust mitigation measures used as required include application of binder to soil stockpiles, covering batters with geofabric and dust suppression using application of water. Of note and as raised above no complaints were received for this location of the project during the reporting period.

Finally, despite the recorded exceedances of the CGCR Goal, with the implementation of site controls and management of activities of the Project continues to meet their requirements under Imposed Condition 13 and the OEMP.

3.1.9 Particulates Results

UNITY had two (2) partially active air quality monitoring stations and one (1) station out for annual calibration in place for the reporting period as detailed in Table 5.

To provide data consistency the air quality monitoring station at Mayne Yard also has a temporary hire unit in place to undertake air quality monitoring. This is due to equipment issues associated with the Mayne Yard Air Quality Unit. This was installed at the commencement of the November reporting period and the data is not included in this report.

Works at the RNA (Exhibition grounds) have continued with the completion of bulk earthworks at the project site and works now focused on detailed earthworks and structures. For the current period air quality monitoring is not required for the RNA site as provided by the AQP for the project. The Air Quality Monitoring Station at this location remains out for calibration.

Works at Clapham have been ongoing with the facility predominately focused on the staging works associated with project rail track possessions. There is some work associated with the structures on site, but for the most part these are limited to structural works around the flyover. There were bulk civil works occurring directly adjacent to the DDG at Mayne Yard during September. This is discussed in detail in Section 3.1.8.

3.1.9.1 Monitoring Results – Reporting Period

External ambient air quality data was collected for total suspended particles (TSP), and particulate matter less than 10 μ m (PM₁₀).

TSP is one of the indicators for which the Coordinator-General has imposed a goal of 80 µg/m3 (over an averaging period of 24 hours) the project must aim to achieve under Imposed Condition 13(a).

 PM_{10} is one of the indicators for which the Coordinator-General has imposed a goal of 50 μ g/m3 (over an averaging period of 24 hours) the project must aim to achieve under Imposed Condition 13(a).

These stations have been installed on-site as per AS/NZS 3850 1.1 following consultation with UNITY air quality professionals. The results are represented in the below figures.

TSP and PM10 were below the imposed air quality goals under the conditions of approval.



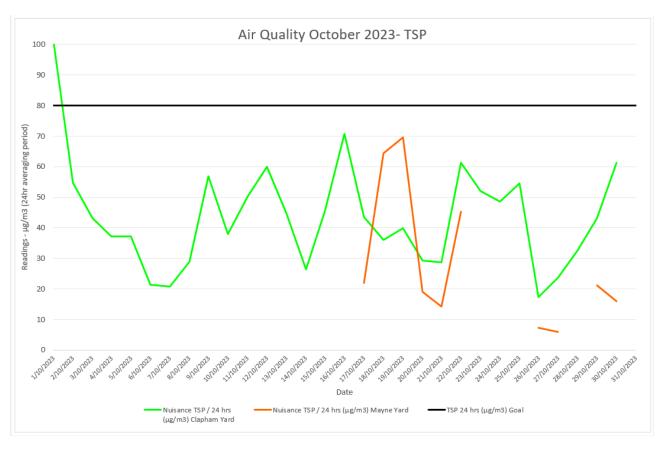


Figure 1 Air Quality Monitoring (TSP) Results

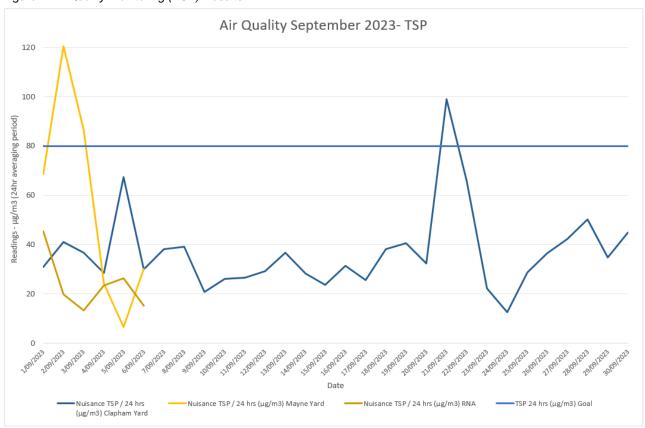


Figure 4 Air Quality Monitoring (TSP) Results September 2023



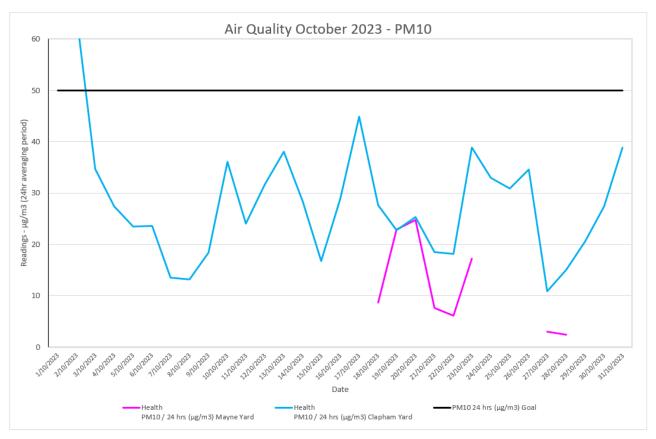


Figure 5 Air Quality Monitoring (PM10) Results

3.1.10 Monitoring Results – Annual Averaging

Imposed Condition 13 (a) sets annual average air quality goals for TSP (Human health) and PM₁₀ (Human health).

The below table summarises where TSP and PM₁₀ monitoring have been carried out over the last 12 months. The National Environment Protection (Ambient Air Quality) Measure Technical Paper No.5 provides guidance and procedures for uniform data recording and handling. (https://www.nepc.gov.au/system/files/resources/9947318f-af8c-0b24-d92804e4d3a4b25c/files/aaqprctp05datacollection200105final.pdf).

For air quality data to be officially reported, as per section 4.5 of Technical Paper No. 5, the minimum data capture would be 75% of the year or 274 days.

"It is essential that data loss is kept to an absolute minimum. For representative monitoring data and for credible compliance assessment it is desirable to have data capture rates higher than 95%. 75% data availability is specified as an absolute minimum requirement for data completeness".

In some instances, Relevant Project Works, which triggered TSP and PM10 monitoring was carried out for less than 274 days (e.g., at the Northern Corridor). In such instances the annual averages are still reported but are indicative only as data capture did not meet the 75% data capture requirements of *National Environment Protection (Ambient Air Quality) Measure Technical Paper No. 5 – Data Collection and Handling.*



Table 7 Summary of Air Quality Monitoring Devices Over 12 months

Monitoring Device Installed by UNITY	Area	Date Installed	Date Decommissioned	Number of days data was captured over 365 days period	Data capture over an annual period	Annual performance reporting
TSP / PM ₁₀ Monitor	Northern Corridor (Eastern Air Shed)	23 April 2020	13 January 2021	260 over 365 days	71% over 365 days	Indicative only Data capture did not meet the minimum data capture requirements
TSP / PM ₁₀ Monitor	Mayne Yard North (Eastern Air Shed)	23 April 2020	11 May 2022	Period 1 (to 23 April 2021) 358 over 365 days Period 2 (24 April 2021 to 25 April 2022) 364 over 365 days Period 3 (26 April 2022 to 11 May 2022) 3 days over 47 days	Period 1 98% over 365 days Period 2 99% Over 365 days Period 3 17% Over 47 days	Applicable for Period 1 Data capture met minimum data capture requirements. Applicable for Period 2 Data capture has met minimum data capture requirements. Applicable for Period 3 Data capture has not met minimum data capture requirements apture requirements.
TSP / PM ₁₀ Monitor	Mayne Yard East (Eastern Air Shed)	26 August 2022	Not yet decommissioned	Period 1 (Started 26 August 2022) 211 days over 280 days Period 2 (Started 27 August 2023) 56 days over 67 days	Period 1 75% Over 280 days Period 2 83% over 67 days	Applicable for Period 1 Data capture has not yet met minimum data capture requirements. Applicable for Period 2 Data capture has not yet met minimum data capture requirements.



Monitoring Device Installed by UNITY	Area	Date Installed	Date Decommissioned	Number of days data was captured over 365 days period	Data capture over an annual period	Annual performance reporting
TSP / PM ₁₀ Monitor	RNA (Western Air Shed)	11 June 2020	Not yet decommissioned	Period 1 (to 11 June 2021) 314 over 365 days Period 2 (12 June 2021 to 12 June 2022) 290 over 365 days Period 3 (Started 13 June 2022) 310 over 365 days Period 4 (Started 14 June 2023) 95 days over 140 days	Period 1 86% over 365 days Period 2 79% Over 365 days Period 3 85% Over 350 days Period 4 67% Over 140 days	Applicable for Period 1 Data capture met minimum data capture requirements. Applicable for Period 2 Data capture met minimum data capture requirements. Applicable for Period 3 Data capture met minimum data capture requirements. Not yet applicable for Period 4 Data capture has not yet met minimum data capture requirements. Not yet applicable for Period 4 Data capture has not yet met minimum data capture requirements.
TSP / PM ₁₀ Monitor	Clapham Yard (Eastern Air Shed)	1 February 2021	Not yet decommissioned	Period 1 (to 31 January 2022) 326 over 364 days Period 2 (01 February 2022 to 31 January 2023) 190 over 365 days Period 3 (started 01 February 2023) 220 over 273 days	Period 1 90% over 364 days Period 2 57% Over 365 days Period 3 80% Over 273 days	Applicable for Period 1 Data capture met minimum data capture requirements. Applicable for Period 2 Data capture did not meet the minimum data capture requirements. Not yet applicable for Period 3 Data capture has not yet met the minimum data capture requirements.

The below table summarises the applicable and indicative annual data results for TSP and PM_{10} against the performance goals imposed under Condition 13(a). Results in italic are indicative only.



Table 8 Annual Performance Results

Air Quality Indicator	Goal	Period	Northern Corridor	Mayne Yard North	Mayne Yard East	RNA	Clapham Yard
TSP		Period 1	8 μg/m³	11 μg/m³	9 μg/m³	18 μg/m ³	8 μg/m ³
90 μg/m ³		Period 2	-	10 μg/m ³	-	15 μg/m³	16 μg/m ³
		Period 3	-	Not applicable	-	13 µg/m³	Not yet applicable
		Period 4	-	Not applicable	-	Not yet applicable	-
PM ₁₀		Period 1	5 μg/m³	7 μg/m³	11 μg/m ³	11 μg/m ³	5 μg/m ³
25 μg/m ³		Period 2	-	7 μg/m³	-	10 μg/m ³	14 μg/m ³
		Period 3	-	Not yet applicable	-	10 μg/m ³	Not yet applicable
		Period 4	-	Not applicable	-	Not yet applicable	-

3.1.11 Interpretation

3.1.11.1 Particulates Results

External ambient air quality was collected for total suspended particulates (TSP) and particulate matter less than $10\mu m$ (PM₁₀).

TSP is one of the indicators for which the Coordinator-General has imposed a goal of 80µg/m³ (over an averaging period of 24 hours) the project must aim to achieve under Imposed Condition 13(a).

PM₁₀ is one of the indicators for which the Coordinator-General has imposed a goal of 50µg/m³ (over an averaging period of 24 hours) the project must aim to achieve under Imposed Condition 13(a).

These stations have been installed on-site as per AS/NZS 3850 1.1 following consultation with UNITY Certified Air Quality Professionals (CAQP).

During the reporting period:

- None of the valid particulate results exceeded their relevant goals for PM₁₀
- There were no complaints received associated with air quality complaints raised for the sites of Mayne Yard, RNA and Clapham Yard.
- The Mayne Yard East DMP was returned from calibration and installed on 8 September, Further commentary below in 3.1.11.2.
- The RNA DMP was removed for calibration on 6 September this is still to be returned to site. The AQP has not required monitoring to be undertaken for the site during this period.
- The Clapham Yard DMP was recording during October.

3.1.11.2 Mayne Yard West October Interpretation

The DMP was relocated to Mayne Yard West post-calibration due to changes to access in Mayne Yard East.

Due to technical issues with the Mayne Yard West DMP, there were twelve (12) days with recorded data for the reporting period. Eight (8) out of the twelve days recorded a sufficient volume of data (minimum 18-hours, or 75% over a 24-hour period). Technical issues relating to the battery connection were identified in addition to previous issues with air intake.



The battery was dropped at the supplier for repair and a rental particulate monitor was sourced and installed on the 10th of November.

No complaints were received by UNITY from surrounding sensitive receivers regarding air quality during the reporting period.

3.1.11.2.1 UNITY Works

During the reporting period Mayne Yard East/West works consisted of entry road modifications, signalling hut installation, CER inground services installation and drainage works.

3.1.11.2.2 Meteorological Conditions

As shown in the Wind Rose below (refer Figure), the predominant winds during the reporting period were from a north-westerly direction. As a result, any potential dust generated from UNITY works would have travelled south-east across the Mayne Yard work areas and away from the particulate monitor located at Mayne Yard West (refer to Attachment 3).

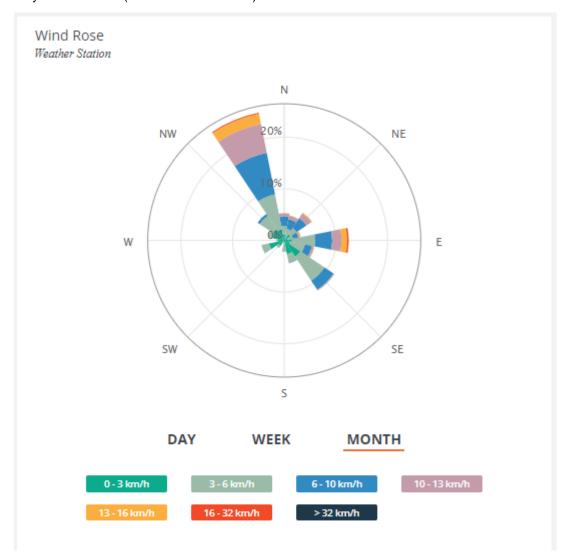


Figure 7 Mayne Yard East Wind Rose October 2023

3.1.11.2.3 Air Quality Complaints

During the reporting period, no air quality complaints were received for works associated with Mayne Yard from nearby sensitive receivers.



3.1.11.3 Clapham Yard TSP Data October 2023

During the September reporting period, there was one exceedance of both TSP and PM₁₀ levels. This exceedance on the 21st of September appears to be related to bushfire events in and around the Brisbane area during the September Period.

During the October reporting period, there were two exceedances of both TSP and PM₁₀ levels recorded at the Clapham Yard particulate monitor.

The exceedances recorded on 1 and 2 October, while also in the same period as the bushfire period, occurred in the days following the Clapham to Salisbury SCAS, during which the Clapham Yard was being utilised as a staging area for the project site. The location of the dust monitor was adjacent to the mixing area for the large stockpile at the southern end of the site and the process of mixing the saturated soils from the horizontal directional drilling with the dry material from this stockpile may have resulted in the exceedance.

No air quality complaints were received in relation to Clapham Yard works for the reporting period.

3.1.11.3.1 UNITY Works

During the reporting period Clapham Yard Works consisted of BR94 RSS wall works and Energex cutover works.

The Clapham Yard site is almost entirely capped and exposed areas such as batters and stockpiles have been glued down with a polymer spray which binds soil particles, forming a crust to manage erosion and sediment control and dust generation. Haul roads, active stockpiles and laydown areas are treated with water carts.

3.1.11.3.2 Meteorological Conditions

As shown in the Wind Rose below (refer Figure 8), the predominant winds during the lag in TSP data period were from an easterly and north-easterly direction (refer to Attachment 3).



Wind Rose Weather Station

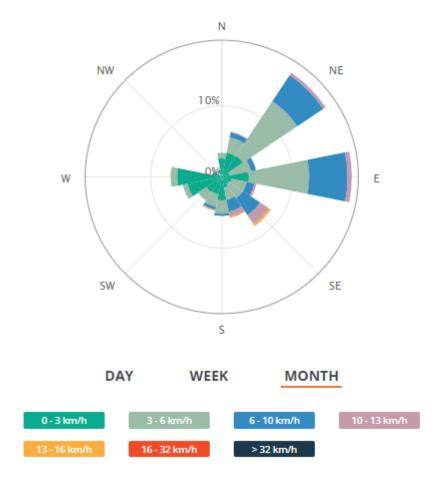


Figure 8 Clapham Yard Wind Rose October 2023

3.1.11.3.3 Air Quality Complaints

During the reporting period, no air quality complaints were received for works associated with Clapham Yard from nearby sensitive receivers.

Additional remodelling was also completed by the Project CAQP which confirmed that the current scope of Works at Clapham Yard does not trigger particulates monitoring.

Finally, the Project continues to meet their requirements under Imposed Condition 13 and the OEMP, through the implementation of site controls and management of activities of the Project.

Water Quality

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

Imposed 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*.

Imposed Condition 15(a) requires that discharges of groundwater from Project Works within Moolabin Creek, Yeerongpilly – Oxley Creek catchment must comply with the Oxley Creek - Lowland freshwater



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 Imposed Condition 15(a) was not triggered during the reporting period. There were no groundwater discharges during the reporting period.

Water quality monitoring to demonstrate compliance with Condition 15(b) and Condition 18 was triggered during the reporting period. Post rainfall response monitoring was undertaken.

3.1.12 Rainfall Records

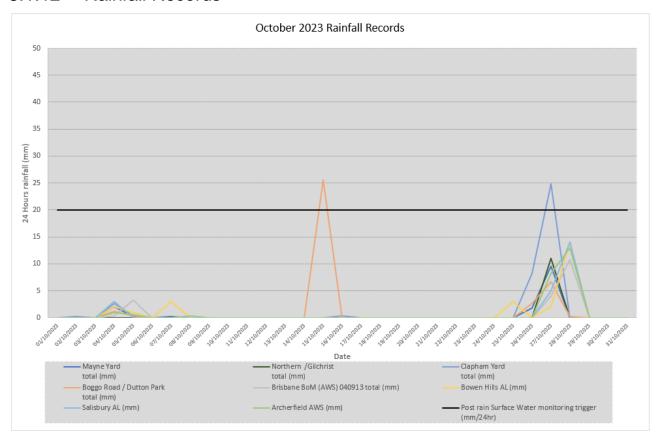


Figure 9 October 2023 Rainfall Records

3.1.13 Post Rainfall Monitoring Results

Post rainfall monitoring is triggered typically following any rainfall event exceeding 20 to 25 mm over 24 hours, however, storm events during the high-risk period of the year (November to March) of lesser amounts but of a higher intensity may cause run-off which would also trigger post-rain monitoring consistent with the C-EMP.

Post rainfall monitoring was triggered as per Condition 15(b) and Condition 18 on 28 October and reported on below with the RIS scope of works remaining compliant with Imposed Conditions 15 and 18.

The pH values at SW-07a (upstream) and SW-07 (midstream) exceed the Project Water Quality Objectives as outlined in the C-EMP. However, as the pH exceedance is highest upstream of project works and is within parameters at SW-08 (downstream), the exceedance cannot be attributed to project works.



Date	Location	Waterway	Discharge Criteria	Discharge Criteria ¹				
			Turbidity (NTU) Nil until Turbidity / TSS correlation achieved ²	TSS (mg/L) <50	DO (%) Nil	pH (pH Unit) Stable pH reading; and General sites: 6.5 – 8.5, or Wallum/ Acidic Ecosystems: 5.0 – 7.0		
28 Oct	SW-05 (Upstream)	Moolabin Creek	3.8	12	70	8		
28 Oct	SW-06 (Downstream)	Moolabin Creek	5.4	16	71	8.1		
28 Oct	SW-7A (Upstream)	Rocky waterholes	16.66	34	93	9.5		
28 Oct	SW-07 (Midstream)	Rocky waterholes	17.87	18	55	8.7		
28 Oct	SW-08 (Downstream)	Rocky Waterholes	17.46	34	56	8.49		

3.1.14 Routine Surface Water Monitoring Results

During the reporting period, UNITY did not undertake routine surface water quality monitoring.

A review of the data sample has identified that over twelve months of continuous data collection has occurred with over 20 monitoring events. The frequency of background monitoring has therefore been reduced to bi-annually, with the dry season (April to August) monitoring completed in June.

Wet season (November to March) monitoring is scheduled for early in the new year.

This reduction of monitoring frequency is acceptable to continue informing the Dis-1 Credit for the ISCA 'Excellent Rating' the Project is pursuing.

¹ Refer to the waterways and water quality management plan, a C-EMP sub-plan for details of derivation of the discharge criteria.

² Correlations are typically run on the source water (i.e., basins) not the receiving system where there is a dilution component of potentially diffuse sources of sediments from non-Project related areas. Due to the very limited amount of discharges the RIS Scope of Works has experienced, there is no correlation available. Typically, a minimum of 20 data points is used to determine TSS / in field turbidity correlation for site waters.



Table 9 Routine Surface Water Monitoring Results

Date	Location	Waterway	Tide	Turbidity (NTU)	TSS (mg/L)	DO (%)	pH (pH unit)
28 Oct	SW-5 – Upstream rail corridor	Moolabin Creek	Not applicable – non-tidal environment	Field: 1.77 Lab: 3.8	12	70	8.0
28 Oct	SW-6 – Downstream of rail corridor	Moolabin Creek	Not applicable – non-tidal environment	Field: 5.4 Lab: 5.4	16	71	8.1
28 Oct	SW-7a – Upstream of rail corridor	Rocky Water Holes Creek	Not applicable – non-tidal environment	Field: 16.65 Lab: 8.4	34	93	9.5
28 Oct	SW-7 – Upstream of rail corridor	Rocky Water Holes Creek	Not applicable – non-tidal environment	Field: 17.84 Lab: 5.1	18	55	8.7
28 Oct	SW-8 – Downstream of rail corridor	Rocky Water Holes Creek	Not applicable – non-tidal environment	Field: 17.46 Lab: 7.3	34	56	8.49

3.1.15 Groundwater Discharge Monitoring Results

Groundwater discharge monitoring was not triggered during the reporting period.

3.1.16 Surface Water Discharge Monitoring

Table 11 Surface Water Discharge Results

Date	Location	Waterway	Discharge Criteria ³			
			Turbidity (NTU) Nil until Turbidity / TSS correlation achieved ⁴	TSS (mg/L) <50	DO (%) Nil	pH (pH Unit) Stable pH reading; and General sites: 6.5 – 8.5, or Wallum/Acidic Ecosystems:
Nil – li	Not Triggered					5.0 – 7.0

³ Refer to the waterways and water quality management plan, a C-EMP sub-plan for details of derivation of the discharge criteria

⁴ Correlations are typically run on the source water (i.e., basins) not the receiving system where there is a dilution component of potentially diffuse sources of sediments from non-Project related areas. Due to the very limited amount of discharges the RIS Scope of Works has experienced, there is no correlation available. Typically, a minimum of 20 data points is used to determine TSS / in field turbidity correlation for site waters.



4 Compliance Review

Non-Compliance Events

The below section summarises the events to be reported in accordance with Imposed Condition 5 and Imposed Condition 6(b)(ii). A non-compliance event (NCE) 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
N/A for reporting	period				

C-EMP Compliance

The below table summarises compliance status with the C-EMP and monitoring requirements of relevant sub-plans for the reporting period.

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

	-Livir and relevant Subplans monitorii	.g q		,	
Aspect	Monitoring requirement	Activities risk profile	Monitoring undertaken	Compliance status with C- EMP / 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 is undertaken as part of routine inspections. Monitoring for TSP, PM ₁₀ , and deposited dust was also undertaken TSP, PM ₁₀ monitoring was carried out for three active Worksites	Compliant Compliant	Not Applicable
Air Quality	Complaint's response	Moderate to High	Not triggered	Compliant	Not Applicable
Noise	Buffer distance tests based on the outcomes of the predictive assessment based / risk profile of activities	Moderate to High	No– noise monitoring was not triggered based on the outcome of predictive noise models for the SCAS works in October, however monitoring was undertaken for works at Yeerongpilly during the SCAS which extended into October.	Compliant	Not Applicable
Noise	Plant noise audits for noisy plant to validate models input as required	Moderate to High	No	N/A	Not Applicable
Noise	Complaint's response	Moderate to High	Not triggered	N/A	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 – monitoring triggered for RNA Stage 3 Works	Compliant	Not Applicable



Aspect	Monitoring requirement	Activities risk profile	Monitoring undertaken	Compliance status with C- EMP / Subplan	Effect of the non-compliance
Vibration	Complaint's response	Moderate to High	Not triggered No complaints	N/A	Not Applicable
Water Quality	Bi-Annual monitoring	N/A	Dry Season monitoring completed during the reporting period. Wet season monitoring to be completed later in the year.	Compliant	Not Applicable
Water Quality	Post Rainfall	Moderate to High	Triggered in the south, Field and lab testing undertaken	Compliant	Not Applicable
Water Quality	Dewatering	Moderate to High	Not triggered No dewatering to stormwater	Compliant	Not Applicable



Attachment 1 Imposed Conditions Non-Compliance Event Report (if required)



Attachment 2 Monitoring Locations – Noise and Vibration



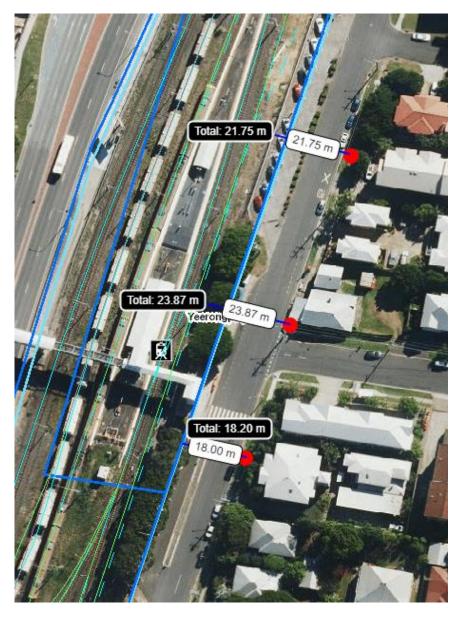


Figure 10 Yeerongpilly Station Noise Monitoring 30 September 2023



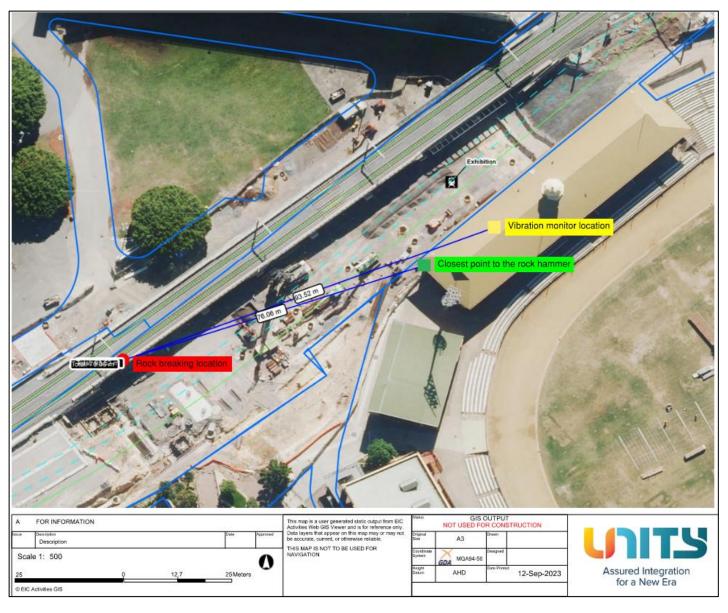
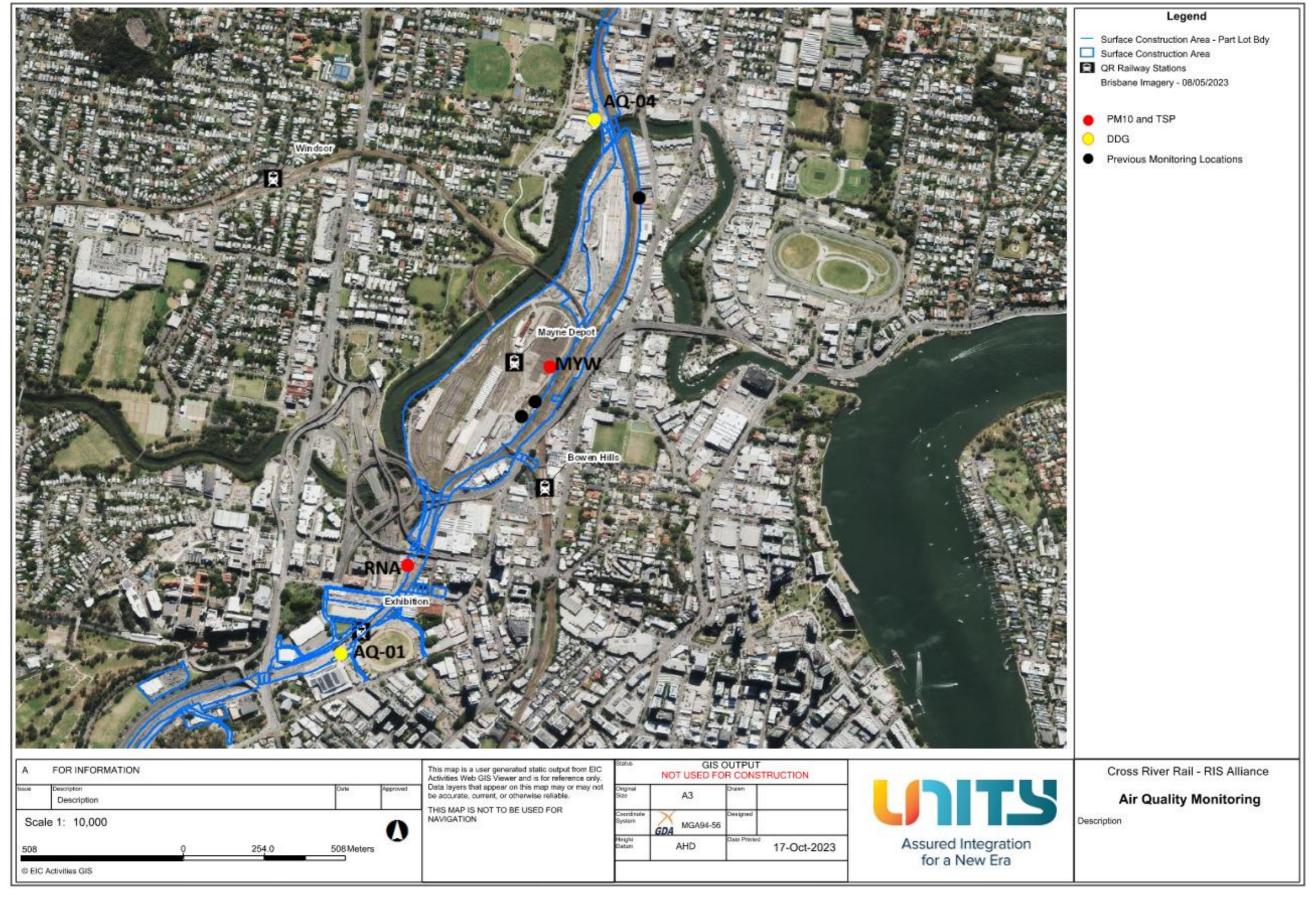


Figure 11 RNA Vibration Monitoring October 2023

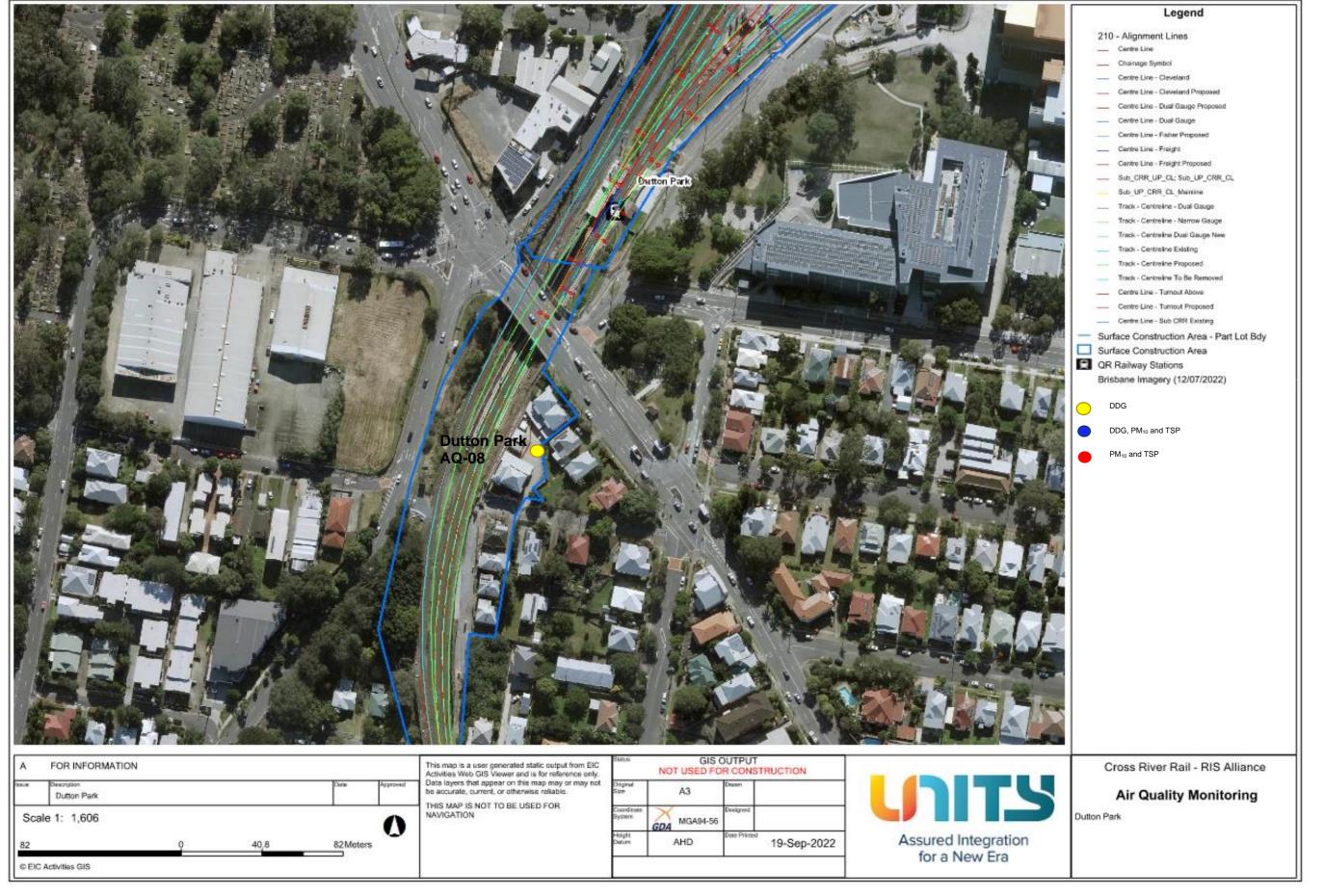


Attachment 3 Monitoring Locations – Air Quality

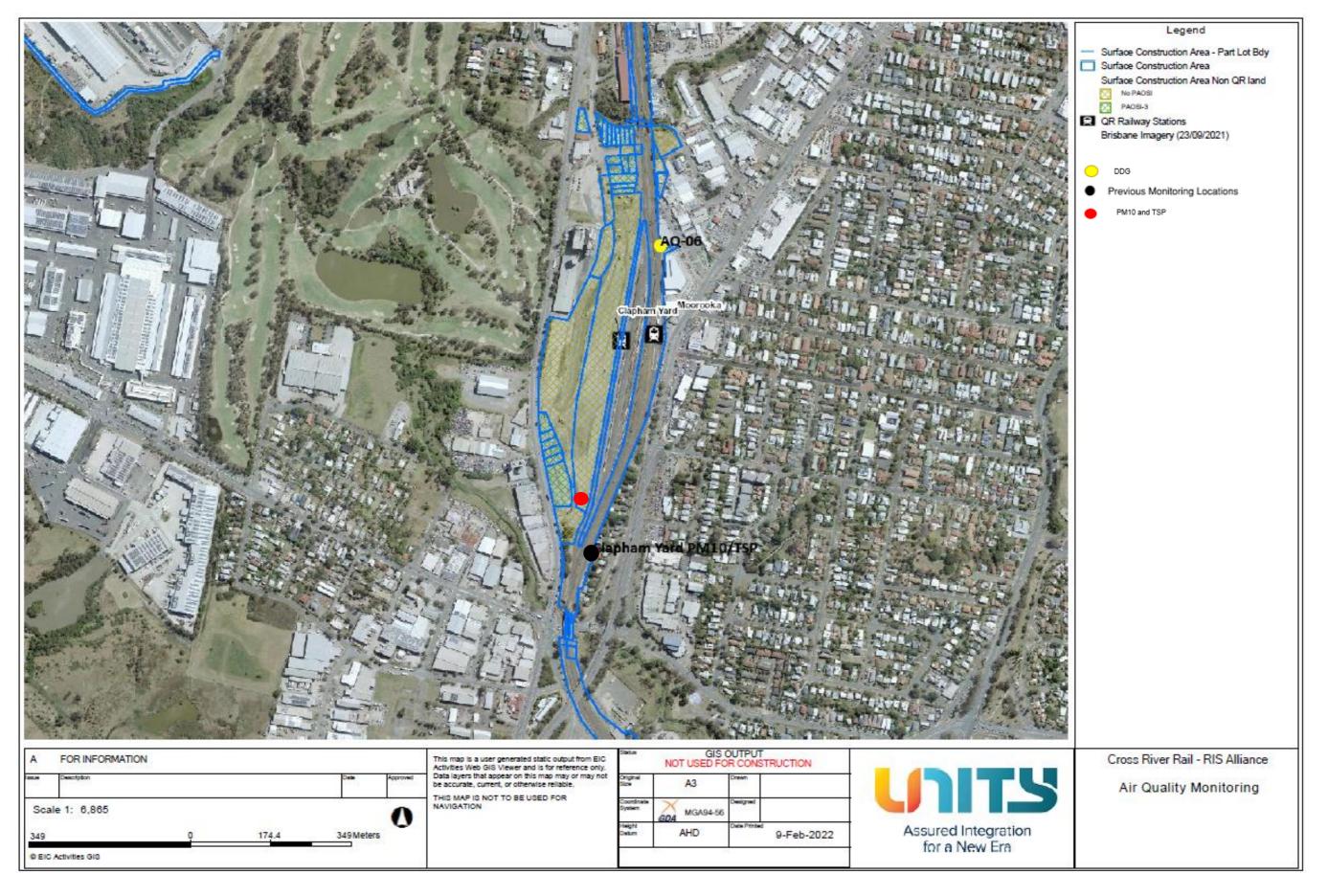








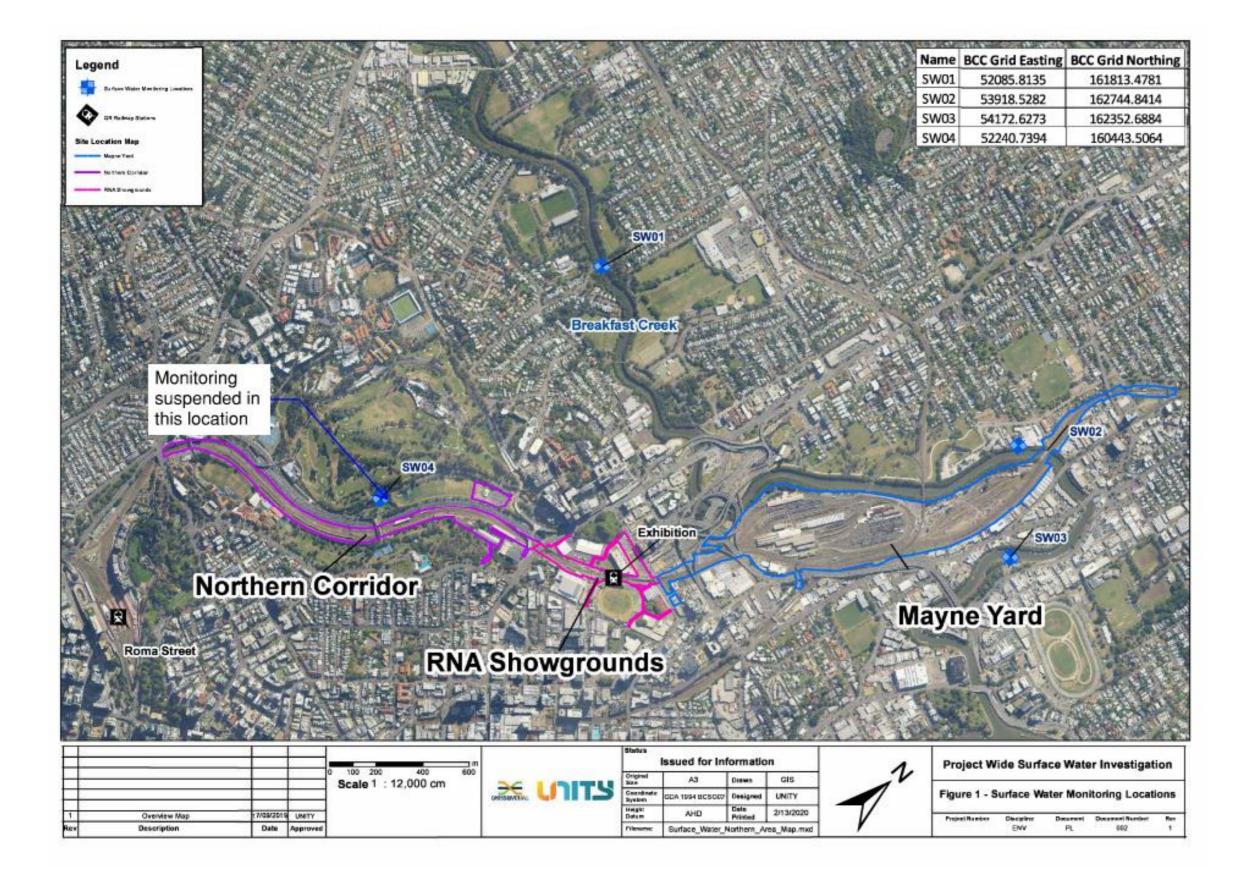




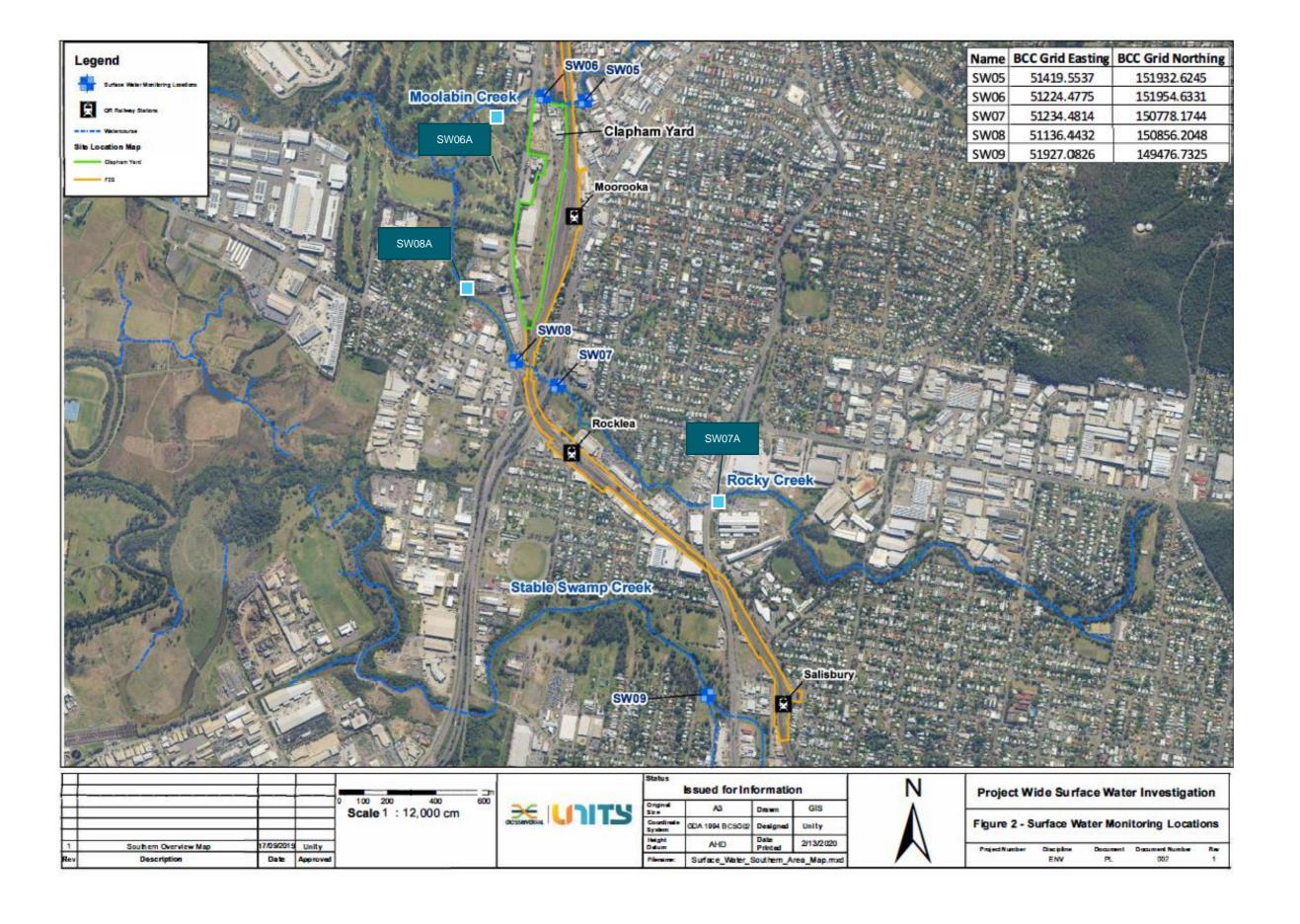


Attachment 4 Monitoring Locations – Surface Water









Appendix B TSD Monthly Report







COORDINATOR-GENERAL'S MONTHLY REPORT: OCTOBER 2023

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

1. Monthly Monitoring Summary

It is CBGU Joint Venture'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.

No vibration monitoring was triggered or required in October 2023. Noise monitoring was conducted on fourteen (14) occasions during October 2023. Each noise and vibration monitoring event that was undertaken confirmed works adhered to project requirements.

Ambient air quality monitoring was conducted at Roma Street, Albert Street, Woolloongabba, Boggo Road, Southern Portal and Northern Portal precinct sites during October 2023. Air quality monitoring confirmed works adhered to project requirements.

Water quality monitoring was conducted before the release of water from the site on nineteen (19) occasions. Each monitoring event confirmed project requirements were adhered to. One (1) round of surface water quality monitoring was conducted; the monitoring event confirmed no impacts were generated by the Project.

Cross River Rail – Tunnel and Stations

Document Number: CRR-TSD-RPT-CG-202310









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	CBGU project works have been conducted in compliance 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	All CBGU works were conducted in accordance with the Construction Environmental Management Plan (CEMP) (Rev 11).
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	CBGU project works have been conducted in accordance with the approved hours of work.









CG Condition	Requirement Summary	Compliance Met (Yes/No/NA)	Comment
11.	Noise – Work must aim to achieve internal noise goals for human health and well-being.	Yes	CBGU 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	CBGU 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	CBGU 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	CBGU 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	CBGU has prepared and manages processes to 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	CBGU 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 CBGU Project works 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	CBGU has prepared and manages processes to ensure erosion & sediment control is managed in accordance with Imposed Condition 18.









CG Condition	Requirement Summary	Compliance Met (Yes/No/NA)	Comment
19.	Acid Sulfate Soils managed as per the Queensland Acid Sulfate Soil Technical Manual.	Yes	CBGU has prepared and manages processes to ensure acid sulphate soils are 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	CBGU 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	CBGU project works are designed and implemented in accordance with Condition 21.
22.	Flood Water – Temporary emission to allow the release of Flood Waters to high flow receiving waters.	Yes	CBGU project works have been conducted in accordance with the provisions available to manage floodwaters.









3. 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's Change Reports acknowledges instances where these goals may not be achieved.

No vibration monitoring was triggered or required in October 2023.

Table 2: Vibration Monitoring Data

No.	Start Date Time (AM/PM)	Finish Date	Location	Average Vibration level (mm/s)	Max Vibration Level (mm/s)	Vibration Goal (mm/s)	Receiver / Goal Type	Adhered to Project Requirements (Yes / No)
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Nil

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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 Reports acknowledge instances where these goals may not be achieved.

Noise monitoring was conducted on fourteen (14) occasions during October 2023. All noise monitoring data adhered to Project requirements and is provided in the table below.

Table 3: Noise Monitoring Data

No.	Date	Time (AM / PM)	Location (Street Name) (Construction Precinct)	Purpose of Monitoring	Internal or External ^[3] Monitoring	Activity	Dominant Noise Source	Noise Goal LA10 ^[1]	Noise level LA10	Noise Goal LAeq ^[2]	Noise level LAeq	Adhered to Project Requirements (Yes / No)
1.	5/10/2023	9:01 AM	Albert Street (Albert Street Precinct)	Construction Monitoring at Sensitive Places	External	Demolition Works	Construction	72	74.2	62	71.5	Yes
2.	9/10/2023	10:00 PM	Albert Street (Albert Street Precinct)	Construction Monitoring at Sensitive Places	Internal	Demolition works and concrete works	Construction	42	37.6	35	36.3	Yes
3.	9/10/2023	10:17 PM	Albert Street (Albert Street Precinct)	Construction Monitoring at Sensitive Places	External	Demolition works and concrete works	Construction	59	70.2	52	69.1	Yes
4.	9/10/2023	9:21 PM	Albert Street (Albert Street Precinct)	Construction Monitoring at Sensitive Places	Internal	Demolition works and concrete works	Construction	50	42	40	41.4	Yes
5.	10/10/2023	9:53 AM	Stanley Street (Woolloongabba Precinct)	Model Verification	External	Earthworks	Road Traffic	67	72	57	68.9	Yes

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No.	Date	Time (AM / PM)	Location (Street Name) (Construction Precinct)	Purpose of Monitoring	Internal or External ^[3] Monitoring	Activity	Dominant Noise Source	Noise Goal LA10 ^[1]	Noise level LA10	Noise Goal LAeq ^[2]	Noise level LAeq	Adhered to Project Requirements (Yes / No)
6.	18/10/2023	11:06 AM	Peter Doherty Street (Boggo Road Precinct)	Construction Monitoring at Sensitive Places	External	Earthworks	Construction	67	71.7	62	69.7	Yes
7.	20/10/2023	10:58 AM	Albert Street (Albert Street Precinct)	Construction Monitoring at Sensitive Places	External	Demobilisation works	Construction	72	67.4	62	71.4	Yes
8.	23/10/2023	9:25 PM	Albert Street (Albert Street Precinct)	Construction Monitoring at Sensitive Places	Internal	Concrete works	Construction	50	44.5	40	43.2	Yes
9.	23/10/2023	10:08 PM	Albert Street (Albert Street Precinct)	Construction Monitoring at Sensitive Places	Internal	Concrete works	Construction	42	41.1	35	39.9	Yes
10.	23/10/2023	10:37 PM	Albert Street (Albert Street Precinct)	Construction Monitoring at Sensitive Places	Internal	Concrete works	Construction	42	37.9	35	36.6	Yes
11.	23/10/2023	10:57 PM	Albert Street (Albert Street Precinct)	Construction Monitoring at Sensitive Places	Internal	Concrete Works	Construction	42	36.4	35	34.7	Yes
12.	31/10/2023	10:14 PM	Albert Street (Albert Street Precinct)	Construction Monitoring at Sensitive Places	Internal	Concrete works	Construction	42	32	35	30.9	Yes









No.	Date	Time (AM / PM)	Location (Street Name) (Construction Precinct)	Purpose of Monitoring	Internal or External [3] Monitoring	Activity	Dominant Noise Source	Noise Goal LA10 ^[1]	Noise level LA10	Noise Goal LAeq ^[2]	Noise level LAeq	Adhered to Project Requirements (Yes / No)
13.	31/10/2023	10:31 PM	Albert Street (Albert Street Precinct)	Construction Monitoring at Sensitive Places	Internal	Utilities works	Construction	42	35.3	35	32.6	Yes
14.	31/10/2023	11:09 PM	Albert Street (Albert Street Precinct)	Construction Monitoring at Sensitive Places	Internal	Concrete works	Construction	42	46.6	35	45.6	Yes

^[1] Intermittent noise goal (LA10)

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^[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.









Air Quality

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 acknowledges instances that exist that these goals may not be achieved. Dust deposition monitoring was performed in October 2023. The dust deposition gauge results for the reporting period are detailed below, and all monitoring data adhered to project requirements.

Table 4.2.2: Air Quality Monitoring – October Deposited Dust Data

	Proj	ect Wide Air Quality	Goals ^[1]			
Location	Criterion	Air Quality Indicator	Goal (mg/m²/day)	Monitoring results (mg/m²/day)	Comments	
Northern Portal				41.38		
Roma Street Precinct				22.58 37.50		
Albert Street Precinct (North)						
Albert Street Precinct (South)				18.75		
Woolloongabba Precinct (North)		Danasitad dust	100	16.13	Air quality monitoring was performed during the	
Woolloongabba Precinct (South)	- Nuisance	Deposited dust	120	58.06	reporting period. All results adhered to project requirements.	
Boggo Road Precinct (North)				13.79		
Boggo Road Precinct (South)				31.03		
Southern Portal (South)				24.14		
Southern Portal (East)				17.24		

^[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.

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^[2] The Northern Portal dust deposition monitoring has been handed over to UNITY Alliance. CBGU's scope of work consists of mechanical and electrical fit-out within the tunnel. As such, no Northern portal data will be reported in future months.









3.3.2 Ambient Air Quality Results

Total Suspended Particles (TSP) and particulate matter less than 10µm (PM10) monitoring were conducted during October 2023.

TSP and PM10 are monitored using portable air quality units and nearby Government air quality stations. Targeted monitoring of potential dust-generating activities is conducted by the mobile air quality units and was completed at Albert Street, Woolloongabba and Boggo Road Precincts during October 2023. Three (3) Government air quality stations near the Construction Precincts are also utilised.

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

	TSP	TSP PM10		ongabba	Alb	ert	Boggo	Road	Northern Portal	
Date	Project Goal [1]	Project Goal	TSP	PM 10	TSP	PM 10	TSP	PM 10	TSP	PM 10
					μg/m³/24 l	nr)				
01-Oct-23	80	50	12.29	12.18	6.04	5.58	_ [2]	_ [2]	_[4]
02-Oct-23	80	50	10.73	10.69	6.15	5.76	_ [2]	_ [2]	_[4]
03-Oct-23	80	50	16.15	16.07	10.56	9.25	_ [2]	_[2]	_[4]
04-Oct-23	80	50	15.18	15.08	10.85	9.64	_ [2]	_[2]	_[4]
05-Oct-23	80	50	13.60	13.32	24.45	18.50	_ [2]	_[2]	_[4]
06-Oct-23	80	50	13.71	13.55	21.36	16.22	_ [2]	_[2]	_[4]
07-Oct-23	80	50	7.57	7.49	10.87	8.81	_ [2]	_[2]	_[4]
08-Oct-23	80	50	7.52	7.47	5.16	4.69	_ [2]	_ [2]	_[4]
09-Oct-23	80	50	7.92	7.81	10.83	8.61	_ [2]	_[2]	_[4]
10-Oct-23	80	50	11.85	11.72	11.62	9.46	_ [2]	_[2]	_[4]
11-Oct-23	80	50	10.46	10.31	11.30	8.94	_ [2]	_[2]	_[4]
12-Oct-23	80	50	11.12	10.98	8.96	7.10	_ [2]	_[2]	_[4]
13-Oct-23	80	50	12.95	12.79	12.18	10.08	_ [2]	_[2]	_[4]
14-Oct-23	80	50	17.12	16.74	10.79	9.46	_ [2]	_[2]	_[4]
15-Oct-23	80	50	13.46	13.36	7.44	6.72	_ [2]	_ [2]	_[4]
16-Oct-23	80	50	16.30	16.14	11.81	9.88	_ [2]	_ [2]	_[4]
17-Oct-23	80	50	39.84	39.50	24.02	20.68	_ [2]	_ [2]	_[4]
18-Oct-23	80	50	23.27	23.12	15.92	13.55	_ [2]	_[2]	_[4]

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	TSP	PM10	Woolloongabba		Albe	ert	Boggo	Road	Northern Portal	
Date	Project Goal [1]	Project Goal	TSP	PM 10	TSP	PM 10	TSP	PM 10	TSP	PM 10
					(μg/m³/24 h	nr)				
19-Oct-23	80	50	9.92	9.75	14.38	11.64	_ [2]	_[2]	_[4]
20-Oct-23	80	50	_ [3]	_[3]	13.08	10.55	4.60	4.59	_[4]
21-Oct-23	80	50	_ [3]	_ [3]	7.96	6.72	5.43	5.42	_[4]
22-Oct-23	80	50	_ [3]	_[3]	8.30	7.72	10.82	10.82	_[4]
23-Oct-23	80	50	_ [3]	_ [3]	10.88	9.64	11.08	11.07	_[4]
24-Oct-23	80	50	_ [3]	_ [3]	9.68	8.06	6.25	6.25	_[4]
25-Oct-23	80	50	_ [3]	_[3]	9.67	7.86	5.37	5.36	_[4]
26-Oct-23	80	50	_ [3]	_[3]	17.12	13.83	9.56	9.54	_[4]
27-Oct-23	80	50	_ [3]	_[3]	10.69	8.26	1.80	1.79	_[4]
28-Oct-23	80	50	_ [3]	_ [3]	7.14	6.16	2.32	2.32	_[4]
29-Oct-23	80	50	_ [3]	_ [3]	8.33	7.88	13.53	13.53	_[4]
30-Oct-23	80	50	_ [3]	_[3]	9.98	8.28	9.74	9.73	_[4]
31-Oct-23	80	50	21.63	21.48	15.27	12.84	13.44	13.43	_[4]

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

^[2] The Boggo Road air quality unit experienced technical difficulties from the 1st – 19th of October. As soon as practicable, the unit was inspected, and the manufacture was contacted to assist with resolving the issue. The air quality unit was sent to the manufacture for repair and reinstated as soon as practicable. A nearby (Woolloongabba) DES Air Quality Station demonstrated compliant air quality during this outage period. These results are provided below. Low levels were also consistently monitored throughout the month when the unit was operating.

^[3] The Woolloongabba air quality unit was uninstalled to allow annual NATA calibration. As soon as practicable, a replacement unit was installed. A nearby (Brisbane CBD) DES Air Quality Station demonstrated compliant air quality during this outage period.

^[4] The Northern Portal air quality unit has been decommissioned. CBGU's scope of work consists of mechanical and electrical fit-out within the tunnel. As such, Northern portal data will not be reported in future



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

- Brisbane CBD: PM10 daily maximum average: **43.5** µg/m3/24 hr (https://apps.des.qld.gov.au/air-quality/chart/?station=cbd¶meter=18&date=1/10/2023&timeframe=month)
- South Brisbane: PM10 daily maximum average: **47.7** µg/m3/24 hr (https://apps.des.qld.gov.au/air-quality/chart/?station=sbr¶meter=18&date=1/10/2023&timeframe=month)
- Woolloongabba: PM10 daily maximum average: **41.7** µg/m3/24 hr (https://apps.des.qld.gov.au/air-quality/chart/?station=woo¶meter=18&date=1/10/2023&timeframe=month).

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

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Particle PM₁₀ at Brisbane CBD, 1-31 October 2023 @ about Particle PM₁₀ Brisbane CBD station overview The guideline for Particle PM₁₀ is 100μg/m³ (1hr avg) and 50μg/m³ (24hr avg). Daily maximum hourly average (µg/m³ (1hr avg)) 150 4 Oct 6 Oct 8 Oct 10 Oct 12 Oct 14 Oct 16 Oct 18 Oct 20 Oct 22 Oct 24 Oct 26 Oct 28 Oct 30 Oct 2 Oct Daily maximum air quality category (based on 1hr avg) 750 ₹ 500 14[] [W/20] 250 2 Oct 4 Oct 6 Oct 8 Oct 10 Oct 12 Oct 14 Oct 16 Oct 18 Oct 20 Oct 22 Oct 24 Oct 26 Oct 28 Oct 30 Oct Daily maximum running average (µg/m³ (24hr avg)) 2 Oct 4 Oct 6 Oct 8 Oct 10 Oct 12 Oct 14 Oct 16 Oct 18 Oct 20 Oct 22 Oct 24 Oct 26 Oct 28 Oct 30 Oct Daily maximum hourly measurement (µg/m³) 100

Figure 1: Brisbane CBD - DES Station - PM10 graph for October 2023 (reproduction from the DES website).









Particle PM₁₀ at South Brisbane, 1-31 October 2023 @ about Particle PM₁₀

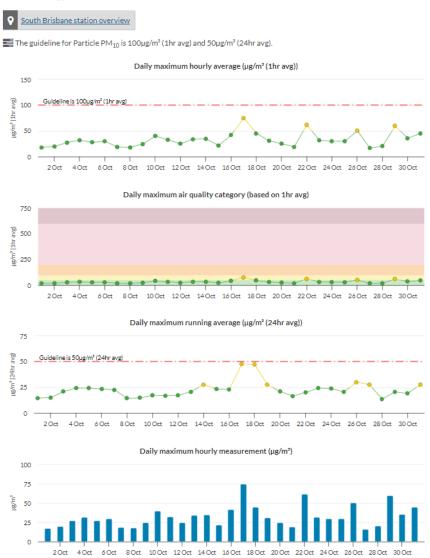


Figure 2: South Brisbane – DES Station - PM10 graph for October 2023 (reproduction from the DES website).









Particle PM₁₀ at Woolloongabba, 1-31 October 2023 @ about Particle PM₁₀



Figure 3: Woolloongabba – DES Station - PM10 graph for October 2023 (reproduction from the DES website).

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3.4 Water Quality – Discharge

CBGU undertook four (4) water quality monitoring events before the release (groundwater and surface water) from the site.

3.4.1 Groundwater Discharge

Water quality monitoring data is provided in the table below.

Table 6: Groundwater Discharge – Water Quality Monitoring Data

				Testing of Water Quality Objectives [1]									Adhered to
Location	Date	Ħ	Suspended solids (mg/L)	Turbidity (NTU)	Ammonia N (µg/L) [3]	Oxidised N (µg/L) [3]	Organic N (µg/L) [3]	Total nitrogen (µg/L) [4]	Total phosphorus (µg/L)	Filterable Reactive phosphorus (µg/L) [3]	Chlorophyll a (µg/L)	Dissolved oxygen (%) [2]	Project Requirements (Yes / No)
Boggo Road [5]	26/09/2023	8.07	<5	0.71	10	10	100	100	<10	<10	<1	103.41	Yes
Roma Street	12/10/2023	7.88	<5	0.10	240	630	700	1500	<10	<10	<1	98.04	Yes
Woolloongabba	16/10/2023	7.57	<5	1.39	140	680	400	1200	20	<10	<1	98.29	Yes
Albert Street	18/10/2023	7.81	<5	2.15	100	550	600	1200	60	<10	<1	101.67	Yes
Boggo Road	19/10/2023	8.05	33.00 ^[6]	5.91	100	220	400	700	40	<10	<3 ^[6]	104.46	Yes

^[1] 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.

- [5] At the completion of last month's report the Boggo Road water quality results were not received from the laboratory. The results are reported in this month's report.
- [6] Algae formation was observed at the Boggo Road water treatment plant during sampling. As a result, the water treatment plant underwent a full clean-out and the filtering system was also replaced. Suspended solids levels adhered to project requirements in that site practices are designed to aim to achieve the water quality objectives. Water quality objectives are not individual point source emission objectives, but the receiving water quality objectives. The Boggo Road median value for suspended solids is less than 7.38mg/L. The results are below that of the receiving environment. They are also considered abnormal compared to results from previous months.

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^{- [2]} All results adhere to Project requirements in that site practices are designed to aim to achieve the water quality objectives. The dissolved oxygen samples were acquired before discharge from the site. Pumping of the water will have inadvertently aerated the water, thus influencing the dissolved oxygen level.

^{- [3]} All results adhere to Project requirements in that site practices aim to achieve the water quality objectives. These samples identified results generally consistent with pre-construction conditions, and no external influences were introduced by construction activity.

^{- [4]} Total nitrogen levels adhered to project requirements in that site practices are designed to aim to achieve the water quality objectives. The results are mostly below that of the receiving environment. They are also considered abnormal compared to results from previous months, and are influenced by external factors (e.g., high rainfall events, overloaded sewage systems, fertilising natural areas, etc.) rather than related to construction activities.



-	Note: Testing of EPP (Water) Qu	uality Objectives are analysed at a NA	TA accredited laboratory each month (re	esults provided above). Field testing	g (turbidity, pH) is done regularly during ongoing discharge.

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3.4.2 Ponded/Surface Water Discharge

Discharged ponded/Surface water quality monitoring data is provided in the table below.

Table 7: Surface Water Discharge - Water Quality Monitoring Data

	valer bischarge Water Quality Worldon	- 1011. [4]			
			Testing of Water (Quality Objectives [1]	Adhered to Project Requirements
No.	Location	Date	рН	Turbidity (NTU)	(Yes / No)
1.	Northern Portal	28/09/2023	7.92	4.81	Yes
2.	Northern Portal	29/09/2023	7.93	1.02	Yes
3.	Northern Portal	4/10/2023	8.12	0.30	Yes
4.	Northern Portal	5/10/2023	8.14	1.24	Yes
5.	Northern Portal	6/10/2023	8.04	6.13	Yes
6.	Northern Portal	9/10/2023	8.04	0.34	Yes
7.	Northern Portal	10/11/2023	8.20	9.35	Yes
8.	Northern Portal	11/10/2023	8.15	3.60	Yes
9.	Northern Portal	13/10/2023	8.10	8.81	Yes
10.	Northern Portal	16/10/2023	7.99	0.48	Yes
11.	Northern Portal	17/10/2023	7.82	20.70	Yes
12.	Northern Portal	18/10/2023	7.85	10.20	Yes
13.	Northern Portal	20/10/2023	7.72	7.86	Yes
14.	Northern Portal	23/10/2023	8.02	0.67	Yes
15.	Northern Portal	24/10/2023	8.05	20.30	Yes









16.	Northern Portal	25/10/2023	8.01	4.26	Yes
17.	Northern Portal	26/10/2023	8.10	1.42	Yes
18.	Northern Portal	27/10/2023	7.88	34.90	Yes
19.	Northern Portal	30/10/2023	8.15	1.90	Yes

^[1] The Project's discharge procedure is designed to minimise environmental impact and aim to achieve the water quality objectives. All discharges were compliant with Guidelines for Best Practice Erosion and Sediment Control (IECA, 2008) and the Department of Transport and Main Roads' Technical Standard MRTS 52 - Erosion and Sediment Control.









3.5 Water Quality – Surface Water

During October 2023, CBGU JV undertook one (1) round of surface water sampling at five (5) site 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 generally appears good, and water discharge from the Project would not have had an impact on the catchment, considering the results also provided within section 3.4 above.

Table 8: Offsite Upstream & Downstream Water Quality Data

Location	Upstream / Downstream	Date	Purpose of Monitoring	Turbidity (NTU)	Dissolved oxygen (%)	рН
Northern Portal	Upstream	12/10/2023	Monthly	5.18	74.65	7.65
Northern Portal	Downstream	12/10/2023	Monthly	11.38	81.99	8.04
Roma Street	Upstream	12/10/2023	Monthly	9.73	88.26	8.48
Roma Street	Downstream	12/10/2023	Monthly	10.04	90.61	8.52
Albert Street	Upstream	18/10/2023	Monthly	31.2	93.19	7.74
Albert Street	Downstream	18/10/2023	Monthly	28.4	93.19	7.6
Woolloongabba	Upstream	19/10/2023	Monthly	32.9	100.25	7.89
Woolloongabba	Downstream	19/10/2023	Monthly	19.3	106.28	7.78
Boggo Road [1]	Downstream	19/10/2023	Monthly	20.4	77.83	7.22

^{- [1]} Monitoring at the Boggo Road site occurs at a culvert outlet at the beginning of the surface catchment. There is no upstream/downstream monitoring point as such. The culvert 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 9: Non-Compliance Events this Month

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			









5 <u>Complaints</u>

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

During October 2023, three (3) complaints relating to the Project were received, as detailed in Table 10 below.

Table 10: Summary of Complaints

No.	Date	Location	Description of Issue	Responses	Status of Event
1.	9/10/2023	Albert Street (Albert Street Precinct)	Noise	A stakeholder contacted the Project regarding noise generated from the Albert Street worksite. CBGU provided the stakeholder with an overview of the works occurring and their duration. CBGU also outlined the mitigation measures used to alleviate potential impacts and ensure compliance. CBGU reviewed the circumstances and monitoring confirmed works adhered to the Project's noise requirements, and the works undertaken were consistent with the community notification.	Closed
2.	11/10/2023	Albert Street (Albert Street Precinct)	Noise	A stakeholder contacted the Project regarding noise generated from the Albert Street worksite. CBGU provided the stakeholder with an overview of the works occurring and their duration. CBGU also outlined the mitigation measures used to alleviate potential impacts and ensure compliance. CBGU reviewed the circumstances and monitoring confirmed works adhered to the Project's noise requirements, and the works undertaken were consistent with the community notification.	Closed
3.	23/10/2023	Albert Street (Albert Street Precinct)	Noise	A stakeholder contacted the Project regarding noise generated from the Albert Street worksite. CBGU provided the stakeholder with an overview of the works occurring and their duration. CBGU also outlined the mitigation measures used to alleviate potential impacts and ensure compliance. CBGU reviewed the circumstances and monitoring confirmed works adhered to the Project's noise requirements, and the works undertaken were consistent with the community notification.	Closed

Cross River Rail – Tunnel and Stations

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