PATONS LANE RESOURCE RECOVERY CENTRE

Orchard Hills Waste and Resource Management Facility

MP09_0074

Annual Environmental Management Review

1 September 2021 to 31 August 2022

12 February 2024

CONTACT

HEATHER TILLEY
Associate Technical Director

E heather.tilley@arcadis.com

Arcadis
Level 16 580 George St
Sydney, NSW, 2000

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SRC OPERATIONS PTY LTD

PATONS LANE RESOURCE RECOVERY CENTRE

Orchard Hills Waste and Resource Management Facility

Annual Environmental Management Review

Author	Chris Power	
Checker	Heather Tilley	
Approver	Heather Tilley	

Report No 30060351

Date 12/02/2024

Revision Text D

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REVISIONS

Revision	Date	Description	Prepared by	Approved by
A	20/05/2022	Draft for Client Review	HT/CP	HT
B	20/09/2023	Updated with additional information	TK	HT
C	05/02/2024	Final Draft for Client Review	TK	HT
D	12/02/2024	Final for DPHI submission	HT	HT

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ACRONYMS AND GLOSSARY

Acronym	Meaning
AHD	Australian Height Datum
AQMP	Air Quality and Greenhouse Gas Management Plan
AEMR	Annual Environmental Management Review
BH	Borehole
BWL&VMP	Bund Wall, Landscaping and Vegetation Management Plan and Rehabilitation Plan
CAMP	Contamination & Asbestos Management Plan
CLC	Community Liaison Committee (CLC)
CoC	Conditions of Consent
C&I	Commercial and industrial
C&D	Construction and demolition
DD	Deposited dust
DO	Dissolved oxygen
DPIE	Department of Planning, Industry and Environment
EC	Electrical conductivity
EPA	Environmental Protection Authority
EP&A Act	*Environmental Planning and Assessment Act 1979*
EPL	Environmental Protection Licence
FEMP	Fire and Emergency Management Plan
LDP	Licenced discharge point
LEMP	Landfill Environmental Management Plan
LMP	Litter Management Plan
MWOO	Mixed waste organic outputs
NML	Noise management levels
NSL	No specific limit
PLRRC	Patons Lane Resource Recovery Centre
PM_{10}	Particulate matter < 10 µm
QOMP	Quarry Operation Management Plan
ONMP	Operational Noise Management Plan
RRC	Resource Recovery Centre
Reporting Period	1 April 2020 to 31 March 2021 and 1 April 2021 to 31 August 2021
Sch	Schedule
SWLMP	Soil, Water and Leachate Management Plan
TDS	Total dissolved solids
TEOM	Tapered Element Oscillating Microbalances
TNMP	Traffic Noise Management Plan

Acronym	Meaning
TOC	Total organic carbon
TSP	Total suspended particulates
TSS	Total suspended solids
WRRMP	Waste and Resource Recovery Monitoring Program

TITLE BLOCK

Name of operation	Patons Lane Resource Recovery Centre *(Approval refers to Orchard Hills Waste and Resource Management Facility)*
Name of operator	SRC Operations Pty Limited (a wholly owned subsidiary of Bingo Industries Limited)
Development consent	MP09_0074 as Modified (March 2016)
Name of holder of development	SRC Operations Pty Limited (a wholly owned subsidiary of Bingo Industries Limited)
EPL	Resource Recovery EPL 21259 Waste disposal (application to land) EPL 20814
Annual Review start date	1 September 2021
Annual Review end date	31 August 2022

I certify that this Annual Environmental Management Report is a true and accurate record of the compliance status of Patons Lane Resource Recovery Centre for the period September 2021 to August 2022 and that I am authorised to make this statement on behalf of SRC Operations Pty Limited / Bingo Industries Limited.

Note.

a) *The Annual Review is an 'environmental audit' for the purposes of section 122B(2) of the Environmental Planning and Assessment Act 1979. Section 122E provides that a person must not include false or misleading information (or provide information for inclusion in) an audit report produced to the Minister in connection with an environmental audit if the person knows that the information is false or misleading in a material respect. The maximum penalty is, in the case of a corporation, $1 million and for an individual, $250,000.*

b) *The Crimes Act 1900 contains other offences relating to false and misleading information: section 192G (Intention to defraud by false or misleading statement—maximum penalty 5 years imprisonment); sections 307A, 307B and 307C (False or misleading applications/information/documents—maximum penalty 2 years imprisonment or $22,000, or both).*

Name of authorised reporting officer	
Title of authorised reporting officer	
Signature of authorised reporting officer	
Date	

EXECUTIVE SUMMARY

In accordance with Schedule 5 Condition 5A (Sch 5 C5A) of Project Approval MP09_0074 (as Modified), the Proponent shall submit an Annual Environmental Management Report (AEMR) one year after the commencement of site establishment, and annually from the date of approval thereafter to review the environmental performance of the Project to the satisfaction of the Secretary.

This AEMR has been prepared for the reporting period 1 September 2021 to 31 August 2022.

This AEMR has been prepared to address the requirements of the Sch5 C5A, and has also considered the requirements of the compliance reporting guideline '*Compliance Reporting Post Approval Requirements' (DPIE, 2020)* and provides information to assess the Facilities post approval activities, monitoring and reporting.

Statement of Compliance

During the Reporting Period there were five non-compliances identified and reported by the proponent.

An overview of the status of compliance with each relevant approval for the Reporting Period is presented in the tables below.

Details of the non-compliances including actions taken or proposed by the proponent to address the non-compliance is provided in **Section 9.1**, and where required further detail has been provided throughout the document.

Statement of Compliance

Were all conditions of approval complied with:	Yes / No	Total non compliances
Development Consent MP09_0074 (as modified)	No	2
Waste disposal (application to land) – EPL 20814	No	2
Resource Recovery (RR) – EPL 21259	No	1

Summary of Non-compliances *(refer to **Section 9.1** for further detail)*

Condition	Comment	Where Addressed
MP09_0074		
Sch5 C5A	Reporting requirements related to the submission of annual AEMR.	Section 9.1 Section 3 Table 8-1
Sch9(q) C5A	The Proponent shall submit a summary report of the real time monitoring results to Council.	Section 5.2 Section 5.2.4
EPL 20814 (landfill) - Annual return Reporting Period 8 November 2021 to 7 November 2022		
L2.4	Monitoring point 1 (LDP1) with elevated pH results, Monitoring point 3 (LDP3) with elevated Total Suspended Solids (TSS) results and Monitoring Point 2 (LDP2) with elevated Ammonia results (occurred 7 times)	Section 9.1
M2.2	Monitoring not in accordance with requirements (i.e. concentration of pollutants and/or sampling frequency) (occurred 3 times)	Section 9.1

Condition	Comment	Where Addressed
EPL 21259 (RR) – Annual return Reporting Period 28 June 2021 to 27 June 2022		
O4.1	The Pollution Incident Response Management is required to be tested routinely at least once every 12 months	Section 9.1

AEMR structure

- **Section 1** Provides an overall context and introduction to the AEMR.
- **Section 2** Details the approvals relevant to the facility, including any relevant changes and/or modifications proposed or implemented (particularly during the Reporting Period).
- **Section 3** Includes an overview of the operation of the facility during the Reporting Period.
- **Section 4** Provides an update on the status of non-compliances identified by previous reports, including previous Independent Environmental Audits, Annual Environmental Reviews or other stakeholder/regulator Audits or reports.
- **Section 5** Provides a comprehensive review of the environmental management and performance (monitoring results) of the project during the Reporting Period, including identification of emerging trends and/or discrepancies between the predicted and actual impacts of the project.
- **Section 7** Details the complaints received during the Reporting Period Including actions taken or proposed by the proponent to address the complaint and also details the activities undertaken to engage with the community.
- **Section 8** Discusses the findings of the independent audits undertaken during the Reporting Period.
- **Section 9** Lists and provides details of incidents which occurred, or where applicable, updates to previously reported incidents for which there was noteworthy action taken during the Reporting Period Details the non-compliances identified during the Reporting Period including actions taken or proposed by the proponent to address the non-compliance.
- **Section 10** Provides an overview of the activities to be completed to improve environmental performance during the next Reporting Period
- **Appendix A** Compliance status of each condition of Development Consent MP09_0074 (as modified)
- **Appendix B** Groundwater Monitoring Data

1 INTRODUCTION

The Patons Lane Resource Recovery Centre (PLRRC or Project) is located in Orchard Hills, NSW and is a resource management facility comprising Lot 40, DP 738126, within the former Erskine Park Quarry owned by SRC Properties Pty Ltd (the Proponent). **Figure 3-1** shows the layout of the RRC.

Project Approval MP09_0074 was granted by the Land and Environment Court for the establishment and operation of the resource recovery centre on 29 August 2012 and approved the landfilling of commercial and industrial (C&I) and construction and demolition (C&D) waste types (general solid (non-putrescible) waste).

A Section 75W modification (MP09_0074 MOD1), submitted in September 2015, was assessed and approved under the previous Part3A[1] system. The modification was considered to be administrative and sought to modify the time constraints imposed by the original 2012 Approval but did not seek to alter the purpose or material content of any other Condition of Consent (CoC). The Modification was approved on the 30 March 2016.

The objectives of the PLRRC are to:

- Provide a facility to assist the NSW Government to meet the recycling targets for C&I and C&D waste.
- Recover a high proportion of clay/shale resources for the brick and construction industry.
- Receive and emplace wastes and residuals from the on-site recycling.
- Receive and emplace approved waste and residuals from third party waste providers.
- Progressively rehabilitate a disused quarry to re-instate the agriculturally productive land consistent with the surrounding lands.

The PLRRC will operate in accordance with three key stages. The stages are summarised in **Table 1-1**.

Table 1-1: PLRRC staged operation

Stage	Description	Time frame
Stage 1	Stage 1 works and activities are made up of the following components: • Site establishment works and activities • Construction of the recycling and reprocessing area (RRA) • Operation of the landfill and the RRC and cell construction up to the completion of the excavation of Cell 1 (made up of Cells 1A, 1B and 1C). **Site establishment commenced on 19 April 2018.**	5-7 years (completion estimated to be 2023-2025)
Stage 2	Excavation and operation Cell 2	TBD
Stage 3	Excavation and operation Cell 3 and final landform rehabilitation	TBD

[1] Part 3A of the *Environmental Planning and Assessment Act 1979* (NSW) was repealed in 2011. However, the Part 3A system for major project assessment still applies to many project applications that were submitted before the repeal, as well as to modifications for projects that were initially approved under Part 3A.

1.1 Purpose and Scope of the AEMR

This AEMR has been prepared to address Sch5 C5A[2]. **Table 1-2** details how and where this CoC has been addressed in this AEMR and covers the period 1 September 2021 to 31 August 2022 (the Reporting Period).

Table 1-2: Compliance with Sch5, C5A

Condition Requirement	Document Reference
One year after the commencement of site establishment, and annually from the date of approval thereafter, the Proponent shall submit an Annual Environmental Management Report to review the environmental performance of the Project to the satisfaction of the Secretary. This report must:	This Report
• describe the operations that were carried out in the past year;	**Current Reporting Period** Section 3.1 – 1 September 2021 to 31 August 2022 **Forecast for next Reporting Period** Section 3.2 – 1 September 2022 to 31 August 2023
• analyse the monitoring results and complaints records of the Project over the past year, which includes a comparison of these results against the:	See below
• relevant statutory requirements, limits or performance measures / criteria;	**Appendix A** Table 5-1 – Compliance with limits Table 6-1 – Compliance with EIS Section 7.4– Complaints
• monitoring results of previous years; and	**Section 5 – Monitoring results** Section 5.2 – Noise Section 5.2.5 – Dust Section 5.4 – Weather Section 5.5 – Surface water Section 5.6 – Groundwater Section 5.7 – Leachate Section 5.8 – Landfill gas Section 5.9 – Waste Section 5.10 – Truck numbers Section 5.11 – Rehabilitation Appendix B – Groundwater Monitoring Data
• relevant predictions in the EA;	Section 6 of this Report

[2] The Schedule 5 of the Conditions of Consent currently include two Condition 5. The AEMR condition is numbered Schedule 5 Condition 5A to avoid confusion.

Condition Requirement	Document Reference
• identify any non-compliance over the last year, and describe what actions were (or are being) taken to ensure compliance;	Section 9
• identify any trends in the monitoring data over the life of the Project; and	Table 5-1
• describe what measures will be implemented over the next year to improve the environmental performance of the Project.	Table 5-1

2 APPROVALS

An application to establish the PLRRC was submitted under Section 75 of the former Part 3A of the *Environmental Planning and Assessment Act 1979*. This application was refused by the Minister for Planning in September 2009, but was appealed by the then Proponent. Appeal No. 10928 of 2010 was made and upheld in the NSW Land and Environment Court and the project was granted approval on 29 August 2012.

A Section 75W modification (MP09_0074 MOD1), submitted in September 2015, was assessed, and approved under the previous Part 3A system. The modification was considered to be administrative and was approved on the 30 March 2016.

Table 2-1 summarises all the approvals currently in place for the PLRRC which are relevant to the construction and operation of the PLRRC. **Table 2-2** lists any changes to those approvals that occurred during the Reporting Period.

Table 2-1: Summary of PLRRC approvals

Approval	Date of Approval	Summary
Planning Approvals and Modifications		
MP09_0074 Original Approval Land and Environment Court Approval	29 August 2012	Construction and operation of a waste recycling and re-processing facility. Development and operation of staged waste emplacement cells to contain all residual wastes from the recycling facility, other imported wastes (unable to be re-processed) and selected construction and demolition wastes recovered from the on-site existing perimeter bund walls.
Modification 1	30 March 2016	Schedule 3 Conditions 18 and 19 were modified to confirm the definition of 'Site Establishment' and 'Operation' within Schedule 2. The definition of site establishment was updated to be cover the construction work for Cell 1A and any clay/shale extraction associated with the construction of Cell 1A. Operation includes the construction of Cells 1B to 4.
Environmental Protection Licenses		
EPL 20814 (landfill)	8 November 2016	**Fee Based Activity:** Land-based extractive activity (> 100000-500000 T annual capacity to extract, process or store) Waste disposal by application to land (Any capacity) **Limits:** General solid waste (non-putrescible) – Maximum 205,000 tonnes in any 12-month period
EPL 21259 (RRC)	28 June 2019	**Fee Based Activity:** Recovery of general waste (Any general waste recovered) Waste storage - other types of waste (Any other types of waste stored) **Limits:** The authorised amount of waste permitted on the premises cannot exceed 140,000 tonnes at any one time. The maximum quantity of waste permitted to be received at the Premises is 350,000 tonnes in any 12-month period.

Table 2-2: PLRRC approvals and amendments during the Reporting Period

Approval / Approval date	Updates/Changes to Approval during Reporting Period	Amendment approval
MP09_0074		
29 August 2012	None	N/A
MP09_0074_MOD1		
30 March 2016	None	N/A
EPL 20814 (landfill)		
8 November 2016	**A variation application to EPA on 22 January 2020, is still pending approval** • Item 1 – Approval of additional alternative daily cover materials (new Conditions to be created related to Condition O5.1 (a)(ii)). Approval of alternative daily cover materials (Item 1) will provide the Licensee with an increased operational flexibility and ongoing ability to meet daily cover requirements. • Item 2 – Minor corrections to groundwater monitoring requirements to improve consistency between the *NSW EPA – 'Environmental Guidelines – Solid waste landfills, Second edition, 2016*' (EPA Guidelines) and current Industry and laboratory standard testing practices (Condition M2.2 – Points 4-18 and Points 20-21).	Pending approval
EPL 21259 (resource recovery centre)		
28 June 2019	None	N/A

3 OPERATIONS SUMMARY

The following sections describe the development that was carried out in the Reporting Period (1 September 2021 to 31 August 2022) and provide a forecast for activities that will be carried out over the next reporting year (1 September 2022 to 31 August 2022).

3.1 Current Reporting Period (1 September 2021 to 31 August 2022)

3.1.1 PLRRC Operation

Operation of the PLRRC commenced in August 2019. During this Reporting Period the following waste material and resource recovery occurred:

- Receipt of 52,291 tonnes of waste at the gate.
- Processing of 49,787 tonnes of mixed waste at the Recycling Centre.
- Lawful and resource recovery of 109,567 tonnes of material.
- Landfilling of 0 tonnes.
- Clay and shale extraction as required during the construction of Cells 1A-1C.

3.1.2 Monitoring activities

The following monitoring was undertaken at the site.

Aspect	Monitoring undertaken
Noise	• Unattended noise monitoring occurred at three locations surrounding the site boundary. Data was collected monthly and uploaded to the PLRRC website. • Attended noise monitoring was conducted by Wilkinson Murray at residential receivers surrounding the PLRRC and occurred every month except for July 2021 in the reporting period. • Quarterly summary reports for noise monitoring results were prepared for the reporting period.
Air quality	• Although continuous (unattended) monitoring occurred, due to technical issues with the TEOMs, no data was available to review for compliance with criteria. • Dust gauge air quality monitoring was conducted monthly by Wilkinson Murray.
Weather	• Continuous weather monitoring
Surface water	• 17 wet weather surface water discharges occurred at the licensed discharge points. All events were monitored.
Groundwater	• Annual monitoring occurred in August 2022. • Quarterly monitoring occurred in November 2021, February 2022, May 2022 and August 2022. • The results of this monitoring were published on the PLRRC website.
Leachate	• Annual monitoring occurred in August 2022. • Quarterly monitoring occurred in November 2021, February 2022, May 2022 and August 2022.
Landfill gas	• Quarterly subsurface gas sampling occurred in November 2021, February 2022, May 2022 and August 2022. • Quarterly surface gas monitoring was undertaken in November 2021, February 2022, May 2022 and August 2022. • Quarterly gas accumulation sampling November 2021, February 2022, May 2022 and August 2022. • The results of this monitoring were published on the Patons Lane RRC website.

Aspect	Monitoring undertaken
Waste	• Monthly waste received, processed and removed from site for offsite disposal or lawful recovery
Truck number	• Daily truck movements were recorded.

3.2 Next Reporting Period (forecast): 1 September 2022 to 31 August 2023

3.2.1 Site Operations

- Receipt of up to 450,000 tonnes of waste at gate
- Receipt and processing of up to 350,000 tonnes of mixed waste at Recycling Centre
- Recovery of up to 300,000 tonnes of recyclable material from mixed waste
- Landfill of up to 205,000 tonnes (50,000 tonnes from recycling facility and 155,000 tonnes direct to landfill)

3.2.2 Monitoring activities

- Ongoing monthly noise and dust monitoring
- Continuous weather monitoring
- Annual and quarterly leachate monitoring
- Sampling of wet weather surface water discharges (as required)
- Ongoing annual and quarterly groundwater monitoring
- Ongoing quarterly gas sampling.

Figure 3-1: Site establishment activities

4 ACTIONS/REQUIREMENTS FROM PREVIOUS ANNUAL REVIEW

This section summarises the actions and requirements identified in the previous AEMR (Reporting Period April 2020 to August 2021) submitted for the PLRRC.

Table 4-1: Actions from the previous Annual Review

Action required from previous Annual review	Requested by	Action taken by the Operator	Where discussed in annual review
Environmental Data Management System (EDMS)	Operator	Continuation of embedding the EDMS within the environmental management of the operation by engaging with consultants for the use of the EDMS and documenting procedures. This is currently ongoing.	Section 10
Environmental Management and Improvement Programs	Operator	Implemented the existing controls and monitoring plans of the site Environmental Management Plan and associated sub-plans.	Section 5
Surface water quality monitoring	Operator	Surface water monitoring schedules will be updated to ensure that water quality samples are collected quarterly from all internal and external dams at PLRRC and also quarterly from Blaxland Creek both upstream and downstream of the PLRRC.	Section 5.5
Site rehabilitation	Operator	Ongoing site rehabilitation in accordance with the BWLVMP.	Section 5.11

5 ENVIRONMENTAL PERFORMANCE

5.1 Summary of monitoring results

This section reports on the monitoring results and environmental outcomes that were intended for the reported period, and whether these outcomes were achieved.

Table 5-1: Environmental performance, implications and management actions

Aspect	Approved limit (if applicable) / EIS Prediction	Performance during the Reporting Period	Trend / key management implications	Implemented / proposed management actions
Air Quality (Conditions of Consent)				
Sch4 C16(e)	A monitoring program for real-time air quality impacts of the Project	The dust monitoring program for the PLRCC commenced on 1 July 2018 and continued throughout construction and site establishment and continued once operation of the facility commenced in August 2019. The monitoring program includes two TEOMs measuring PM_{10} (suspended solids) continuously and seven dust deposition (DD) gauges. Rolling averages for DD gauges was below the Max TOTAL DD level 4 g/m2/month for the period. The TEOMs were offline for the entire Reporting Period, therefore no data was available to assess compliance for PM_{10}. The air quality sampling methodologies comply with AS/NZS 3580.10.1[3] (DD Gauge). PM_{10} TEOMs are required to comply with AS/NZS 3580.9.8[4] and calibrated in accordance with AS/NZS 3580.9.8. Due to the TEOMs being offline for the entire reporting period, this was not in compliance with the standards.	No commentary could be provided on the compliance with the long- and short-term criteria for PM_{10} due to the TEOM being unavailable for the entire Reporting Period. Generally compliant for rolling averages for the DD gauges.	Repairs or maintenance of the TEOM will be undertaken. Once the TEOM is available again, continuous PM_{10} monitoring will be commenced and will be reported on monthly basis for the next Reporting Period.

[3] *AS/NZS 3580.10.1 Methods for sampling and analysis of ambient air Determination of particulate matter - Deposited matter - Gravimetric method*

[4] *AS/NZS 3580.9.8 Methods for sampling and analysis of ambient air Determination of suspended particulate matter - PM10 continuous direct mass method using a tapered element oscillating microbalance analyser*

Aspect	Approved limit (if applicable) / EIS Prediction	Performance during the Reporting Period	Trend / key management implications	Implemented / proposed management actions
Sch4 C13	The long- and short-term criteria for PM_{10} and DD is summarised in Table 5-5 as specified in Sch4 C13 (Tables 4-6). These are the same criteria provided in EPL 20814.	Rolling averages for DD gauges was below the Max TOTAL DD level 4 g/m2/month for the period. The TEOMs were offline for the entire Reporting Period, therefore no data was available to assess compliance. Total Suspended Particulate (TSP) matter is not continuously monitored, however, estimates of the annual average background TSP concentrations can be determined from a relationship with the measured PM_{10} concentrations. If PM10 levels are compliant, TSP levels will be compliant with the criteria.	No commentary could be provided on the compliance with the long- and short-term criteria for PM_{10} due to the TEOM being unavailable for the entire Reporting Period. Due to the lack of PM_{10} data, no comment on compliance with TSP can be made for this Reporting Period Generally compliant for rolling averages for the DD gauges	Repairs or maintenance of the TEOM will be undertaken. Once the TEOM is available again, continuous PM_{10} monitoring will be commenced and will be reported on monthly basis for the next Reporting Period.
Air Quality (Condition of Consent Sch4 C13 and EPL 20814 - Landfill)				
Particulate matter < 10 µm	• 24-hour average: 50 µg/m^3 ** • Annual average: 30 µg/m^3 **	The TEOMs were offline for the entire Reporting Period due to failures with the monitoring equipment, therefore no data was available to assess compliance. See **Table 5-6** for more information.	The TEOMs were offline for all months during the Reporting Period, therefore no commentary around exceedance can be provided.	Repairs or maintenance of the TEOM will be undertaken. Once the TEOM is available again, continuous PM_{10} monitoring will be commenced and will be reported on monthly basis for the next Reporting Period.
Deposited Dust (DD)	• Max INCREASE in DD level: 2 g/m^2/month **[5] • Max TOTAL DD level: 4 g/m^2/month ***	There were no exceedances of the maximum total DD level recorded during this Reporting Period. See **Table 5-6** for more information	Generally compliant – The site is managed in accordance with the approved AQMP.	No additional management actions (other than what is detailed in the AQMP) are proposed. DD will continue to be monitored and reported on monthly basis during the next Reporting Period.
Total suspended particulates (TSP)	Annual average: 90 µg/m^3	TSP is not currently measured continuously, but as described in **Section 5.3.2.1** estimates of the annual average background TSP concentrations can be determined from a relationship between PM_{10} concentrations measured on the site. The TEOM was unavailable for the entire Reporting Period.	No commentary could be provided on the compliance with the long- and short-term criteria for PM_{10} due to the TEOM being unavailable for the entire Reporting Period. Due to the lack of PM_{10} data, no comment on compliance with TSP can be made for this Reporting Period.	Repairs or maintenance of the TEOM will be undertaken. Once the TEOM is available again, continuous PM_{10} monitoring will be commenced and will be reported on monthly basis for the next Reporting Period.

[5] ** - Incremental impact (i.e. incremental increase in concentrations due to the activities on their own)
*** - Total impact (i.e. incremental increase in concentrations due to the activities plus background concentrations due to other sources)

Aspect	Approved limit (if applicable) / EIS Prediction	Performance during the Reporting Period	Trend / key management implications	Implemented / proposed management actions
Water Quality (Condition of Consent Sch7 H C5(b) and EPL 20814 – Landfill)				
Surface water monitoring	See below for criteria	The SWLMP requires that surface water be monitored quarterly at the sediment dams and wet weather discharge monitoring is also undertaken at the wet weather overflow points. Since construction of Dams 2A, 3 and 6 (completed in July 2019), wet weather discharge monitoring has been undertaken at least quarterly at sediment dams 4 and 5 and overflow points. This is taken to have satisfied the requirement for quarterly surface water monitoring.	Generally compliant – The site is managed in accordance with the approved SWLMP.	No additional management actions (other than what is detailed in the SWLMP) are proposed.
Ammonia	1 mg/L	Five exceedances of ammonia were recorded following wet weather events on 29 March 2022 and 17 July 2022. All were associated with LPD2 (High Efficiency Sediment (HES) Gantry and Spillway). Rainfall of 65 mm and 8 mm was recorded in the 72 hours prior to sampling for the respective wet weather events, events that were considered to be above the 5-day 90th percentile rainfall of 47.6 mm (blue-book design criteria).	Generally compliant – The site is managed in accordance with the approved SWLMP. Measures to minimise water pollution will continue to be undertaken.	No additional management actions (other than what is detailed in the SWLMP) are proposed. It is noted the two elevated ammonia results recorded at LDP2 were attributed to the single incident (29/03/2022). There was ongoing maintenance of the surface water management system removing residual contamination with a declining trend in the ammonia concentrations being recorded for each subsequent discharge event.
pH	6.5-8.5	One exceedance was recorded on 29 November 2021. The pH value recorded was 8.72.	Generally compliant – The site is managed in accordance with the approved SWLMP.	No additional management actions (other than what is detailed in the SWLMP) are proposed.
Total suspended solids (TSS)	50 mg/L	There were 15 exceedances of the TSS limits at the discharge monitoring locations during the Reporting Period. As described in **Section 5.5.4**, in accordance with EPL 20814 Condition L3.1, the Licensee is taken not to have exceeded a concentration limit specified in the licence for the discharge of total suspended solids (TSS) from Points (EPA ID) 1-3 (i.e. Dam 6 discharge point, weir monitoring point and Dam3 discharge point) if:	Measures to minimise water pollution were undertaken	No additional management actions (other than what is detailed in the SWLMP) are proposed and what is permitted in the EPL.

Aspect	Approved limit (if applicable) / EIS Prediction	Performance during the Reporting Period	Trend / key management implications	Implemented / proposed management actions
		(a) the discharge from Points 1-3 occurs solely for rainfall events exceeding the 90th percentile 5-day rainfall event; and (b) the Licensee has taken all practical measures to avoid or minimise water pollution. It is also noted that higher than average rainfall was experienced throughout the Reporting Period. Based on the above, the specified concentration limit for TSS did not apply for most of these exceedances, as rainfall events that were considered to be above the 5-day 90th percentile rainfall of 47.6 mm (blue-book design criteria).		
Water Quality (EPL 21259 – RRC)				
Requirements	No limits – however see Sch7 H C5(b) criteria / limits above for more information	Discharge point referenced as Point 2 is known as LDP2 (HES Spillway) in EPL 20814.	Generally compliant – The site is managed in accordance with the approved SWLMP.	No additional management actions (other than what is detailed in the SWLMP) are proposed.
Waste (Conditions of Consent)				
Sch3 C22 Maximum total waste emplacement	4,300,000 tonnes	A total of 298,504 tonnes of waste has been received to date at the PLRCC since operation began.	The PLRRC is operating well within the maximum emplacement limit	No additional management actions (other than what is detailed in the WRRMP are proposed.
Sch3 C22 Maximum annual waste receipt	450,000 tonnes	A total of 52,291 tonnes of waste was received at the site for the Reporting Period. This comprised 20 tonnes of C&I waste and 52,271 tonnes C&D waste. well within the annual onsite emplacement limit.	Waste is managed in accordance with the WRRMP and the Bingo Standard Operating Procedures (SOP) including procedures for asbestos, weighbridge operation, visual inspection and non-conforming waste.	No additional management actions (other than what is detailed in the WRRMP are proposed.
Sch3 C22 Maximum annual on-site waste emplacement	205,000 tonnes	Landfilling at the PLRRC commenced in August 2019. A total of 0 tonnes of waste was emplaced in landfill during the Reporting Period, as the total transport offsite exceed what was received..	Waste is managed in accordance with the WRRMP and the Bingo Standard Operating Procedures (SOP)	No additional management actions (other than what is detailed in the WRRMP are proposed.

Aspect	Approved limit (if applicable) / EIS Prediction	Performance during the Reporting Period	Trend / key management implications	Implemented / proposed management actions
Sch 4 C7 (asbestos)	7,500 m^3 of special waste (asbestos) permitted in accordance with the Asbestos and Contamination Management Plan	As shown in **Section 5.9** and **Table 5-25**. No asbestos was received during the Reporting Period.	Waste is managed in accordance with the WRRMP and the Bingo Standard Operating Procedures (SOP).	No additional management actions (other than what is detailed in the WRRMP are proposed.
Sch4 C5	Requires the implementation of a Waste and Resource Recovery Monitoring Program which includes monitoring for: • the quantity, type and source of waste received; and quantity, type and quality of the outputs produced.	Operation of the PLRRC commenced in August 2019. Waste received at the PLRRC is reported on a monthly basis through the EPA Waste and Resource Reporting Portal (WARRP) in accordance with the requirements of the *Protection of the Environment Operations Act 1997.* See **Table 5-25**.	Waste is managed in accordance with the WRRMP and the Bingo Standard Operating Procedures (SOP). The monthly WARRP reporting details the quantity, type and source of waste received; and quantity, type and quality of the outputs produced.	No additional management actions (other than what is detailed in the WRRMP are proposed.
Waste (EPL 20814 - Landfill)				
Requirements	The Licensee must not cause, permit or allow any waste to be received at the premises, except the wastes expressly referred to in the column titled “Waste” and meeting the definition, if any, in the column titled “Description” in the table below.	As shown in **Section 5.9** and **Table 5-25**, the waste types received at this site are in accordance with the waste identified within the EPL. During the Reporting Period, waste was only emplaced into landfill Cell 1A, as required by Condition L4.3.	Waste is managed in accordance with the WRRMP and the Bingo Standard Operating Procedures (SOP) including procedures for asbestos, weighbridge operation, visual inspection and non-conforming waste.	No additional management measures are currently proposed, other than what is detailed in the WRRMP and the relevant Bingo SOPs.
Special Waste	No asbestos is permitted to be received from offsite.	As shown in **Section 5.9** and **Table 5-25**. No asbestos was received during the Reporting Period.	As above	Weighbridge operators/traffic controllers have a responsibility to visually inspect each load entering the PLRRC and will report any suspicious material in the load to the site manager in accordance with the *SOP BDR001 Asbestos at Recycling Centres*
General solid waste (non-putrescible)	Maximum 205,000 tonnes in any 12-month period is permitted to be landfilled (in Cell 1A)	As shown in **Section 5.9** and **Table 5-25** the waste types received on this site are in accordance with the waste identified within the EPL.	As above	Waste received at the PLRRC is reported on a monthly basis through the EPA Waste and Resource Reporting Portal (WARRP) in accordance with the requirements of the POEO Act.

Aspect	Approved limit (if applicable) / EIS Prediction	Performance during the Reporting Period	Trend / key management implications	Implemented / proposed management actions
Waste (EPL 21259 – RRC)				
Excavated natural material	The Licensee must comply with all requirements of a generator of Excavated Natural Material (ENM)as set out in the Excavated Natural Material Order (as in force from time to time)	This condition of consent was not triggered for this reporting year.	Waste is managed in accordance with the WRRMP and the Bingo Standard Operating Procedures (SOP)	No additional management measures are currently proposed, other than what is detailed in the LEMP, the WRRMP and the relevant Bingo SOPs.
Soils Resource recovery waste storage	Need to comply with limits for arsenic (As), cadmium (Cd), mercury (Hg), petroleum hydrocarbon (PH), Polycyclic aromatic hydrocarbons (PAH), Polychlorinated biphenyls No Acid Sulfate Soil (ASS) or Potential Acid Sulfate Soil (PASS) is to be received at the Premises.	All material brought to site was compliant with the requirements of the EPL during the Reporting Period. The current process is followed: • Customer advises of soil materials • Waste class is handed to sales, and sales provides the technical reviews (SEQ) • SEQ accepts or rejects based on compliance with both guidelines and EPL conditions • Once approved by the technical reviewer the sales team will allocate a specific job number to the soil project once approved, this ensure soils not assessed do not make their way into the facility. The Waste Classification Report is provided with the material and includes source of material, review of ASS, field observations, and results of the laboratory analysis (covering the select parameters) which is undertaken at a NATA accredited laboratory. The report also details the 6-step classification procedure from the *NSW EPA Waste Classification Guidelines (2014)*	The existing process and procedures are sufficient to management any non-confirming waste or material. Any material not suitable for resource recovery or for landfilling at the site is rejected and recorded in the rejected load documentation	No additional management measures are currently proposed, other than what is detailed in the WRRMP and the relevant Bingo SOPs.
All Waste (e.g. B&D, C&I, paper, wood waste etc)	As defined in the POEO Act, as in force from time to time	As shown in **Section 5.9** and **Table 5-25**, the waste received on this site are in accordance with the waste identified within the EPL.	Waste is managed in accordance with the WRRMP and the Bingo Standard Operating Procedures (SOP) including procedures for asbestos, weighbridge operation, visual inspection and non-conforming waste.	No additional management measures are currently proposed, other than what is detailed in the WRRMP and the relevant Bingo SOPs.

Aspect	Approved limit (if applicable) / EIS Prediction	Performance during the Reporting Period	Trend / key management implications	Implemented / proposed management actions
L2.2 Waste Limit	The authorised amount of waste permitted on the premises cannot exceed 140,000 tonnes at any one time.	As shown in **Section 5.9** and **Table 5-25**, the waste received on this site are in accordance with the waste identified within the EPL.	Waste is managed in accordance with the WRRMP and the Bingo Standard Operating Procedures (SOP) including procedures for asbestos, weighbridge operation, visual inspection and non-conforming waste.	No additional management measures are currently proposed, other than what is detailed in the WRRMP and the relevant Bingo SOPs.
L2.3 Waste Limit	The maximum quantity of waste permitted to be received at the Premises is 350,000 tonnes in any 12-month period.	As shown in **Section 5.9** and **Table 5-25**, the waste received on this site are in accordance with the waste identified within the EPL.	Waste is managed in accordance with the WRRMP and the SOP including procedures for asbestos, weighbridge operation, visual inspection and non-conforming waste.	No additional management measures are currently proposed, other than what is detailed in the WRRMP and the relevant Bingo SOPs.
Noise (Conditions of Consent)				
Sch4 C26(k) and Sch4 C27(f)	Requires a program for monitoring the noise impacts	Long term (non-attended) noise monitoring commenced in July 2018. Attended noise monitoring has been undertaken on monthly basis since September 2018 and throughout the Reporting Period.	Compliant – Noise monitoring is being undertaken in accordance with the Conditions and the NVMP.	No additional management actions proposed. Noise will be monitored (continuously for unattended and monthly for attended) and will be reported on monthly basis during the next Reporting Period.
Sch4 C21 and C22	Noise criteria are provided in **Table 5-2.** These criteria are the same as those provided in EPL 20814	Exceedances of the noise trigger levels presented in **Table 5-2** were recorded at all monitoring locations throughout the Reporting Period. However, a review of a sample of the audio files showed that noise from construction and operation of the Project was occasionally audible and usually at a low level. The exceedances sampled were found to be due to extraneous sources (for example excessive wind, movement near to the monitor, distant traffic, aircraft, birds or other animals, rain, etc).	Generally compliant - no activities from site were audible, and noise measurements were predominately influenced by low winds, bird noise and road traffic.	No additional management actions proposed. Noise will be monitored (continuously for unattended and monthly for attended) and will be reported on monthly basis during the next Reporting Period.
Noise (EPL 20814 - Landfill)				
EPL requirements	• Day site establishment limit (DSEL) • Day operation limit (DOL) Both measured in ($LA_{eq(15\ min)}$) dB(A) (See **Table 5-2**)	As shown in **Table 5-3** no noise exceedances for attended and unattended noise monitoring events were recorded during the Reporting Period that were associated with the activities on the premises. No community complaints have been received during the Reporting Period (See **Section 7.4**).	Generally compliant – The site is being managed in accordance with the approved NVMP.	No additional management actions proposed. Noise will be monitored (continuously for unattended and monthly for attended) and will be reported on monthly basis during the next Reporting Period.

Aspect	Approved limit (if applicable) / EIS Prediction	Performance during the Reporting Period	Trend / key management implications	Implemented / proposed management actions
Daily Cover (EPL 20814 - Landfill)				
Daily Cover	Daily cover: Daily cover material must be either (i) Virgin excavated natural material (VENM); or (ii) NSW EPA approved alternative daily cover (ADC).	Cover during this Reporting Period was sourced from onsite VENM won from quarrying activities.	Onsite won VENM will continue to be utilised as daily cover for the next reporting.	No additional management measures are currently proposed, other than what is detailed in the LEMP and the BWVLMP and the relevant Bingo SOPs.
Traffic Movements (Conditions of Consent)				
Sch3 C25 and C26	Heavy vehicle traffic generation must not exceed 250 daily heavy vehicle movements.	**Figure 5-12** shows the traffic movements recorded during this Reporting Period. No exceedances of the daily heavy vehicle limit of 250 were reported.	An accurate register of daily heavy vehicle movements is maintained at the weighbridge.	No additional management measures are currently proposed, other than what is detailed in the LEMP, the TNMP and the relevant Bingo SOPs.

5.2 Noise Monitoring

The Conditions of Consent requires a program for monitoring the noise impacts of the Project, including real time noise monitors to measure noise emissions during construction [Sch4 C26(k)] and operation [Sch4 C27(f)]. The noise monitoring program was included in both the Construction Noise Management Plan (CNMP) and the Operational Noise Management Plan (ONMP).

The noise monitoring program for the PLRCC commenced on 1 July 2018 and will continue throughout the operational phases of the project. The locations of the noise monitors are shown on **Figure 5-1.**

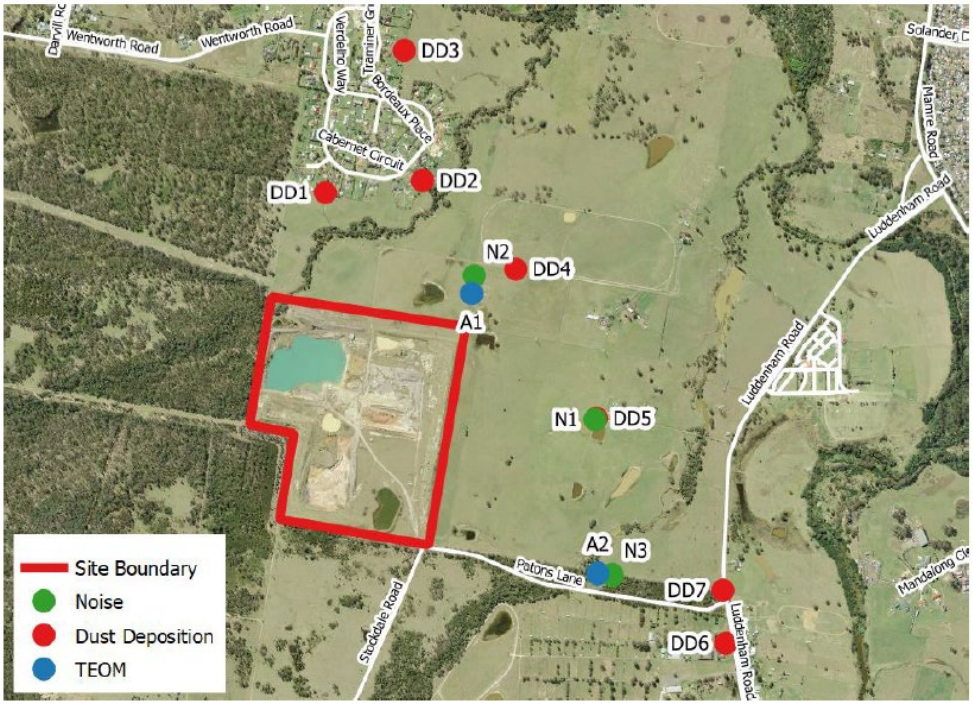

Figure 5-1: Environmental monitoring locations (source: Wilkinson Murry)

5.2.1 Equipment

5.2.1.1 Unattended (long-term) noise monitoring equipment

SmartaData/RION NL–52 unattended noise monitoring systems were installed on 1 June 2018 and their use is ongoing. The environmental noise loggers monitor statistical noise levels and include audio recordings. The loggers are set to A-weighted, fast response, continuously monitoring over 15-minute sampling periods. This equipment is capable of remotely monitoring and storing noise level descriptors that are later uploaded to a central web server detailed analysis.

The noise monitors are NATA calibrated every two years in accordance with *AS1055 Acoustics - Description and measurement of environmental noise* and quality assurance procedures.

5.2.1.2 Attended noise monitoring equipment

Where attended noise monitoring is conducted, a Brüel & Kjær Type 2250 Sound Level Meter is used. This sound level meter conforms to *AS1259 Acoustics – Sound Level Meters as a Type 1 Precision Sound Level Meter* which has an accuracy suitable for field and laboratory use. The A-Weighting filter is selected, and the time weighting response is set to “Fast”.

Attended noise monitoring was conducted each month at surrounding residential receivers from September 2021 to August 2022.

5.2.1.3 Sound Power Level Data

Attended assessments of construction equipment Sound Power Levels (SWL) at PLRRC were conducted to review the modelled equipment sound power levels. Sound power levels are generally assessed quarterly in accordance with *Australian Standard 1217.7 Acoustics – Determination of Sound Power Levels of Noise Sources – Survey Method*.

5.2.2 Noise monitoring limits

In accordance with Sch4 C21 and C22, the Proponent will ensure that the noise generated by the Project does not exceed the limits detailed in **Table 5-2.** Noise will to be measured in accordance with the relevant modifying/correction factors and meteorological conditions in the *NSW Industrial Noise Policy*.

Table 5-2: Sch4 C22 noise limits

Receiver	Day Site Establishment Limit LAeq(15 minute) dB(A)	Day Operation Limit LAeq(15 minute) dB(A)
11 Cabernet Place (1)	43	39
3 Chablis Place (1)	41	38
Roughwood Park, Luddenham Road	39	39
Glenholme Farm, Luddenham Road	39	39
210 Luddenham Road (1)	35	38
Residence & Hall at the Croatian Cultural Association	37	39

NOTE (1) – See **Section 5.2.4.1** for more details

The same noise limits have been applied to EPL 20814**.**

5.2.3 Noise reporting

Noise is measured at the PLRRC via a microphone plugged into a device, which reports on noise levels every 15 minutes. These decibel frequencies are then converted to Statistical Noise Levels (Ln) and noise monitoring results for the last 24-hours are made available at https://www.patonslane.com.au/noise-monitoring/.

Monthly reports for the attended and unattended monitoring are prepared by the noise consultant. Where non-compliances related to real time noise monitoring are recorded during the project operations, a quarterly summary report in accordance with point Q) of the *Management Methods, Procedures and Specific Noise Mitigation Measures (ex DD in appeal no 10928 of 2010)*, is prepared to present and document the non-compliances.

5.2.4 Noise monitoring results

Noise monitoring results for the Reporting Period are provided in **Table 5-3**. This table summarises the findings of the monthly reports which are prepared by the noise consultant. The monthly reports are made available on the PLRRC website.

Quarterly reports were prepared for:

- July, August and September 2021.
- October, November and December 2021.
- January, February and March 2022.
- April, May and June 2022.
- July, August and September 2022.

All the quarterly reports state that no non-compliances caused by site activities were observed at the receivers during the Reporting Period.

In accordance with point Q) of the *Management Methods, Procedures and Specific Noise Mitigation Measures (ex DD in appeal no 10928 of 2010)*, following the first two years of operation, the summary report of noise monitoring will be completed on a six-monthly basis with the next report required to be prepared for the October 2021-March 2022 period.

5.2.4.1 Noise non-compliances reported

If noise from the premises exceeds the noise limits presented in **Table 5-2**, these are reported as part of the annual returns. No noise exceedances were reported for the Reporting Period September 2021 to 31 August 2022.

The Consultant appointed to conduct the monitoring advised that some of the locations prescribed in the CoC and EPL (**Table 5-2)** were not accessible and the Consultant identified alternative monitoring locations in close proximity to the original attended noise sampling. Noise monitoring was undertaken at the alternative locations detailed below:

- 1 Chablis Place (instead of 3 Chablis Place)
- 117 Luddenham Road (instead of 210 Luddenham Road)
- 10 Cabernet Circuit (instead of 11 Cabernet Circuit).

An application to vary the licence is still being considered and was unchanged during this Reporting Period.

The noise emission sources close to all monitoring sites for all sampling events are the primary and dominant cause of exceedances of sound pressure noise level limits at those locations, no adverse effects from premises activities occurred as these activities were inaudible at the time of attended noise sampling.

The noise sampling locations remain representative of noise levels and sources at key local receptors.

5.2.4.2 Sound Power Levels

Sound power levels are generally assessed quarterly and have not been included in the table. No Sound Power Levels for equipment were measured during this Reporting Period

As shown in **Table 5-3**, compliance with noise management levels (NML) at residential receivers was achieved throughout the Reporting Period.

Table 5-3: Noise monitoring results for the Reporting Period

Date	UNATTENDED MONITORING		ATTENDED MONITORING		Noise Complaints
	Compliance	Comment	Compliance	Comment	
Sep 2021	Yes	No exceedances of the NML attributable to the construction site for unattended measurements.	Yes	Attended noise measurements was undertaken on **24/09/21**. No exceedances were contributable from site.	No
Oct 2021	Yes	No exceedances of the NML attributable to the construction site for unattended measurements.	Yes	Attended noise measurements was undertaken on **25/10/21**. No exceedances were contributable from site.	No
Nov 202	Yes	No exceedances of the NML attributable to the construction site for unattended measurements.	Yes	Attended noise measurements was undertaken on **25/11/21**. No exceedances were contributable from site.	No
Dec 2021	Yes	No exceedances of the NML attributable to the construction site for unattended measurements.	Yes	Attended noise measurements was undertaken on **24/12/21**. No exceedances were contributable from site.	No
Jan 2022	Yes	No exceedances of the NML attributable to the construction site for unattended measurements.	Yes	Attended noise measurements was undertaken on **25/01/22**. No exceedances were contributable from site.	No
Feb 2022	Yes	No exceedances of the NML attributable to the construction site for unattended measurements.	Yes	Attended noise measurements was undertaken on **18/03/21**. No exceedances were contributable from site.	No
Mar 2022	Yes	No exceedances of the NML attributable to the construction site for unattended measurements.	Yes	Attended noise measurements was undertaken on **18/03/22**. No exceedances were contributable from site.	No
Apr 2022	Yes	No exceedances of the NML attributable to the construction site for unattended measurements.	Yes	Attended noise measurements was undertaken on **22/04/22**. No exceedances were contributable from site.	No
May 2022	Yes	No exceedances of the NML attributable to the construction site for unattended measurements.	Yes	Attended noise measurements was undertaken on **24/05/22**. No exceedances were contributable from site.	No
Jun 2022	Yes	No exceedances of the NML attributable to the construction site for unattended measurements.	Yes	Attended noise measurements was undertaken on **28/06/22**. No exceedances were contributable from site.	No
Jul 2022	Yes	No exceedances of the NML attributable to the construction site for unattended measurements.	Yes	Attended noise measurements was undertaken on **27/07/22**. No exceedances were contributable from site.	No
Aug 2022	Yes	No exceedances of the NML attributable to the construction site for unattended measurements.	Yes	Attended noise measurements was undertaken on **30/08/22**. No exceedances were contributable from site.	No

5.2.5 Analysis of noise monitoring of data

Both long term (non-attended) and attended noise monitoring was undertaken on monthly basis during the Reporting Period.

Exceedances of the noise trigger levels presented in **Table 5-2** were recorded at all monitoring locations throughout the Reporting Period. However, a review of a sample of the audio files showed that noise from the facility was occasionally audible and usually at a low level. The recorded exceedances were sampled and were found to be attributed to extraneous sources, like excessive wind, movement near to the monitor, distant traffic, aircraft, birds or other animals, rain, etc.

This conclusion was also supported by attended noise monitoring throughout the Reporting Period, where in general, no activities from the site were audible. Barely audible site noise was recorded during the attended October 2021 survey; however, noise measurements were still predominately influenced by low winds, bird noise and road traffic.

A summary of the noise monitoring results for the project since inception is provided below:

- Noise monitoring results have been generally consistent since monitoring began in July 2018 ie no exceedances of the noise criteria were found to be attributable to the construction site for unattended measurements since monitoring began.
- Attended noise monitoring has been undertaken monthly since September 2018. Measurements at all locations have been dominated by other ambient sources such as traffic, birds, and other natural sources. Noise criteria at the nominated receivers have been met since monitoring began.

5.3 Dust and Particulates Monitoring

Sch4 C16(e) requires a monitoring program for real-time air quality impacts of the Project. The program is included in the approved Air Quality and Greenhouse Gas Management Plan (AQMP) for the site and includes deposited dust (DD) gauges and the real time monitoring of particulate matter (PM).

The dust monitoring program for PLRCC commenced on 1 July 2018 and will continue throughout the construction and operational phases of the project.

5.3.1 Equipment

The locations of the dust monitors and dust deposition (DD) gauges are shown on **Figure 5-10**.

Table 5-4: Dust monitoring locations

Location ID	Parameter	Equipment Installed	Required Under MPs
A1	Suspended Particulates	TEOM PM_{10} Monitor	Yes
A2	Suspended Particulates	TEOM PM_{10} Monitor	Yes
DD1	Deposited Dust	Dust Deposition Gauge	Yes
DD2	Deposited Dust	Dust Deposition Gauge	Yes
DD3	Deposited Dust	Dust Deposition Gauge	Yes
DD4	Deposited Dust	Dust Deposition Gauge	Yes
DD5	Deposited Dust	Dust Deposition Gauge	Yes
DD6	Deposited Dust	Dust Deposition Gauge	Yes
DD7	Deposited Dust	Dust Deposition Gauge	Yes

The continuous air quality sampling of suspended solids is based on AS/NZS 3580.9.8[6] (PM_{10} TEOM[7]). The TEOMs are calibrated in accordance with AS/NZS 3580.9.8.

Dust deposition gauges are sent to a NATA Accredited laboratory, where the deposited dust is analysed to obtain the total (soluble and insoluble ie wet plus dry) deposition rates and to obtain the monthly dust deposition level. Dust deposition is analysed in accordance with the requirements of AS/NZS 3580.1.10[8]. Insoluble solids comprise combustible matter and ash. Certificates of analysis are provided within the monthly Noise and Air Quality Monitoring Report.

5.3.2 Dust monitoring criteria

Sch4 C13 states that the Proponent shall ensure that dust and particulates generated at the PLRRC must not exceed the criteria (both short and long-term) at any residence, or on more than 25% of any privately owned land surrounding the Premises. **Table 5-5** summarises the PM and DD criteria as specified in the Sch4 C13 (Tables 4-6), the AQMP and on the EPL.

Table 5-5: Long- and short-term criteria for PM_{10} and DD

Criteria Period	Pollutant	Averaging Period	Criteria
Short-term criteria PM	PM < 10 µm	24-hour average	50 µg/m^3
Long-term criteria PM	PM < 10 µm	Annual average	30 µg/m^3
Long-term criteria TSP	Total suspended particulate (TSP)	Annual average	90 µg/m^3
Long-term criteria dust deposition	Maximum INCREASE in DD level	-	2 g/m^2/month
	Maximum TOTAL DD level	-	4 g/m^2/month ***

5.3.2.1 Relationship between TSP and PM_{10}

Currently Total Suspended Particulate (TSP) matter is not continuously monitored, however, estimates of the annual average background TSP concentrations can be determined from a relationship with the measured PM_{10} concentrations. This relationship was established as part of a review of ambient monitoring data collected by co-located TSP and PM_{10} monitors operated for reasonably long periods of time in the Hunter Valley (NSW Minerals Council, 2000) and assumes that 40% of the TSP is PM10.

This approach to estimating ambient TSP concentrations in the absence of monitoring data is common throughout NSW and is generally accepted by NSW EPA. Compliance with the TSP annual criteria will be automatically achieved when compliance with PM_{10} annual criteria is achieved (Wilkinson Murry).

5.3.3 Dust and particulates reporting

Table 5-6 summarises the findings of the monthly reports which are prepared by the air quality consultant. The monthly reports are made available on the PLRRC website.

PLRRC currently monitors the particle size of PM_{10} in three categories:

- Real-time reading
- One-hour average
- Three hours average.

[6] *AS/NZS 3580.9.8 Methods for sampling and analysis of ambient air Determination of suspended particulate matter - PM_{10} continuous direct mass method using a tapered element oscillating microbalance analyser*

[7] TEOM - Tapered Element Oscillating Microbalances

[8] *AS/NZS 3580.10.1 Methods for sampling and analysis of ambient air Determination of particulate matter - Deposited matter - Gravimetric method*

This data generates an instantaneous Particulate Matter (PM) level reading, which is also provided on the PLRRC website at: https://www.patonslane.com.au/air-monitoring/.

5.3.3.1 Dust non-compliances reported

In accordance with Sch 4 C13 of MP09_0074, the Proponent must ensure that dust and particulates generated at the Premises do not exceed the criteria for short term and long term criteria for particulate matter and criteria for deposited dust (**Table 5-5**) at any residence or on more than 25% of any privately owned land surrounding the Premises.

No non-compliances were identified for the monthly average DD gauges data (See **Table 5-5** for more information. No non-compliances were reported to the EPA through the Annual Review.

5.3.3.2 Particulates non-compliances reported

No non-compliances were reported to the EPA through the Annual Review.

However, as noted in **Table 5-6** the TEOM was offline for the entire Reporting Period and therefore no PM_{10} (and therefore TSP) data was available for review. No dust related issues or complaints were reported during the reporting period.

5.3.4 Dust and particulates monitoring results

Table 5-6: Compliance with DD and PM_{10} criteria during the Reporting Period

Date	DUST DEPOSITION (DD)		PM_{10} TEOM		Air quality Complaints
	Compliance	Comment	Compliance	Comment	
Sep 2021	Yes	No exceedances of dust deposition.	NA	Due to power issues affecting both TEOM monitors, no data was recorded this month.	No
Oct 2021	Yes	No exceedances of dust deposition.	NA	Due to power issues affecting both TEOM monitors, no data was recorded this month.	No
Nov 2021	Yes	No exceedances of dust deposition.	NA	Due to power issues affecting both TEOM monitors, no data was recorded this month.	No
Dec 2021	Yes	No exceedances of dust deposition.	NA	Due to power issues affecting both TEOM monitors, no data was recorded this month.	No
Jan 2022	Yes	No exceedances of dust deposition.	NA	Due to power issues affecting both TEOM monitors, no data was recorded this month.	No
Feb 2022	Yes	No exceedances of dust deposition.	NA	Due to power issues affecting both TEOM monitors, no data was recorded this month.	No
Mar 2022	Yes	No exceedances of dust deposition.	NA	Due to power issues affecting both TEOM monitors, no data was recorded this month.	No
Apr 2022	Yes	No exceedances of dust deposition.	NA	Due to power issues affecting both TEOM monitors, no data was recorded this month.	No
May 2022	Yes	DD4 was inaccessible due to flood. The value for DD4 was replaced by an average of the previous 12 measurement plus 20 percent. No exceedances of dust deposition.	NA	Due to power issues affecting both TEOM monitors, no data was recorded this month.	No
Jun 2022	Yes	No exceedances of dust deposition.	NA	Due to power issues affecting both TEOM monitors, no data was recorded this month.	No
Jul 2022	Yes	No exceedances of dust deposition.	NA	Due to power issues affecting both TEOM monitors, no data was recorded this month.	No
Aug 2022	Yes	No exceedances of dust deposition.	NA	Due to power issues affecting both TEOM monitors, no data was recorded this month.	No

5.3.5 Analysis of dust and particulate monitoring

A summary of the air quality monitoring results for the project since inception is provided below.

5.3.5.1 Dust deposition

Figure 5-2 shows the rolling averages for each of the DD gauges since monitoring commenced in April 2019 to August 2022.

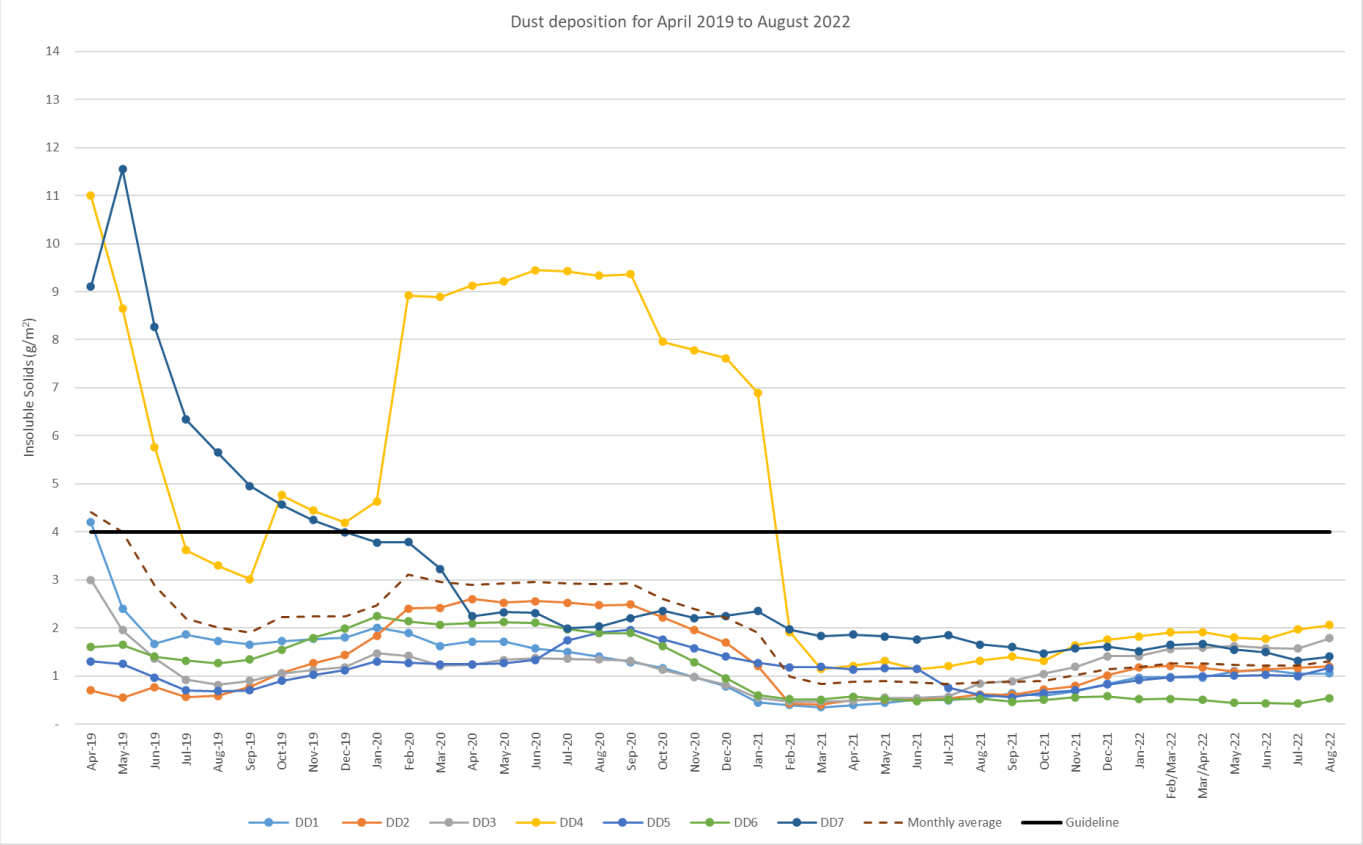

Figure 5-2: Rolling average dust deposition data since operation commenced

In summary:

- During January 2020 and February 2020, all of the DD gauges exceeded the long-term criteria. These exceedances were likely due to the poor air quality resulting from the bushfires in the surrounding areas. This was also evident in the PM_{10} data for the same period.
- From June 2020 to February 2021, DD4 continuously showed exceedances of the DD criteria. DD4 is located north-east of the site. Following the laboratory analysis of the DD material, these exceedances were considered likely to be due to contaminants in the gauges from other offsite sources, and were also noted to be inconsistent with results from the other DD monitoring locations (as evident from **Figure 5-2**). Monthly reports detail the split between soluble and insoluble material per DD gauge. Once the outliers were removed from the samples, no exceedance of the long-term criteria for DD were recorded during this Reporting Period.
- Since February 2021 and throughout this Reporting Period, all DD gauge data was well below the DD criteria as shown in **Table 5-5**.

5.3.5.2 Particulate Matter (PM_{10})

Due to power issues affecting both TEOM monitors, no data for PM_{10} was recorded during this Reporting Period. However, it is noted that no complaints relating to dust or air quality were raised during the reporting period.

5.4 Weather monitoring

As required under Sch4 C29, the Proponent has installed a weather station to continuously monitor (by sampling and obtaining results by analysis) the following parameters:

- Rainfall (mm)
- Solar radiation (W/m^2): This is a measure of the intensity of the sunlight at the site and varies throughout the day from 0 watts per square meter (W/m^2) at night to over 1000 W/m^2 during the day.
- Wind speed (m/s) and wind direction (degrees) at 10 metres
- Temperature at 2 metres and 10 metres (°C)
- Sigma theta at 10 metres (degN): horizontal wind direction fluctuations, measured in degrees clockwise from true north.

The weather monitoring station is located immediately west of the site office carpark, and monitoring commenced in August 2018. A summary of the measured parameters is provided in the charts below. An analysis of the data is provided in **Section 5.4.8.**

5.4.1 Rainfall (mm)

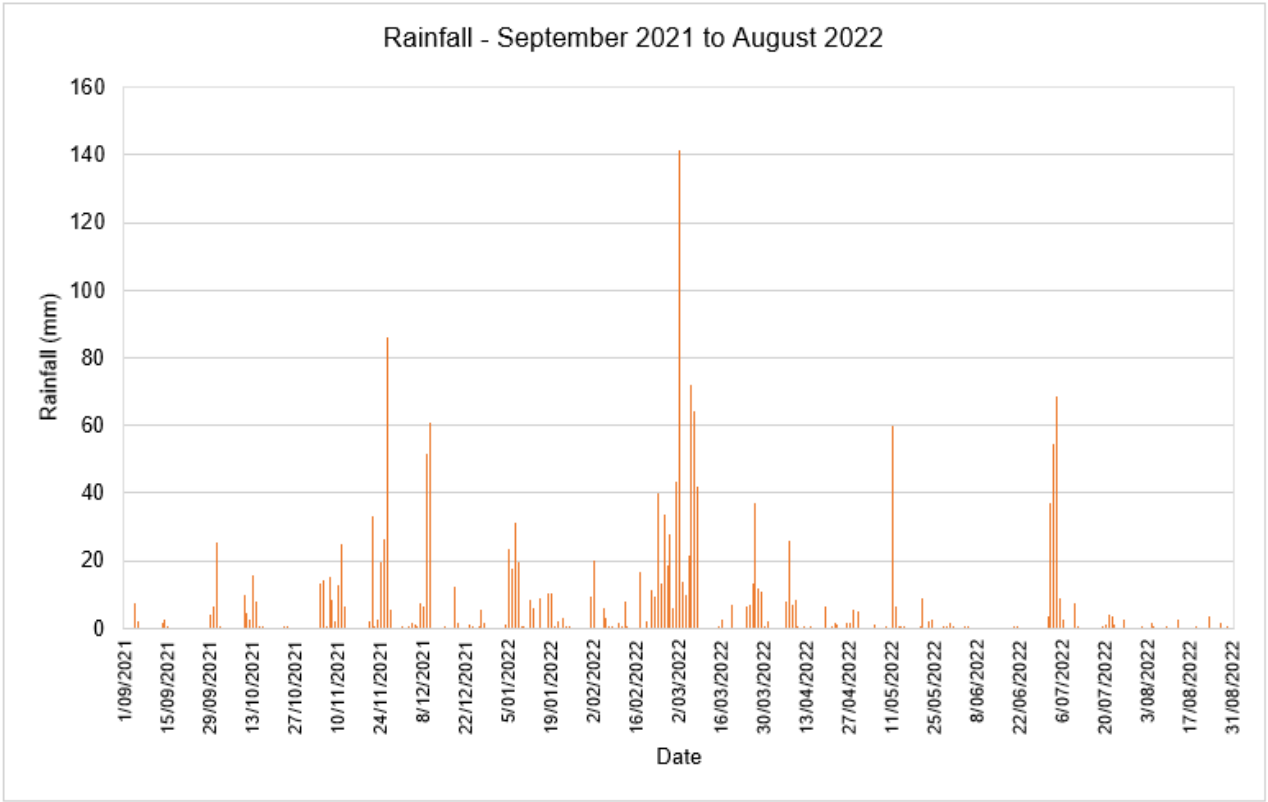

Figure 5-3: Daily rainfall data for the Reporting Period

5.4.2 Solar radiation (W/m^2)

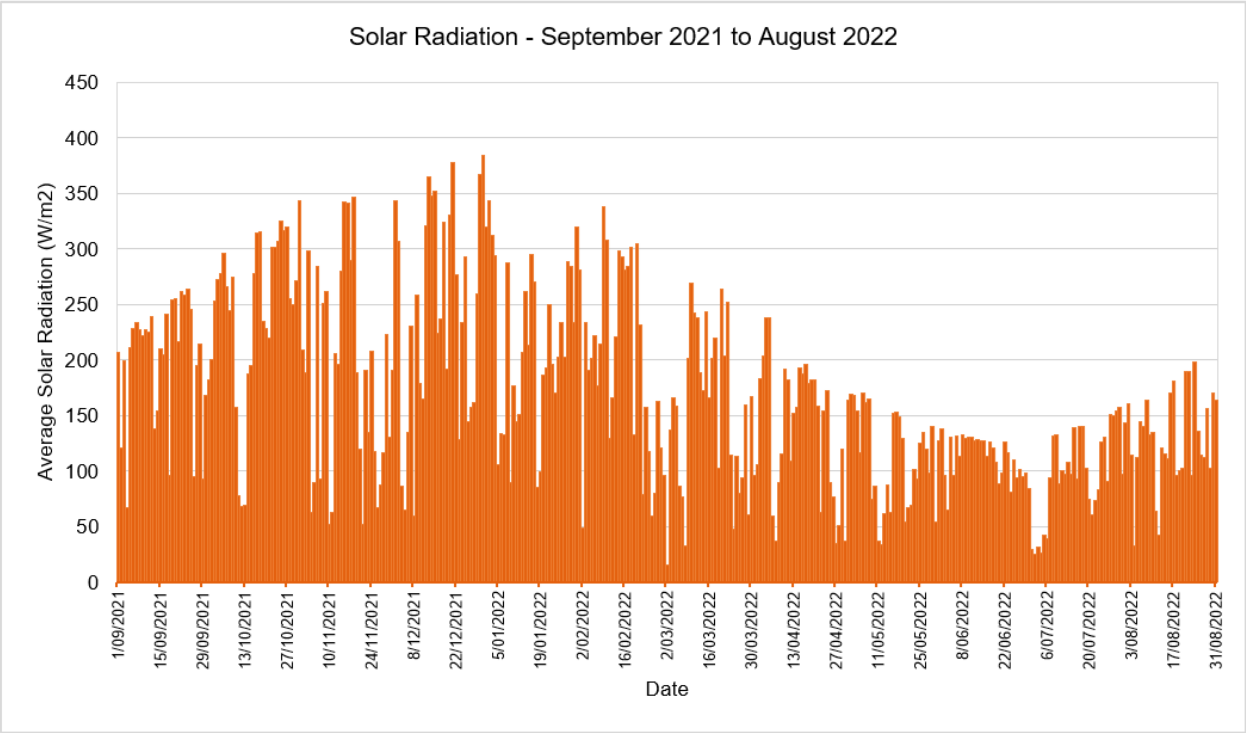

Figure 5-4: Daily solar radiation data for the Reporting Period

5.4.3 Wind speed at 10 metres (m/s)

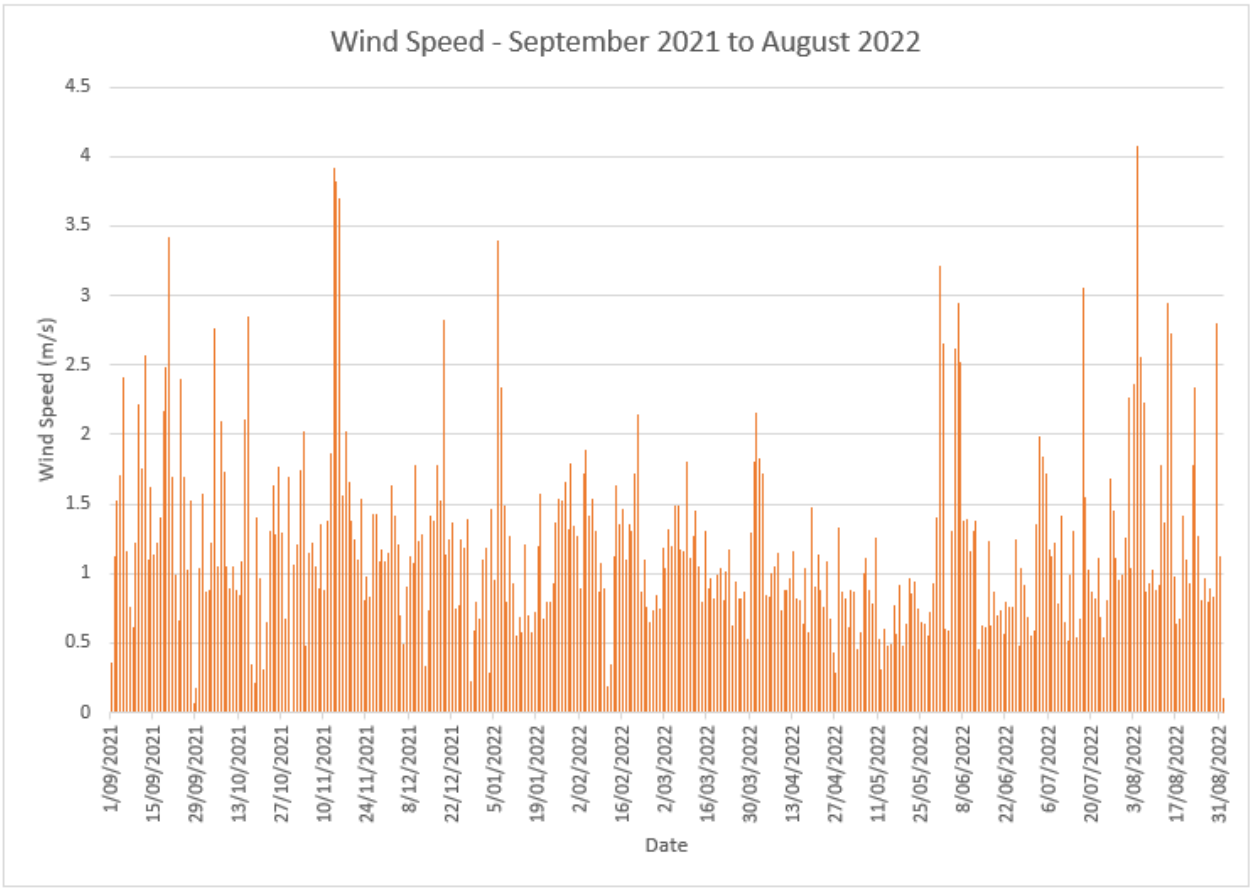

Figure 5-5: Daily wind speed at 10 metres for the Reporting Period

5.4.4 Sigma theta (degN)

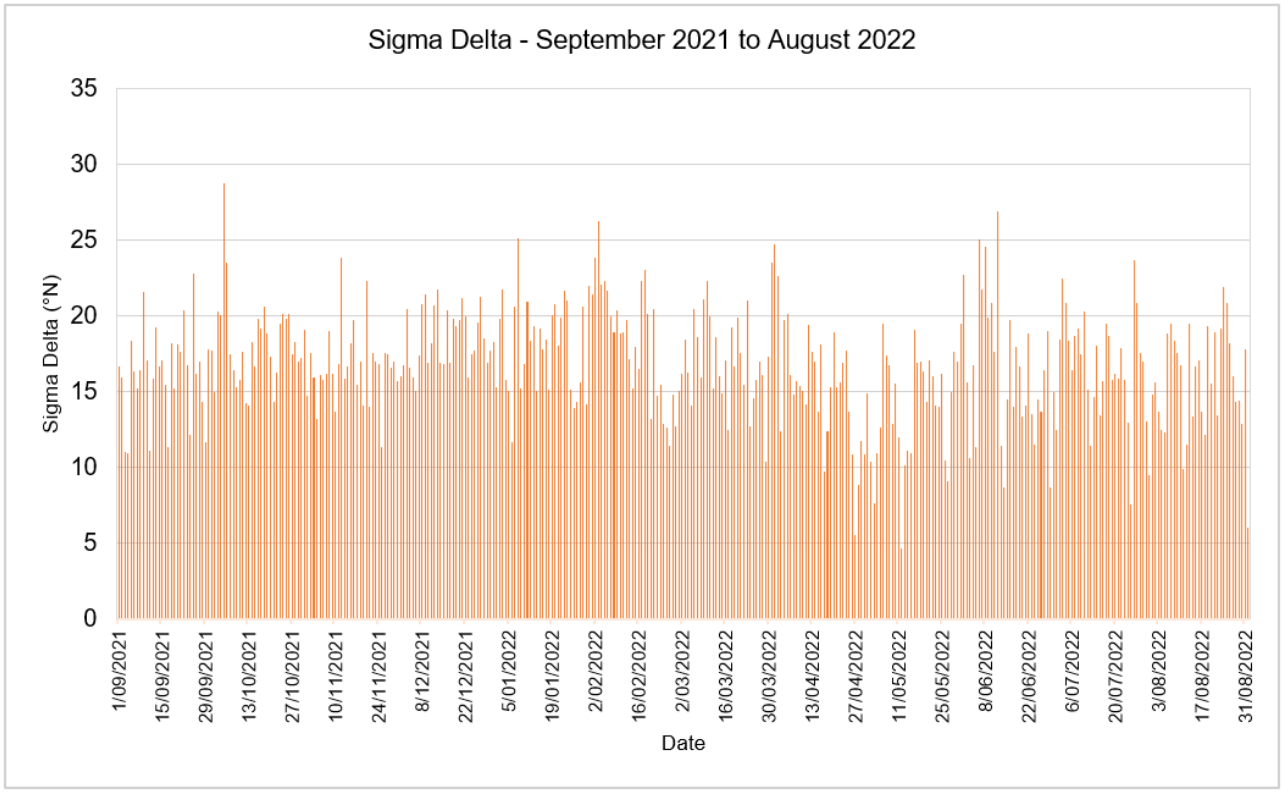

Figure 5-6: Average daily sigma delta (SD_WD) for the Reporting Period

5.4.5 Wind direction

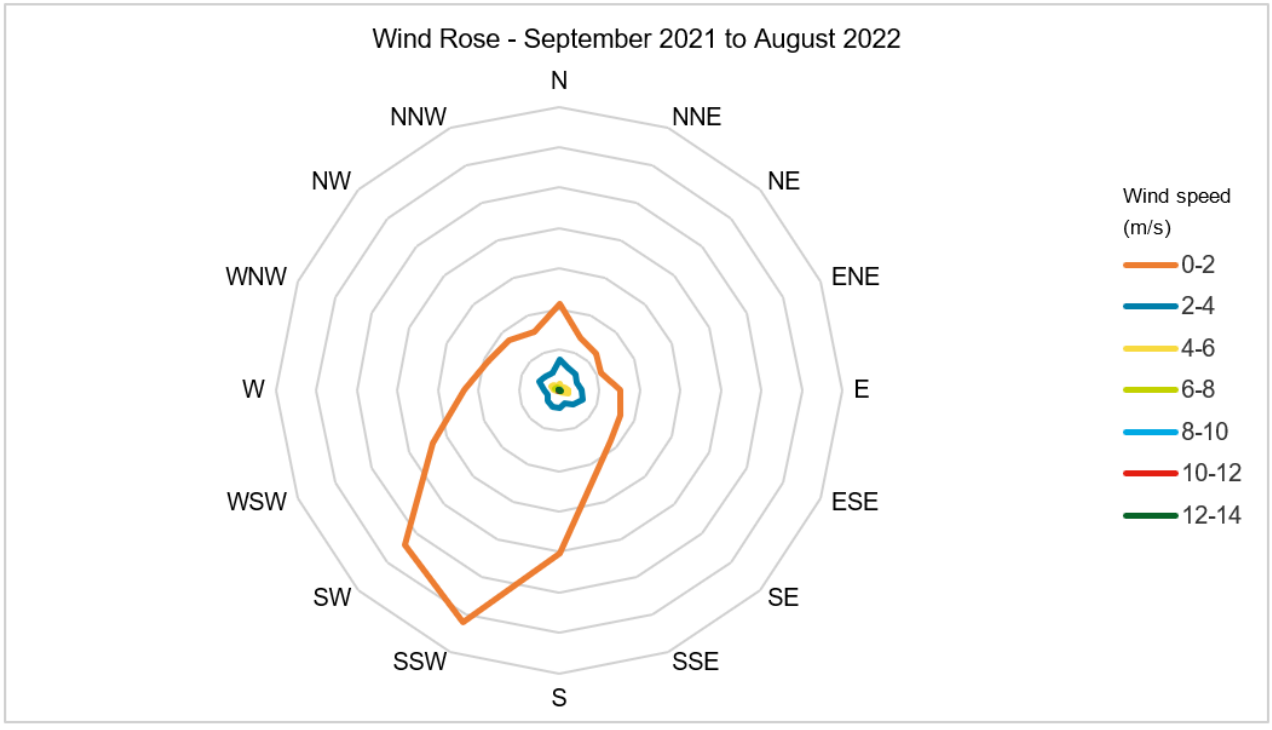

Figure 5-7: Wind rose for the Reporting Period

5.4.6 Temperature at 10 metres (°C)

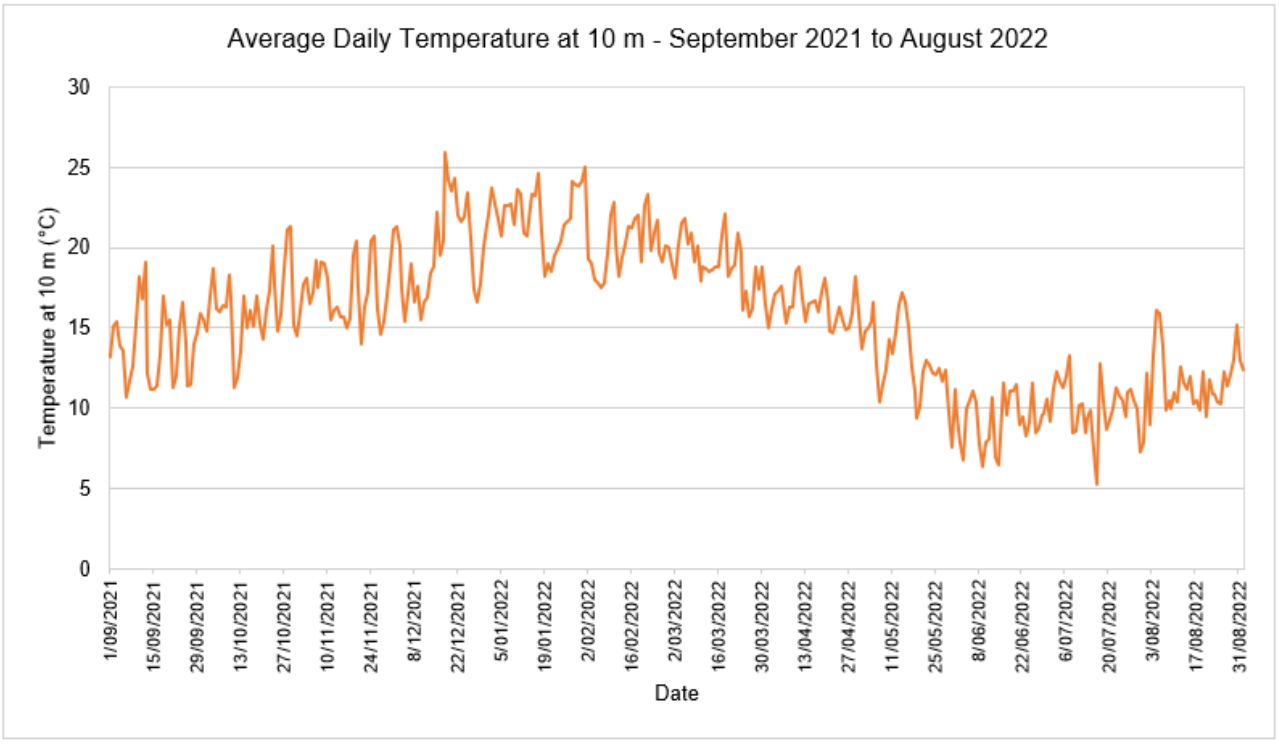

Figure 5-8: Daily temperature at 10 metres for the Reporting Period

5.4.7 Temperature at 2 metres (°C)

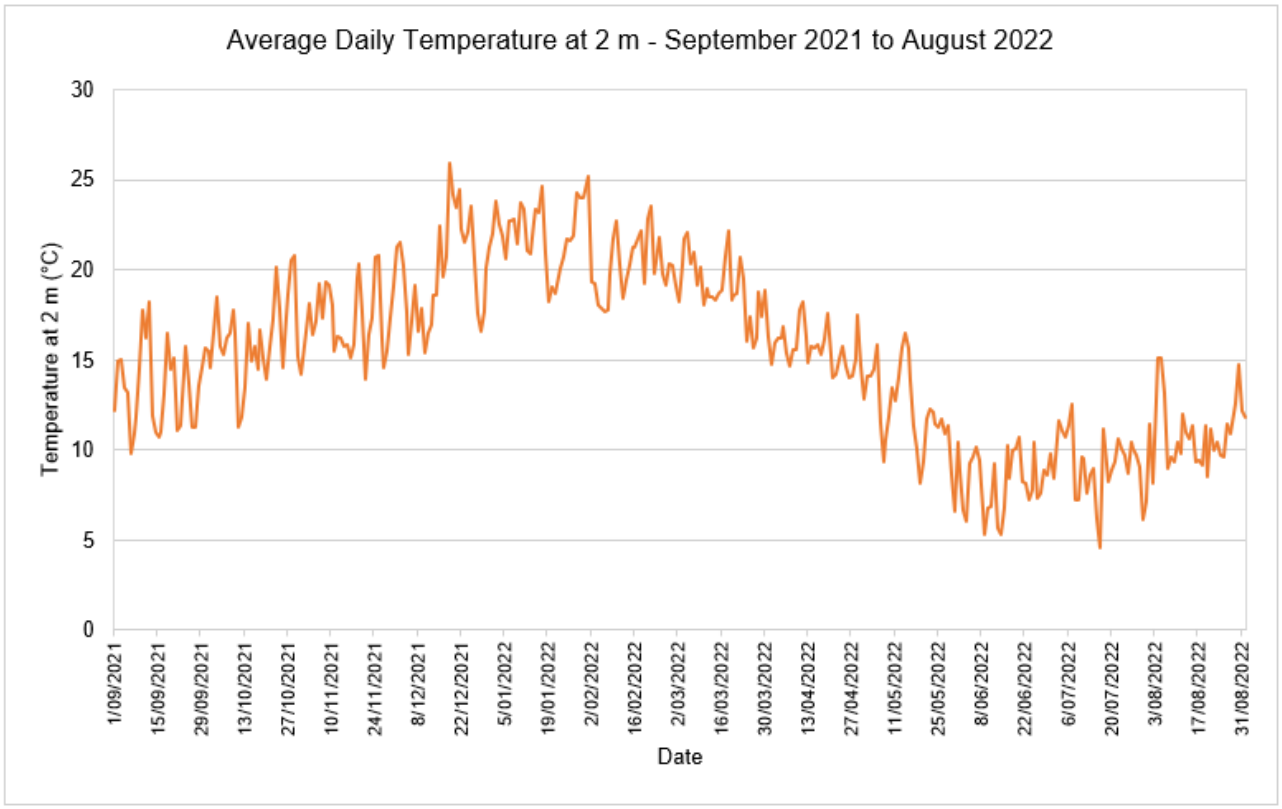

Figure 5-9: Daily temperature at 2 metres for the Reporting Period

5.4.8 Analysis of weather monitoring

Table 5-7: Weather monitoring data analysis for Reporting Period

Location ID	Parameter
Rainfall (mm)	• The highest monthly rainfall was recorded in March 2022, totalling 506 mm. Lowest monthly rainfall was recorded in June 2022 with a total of 0.8 mm. • The highest daily rainfall of 141.6 mm was recorded on 2 March 2022, followed by 86 mm on 26 November 2021. • Total rainfall for 2021 (September to December) was 518.2 mm, and total rainfall for 2022 (January to August) was 1764.6 mm. • The average rainfall for the Reporting Period was 147.1 mm. • Autumn had the most rainfall, with a total of 664 mm being recorded. Winter had the lowest total rainfall with a total of 209 mm being recorded.
Solar radiation (W/m^2).	• Highest solar radiation was recorded in the Spring-Summer months (September to February) and the lowest solar radiation was recorded in the autumn-winter months (March to August). • The highest monthly solar radiation during the Reporting Period was 7601.2 W/m^2, which was recorded in October 2021. The lowest monthly solar radiation was 3001.7 W/m^2, recorded in July 2022. • The highest daytime solar radiation during the Reporting Period was recorded on 1 December 2021 at 12:50 pm.
Wind speed at 10 metres (m/s)	• The average wind speed for the Reporting Period was 1.2 m/s. • The maximum wind speed recorded was 13.8 m/s on 12 September 2021 at 12:00 pm • The minimum wind speed recorded was 0 m/s and recorded on various days. • The highest monthly average wind speed was 1.53 m/s, recorded in November 2021. • The lowest monthly average wind speed was 0.1 m/s, recorded in September 2022. • Wind speed was predominantly in the 0-2 m/s range, intermittently in the 2-4 m/s range, and occasionally greater than 4 m/s: 0-2 m/s range (81%), 2-4 m/s (14%), 4-6 m/s (3%), and >6 m/s (1%)
Wind direction at 10 meters (degrees) Sigma theta at 10 metres (degN)	• The wind rose in **Figure 5-7**, shows that the wind direction was predominately from the south-west. • The wind rose was developed using raw wind speed (m/s) and raw wind direction (degrees)
Temperature at 2 metres (°C)	• The average temperature for the Reporting Period was 15.3°C. • The highest temperature recorded was 37.52°C on 18 December 2021 at 2:40 pm. • The lowest temperature recorded was -2.5°C on 15 June 2022 at 7:30 am. • The highest monthly average temperature was 22.04°C, recorded in January 2022. • The lowest monthly average temperature was 8.21°C, recorded in June 2022.
Temperature at 10 metres (°C)	• The average temperature for the Reporting Period was 15.7°C. • The highest temperature recorded was 36.64°C on 18 December 2021 at 4:40 pm. • The lowest temperature recorded was -1.91°C on 15 June 2022 at 6:10 am. • The highest monthly average temperature was 21.95°C recorded in January 2022. • The lowest monthly average temperature 9.25°C recorded in June 2021.

5.5 Surface water monitoring

As per the SWLMP (GHD, 2019), the main purpose of the surface water management system is the collection and treatment of sediment laden runoff prior to discharge via one of three licensed discharge points. Runoff not considered leachate[9] will be collected and discharged into sediment dams or temporary in-cell surface water storage areas, within the bunds, for initial treatment of sediment.

Surface water runoff from intermediate cover areas and bunded areas of the cell floor will be isolated from contact with the waste and will be collected and pumped from the landfill area and treated as stormwater in the surface water management system. Water from the sediment dams will be reused on site where possible for operational purposes (such as dust suppression). Water not re-used will be transferred to external dams beyond the bunds and discharged if above the design rainfall event or otherwise once testing for appropriate water quality has been undertaken. If required flocculant treatment will be undertaken in accordance with the Stormwater Dewatering Management Plan (Niche Environment and Heritage, 2016).

5.5.1 Monitoring locations

The surface water management system encompasses the collection and treatment of sediment laden runoff prior to discharge via monitoring points.

The surface water and wet weather monitoring locations are shown on **Figure 5-10.** The licensed discharge points are provided EPL 20814 and replicated in **Table 5-8.**

Table 5-8: EPL 20814 Licensed discharge points for surface water

EPA/EPL ID #	Type of discharge point	Sampling Point on Figure 5-10
1	Wet weather discharge and water quality monitoring	Dam 6 discharge point
2	Wet weather discharge and water quality monitoring	Weir monitoring point
3	Wet weather discharge and water quality monitoring	Dam 3 discharge point
EPA/EPL ID #	**Monitoring point**	**Sampling Point on Figure 5-10**
19	Surface water monitoring point	Monitoring gantry

[9] Leachate is stormwater which has contacted surface exposed waste and the liquid collected from the cells which have underdrain collection and extraction systems. The surface water management system will only manage stormwater that has come into contact with VENM, ENM and other inert materials such as unprocessed and processed Building and Demolition wastes and on the basis that the water quality objectives stipulated in the Environment Protection Licence are met. Any water coming into contact with C&I wastes shall be treated as leachate noting that the Project approval requires that all unprocessed C&I wastes are sorted in an enclosed building with impermeable floors draining to a leachate management system.

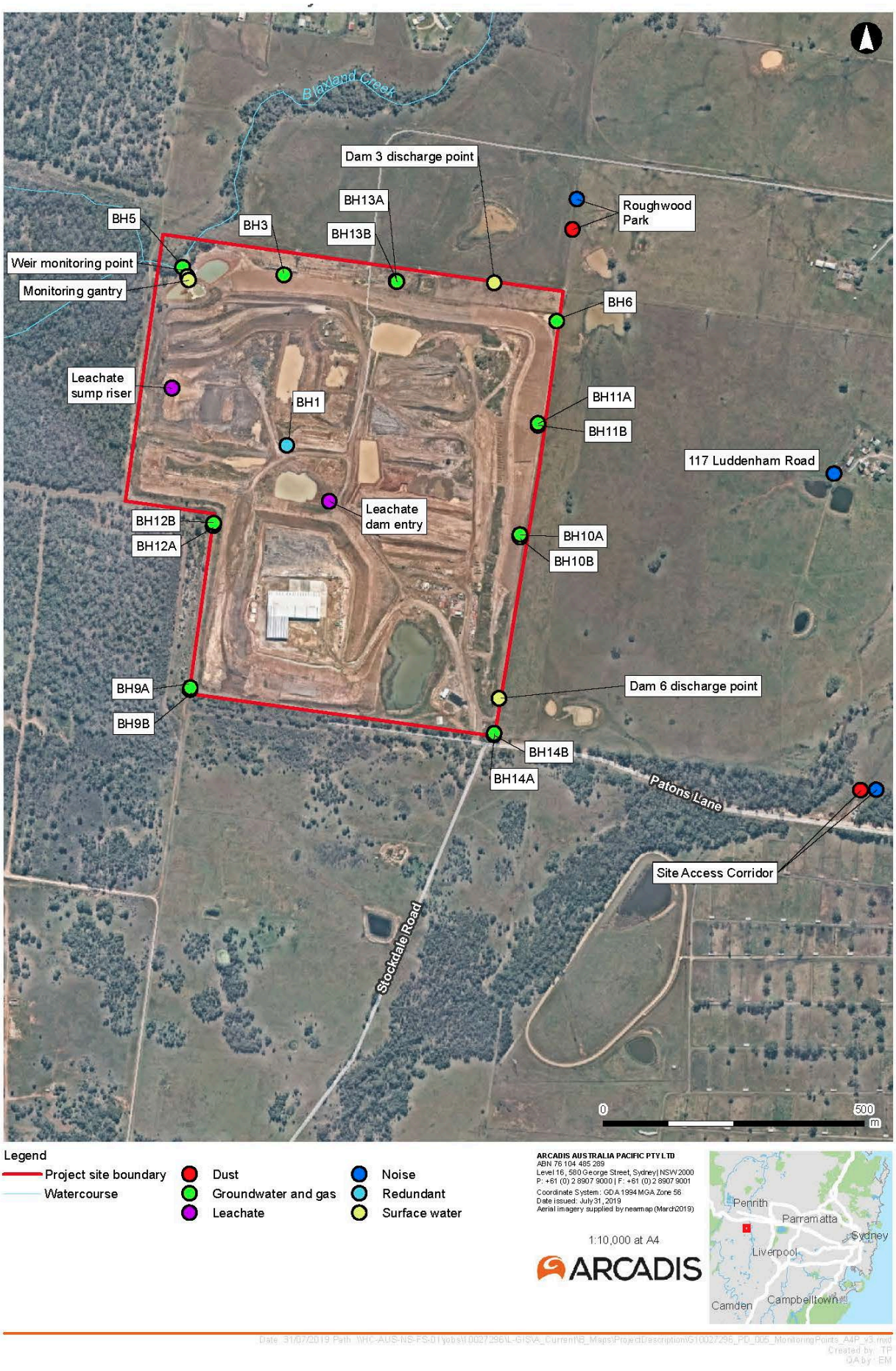

Figure 5-10: Monitoring Locations

5.5.2 Monitoring criteria

As per Sch7 H C5(b), the surface water management system includes measures to treat runoff where required to reach acceptable discharge under the EPL, according to guidelines from *Managing Urban Stormwater - Soils and Construction Manual (DECC 2004)* and EPA requirements.

The EPL concentration limits are specified in **Table 5-9.** For each monitoring/discharge point or utilisation area specified in **Table 5-8**, the concentration of a pollutant discharged at that point, or applied to that area, must not exceed these criteria.

Table 5-9: Discharge criteria for surface water for licenced discharge points

Pollutant	Unit	Criteria	Frequency of monitoring
Ammonia	mg/L	1	If discharges occur, the collection of samples within 24 hours of discharge and at a minimum of weekly intervals during discharge
pH	pH units	6.5-8.5	
Total suspended solids (TSS)	mg/L	50	

5.5.3 Surface water monitoring for the Reporting Period

The Surface water Assessment (GSS Environmental and BMT WBM Pty Ltd, February 2010) recommended that water quality samples are collected quarterly from all internal and external dams at PLRRC and from Blaxland Creek both upstream and downstream of the PLRRC.

The SWLMP requires that surface water be monitored quarterly at the sediment dams and wet weather discharge monitoring is also undertaken at the wet weather overflow points. Since construction of Dams 2A, 3 and 6 (completed in July 2019), wet weather discharge monitoring has been undertaken at least quarterly at sediment dams 4 and 5 and at the overflow points. This is taken to have satisfied the requirement for quarterly surface water monitoring. Wet weather overflow monitoring for the Reporting Period is addressed in **Section 5.5.4**.

The following monitoring parameters were established in accordance with the *Environmental Guidelines: Solid Waste Landfills, Second Edition (Guidelines for Solid Waste Landfills)* (NSW EPA, 2016), and approved via the EPL 20814.

- pH
- Total suspended solids (mg/L)
- Turbidity (NTU)
- Dissolved oxygen (mg/L)
- Electrical conductivity (µs/cm)
- Nitrogen – ammonia (mg/L)
- Total organic carbon(mg/L)
- Total dissolved solids(mg/L)
- Potassium (mg/L)

All monitoring of waters will be undertaken in accordance with *Approved Methods for Sampling and* Analysis *of Water Pollutants in NSW* (DECCW, March 2004).

5.5.4 Wet weather overflow monitoring for the Reporting Period

There are no specific Conditions of Consent that are applicable to wet weather discharges, however EPL 20814, requires that wet weather overflows are monitored during active discharges. Wet weather overflow points are located at LDP1 Dam 6 and LDP3 Dam 3 (**Figure 5-10**).

Table 5-9 details the wet weather discharge monitoring criteria.

In addition to the above parameters, pH (in pH units) is also monitored monthly during any pumped discharge and during overflow discharges, and within 24 hours after detection of an overflow discharge (during operational hours) while the overflow discharge occurs.

There were 15 wet weather discharges during the Reporting Period. Wet weather discharge monitoring is shown in **Table 5-10.** Exceedances of the discharge criteria **(Table 5-9)** are shown by pink shading.

Table 5-10: Wet weather overflow monitoring for the Reporting Period

TDS – total dissolved solids, DO – dissolved oxygen, TOC – total organic carbon, NSL – no specific limit. EC – electrical conductivity – recommended limit of 1,600 µS/cm for discharge to Blaxland Creek (or off-site)

Date	Parameter	Unit	Limit	LDP1 Dam 6	LDP3 Dam 3	S7 Blaxland Creek	LDP2 HES Gantry	LDP2 HES Spillway	S8 Blaxland Creek	Comment
05/10/21	**pH**	**pH**	**6.5-8.5**	**7.79**	**8.01**	**6.99**	**7.97**	**7.97**	**6.90**	17 mm rainfall in four days
	TSS	**mg/L**	**50**	**5**	**30**	**160**	**<5**	**<5**	**30**	
	Ammonia	**mg/L**	**1**	**0.03**	**<0.01**	**0.04**	**<0.01**	**<0.01**	**0.05**	
	EC	µS/cm	NSL	1360	672	448	698	697	797	
	TDS	mg/L	NSL	957	402	582	412	426	482	
	DO	% sat	NSL	7.05	6.66	1.27	6.97	6.95	2.59	
	TOC	mg/L	NSL	9	3	9	3	3	5	
	Potassium	mg/L	NSL	11	1	3	3	4	4	
14/10/21	**pH**	**pH**	**6.5-8.5**	**7.7**	**7.98**	**6.84**	**8.16**	**8.15**	**7.14**	29.2 mm rainfall in four days
	TSS	**mg/L**	**50**	**<5**	**<5**	**119**	**<5**	**<5**	**<5**	
	Ammonia	**mg/L**	**1**	**0.03**	**<0.01**	**0.05**	**<0.01**	**<0.01**	**<0.01**	
	EC	µS/cm	NSL	1380	762.00	472	748.00	755.00	768	
	TDS	mg/L	NSL	940	448	424	436	428	432	
	DO	% sat	NSL	7.24	6.40	1.93	6.98	6.80	6.13	
	TOC	mg/L	NSL	10	6	9	4	3	4	
	Potassium	mg/L	NSL	11	2	4	4	4	4	
08/11/21	**pH**	**pH**	**6.5-8.5**	**8.27**	**8.14**	**7.43**	**8.37**	**8.37**	**7.43**	50.2 mm in preceding five days
	TSS	**mg/L**	**50**	**7**	**18**	**31**	**19**	**16**	**8**	
	Ammonia	**mg/L**	**1**	**0.02**	**<0.01**	**0.02**	**<0.01**	**<0.01**	**<0.01**	
	EC	µS/cm	NSL	1390	794	703	750	750	766	
	TDS	mg/L	NSL	948	446	408	414	414	446	
	DO	% sat	NSL	7.07	6.47	3.90	7.17	6.78	5.40	
	TOC	mg/L	NSL	11	3	13	4	4	4	
	Potassium	mg/L	NSL	13	2	5	4	4	4	

TDS – total dissolved solids, DO – dissolved oxygen, TOC – total organic carbon, NSL – no specific limit. EC – electrical conductivity – recommended limit of 1,600 µS/cm for discharge to Blaxland Creek (or off-site)

Date	Parameter	Unit	Limit	LDP1 Dam 6	LDP3 Dam 3	S7 Blaxland Creek	LDP2 HES Gantry	LDP2 HES Spillway	S8 Blaxland Creek	Comment
22/11/21	**pH**	**pH**	**6.5-8.5**	**8.03**	**7.73**	**7.13**	**8**	**8.03**	**6.97**	28.8 mm rainfall in two days
	TSS	**mg/L**	**50**	**11**	**42**	**8**	**11**	**8**	**6**	
	Ammonia	**mg/L**	**1**	**0.04**	**0.04**	**0.02**	**<0.01**	**0.04**	**0.03**	
	EC	µS/cm	NSL	1,250	733	348	729	733	358	
	TDS	mg/L	NSL	959	506	238	416	410	258	
	DO	% sat	NSL	7.27	7.14	5.58	7.59	7.44	6.11	
	TOC	mg/L	NSL	10	4	16	4	4	15	
	Potassium	mg/L	NSL	10	2	4	3	3		
29/11/21	**pH**	**pH**	**6.5-8.5**	**8.72**	**7.73**	**7.34**	**7.89**	**7.9**	**7.11**	Significant Rainfall: • 81.2 mm in preceding five days • 132 mm (72 h prior to sampling) • 138 mm (5 days prior to sampling)
	TSS	**mg/L**	**50**	**13**	**197**	**<5**	**<5**	**<5**	**<5**	
	Ammonia	**mg/L**	**1**	**0.04**	**0.06**	**0.02**	**0.33**	**0.37**	**0.03**	
	EC	µS/cm	NSL	1,080	593	181	1,100	1,100	203	
	TDS	mg/L	NSL	766	667	160	735	738	177	
	DO	% sat	NSL	8.85	5.73	6.70	6.51	6.76	7.76	
	TOC	mg/L	NSL	10	4	17	8	8	17	
	Potassium	mg/L	NSL	11	2	4	7	7	4	
10/12/21	**pH**	**pH**	**6.5-8.5**	**8.22**	**7.82**	**7.03**	**8.03**	**8.04**	**7.31**	74 mm in preceding five days
	TSS	**mg/L**	**50**	**32**	**336**	**59**	**14**	**14**	**45**	
	Ammonia	**mg/L**	**1**	**0.10**	**0.08**	**<0.01**	**0.45**	**0.45**	**<0.01**	
	EC	µS/cm	NSL	896	522	104	1,200	1,200	99	
	TDS	mg/L	NSL	620	703	132	763	734	132	
	DO	% sat	NSL	6.95	5.75	7.08	6.65	6.69	7.26	
	TOC	mg/L	NSL	11	3	14	10	10	14	
	Potassium	mg/L	NSL	8	2	3	9	9	3	

TDS – total dissolved solids, DO – dissolved oxygen, TOC – total organic carbon, NSL – no specific limit. EC – electrical conductivity – recommended limit of 1,600 µS/cm for discharge to Blaxland Creek (or off-site)

Date	Parameter	Unit	Limit	LDP1 Dam 6	LDP3 Dam 3	S7 Blaxland Creek	LDP2 HES Gantry	LDP2 HES Spillway	S8 Blaxland Creek	Comment
06/01/22	**pH**	**pH**	**6.5-8.5**	**8.39**	**7.41**	**6.78**	**8.37**	**8.4**	**7.17**	38.6 mm rainfall in preceding three days
	TSS	**mg/L**	**50**	**26**	**45**	**73**	**12**	**9**	**12**	
	Ammonia	**mg/L**	**1**	**0.03**	**0.02**	**0.07**	**0.03**	**0.03**	**0.04**	
	EC	µS/cm	NSL	1010	637	400	1220	1220	1140	
	TDS	mg/L	NSL	697	376	298	876	813	756	
	DO	% sat	NSL	7.44	6.51	0.93	6.83	7.55	6.72	
	TOC	mg/L	NSL	10	3	13	11	11	5	
	Potassium	mg/L	NSL	8	2	4	8	8	7	
14/01/22	**pH**	**pH**	**6.5-8.5**	**8.42**	**7.81**	**7.21**	**8.35**	**8.35**	**7.17**	11.6 mm rainfall in two days
	TSS	**mg/L**	**50**	**<5**	**16**	**6**	**6**	**6**	**10**	
	Ammonia	**mg/L**	**1**	**0.02**	**0.01**	**0.02**	**0.05**	**0.05**	**0.02**	
	EC	µS/cm	NSL	978	587	233	1130	1130	260	
	TDS	mg/L	NSL	720	374	191	808	808	198	
	DO	% sat	NSL	6.93	7.12	6.87	6.74	6.74	7.12	
	TOC	mg/L	NSL	10	3	20	9	9	19	
	Potassium	mg/L	NSL	8	2	3	7	7	3	
21/01/22	**pH**	**pH**	**6.5-8.5**	**7.74**	**7.29**	**7.15**	**8.06**	**8.08**	**7.13**	30.2 mm rainfall in preceding five days
	TSS	**mg/L**	**50**	**<5**	**12**	**<5**	**<5**	**13**	**<5**	
	Ammonia	**mg/L**	**1**	**0.07**	**0.04**	**0.02**	**0.16**	**0.17**	**0.02**	
	EC	µS/cm	NSL	1040	609	225	1430	1430	241	
	TDS	mg/L	NSL	692	364	279	868	852	176	
	DO	% sat	NSL	5.83	6.81	6.46	6.24	6.61	7.00	
	TOC	mg/L	NSL	10	3	20	10	10	21	
	Potassium	mg/L	NSL	8	2	4	8	7	3	

TDS – total dissolved solids, DO – dissolved oxygen, TOC – total organic carbon, NSL – no specific limit. EC – electrical conductivity – recommended limit of 1,600 µS/cm for discharge to Blaxland Creek (or off-site)

Date	Parameter	Unit	Limit	LDP1 Dam 6	LDP3 Dam 3	S7 Blaxland Creek	LDP2 HES Gantry	LDP2 HES Spillway	S8 Blaxland Creek	Comment
03/02/22	**pH**	**pH**	**6.5-8.5**	**7.44**	**7.44**	**7.09**	**8.31**	**8.33**	**6.97**	33 mm rainfall in three days
	TSS	**mg/L**	**50**	**102**	**102**	**8**	**<5**	**8**	**14**	
	Ammonia	**mg/L**	**1**	**0.05**	**0.05**	**0.01**	**0.09**	**0.06**	**0.03**	
	EC	µS/cm	NSL	619	619	376	1370	1370	393	
	TDS	mg/L	NSL	412	412	243	842	882	268	
	DO	% sat	NSL	6.86	6.86	3.77	6.58	6.58	4.28	
	TOC	mg/L	NSL	4	4	19	9	9	20	
	Potassium	mg/L	NSL	2	2	4	8	8	4	
22/02/22	**pH**	**pH**	**6.5-8.5**	**8.4**	**8.01**	**7.31**	**8.5**	**8.49**	**7.20**	20.4 mm rainfall in preceding five days
	TSS	**mg/L**	**50**	**8**	**23**	**8**	**<5**	**13**	**54**	
	Ammonia	**mg/L**	**1**	**0.11**	**0.03**	**0.04**	**0.01**	**0.03**	**0.04**	
	EC	µS/cm	NSL	1310	626	474	1340	1340	668	
	TDS	mg/L	NSL	938	384	258	823	856	414	
	DO	% sat	NSL	7.28	7.25	4.13	6.98	6.87	6.12	
	TOC	mg/L	NSL	14	3	13	9	9	13	
	Potassium	mg/L	NSL	14	2	5	8	8	6	
01/03/22	**pH**	**pH**	**6.5-8.5**	**7.86**	**7.61**	**7.45**	**7.91**	**7.90**	**7.34**	Very High Rainfall: • 68 mm (72 h prior to sampling) • 117 mm (5 days prior to sampling) Sampled within 24 h of discharge: Yes
	TSS	**mg/L**	**50**	**18**	**106**	**37**	**16**	**12**	**194**	
	Ammonia	**mg/L**	**1**	**0.07**	**0.12**	**0.01**	**0.08**	**0.08**	**0.01**	
	EC	µS/cm	NSL	1050	498	186	1130	1140	209	
	TDS	mg/L	NSL	742	472	171	834	804	194	
	DO	% sat	NSL	67.6	65.0	86.6	86.8	86.7	94.9	
	TOC	mg/L	NSL	23	7	22	9	8	21	
	Potassium	mg/L	NSL	9	2	4	7	7	4	

TDS – total dissolved solids, DO – dissolved oxygen, TOC – total organic carbon, NSL – no specific limit. EC – electrical conductivity – recommended limit of 1,600 µS/cm for discharge to Blaxland Creek (or off-site)

Date	Parameter	Unit	Limit	LDP1 Dam 6	LDP3 Dam 3	S7 Blaxland Creek	LDP2 HES Gantry	LDP2 HES Spillway	S8 Blaxland Creek	Comment
29/03/22	**pH**	**pH**	**6.5-8.5**	**7.90**	**7.80**	**7.05**	**8.00**	**7.98**	**7.19**	• 65 mm (72 h prior to sampling) • 80 mm (5 days prior to sampling) Rainfall (80 mm) in the five days prior to sampling) was above the blue-book design criteria (5-day 90th percentile rainfall of 47.6 mm). This is the first time that ammonia has exceeded the EPL (1 mg/L), with levels typically <0.1 mg/L.
	TSS	**mg/L**	**50**	**38**	**159**	**30**	**43**	**34**	**24**	
	Ammonia	**mg/L**	**1**	**0.06**	**0.01**	**<0.01**	**10.3**	**10.3**	**0.88**	
	EC	µS/cm	NSL	898	231	127	1140	1150	206	
	TDS	mg/L	NSL	864	1010	166	765	766	207	
	DO	% sat	NSL	72.6	69.5	91.9	95.1	96.4	97.1	
	TOC	mg/L	NSL	13	3	12	15	15	15	
	Potassium	mg/L	NSL	9	1	3	10	10	4	
04/07/22	**pH**	**pH**	**6.5-8.5**	**7.84**	**7.70**	**6.95**	**7.74**	**7.75**	**7.01**	Discharge occurred on the 4th, but testing was completed on the 5th. Very heavy rainfall: • 167 mm (72 h prior to sampling) • 72 mm (5 d prior to sampling) The 5-day 90th percentile rainfall of 47.6 mm (blue-book design criteria) was exceeded
	TSS	**mg/L**	**50**	**98**	**492**	**51**	**55**	**58**	**42**	
	Ammonia	**mg/L**	**1**	**0.02**	**0.02**	**0.01**	**0.82**	**0.80**	**0.05**	
	EC	µS/cm	NSL	423	188	105	944	943	120	
	TDS	mg/L	NSL	388	358	54	557	652	74	
	DO	% sat	NSL	87.0	88.6	95.0	98.1	99.9	94.0	
	TOC	mg/L	NSL	6	3	9	8	8	9	
	Potassium	mg/L	NSL	3	<1	2	7	6	2	
12/07/22	**pH**	**pH**	**6.5-8.5**	**-**	**-**	**7.31**	**8.04**	**8.06**	**7.41**	• 8 mm (72 h prior to sampling) • 8 mm (5 days prior to sampling) The concentration of ammonia (as N) was above the EPL. 20814 limit (1.0 mg/L) and considerably higher than the background concentration (0.01 mg/L) measured at S7. However, the ammonia (as N) concentration at S8 (Blaxland Creek, downstream of the discharge point – 1.38 mg/L) is below the National default water quality guideline (~1.7 mg/L at a site-specific pH 7.4
	TSS	**mg/L**	**50**	**-**	**-**	**9**	**8**	**<5**	**8**	
	Ammonia	**mg/L**	**1**	**-**	**-**	**0.01**	**4.42**	**4.44**	**1.38**	
	EC	µS/cm	NSL	-	-	389	1230	1230	694	
	TDS	mg/L	NSL	-	-	232	806	924	414	
	DO	% sat	NSL	-	-	94.3	97.2	99.8	94.6	
	TOC	mg/L	NSL	-	-	8	12	12	10	
	Potassium	mg/L	NSL	-	-	3	9	9	5	

5.5.5 Analysis of surface water monitoring results

5.5.5.1 Summary of results for Reporting Period

There were 15 wet weather discharge events during the reporting year.

To include values less than the laboratory limit of reporting in calculations, the lowest measurable value has been substituted. For example, for TSS values less than 5, the value of 5 was substituted.

Table 5-11: Summary of results for Reporting Period

Parameter	Unit	Limit	Min	Average	Max	Exceedances
pH	pH	6.5-8.5	6.78	7.72	8.72	One exceedance was recorded on 29/11/2021 at LDP1 Dam 6. The pH value recorded was 8.72.
TSS / Turbidity	mg/L	50	5	39.23	492	There were 15 exceedances of the TSS. Exceedances were recorded on the following wet weather events. The number in parentheses indicates more than one of the discharge points or monitoring locations: • 05/10/21 • 14/10/21 • 29/11/21 • 10/12/21 (2) • 06/01/22 • 03/02/22 (2) • 01/03/22 (2) • 29/03/22 • 04/07/22 (4) On all occasions the rainfall in the five days prior to sampling was above the blue-book design criteria (5-day 90th percentile rainfall of 47.6 mm), therefore as per the EPL conditions "*The Licensee is taken not to have exceeded a concentration limit specified in the licence for the discharge of total suspended solids from Points 1-3".* • The highest TSS data (492 mg/L) was recorded on 05/07/2022 at LDP3 Dam 3. • Two exceedances were recorded at LDP1 Dam 6, 98 mg/L (04/07/2022) and 102 mg/L (03/02/2022). • Six exceedances were recorded at LDP3 Dam 3, ranging from 102 mg/L to 492 mg/L. • Five exceedances were recorded at S7 Blaxland Creek, ranging from 51 mg/L to 160 mg/L. • One exceedance of 55 mg/L was recorded at LDP2 HES Gantry on 04/07/2022. • One exceedance of 58 mg/L was recorded on 04/07/2022 at LDP2 HES Spillway. • Two exceedances were recorded at S8 Blaxland Creek, ranging from 54 mg/L to 194 mg/L.
Ammonia	mg/L	1	<0.01	0.43	10.3	There were five exceedances of ammonia, recorded on the following wet weather events: • 29/03/22 (2) • 12/07/22 (3) • The highest exceedance of ammonia recorded was 10.3 mg/L on 29/03/2022 at LDP2 HES Gantry and LDP2 HES Spillway • Two exceedances were recorded at LDP2 HES Gantry, 10.3 mg/L (29/03/2022) and 4.42 mg/L (12/07/2022).

Parameter	Unit	Limit	Min	Average	Max	Exceedances
						• Two exceedances were recorded at LDP2 HES Spillway, 10.3 mg/L (29/03/2022) and 4.44 mg/L (12/07/2022). • One exceedance of 1.38 mg/L was recorded on 12/07/2022 at S8 Blaxland Creek.
EC[10]	µS/cm	NSL	99	759	1,430	Not applicable
TDS	mg/L	NSL	54	533	1,010	Not applicable
DO	% sat	NSL	0.93	27	99.9	Not applicable
TOC	mg/L	NSL	3	9.7	22	Not applicable
Potassium	mg/L	NSL	<1	5.4	10	Not applicable

5.5.5.2 Wet weather water monitoring non-compliances

EPL Condition L2.4 of EPL 20814 details the Water and/or Land Concentration Limits. These are replicated in **Table 5-9.** During EPL 20814 reporting period of 7 November 2021 to 7 November 2022, five non-compliances were reported against the water concentration limits of the licence (with the dates listed for the AEMR Reporting Period). More details are provided below.

- **Monitoring point 1 (LDP1) with elevated pH result (8.72) on 29 November 2021**

  The high and intense rainfall, above the design capacity of the sediment basin, resulted in high sediment loads. Manual dosing with flocculant was being undertaken to reduce the total suspended solids in the discharge water. The flocculant dosing may have contributed to the high pH.

  There was no known environmental harm resulting from the non-compliance. The Licensee has undertaken a review of the manual dosing procedures for the facility because of the incident to improve the understanding of dosing rates. There have been no further incidences of exceeding the pH concentration limits.

- **Monitoring point 1 (LDP1) with elevated TSS result (98 mg/L) on 4 July 2022**

  Heay rainfall, above the design capacity of the sediment basin, caused higher sediment loads. In the five days prior to sampling, 172 mm of rain had fallen.

- **Monitoring point 3 (LDP3) with elevated TSS results:**
  - 102 mg/L on 3 February 2022
  - 159 mg/L on 29 March 2022
  - 492 mg/L on 4 July 2022

  Dam 3 receives runoff from the external faces of the northeastern and eastern perimeter bund wall. Contributions from offsite, adjacent properties, is also received at Dam 3.

  On 3 February, discharge occurred because of 29 mm rainfall being received in the 5 days prior to the discharge event. It is noted, sustained rainfall through the preceding months, November 2021, December 2021 and January 2022 had contributed to saturated ground conditions resulting in higher than usual runoff. Soils at the facility are typically characterised as sodic which can be highly erodible. Vegetation cover is used on the perimeter bund wall to minimise the potential for erosion. The persistent, high and intense rainfall events experienced throughout the reporting period resulted in higher than expected erosion which has contributed to the elevated TSS results at LDP3.

[10] EC – electrical conductivity – recommended limit of 1600 µS/cm

Similarly, more than 500 mm of rainfall was recorded at the facility in March 2022 (506 mm recorded at the onsite weather logger and 556 mm BOM station 067084 (Orchard Hills Treatment Works) located <5km for the facility), resulting in greater erosion and consequently elevated TSS results on 29 March 2022.

On 4 July 2022, 172 mm of rain had fallen in the five days prior to sampling, resulting in higher sediment loads.

- **Monitoring point 2 (LDP2) with elevated TSS result (58 mg/L) on 4 July 2022**

  Heay rainfall, above the design capacity of the sediment basin, caused higher sediment loads. In the five days prior to sampling, 172 mm of rain had fallen. Heavy rainfall resulted in higher sediment loads, causing higher TSS values.

- **Monitoring Point 2 (LDP2) with elevated Ammonia results:**
  - 10.3 mg/L on 29 March 2022
  - 4.44 mg/L on 12 July 2022

  LDP2 is located in the northwest corner of the operation. The majority of stormwater flows from the facility are conveyed via a series of on-site sediment dams and controlled overflows through engineered swales and pipes to Dam 2A. Excess water flows from Dam 2A through the High Efficiency Sediment (HES) basin for treatment before being discharged to Blaxland Creek via an engineered spillway. Dam 2A also has a high flow spillway and discharge of stormwater in events that exceed the capacity of the HES and Dam 2A.

  More than 500 mm of rainfall was recorded at the facility in March 2022 (506 mm recorded at the onsite weather logger and 556 mm BOM station 067084 (Orchard Hills Treatment Works) located <5km for the facility). An investigation undertaken by the Licensee was unable to determine the source of the ammonia contamination in the stormwater system. The Licensee took all reasonable measures to prevent the discharge of stormwater with high concentrations with transfers of the stormwater to the leachate management system undertaken where possible, as well as increased measures to avoid or minimise water pollution, including:

  - De-silting dams
  - Maintaining dish drains leading to the discharge dam
  - Ongoing management of dam freeboard

  It is noted the two elevated ammonia results recorded at LDP2 have been attributed to a single incident, on 29 March 2022, with ongoing maintenance of the surface water management system removing residual contamination with a declining trend in the ammonia concentrations being recorded for each subsequent discharge event.

  There was no known environmental harm resulting from the non-compliance. On all occasions when the ammonia concentration was measured at the receiving waters, S8 (~40 m downstream of the LDP2 discharge point in Blaxland Creek), the concentrations were at or below the National default water quality guideline for freshwater ecosystems (adjusted for pH).

5.5.5.3 Overview of rainfall

The significant and unprecedented rainfall received in both 2021 and 2022 compared to median rainfall for the area is a significant underlying cause for each of the exceedances recorded during the Reporting Period.

Figure 5-11 shows the daily cumulative rainfall for 2021 and 2022 compared to the median rainfall. Each of the dates that exceedances were recorded are indicated on the figure, which highlights the occurrence of the non-compliances coinciding with periods of high and intense rainfall.

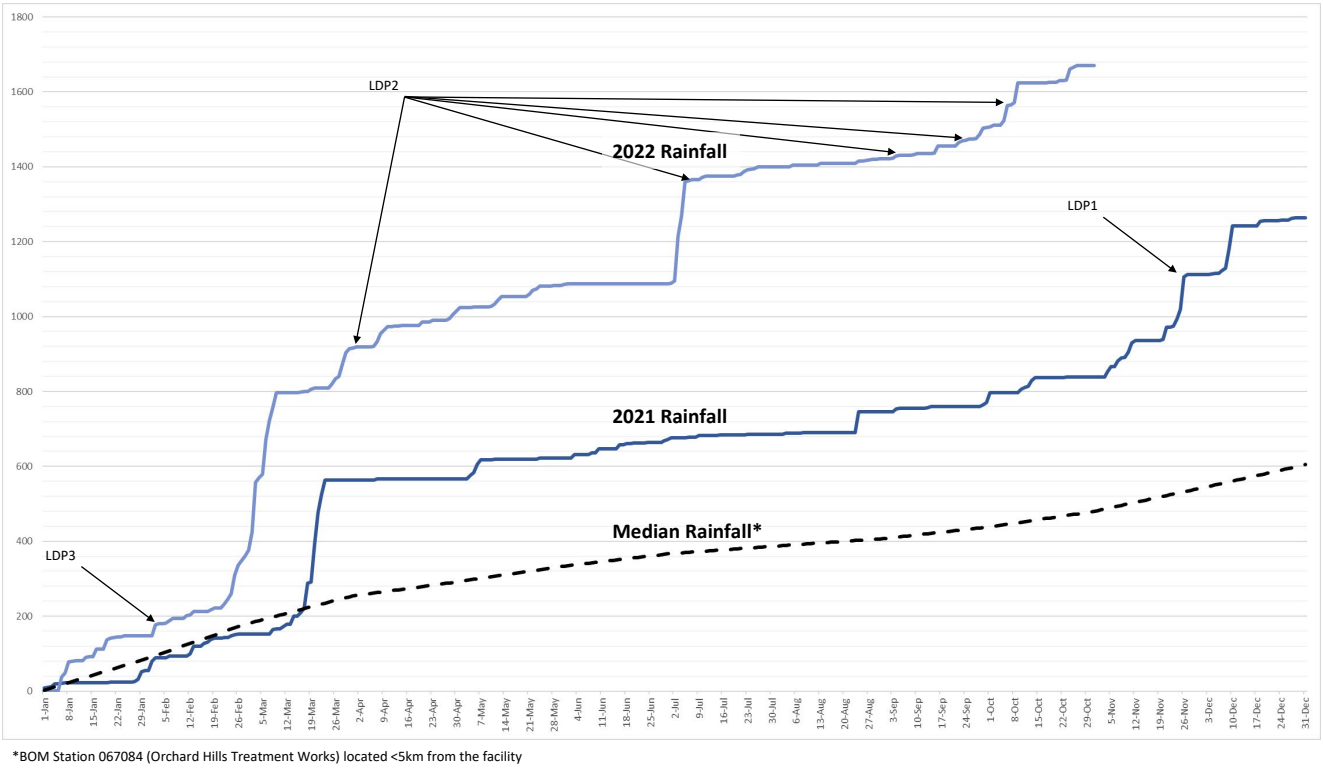

Figure 5-11: Summary of rainfall and discharge non-compliance during the reporting period

5.5.5.4 Long term trends

There is still insufficient data to determine long-term trends.

5.6 Groundwater monitoring

Landfill operations commenced in August 2019. Groundwater is monitored at the groundwater monitoring bores proposed for the Project in the *Cell Design and Groundwater Assessment* (Aquaterra Consulting, 2010). Additional boreholes were also installed for the detailed geotechnical investigations.

The groundwater observation bores were drilled around the perimeter of the Project as part of the site establishment works. Bore construction was in accordance with EPA requirements and subsequent sampling has been carried out in accordance with monitoring plan in the SWLMP and in accordance with the relevant EPL.

5.6.1 Groundwater monitoring criteria

There are no specific criteria detailed in the Conditions of Consent. However, Sch4 C20(g) requires that a groundwater program that is in accordance with the requirements of the EPL, includes collection of baseline data; details of the proposed monitoring network; and details the parameters for testing and respective trigger levels for action under the surface water, groundwater and leachate response plan.

Sch4 C20(j) requires that the response plan describes the array of measures that could be implemented to respond to any groundwater contamination that may be caused by any development.

As described in the SWLMP, groundwater quality will be assessed against relevant assessment criteria outlined in *Australian and New Zealand Guidelines for Fresh and Marine Water Quality* ANZECC/ARMCANZ 2000 (*ANZECC 2000)* and background and including historical pre-waste activities.

If an exceedance of the limits/performance criteria or the occurrence of an incident that causes (or may cause) material harm to the environment, the NSW EPA would be notified as soon as practicable after the exceedance or incident.

5.6.2 Groundwater monitoring locations

Groundwater is monitored quarterly at 15 locations around the site. The boreholes provided in **Table 5-12** and the locations are shown on **Figure 5-10**.

BH1, BH2, BH4 and BH8 were monitored quarterly for standing water level only, prior to being decommissioned.

Table 5-12: EPL 20814 Licensed discharge points for groundwater

Sampling Point	EPA/EPL ID #	Sampling Point	EPA/EPL ID #	Sampling Point	EPA/EPL ID #
BH3	4	**BH10A**	9	**BH12B**	14
BH5	5	**BH10B**	10	**BH13A**	15
BH6	6	**BH11A**	11	**BH13B**	16
BH9A	7	**BH11B**	12	**BH14A**	17
BH9B	8	**BH12A**	13	**BH14B**	18

5.6.3 Groundwater parameters

Table 5-13 details the parameters and the frequency of monitoring which were established in accordance with the landfill guidelines.

Table 5-13: Groundwater monitoring parameters

Frequency	Parameter
Quarterly	• pH, redox potential and temperature • Standing Water Level (m AHD) • Total Dissolved Solids (mg/L) • Major cations and anions i.e. calcium, magnesium, potassium, sodium, chloride, and sulfate (as SO_4) • Bicarbonate Alkalinity (as CaCO3) (mg/L) • Total Alkalinity (as $CaCO_3$) (mg/L) • Total Organic Carbon (TOC) (mg/L) • Ammonia and nutrients i.e. Ammonia (as N), nitrate and nitrite (as N), phosphorus, phosphate total (as P)
Yearly	• Metals (mg/L) i.e. aluminium, arsenic, barium, cadmium, chromium, cobalt, copper, lead, manganese, mercury, nickel, zinc • Fluoride • Organic contaminants (mg/L): – Phenols – petroleum hydrocarbons, – monoaromatic hydrocarbons (in particular benzene, toluene, ethylbenzene and xylene) – organochlorine and organophosphate pesticides – polycyclic aromatic hydrocarbons

5.6.4 Groundwater sampling for the Reporting Period

Quarterly sampling for the Reporting Period was undertaken as follows:

- November 2021
- February 2022
- May 2022
- August 2022.

Annual sampling for the Reporting Period was undertaken as follows:

- August 2022.

The Reporting Period monitoring results are provided in **Appendix B**.

5.6.5 Groundwater monitoring analysis and trends

Baseline borehole monitoring was undertaken in April 2009 and the results were compared with the Freshwater Ecosystem Protection guidelines (ANZECC, 2000). Results were obtained for total dissolved solids, major ions, dissolved metals (eg aluminium, zinc), nutrients (eg ammonia, total nitrogen) pesticides and hydrocarbons and BTEX (Benzene, toluene, ethylbenzene and xylene). The following summarises the results of the baseline borehole monitoring:

- High levels of total dissolved solids were recorded which were found to be indicative of less mobile water of long residence time and very low recharge.
- There was a dominance of chloride ions (ie bicarbonate and calcium), which were found to be indicative of old groundwaters.
- Aluminium, zinc and copper were found to be above the ANZECC Guidelines, and cadmium was equal to the ANZECC Guidelines.
- Ammonia and total nitrogen were also both the ANZECC Guidelines, with the source of nitrogen being related to the shale geology in the area.
- No pesticides or PAH were detected
- A small quantity of BTEX was measured, but this was thought to be residual oil and grease on the drilling rods.

Quarterly sampling occurred between September 2021 and August 2022 (four monitoring events). One annual monitoring event occurred during this Reporting Period.

Below is a summary of the monitoring data since groundwater monitoring began, and for this Reporting Period:

- Total dissolved solids varied between 1,000 mg/L and 4,000 mg/L for all boreholes in November 2019 and steadily reduced to between 200 mg/L and 2,500 mg/L in March 2020. Quarterly monitoring at each location during this Reporting Period identified total dissolved solids above the range measured during the baseline monitoring event (Baseline was 8,930 mg/L - 13,000 mg/L), with the exception of BH05, BH06, BH09B, BH12B and BH13B. As with the previous Reporting Period, BH12A consistently has the highest dissolved solids of all the boreholes.
- Chlorides remained steady between November 2019 and August 2021 and measured between 500 mg/L and 2,600 mg/L. BH13A, BH11A and BH12A showed an increase in December 2020 to just below 3,000 mg/L, but decreased in March 2021 and remained consistently below around 1,800 mg/L. Between September 2021 and August 2022 all boreholes had chlorides above 5,000 mg/L, with the exception of BH05, BH09B, BH12B and BH13B. BH12B and BH13B had chloride levels below 500 mg/L.
- There were minimal results for aluminium to provide any commentary.

- Zinc measured between 0 mg/L and 0.5 mg/L in August 2020, with majority of the boreholes experiencing a decline in zinc levels in August 2022. BH11A saw a minor increase in zinc levels (<0.5 mg/L), and readings of 7 mg/L and 2 mg/L at BH13A and BH14B respectively. Baseline data for Zinc exceeded the freshwater ecosystem value of 0.0014 mg/L.
- Copper ranged between 0 and 0.05 mg/L in November 2010 and showed a steady increase until August 2020, but all results were still below 0.1 mg/L, with the exception of BH10A which was marginally above 0.1 mg/L. A decline in copper levels was observed in August 2022, with readings ranging between 0 and 0.01 mg/L, with the exception of BH11A at 0.017 mg/L. Baseline data exceeded the freshwater ecosystem value of 0.0014 mg/L, however copper levels measured in August 2022 at BH03, BH05 and BH12B were below 0.0014 mg/L.
- There were minimal results for cadmium to provide any commentary.
- Ammonia ranged between 0.1 mg/L and 2.5 mg/L in November 2019 and remained steady for all boreholes through to March 2020. BH03 consistently had the highest levels of Ammonia and steadily increased until December 2020 to just above 3 mg/L) and then showed a decrease until August 2021 (2.5 mg/L). All boreholes, with the exception of BH03, BH09A and BH12A, were below the freshwater ecosystem protection guidelines of 0.9 mg/L. Readings from BH03, BH09A and BH11A can be explained as baseline data indicated that ammonia is naturally present within the shales.
- Total nitrogen measured in the 0-0.5 mg/L range in November 2019 and appeared to peak in March 2020 at 6 mg/L and 3.8 mg/L for BH09B and BH11B respectively. These measured levels decrease June 2020 to well below 1 mg/L. All other bores remained constant in at 0-2 mg/L. During this Reporting Period all boreholes, with the exception of BH9A, BH10B, BH11A and BH13B, were below the baseline levels as per the freshwater ecosystem protection guidelines of 0.35 mg/L (Total N). Total nitrogen at BH09A and BH11A decreased in June 2022 to below baseline levels. The source of the nitrogen is the shale geology (Old, 1942).
- Monitoring from August 2022 identified increased pesticides and PAH at all boreholes, with levels of 2 mg/L and 1 mg/L respectively.

5.7 Leachate monitoring

The leachate system was installed prior to commencement of landfilling activities. The details of the system are described in the *Patons Lane Resource Recovery Centre Construction Quality Assurance Report Cell 1A-1 and Initial Leachate Pond July 2019,* prepared by SRC Operations Pty Ltd. Stormwater from all site areas which has the potential to interact with waste is managed as leachate.

Washdown water from within the building is separated from surface water and managed as leachate. The leachate management system is completely separate from the surface water management system for the building. The concrete floor has been designed to support the predicted mass of the C&I waste and graded to shed washdown water into the leachate management system. Any runoff from the recycling and re-processing area is tested to confirm it will not impact on the off-site water quality objectives, as part of the surface water monitoring program. Leachate indicators (eg nitrogen – ammonia) have been included to identify if any leachate enters the surface water system such that any relevant issues can be identified and rectified.

5.7.1 Leachate monitoring requirements and criteria

To address Sch4 C20(g) of the Conditions of Consent, a leachate monitoring program has been established to provide data on the quality of the leachate produced by each landfill cell, to record leachate levels and to record details about any irregular discharges or overflows of leachate from the site.

The monitoring parameters are detailed in **Table 5-15.** Leachate quality is compared with information from relevant literature and historical data.

5.7.2 Leachate monitoring locations

Leachate is monitored in the initial leachate evaporation pond and the Cell 1 leachate collection sump (See **Figure 5-10**). **Table 5-14** details the EPL 20814 leachate monitoring locations.

Table 5-14: EPL 20814 points for leachate quality monitoring

EPA/EPL ID #	Type of monitoring point	Sampling Point
20	Leachate quality monitoring	Leachate sump riser
21	Leachate quality monitoring	Leachate dam entry

5.7.3 Leachate parameters

Leachate is monitored for the following parameters and frequency in accordance with the landfill guidelines and EPL 20814.

Table 5-15: Leachate monitoring parameters

Frequency	Parameter
Quarterly	• Electrical conductivity (µs/cm) • pH (pH units) • Standing Water Level (m AHD) (leachate head in sump)
Yearly	• TDS (mg/L) • TSS (mg/L) • Major cations and anions i.e. calcium, magnesium, potassium, sodium, chloride, fluoride and sulfate (as SO_4) • Total Alkalinity (bicarbonate and carbonite) (mg/L) • Dissolved organic matter (mg/L) i.e. total organic carbon, biochemical oxygen demand (BOD), chemical oxygen demand (COD) (TOC) • Ammonia and nutrients i.e. nitrate, nitrite, phosphorous • Metals (mg/L) i.e. aluminium, arsenic, barium, cadmium, chromium, cobalt, copper, lead, manganese, mercury, nickel, zinc • Organic contaminants (mg/L): – Phenols – petroleum hydrocarbons, – monoaromatic hydrocarbons (in particular benzene, toluene, ethylbenzene and xylene) – organochlorine and organophosphate pesticides • polycyclic aromatic hydrocarbons

5.7.4 Leachate monitoring for the Reporting Period

As required by EPL 20814, both quarterly and annually monitoring is required. For this Reporting Period, quarterly leachate monitoring data is provided in **Table 5-16** and annual leachate monitoring data is provided in **Table 5-17**.

Table 5-16: Quarterly leachate monitoring data for Reporting Period

	Nov-21	Mar-22	May-22	Aug-22
#20 – Leachate sump riser				
Electroconductivity (µs/cm)	3206	NA	NA	NA
pH	8.56	NA	NA	NA
Standing Water Level (m AHD)	NA	NA	NA	NA
#21 – Leachate dam entry				
Electroconductivity (µs/cm)	3,847	2,500	1,954	2,206
pH	7.82	8.45	9.29	8.9
Standing Water Level (m AHD)	49.18	49.27	49.18	49.1

NOTE: (1) NA - not accessible. (2) TBV - Result to be verified

Table 5-17 Annual leachate monitoring data for the Reporting Period

Date	Unit	August 2022
Parameter / Location		**#21 Leachate dam entry**
Aluminium	mg/L	<0.01
Arsenic	mg/L	0.006
Barium	mg/L	0.028
Benzene	mg/L	1
Benzo(a)pyrene	mg/L	
Biochemical Oxygen Demand	mg/L	2
Cadmiun	mg/L	<0.0001
Calcium	mg/L	17
Chemical Oxygen Demand	mg/L	163
Chloride	mg/L	487
Chromium (hexavalent)	mg/L	<0.001
Chromium (total)	mg/L	0.004
Cobalt	mg/L	0.002
Copper	mg/L	0.006
Ethyl benzene	mg/L	<2
Fluoride	mg/L	0.2
Lead	mg/L	<0.001
Magnesium	mg/L	60
Manganese	mg/L	0.003

Date	Unit	August 2022
Mercury	mg/L	0.001
Nickel	mg/L	0.012
Nitrate	mg/L	17.2
Nitrite (as N)	mg/L	0.04
Organochlorine pesticides	mg/L	<2
Organophosphate pesticides	mg/L	<2
Phenols	mg/L	<2
Phosphate total (as P)	mg/L	0.06
Phosphorus (total as P)	mg/L	0.06
Polycyclic aromatic hydrocarbons (PAH)	mg/L	<1
Potassium	mg/L	56
Sodium	mg/L	354
Sulphate (as SO4)	mg/L	70
Toluene	mg/L	<2
Total Dissolved Solids	mg/L	1400
Total Organic Carbon	mg/L	56
Total Petroleum Hydrocarbons	mg/L	<100
Total Suspended Solids	mg/L	<5
Xylene	mg/L	<2
Zinc	mg/L	0.018

NOTE: (1) NA - not accessible.

5.7.5 Leachate monitoring analysis and trends

Leachate was monitored at the leachate sump rise and the leachate dam entry. **Table 5-18** summarises the quarterly minimum, average and maximum results for the leachate monitoring parameters.

Table 5-18: Summary of quarterly leachate results for Reporting Period

Parameter	Unit	Min	Average	Max
Electroconductivity	(µs/cm)	1,954	2,742.6	3,847
pH	pH units	7.82	8.60	9.29
Standing Water Level	m AHD	49.10	49.18	49.27

5.7.5.1 Leachate monitoring non-compliance

In accordance with EPL Condition M2, monitoring for each monitoring/discharge point or utilisation area specified in Table M2.2 (by a point number), the Licensee must monitor (by sampling and obtaining results by analysis) the concentration of each pollutant specified in Column 1. The Licensee must use the sampling method, units of measure, and sample at the frequency, specified opposite in the other columns.

- In February 2022, May 2022 and August 2022 the leachate riser/LCH01 (EPL ID #20) was not accessible to complete monitoring for in field Electrical Conductivity, pH and Standing Water Level. In August 2022, monitoring of the parameters listed in **Table 5-17** was also unable to be completed.

- In November 2021, the leachate riser/LCH01 (EPL ID #20) was not accessible and standing Water Level was not recorded as no viable measurement method was available.

The leachate volume will continue to be reduced. An aeration fountain has been added to the leachate dam and is in operation 24 hours to increase aeration and evaporation to make the monitoring point more accessible.

5.8 Landfill gas monitoring

5.8.1 Landfill gas monitoring criteria

Monitoring for subsurface gas, surface gas emissions and gas accumulation is undertaken in accordance with the Guidelines for Solid Waste Landfills. **Table 5-19** summarises the threshold levels that are provided in Guidelines for Solid Waste Landfills and are the threshold levels that have been used to assess the monitoring data during this Reporting Period.

Table 5-19 Landfill gas monitoring criteria

Aspect	Threshold levels
Landfill gas sub-surface monitoring	Detection of methane levels above 1% methane (v/v) above established natural background levels Carbon dioxide at concentrations of 1.5% carbon dioxide (v/v) above established natural background levels
Landfill gas surface monitoring	Detection of methane levels above 500 ppm (v/v) any point on the landfill surface for intermediate and finally capped areas.
Gas accumulation monitoring in enclosed structures	Detection of methane exceeding 1.2% methane (v/v) (12,500 ppm)

5.8.2 Subsurface landfill gas monitoring for the Reporting Period

The location of the subsurface gas monitoring wells is shown on **Figure 5-10.**

Subsurface landfill gas monitoring is undertaken on a quarterly basis and as detailed in the *PLRRC Air Quality Management Plan (June 2019)* detection of methane levels above 1.25% methane (v/v) requires the EPA to be notified within 24 hours and also requires an increase in the frequency of monitoring.

The results for the Reporting Period are summarised in **Table 5-20.** Where there are two values for either methane or carbon dioxide (CO_2) in the table, this indicates that retesting was undertaken.

Based on the threshold levels identified in the Guidelines for Solid Waste Landfills detailed in **Table 5-20**, exceedances above the 1% methane (v/v) and 1.5% carbon dioxide (v/v) has been identified by pink shading.

Table 5-20: Quarterly landfill gas monitoring for the Reporting Period

LDP	Pollutant	November 2021	February 2022	May 2022	August 2022
BH3	**Methane**	**0**	**0**	**0**	**0**
	CO_2	0.3	0.5	0.2	0
BH5	**Methane**	**0**	**0**	**0**	**0**
	CO_2	11.2	13.3	16.1	13.3
BH6	**Methane**	**0**	**0**	**0**	**0**
	CO_2	8.5	0.11	0.1	0
BH9A	**Methane**	**0**	**0**	**0.1**	**0**
	CO_2	10.1	11.6	1	14.2

LDP	Pollutant	November 2021	February 2022	May 2022	August 2022
BH9B	**Methane**	**0**	**0**	**0.1**	**0**
	CO_2	4.9	11.8	14.3	9.1
BH10A	**Methane**	**0**	**0**	**0**	**0**
	CO_2	7.2	4	2.5	3.4
BH10B	**Methane**	**0**	**0**	**0**	**0.1**
	CO_2	19.1	2.8	8.3	8.2
BH11A	**Methane**	**0**	**0**	**0**	**0**
	CO_2	4.3	6.3	3.4	4.5
BH11B	**Methane**	**0**	**0**	**0**	**0**
	CO_2	14.2	12.3	14.8	6.5
BH12A	**Methane**	**0**	**0**	**0.1**	**0**
	CO_2	4.7	5.7	2.5	5.8
BH12B	**Methane**	**1.9**	**0**	**0**	**0**
	CO_2	10.6	5	9.3	8
BH13A	**Methane**	**0**	**0**	**0**	**0**
	CO_2	0.6	0.8	4.5	1.4
BH13B	**Methane**	**0**	**0**	**0**	**0**
	CO_2	2.4	0.6	4.5	3.8
BH14A	**Methane**	**0**	**0**	**0**	**0.1**
	CO_2	5.3	0.9	1.6	11.2
BH14B	**Methane**	**0**	**0**	**0**	**0**
	CO_2	4.9	10.8	5.6	24.7

5.8.2.1 Retesting

During May 2022, borehole BH12B was retested due to a pump failure.

5.8.2.2 Exceedances of monitoring criteria

For this Reporting Period, one exceedance of 1.25% v/v for methane was identified which required notification to EPA as per the AQPM. This is summarised below.

- The November 2021 subsurface gas monitoring was undertaken on 30 November 2021 and 1 December 2021. BH12B returned an initial methane concentration of 1.9% v/v. While this reading exceeded the assessment criteria, it was still below the lower explosive limit (LEL) for methane of 5% v/v. Following this exceedance, SRC Operations Pty Ltd engaged the consultant to test BH12B on a monthly basis to confirm whether there were any further exceedances.

5.8.3 Surface gas emission monitoring for the Reporting Period

The Guidelines for Solid Waste Landfills recommend surface gas emission monitoring is undertaken to demonstrate that the cover material and extraction system is controlling the emission of landfill gas. Monitoring will occur monthly along a regular grid over the landfill surface, with sampling occurring every 25 metres at a height of five centimetres above the ground surface, using a zeroed and calibrated methane gas detector.

Detection of levels above 500 ppm (v/v) of methane at any point on the landfill surface triggers closer investigation with potential action in the form of repairing or replacing cover material.

This monitoring commences after the intermediate or final capping is applied and the first round of monitoring occurred in February 2021 following the application of the intermediate cover.

Table 5-21: Surface gas emission monitoring for the Reporting Period

Sampling Point	November 2021		February 2022		May 2022		August 2022	
	Maximum (ppm) (1)	Ambient (ppm) (2)	Maximum (ppm) (1)	Ambient (ppm) (2)	Maximum (ppm) (1)	Ambient (ppm) (2)	Maximum (ppm) (1)	Ambient (ppm) (2)
A	20.3	2.4	48.2	2.4	14	2.7	6.4	2.2
B	31.4	3.2	803	3.2	3.1	2.8	8.7	2.2
C	1,800	3.1	7.4	3.1	508	4	30.7	2.2
D	30.2	3.1	3,870	3.1	150	3	9.1	2.2
E					103	2.5	7.4	2.2
F					4.4	2.4		
G					1,020	2.5		
H					17.5	2.4		
1	310,000	2.6	12	2.6	3	2.6	11	2.2
2	180	2.4	17.7	2.4	4.2	2.5	14.6	2.2
3	32	2.7	23.4	2.7	3.6	2.5	3.6	2.2
4	190	2.6			4	2.5	6.1	2.2
5								
6								

Note: 1 – Maximum detected methane measured in ppm

2 – Ambient detected methane concentration in ppm

5.8.3.1 Exceedances of monitoring criteria

For this Reporting Period, several exceedances of 500ppm for methane were identified.

The landfill is relatively new, with low levels of waste. There was minimal landfilling during the monitoring period, however due to higher-than-average rainfall experienced during the reporting period there were higher than usual levels of surface water in the landfill. It is believed that the higher levels of surface water in the landfill led to the increased methane recorded.

The site management personnel were notified of the exceedances in the methane concentration over the landfill surface and immediate corrective action was taken to apply additional soil cover to the area to increase the integrity of the cover and prevent LFG emissions from the landfill.

5.8.4 Gas accumulation monitoring for the Reporting Period

Gas accumulation in buildings at a landfill site can pose a risk of explosion and should not have gas concentrations exceeding 1.2% methane (v/v) (12,500 ppm). Gas accumulation monitoring occurs at the following locations:

- B1 (Site Office)
- B2 (Weighbridge)
- B3 (MQ Site Office)
- B4 (Recycling Centre).

Sampling at B4 (Recycling Centre), commenced in February 2021.

Gas accumulation monitoring is quarterly and was undertaken in November 2021 and February, May and August 2022. The monitoring results are summarised in **Table 5-22**.

Table 5-22: Gas accumulation monitoring data for Reporting Period

Date	B1 Site Office (ppm)	B2 Weighbridge (ppm)	B3 MQ Site office (ppm)	B4 Recycling Centre (ppm)
November 2021	2.2	2.4	-	2.4
February 2022	2	1.8	-	1.5
May 2022	3.2	2.6	-	2.4
August 2022	3.2	2.8	-	2.6

5.8.5 Landfill gas monitoring analysis

Landfill operations commenced in August 2019, therefore landfill gas monitoring only commenced in November 2019. The following summarises the monitoring results.

5.8.5.1 Landfill gas subsurface monitoring

Monitoring was undertaken quarterly in November 2021 and February, May and August 2022.

There was one exceedance of 1.25% v/v for methane for this Reporting Period and was measured at BH12B. This required notification to EPA as per the AQPM.

PLRRC committed to undertaking additional monitoring for a period of four months to confirm whether there were any further exceedances. A landfill risk assessment would also be undertaken in the next Reporting Period.

5.8.5.2 Landfill gas surface monitoring

Quarterly landfill gas surface monitoring commenced in February 2021 following the application of intermediate capping. During this Reporting Period, Quarterly monitoring was undertaken in November 2021 and in February, May and August 2022.

Six exceedances of the methane assessment criteria (500 ppm v/v) were observed during the landfill surface emissions monitoring in November 2021. The following monitoring round conducted by GHD in March 2022 showed no exceedances.

The NSW EPA Landfill Guidelines state that further investigation and corrective action would be required. Summary results would also need to be published on the PLRRC website.

5.8.5.3 Gas accumulation monitoring in enclosed structures

Monitoring was undertaken in quarterly in November 2021 and February, May and August 2022 at the site office, weighbridge and the Recycling Centre. Concentrations exceeding 1.2% methane (v/v) (12,500 ppm) can pose a risk of explosion. Gas accumulation data was well below this level, with a maximum of 3.2 ppm recorded at the site office in May and August 2022.

5.9 Waste Monitoring

5.9.1 Waste limits

In accordance with Sch3 C22, the Proponent shall not exceed the waste receipt and waste emplacement volumes specified in **Table 5-23**.

Table 5-23: Maximum waste receipt and emplacement

Maximum total waste emplacement	Maximum annual waste receipt	Maximum annual on-site waste emplacement
4,300,000 tonnes	450,000 tonnes	205,000 tonnes

The condition permits the proponent to emplace up to 7,500 m^3 of special waste (asbestos) identified under Sch 4 C7 (Asbestos and Contamination Management Plan) in the landfill. All other special waste (asbestos) is required to be disposed off-site at a licenced facility unless agreed to by the Secretary and EPA.

Table 5-24: EPL Limits

EPL	Limit
EPL 20814 (landfill)	• No asbestos is permitted to be received from off-site. • A maximum of 205,000 tonnes in any 12-month period is permitted to be landfilled (in Cell 1A.
EPL 21259 (RRC)	• The authorised amount of waste permitted on the premises cannot exceed 140,000 tonnes at any one time. • The maximum quantity of waste permitted to be received at the Premises is 350,000 tonnes in any 12-month period.

5.9.2 Waste management and monitoring

Sch4 C5 requires the implementation of a Waste and Resource Recovery Monitoring Program and Sch4 C5(c) requires monitoring of:

- The quantity, type and source of waste received.
- Quantity, type and quality of the outputs produced.

Operation of the PLRRC commenced in August 2019. All waste is managed in accordance with the:

- EPA Waste Guidelines
- The approved WRRMP
- Bingo Standard Operating Procedures (SOP) including procedures for asbestos management, weighbridge operation, visual inspection and non-conforming waste.

5.9.2.1 Volume surveys

As required by EPL 20814, six monthly volume surveys are undertaken. The total design capacity for Cell 1A-1 and 1A-2 is 4,300,000 m^3.

- A total volume of 674 m^3 was emplaced between the 30 June 2021 and 29 December 2021 surveys
- A total volume of 0 m^3 was emplaced between the December 2021 and 9 July 2022 surveys.

5.9.2.2 WARRP Reporting

Waste received at the PLRRC is reported on a monthly basis through the EPA Waste and Resource Reporting Portal (WARRP) in accordance with the requirements of the *Protection of the Environment Operations Act 1997.*

- **Table 5-25** summarises the amount of waste received and transported offsite from the EPL 21259 RRC (in tonnes) from 1 September 2021 to 31 August 2022.
- **Table 5-26** summarises the amount of waste received and transported offsite from the EPL 20814 landfill (in tonnes) from 1 September 2021 to 31 August 2022.

Additionally, surveys of stockpiles at the RRC are also undertaken on a six-monthly basis. These occurred on 29 December 2021 and 9 July 2022.

Table 5-25: Summary of EPL 21259 RRC waste in tonnes (1 September 2021 to 31 August 2022)

	Sep-21	Oct-21	Nov-21	Dec-21	Jan-22	Feb-22	Mar-22	Apr-22	May-22	Jun-22	Jul-22	Aug-22	Total (21/22)
Waste Received (tonnes)													
Municipal		-	-	-	-	-	-	-	-	-	-	-	-
Mixed waste	-	-	-	-	-	-	-	-	-	-	-	14	14
Shredder floc	-	-	-	-	-	-	-	-	-	-	-	-	-
Soil (not contaminated)	-	-	-	-	-	-	6	-	-	-	-	-	6
Contaminated soil	-	-	-	-	-	-	-	-	-	-	-	-	-
Total C&I	-	-	-	-	-	-	6	-	-	-	-	14	20
Mixed Waste (total)	-	1,245	2,707	3,966	2,874	3,733	36	2,508	1,987	105	1,845	1,924	22,930
Soil (not contaminated)	987	563	1,094	66	81	30	-	4	-	-	207	153	3,185
VENM	-	-	-	-	-	-	-	-	-	-	-	3,369	3,369
Contaminated soil	-	-	-	-	-	-	-	-	-	-	-	-	-
Bricks or concrete	-	73	1,363	2,425	4,370	3,670	1,326	1,958	3,442	330	-	-	18,958
Asphalt	-	-	218	151	-	-	-	74	289	-	-	-	732
Ferrous (iron or steel)	-	-	-	-	-	-	-	-	-	-	-	-	-
Wood, trees or timber	-	263	330	-	-	-	-	-	-	-	-	-	594
Total C&D	987	2,144	5,712	6,607	7,325	7,433	1,362	4,544	5,719	435	2,052	5,445	49,767
Total Waste Received (A)	**987**	**2,144**	**5,712**	**6,607**	**7,325**	**7,433**	**1,369**	**4,544**	**5,719**	**435**	**2,052**	**5,459**	**49,787**
Rolling 12 months tonnage received	113,726	115,871	121,583	128,190	135,515	142,949	144,317	148,862	154,580	155,015	157,067	162,526	

	Sep-21	Oct-21	Nov-21	Dec-21	Jan-22	Feb-22	Mar-22	Apr-22	May-22	Jun-22	Jul-22	Aug-22	Total (21/22)
Total waste transported from site (tonnes)													
Offsite disposal	-	-	-	-	-	-	-	-	-	201	-	107	308
Lawful recovery licenced	-	73	1,334	2,145	2,256	2,015	213	785	572	131	-	255	9,780
Resource recovery (soil)	10,649	17,528	20,235	16,971	4,116	5,443	4,848	5,387	3,040	6,031	912	1,377	96,539
Lawful recovery not licenced	2,258	-	774	23	48	34	-	31	23	26	-	32	3,248
Total waste transported from site (B)	**12,907**	**17,602**	**22,343**	**19,139**	**6,420**	**7,492**	**5,062**	**6,204**	**3,634**	**6,390**	**912**	**1,771**	**109,875**
(A) minus (B)	-11,920	-15,457	-16,630	-12,532	905	-58	-3,693	-1,659	2,084	-5,955	1,141	3,688	-60,088
(A) – (B) rolling annual tonnage	39,592	24,135	7,504	-5,028	-4,123	-4,181	-7,874	-9,533	-7,449	-13,404	-12,264	-8,576	

Table 5-26: Summary of EPL 20814 landfill waste in tonnes (1 September 2021 to 31 August 2022)

	Sep-21	Oct-21	Nov-21	Dec-21	Jan-22	Feb-22	Mar-22	Apr-22	May-22	Jun-22	Jul-22	Aug-22	Total (21/22)
Total waste received (tonnes)													
Municipal	-	-	-	-	-	-	-	-	-	-	-	-	-
Mixed waste	-	-	-	-	-	-	-	-	-	-	-	-	-
Total C&I	-	-	-	-	-	-	-	-	-	-	-	-	-
Mixed Waste (total)	-	-	-	-	-	-	-	-	-	-	-	-	-
Soil (not contaminated)	-	-	-	-	-	-	-	-	-	-	-	-	-
Contaminated soil	1,522	919	62	-	-	-	-	-	-	-	-	-	2,504
Bricks or concrete	-	-	-	-	-	-	-	-	-	-	-	-	-
Total C&D	1,522	919	62	-	-	-	-	-	-	-	-	-	2,504
Total Waste Received (A)	1,522	919	62	-	-	-	-	-	-	-	-	-	2,504

	Sep-21	Oct-21	Nov-21	Dec-21	Jan-22	Feb-22	Mar-22	Apr-22	May-22	Jun-22	Jul-22	Aug-22	Total (21/22)
Total waste transported from site (tonnes)													
Offsite disposal	-	-	-	195	222	-	-	100	-	-	-	-	517
Lawful recovery licenced	-	73	27	-	-	-	-	-	64	37	-	-	201
Resource recovery (soil)	-	-	-	-	-	-	-	-	-	-	-	-	-
Lawful recovery not licenced	-	1,181	558	506	103	-	-	-	172	194	300	-	3,015
Total waste transported from site (B)	-	1,254	585	701	325	-	-	100	236	231	300	-	3,732
(A) minus (B)	1,522	-335	-523	-701	-325	-	-	-100	-236	-231	-300	-	-1,228

Table 5-27: Summary of waste received and transport to and from PLRRC tonnes (1 September 2021 to 31 August 2022)

	Sep-21	Oct-21	Nov-21	Dec-21	Jan-22	Feb-22	Mar-22	Apr-22	May-22	Jun-22	Jul-22	Aug-22	Total (21/22)
Total waste for PLRRC (tonnes)													
Total Waste Received for entire site (RRC + Landfill)	2,510	3,064	5,775	6,607	7,325	7,433	1,369	4,544	5,719	435	2,052	5,459	**52,291**
% of 140,000 tonnes at any one time.	9%	13%	16%	14%	5%	5%	4%	5%	3%	5%	1%	1%	
Total waste transported from entire site (RRC + Landfill)	12,907	18,856	22,928	19,840	6,745	7,492	5,062	6,304	3,870	6,621	1,212	1,771	**113,608**

5.9.3 Analysis of waste received and processed

Based on the Waste Contribution Monthly Reports (WMCR) submitted between 1 September 2021 to 31 August 2022, a total of **52,291 tonnes** of waste was received at the PLRRC. This comprised of the following:

	RRC	Landfill
Total waste received	49,787 tonnes	2,504 tonnes
Municipal waste	0 tonnes	0 tonnes
C&I Waste	20 tonnes • soil (non-contaminated) • mixed waste	0 tonnes
C&D waste	49,767 tonnes • mixed waste • VENM • Soil (non-contaminated) • bricks or concrete • Aggregate, roadbase or ballast • Wood, trees or timber	2,504 tonnes • soil (contaminated)
Total waste transported offsite	109,875 tonnes	3,732 tonnes
Transport offsite for lawful recovery	9,780 tonnes	201 tonnes
Transport offsite for offsite disposal	308 tonnes	517 tonnes

Limits	Total for period	Complies
Conditions of consent		
4,300,000 tonnes maximum total waste emplacement	298,504 tonnes since operations began	Yes
450,000 maximum annual waste receipt	52,291	Yes
205,000 tonnes maximum annual on-site waste emplacement	1,228 tonnes	Yes
7,500 m^3 of special waste (asbestos)	None Asbestos would be taken off site to a facility that can legally accept it. There is minimal likelihood of asbestos or other unauthorised waste coming onto site as it is pre-sorted or subject to waste classification prior to delivery to site. If the waste is not acceptable, it is recorded in the Rejected Load Register (both on hard copy form and in Nav system)	Yes
EPL 20814 (landfill)		
No asbestos is permitted to be received from off-site	None – as above	Yes

Limits	Total for period	Complies
A maximum of 205,000 tonnes in any 12-month period is permitted to be landfilled (in Cell 1A)	1,228 tonnes	Yes
EPL 21259 (RRC)		
The authorised amount of waste permitted on the premises cannot exceed 140,000 tonnes at any one time.	As shown in **Table 5-27.**	Yes
The maximum quantity of waste permitted to be received at the Premises is 350,000 tonnes in any 12-month period.	Rolling 12 month complies, with a maximum of 52,291 tonnes recorded in August 2022	Yes

There are no criteria/limits for leachate monitoring in the Conditions of Consent or the EPL. Analysis of the leachate monitoring results is included in **Section 5.7**.

5.10 Truck numbers

In accordance with Sch3 C25 and C26 heavy vehicle traffic generation must not exceed 250 daily heavy vehicle movements.

An accurate register of daily heavy vehicle movements is kept and can be provided to the Secretary upon request.

Figure 5-12 summarises the daily truck movements for the PLRRC in the 1 July 2021 to 1 August 2022 Reporting Period.

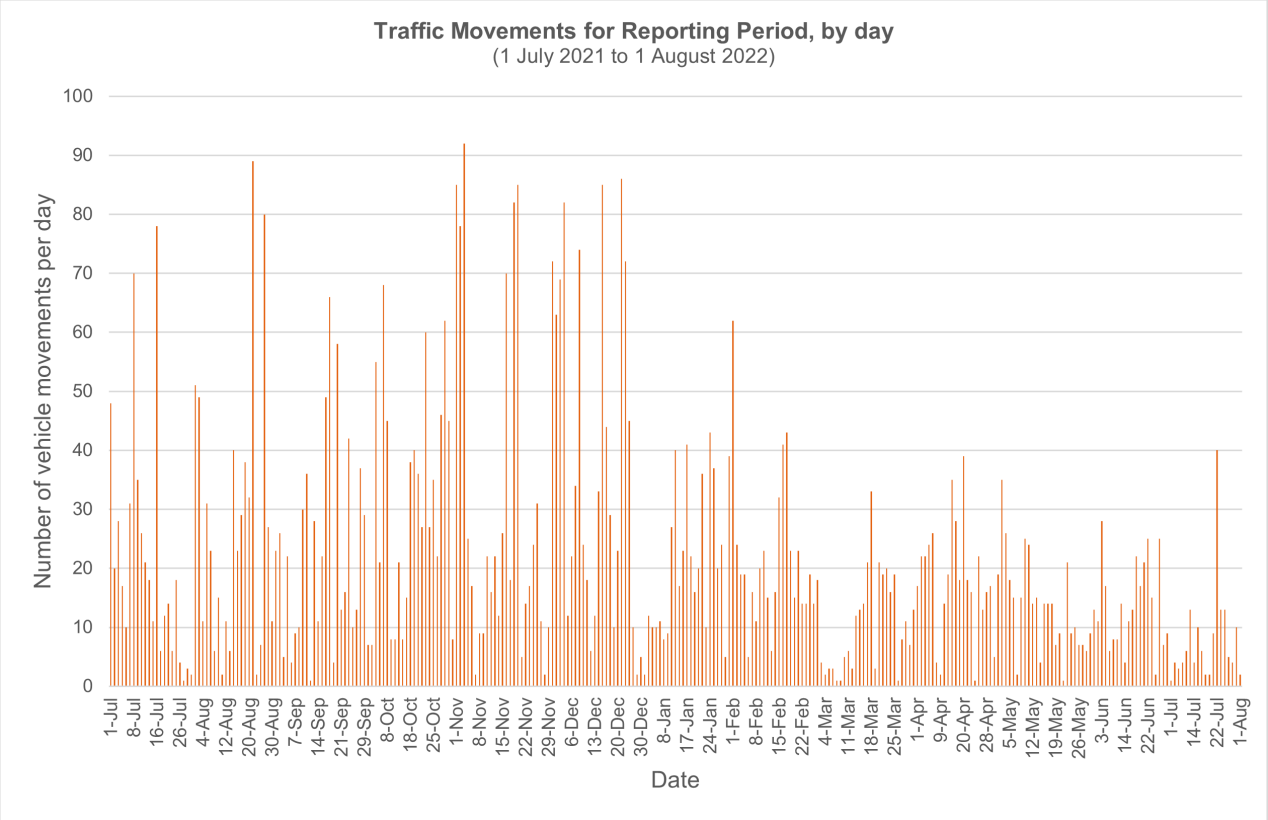

Figure 5-12: Recorded traffic movements for Reporting Period

5.10.1 Analysis of traffic movements

Less formal monitoring traffic movements were during the site establishment and construction as daily truck movements were much less frequent. A formal register for daily truck movements was implemented in August 2019.

During this Reporting Period:

- A total of 6,429 truck movements were recorded
- The maximum daily truck movement was 92, recorded on 3 November 2021.
- December 2021 had the most truck movement for the Reporting Period with a total of 862 truck movements.
- The average daily truck movements for the Reporting Period was 22, with the average of 459 monthly truck movements.
- One truck movement per day was recorded on 8 days.
- The common vehicles received at the site was quad dog, quin dog, tandems, truck and dog, semi-trailers, bin trucks and cylinder trucks.

There were no exceedances of the daily 250 heavy vehicle limit.

5.11 Rehabilitation activities

As required under Sch4 C46, the Proponent must prepare and implement a Rehabilitation Plan to achieve the final landform and landscaping in Figure 2.22 of the *Further Modified Preferred Project Report (Ex Z in Appeal No 10928 of 2010)*.

Rehabilitation of the site commenced in January 2019. The rehabilitation programme included the following performance criteria for Year 1 of the programme.

5.11.1 Rehabilitation criteria

Table 5-28: Rehabilitation criteria for the Reporting Period

Criteria	%	Achieved (Yes/NO)
Reduction in weeds on site (density and size)	50%	Yes
Reduction in weeds on site (species and distribution)	10%	Yes
Increase in native plant density	200%	Yes
Increase in native plant size	100	Yes

5.11.2 Rehabilitation activities completed during the Reporting Period

A summary of how these performance criteria were achieved and rehabilitation works undertaken the Reporting Period is summarised **Table 5-29**. The works were undertaken by Toolijooa Environmental Restoration.

Table 5-29: Rehabilitation works for the Reporting Period

Date	Works undertaken
September 2021	Maintenance activities were developed in the following areas: • South-east maintenance zone (SEMZ) - Admin Building and Track: carrying out aesthetic works near the admin building. Spraying Grazon Extra at 0.5%, targeting *Andropogon virginicus*, *Bidens Pilosa*, *Conyza spp.*, *Eragrostis curvula*, *Ricinus communis*, *Senecio sp.*, *Solanum spp.* and *Verbena sp.* along the track and berm, near the dam and towards the southern berm. • South-west maintenance zone (SWMZ) - Western Berm: follow up spray conducted to eradicate regrowing exotics. • North-west maintenance zone (NWMZ) - Conservation Area: hand removing *Sida rhombifolia* from within areas of native groundcover. Primary activities were developed in the following areas: • NWMZ - Conservation Area: cut and painted *Lycium ferocissumum* and *Olea europaea* and scraped and painted *Cestrum parqui*. Secondary activities were developed in the following areas: • SEMZ - Southern Berm: slashing dead standing weeds and biomass reduction in exotics through planting beds with brushcutter. Spraying with Grazon Extra at 0.5%, targeting *Andropogon virginicus*, *Bidens Pilosa*, *Conyza spp.*, *Eragrostis curvula*, *Ricinus communis*, *Senecio sp.*, *Solanum spp.* and *Verbena sp.* • SWMZ - Western Berm: begun slashing through planting beds to ensure exotics do not out-compete the natives. • North-east maintenance zone (NEMZ) - Eastern Berm: backpack spraying Associate Herbicide at 1g/10L, targeting *Onopordum acanthium*, *Senecio madagascariensis*, *Solanum sisymbriifolium*, *Sonchus oleraceus* and *Vebena sp.* Spraying *Cortaderia selloana* with Roundup Biactive at 1.3%.
October 2021	Maintenance activities were developed in the following areas: • SEMZ - Admin Building and Track: area continues to receive frequent work to maintain aesthetic appeal, spraying *Eragrostis curvula*, *Senecio madagascariensis*, *Solanum sisymbriifolium*, *Sonchus sp.* and *Verbena sp.* in the planting bed along the berm and plateau. • SWMZ: spraying general herbaceous on top of the plataeu and around the dam. Spraying *Cirsium vulgare*, *Solanum sisymbriifolium* and *Verbena sp.* along the planting beds along the western berm. • NWMZ: pack spraying and a splatter gunning *Solanum sisymbriifolium* in the depression. Spot spraying 2% Roundup Biactive + 1g/10L Associate Herbicide solution due to high concentration of weeds and minimal to no natives.
November 2021	Maintenance activities were developed in the following areas: • NEMZ: spraying 2% Roundup Biactive and 1g/10L Associate Herbicide solution, targeting *Solanum sisymbriifolium*, which is the dominant species in the zone, and *Cirsium vulgare*, *Conyza bonariensis*, *Eragrostis curvula*, *Juncus acutus*, *Physalis sp.*, *Solanum spp.* and *Verbena sp.* • NWMZ: spraying along the track which links the tip with the conservation zone. Spot spraying mature population of *Juncus acutus* near the building next to the track.
December 2021	Maintenance activities were developed in the following areas: • NEMZ: spraying 2% Roundup Biactive and 1g/10L Associate Herbicide solution, targeting *Cirsium vulgare*, *Conyza bonariensis*, *Eragrostis curvula*, *Juncus acutus*, *Physalis sp.*, *Solanum spp.* and *Verbena sp.* Mature populations of *Juncus acutus* was resprayed. Revisited the depression, with *Solanum sisymbriifolium* showing signs of regrowth. • SWMZ: spraying *Cirsium vulgare*, *Conyza bonariensis*, *Eragrostis curvula*, *Juncus acutus*, *Physalis sp.*, *Solanum spp.* and *Verbena sp.* on top of plateau. • SEMZ: spot spraying *Cirsium vulgare*, *Conyza bonariensis*, *Eragrostis curvula*, *Solanum sp.* and *Verbena sp.* along the outer bund that runs from NEMZ to SEMZ.

Date	Works undertaken
January 2022	Maintenance activities were developed in the following areas: • SEMZ: hand weeding garden bed near staff carpark and brush cutting of exotic grasses. Seeding *Cirsium sp.* and *Solanum sisymbriifolium* were bagged and *Paspalum dilatatum* removed with mattocks. Pack spraying *Senecio madagascariensis*, *Solanum sisymbriifolium*, *Sonchus sp.* and *Verbena sp.* that were missed or survived last month's spray, as well as spraying around water bodies. • SWMZ: pack spraying *Cirsium sp*., *Cortaderia selloana*, *Eragrostis curvula*, *Senecio madagascariensis*, *Solanum nigrum*, *Solanum sisymbriifolium*, *Sonchus sp*., *Verbena sp*. and *Xanthium occidentale* around the Resource Centre and lunch rooms.
February 2022	Maintenance activities were developed in the following areas: • SEMZ: spraying the access track from SEMZ to NEMZ and the berm to the west of the track. Pack spraying *Senecio madagascariensis*, *Solanum sisymbriifolium*, *Sonchus sp.* and *Verbena sp.* that were missed or survived last month's spray, as well as spraying around water bodies. • SWMZ: re-slashing *Eragrostis curvula* along the access track into the SWMZ. Hand weeding *Chloris sp.*, *Cirsium spp*., *Ricinus communis*, and *Solanum sisymbriifolium*. • NEMZ: spraying access track from SMEZ to NEMZ and berm south of the track, as well as stand of *Solanum sisymbriifolium* around a small tank. Spraying *Cirsium sp.*, *Cortaderia selloana*, *Eragrostis curvula*, *Senecio madagascariensis*, *Solanum nigrum*, *Solanum sisymbriifolium*, *Sonchus sp.*, *Verbena sp.* and *Xanthium occidentale* around stockpiles.
March 2022	Maintenance activities activities were developed in the following areas: • SEMZ: Herbaceous sweep was conducted, dedicated to bagging fruit and seed on weeds. Pampas grass (*Cortaderia selloana*) was found in flower. Seeds were bagged and disposed of. Plants were crowned out. • NWMZ: Inspected and hand weeded the conservation zone. Species were manually removed and piled. Fruits were bagged. Weeds included: *Bidens pilosa, Sida rhombifolia, Solanum pseudocapsicum, Solanum sisymbriifolium, and Sonchus sp.* Surveyed previously worked areas in the NEMZ. *Juncus acutus* was located, seeds were removed and bagged to limit the life cycle. Manually removed when possible.
April 2022	Maintenance activities were developed in the following areas: • NWMZ: using tree loppers and turbo saws to make creek access easier. Slashing *Chloris 64ilosa*, *Eragrostis curvula*, *Paspalum dilatatum*, and *Paspalum urvillei* to create access tracks around the dams and into the conservation zone. Hand weeding *Bidens p64ilosa*, *Sida rhombifolia*, *Solanum pseudocapsicum*, *Solanum sisymbriifolium* and *Sonchus sp.* Within the conservation zone. • NEMZ: pack spraying *Senecio madagascariensis*, *Solanum sisymbriifolium*, *Sonchus sp*. And *Verbena sp.* That were missed or survived last month's spray.
May 2022	Maintenance activities were developed in the following areas: • SWMZ: cutting and painting three myrtle trees and a stand of *Ludwigia peruviana*. Slashing *Chloris sp.* And *Eragrostis curvula* within the planting bed. Pack spraying *Senecio madagascariensis*, *Solanum sisymbriifolium*, *Sonchus sp*. And *Verbena sp.* That were missed or survived last month's spray, as well as pack spraying around the Resource Centre and surrounding berms. • NWMZ: using tree loppers and turbo saws to make creek access easier. Slashing *Eragrostis curvula* within the planting beds. Hand weeding *Bidens p64ilosa*, *Sida rhombifolia*, *Solanum pseudocapsicum*, *Solanum sisymbriifolium* and *Sonchus sp.* Within the conservation zone.

Date	Works undertaken
June 2022	Maintenance activities were developed in the following areas: • SWMZ: spraying *Chloris 65ilosa* and *Eragrostis curvula* regrowth and around the access track to reduce vegetation smothering the track. Slashing the remaining *Chloris sp.* And *Eragrostis sp.* And checking *Ludwigia sp*. To see if a follow up is required. • NWMZ: slashing *Eragrostis curvula* through the planting bed and pack spraying regrowth from last months slash, including *Eragrostis curvula* and *Chloris p65ilosa*. Hand weeding *Bidens 65ilosa*, *Sida rhombifolia*, *Solanum pseudocapsicum*, *Solanum sisymbriifolium* and *Sonchus sp.* Within the conservation zone. • NEMZ: slashing *Eragrostis curvula* through the planting bed. Two juvenile *Cortaderia selloana* were located and crowned out.
July 2022	Maintenance activities were developed in the following areas: • SWMZ: spraying *Chloris Gayana*, *Cirsium vulgare*, *Eragrostis curvula*, *Senecio madagascariensis* and *Solanum spp.* Along the berms and *Aster sp*., *Cyperus eragrostis*, *Juncus acutus* and *Typha orientalis* along drainage lines near the Resource Centre. Located and treated one *Cortaderia selloana*. • NWMZ: brush cutting *Eragrostis curvula* in northern grasslands and mattocking out exotic grasses within the conservation area.
August 2022	Maintenance activities were developed in the following areas: • NWMZ: spot spraying *Eragrostis curvula* that was slashed last month and brush cutting *Eragrostis curvula* in northern grasslands. • SEMZ: sport spraying *Senecio madagascariensis* populating the berm near the track that runs through the centre of the site. Cutting and painting a population of *Cytisus sp.* And some *Senecio pterophorus*. • NEMZ: spot spraying juvenile *Cortaderia selloana* and *Eragrostis curvula*. Cutting and painting *Lycium ferocissimum* and *Ricinus communis*.

Note: All spraying utilised a 1% solution of Roundup Biactive unless stated otherwise.
All cut/scrape and painting and drill and stem injecting was done using neat Roundup Biactive.

5.11.3 Analysis of rehabilitation activities

The majority of the rehabilitation activities undertaken during the Reporting Period related to maintenance of the various areas including the northern grassland and the northern, eastern and western bunds. Maintenance including brush-cutting of planting beds and management of weeds by spot spraying.

6 PERFORMANCE AGAINST EIS PREDICTIONS

As required under Sch5 CC5A(b)(iii), the Annual Review should include a comparison of the data to predictions made in the EIS. **Table 6-1** summarises the relevant EIS prediction and compares this to the results of the monitoring.

Table 6-1: Environmental Performance, Implications and Management Actions – EIS Predictions

Aspect	EIS Prediction / requirements	Performance during the Reporting Period	Trend / key management implications	Implemented / proposed management actions
Air quality prediction (Dust and particulates)	Five modelled operational scenarios predicted that 24-hour and annual average PM_{10}, TSP and DD levels at nearest sensitive receptors would be below the DECCW assessment criteria, even when existing background levels are included. However, 24-hour PM_{10} levels would be elevated on a few days per year when background levels are elevated.	In general, the construction and operation of the site is in accordance with the predictions from the 2010 EIS (prepared by R.W. Corkery & Co. Pty. Limited). **Table 5-6** shows that there were no exceedances of dust deposition. Due to power issues affecting both TEOM monitors, no data could be recorded for PM_{10}.	Generally compliant – The site is managed in accordance with the approved AQMP.	No additional management actions (other than what is detailed in the AQMP) are proposed. PM_{10} will be continuously monitored and will be reported on monthly basis for the next Reporting Period.
Air quality prediction (Odour)	Odour levels at the nearest residences are predicted to be below the most stringent	No odour complaints have been received during the Reporting Period (See **Section 7.4**).	Generally compliant – The site is managed in accordance with the approved AQMP.	No additional management actions (other than what is detailed in the AQMP) are proposed.
Noise predictions	No traffic noise impacts are predicted inclusive of the potential for sleep disturbance from early morning truck movements. No noise exceedances are predicted to occur at neighbouring residences during the construction phase of the Project. During the Project's operational phase, the greatest potential for noise impacts results from the need to have mobile equipment operating on the outer side of the perimeter bunding and final landform.	As shown in **Table 5-3** no noise exceedances for attended and unattended noise monitoring events were recorded during the Reporting Period. No community complaints have been received during the Reporting Period (See **Section 7.4**).	Generally compliant – The site is being managed in accordance with the approved NVMP.	No additional management actions proposed. Noise will be monitored (continuously for unattended and monthly for attended) and will be reported on monthly basis during the next Reporting Period.
Water discharge	During operations surface water discharges to Blaxland Creek would be managed primarily through a series of interconnected internal sediment dams that would capture and treat runoff prior to discharge to Blaxland Creek.	The surface water management system collects and treats sediment laden runoff prior to discharge via one of three licensed discharge points currently located at the outlet of Dam 2 (LDP2) and to also be included in Dams 3B (LDP3) and 6 (LDP1) (See **Figure 5-10**).	Wet weather monitoring will continue to be undertaken in accordance with the current SWMLP and EPL requirements. One non-compliance with the EPL Condition M2, monitoring requirements was reported where some of the parameters were no sampled. Lab	No additional management actions (other than what is detailed in the SWLMP) are proposed. Water discharges will continue to be monitored

Aspect	EIS Prediction / requirements	Performance during the Reporting Period	Trend / key management implications	Implemented / proposed management actions
	The majority of site discharge during Year 1 would be actively managed by pumping from Dam 4.	Surface water is required to be monitored at the wet weather overflow points daily (for turbidity) and weekly (for all other parameters) during active discharge. See **Table 5-10** for more details. There were 15 exceedances of the TSS 50 mg/L criteria during this Reporting Period. However, it is noted that higher than average rainfalls were experienced throughout the Reporting Period. Of these, five were recorded at S7 Blaxland creak, upstream of the PLRCC. On all occasions the rainfall in the five days prior to sampling was above the blue-book design criteria (5-day 90th percentile rainfall of 47.6 mm). In accordance with EPL 20814 Condition L3.1, the Licensee is taken not to have exceeded a concentration limit specified in the licence for the discharge of total suspended solids (TSS) from Points (EPA ID) 1-3 (i.e. Dam 6 discharge point, weir monitoring point and Dam3 discharge point) if: the discharge from Points 1-3 occurs solely for rainfall events exceeding the 90th percentile 5-day rainfall event. Based on the above, the specified concentration limit for TSS do not apply for most of these exceedances. See **Table 5-10**.	analysis included Electrical Conductivity; however, the Dissolved Oxygen and pH were not included in the lab analysis as the holding times had been exceeded. All results, including the Electrical Conductivity were in line with historical ranges, therefore no environmental impacts were anticipated as a result of this non-compliance.	and will be reported as required and during the next Reporting Period. The Licensee will continue to contract a consultant to undertake monitoring and if they are unable to attend site prior to cessation of discharge, trained staff will conduct sampling and infield analysis using calibrated equipment now located on site
Surface water monitoring	The Proponent is committed to a program of surface water monitoring to assist to understand the quality of water accumulating on site and to demonstrate the discharges of water from the Project Site comply with the criteria identified by GSSE/WBM (2010) and set out in Table 4.7.	Surface water is required to be monitored at the wet weather overflow points daily (for turbidity) and weekly (for all other parameters) during active discharge. Overflow points are LDP1 Dam 6 and LDP3 Dam 3. In addition to the above parameters, pH (in pH units) is also monitored monthly during any pumped discharge and during overflow discharges, and within 24 hours after detection of an overflow discharge (during operational hours) while the overflow discharge occurs. Wet weather	The SWLMP requires that surface water be monitored quarterly at the sediment dams and wet weather discharge monitoring is also undertaken at the wet weather overflow points. Since construction of Dams 2A, 3 and 6 (completed in July 2019), wet weather discharge monitoring has been undertaken at least quarterly at sediment dams 4 and 5 and at the overflow points. This is taken to have satisfied the requirement for quarterly surface water monitoring.	No additional management actions (other than what is detailed in the SWLMP) are proposed.

Aspect	EIS Prediction / requirements	Performance during the Reporting Period	Trend / key management implications	Implemented / proposed management actions
		discharge monitoring for the Reporting Period is shown in **Table 5-10**.	Wet weather monitoring will continue to be undertaken in accordance with the current SWMLP and EPL requirements.	
Surface water monitoring	Quarterly monitoring of internal and external dams	The Surface Water Assessment (GSS Environmental and BMT WBM Pty Ltd, February 2010) recommended that water quality samples be collected quarterly from all internal and external dams at PLRRC to address this requirement from the EIS. The SWLMP requires that surface water be monitored quarterly at the sediment dams and wet weather discharge monitoring is also undertaken at the wet weather overflow points. Since construction of Dams 2A, 3 and 6 (completed in July 2019), wet weather discharge monitoring has been undertaken at least quarterly at sediment dams 4 and 5 and at the overflow points. This is taken to have satisfied the requirement for quarterly surface water monitoring. Seventeen wet weather discharge monitoring events was undertaken during this Reporting Period.	As above, wet weather monitoring will continue to be undertaken in accordance with the current SWMLP and EPL requirements.	No additional management actions (other than what is detailed in the SWLMP) are proposed.
Surface water monitoring	Wet weather monitoring from LDP (dam 3 and Dam 6) – daily (for turbidity) and weekly for other parameters	Fifteen wet weather discharges and discharge monitoring events were undertaken during this Reporting Period. See **Table 5-10** and **Section 5.5.4** for more details on monitoring undertaken during the Reporting Period	The site is managed in accordance with the approved SWLMP.	No additional management actions (other than what is detailed in the SWLMP) are proposed.
Surface water monitoring	Blaxland Creek (Upstream and Downstream of the Licensed Discharge Point)	The Surface Water Assessment (GSS Environmental and BMT WBM Pty Ltd, February 2010) recommended that water quality samples be collected quarterly from Blaxland Creek both upstream and downstream of the PLRRC to address this requirement from the EIS. Currently Blaxland Creek is only monitored during wet weather discharges. See **Table 5-10**	The SWLMP requires that surface water be monitored quarterly at the sediment dams and wet weather discharge monitoring is also undertaken at the wet weather overflow points. Since construction of Dams 2A, 3 and 6 (completed in July 2019), wet weather discharge monitoring has been undertaken at least quarterly at sediment dams 4 and 5 and at the overflow points. This is taken to have satisfied	No additional management actions (other than what is detailed in the SWLMP) are proposed.

Aspect	EIS Prediction / requirements	Performance during the Reporting Period	Trend / key management implications	Implemented / proposed management actions
			the requirement for quarterly surface water monitoring. Currently Blaxland Creek is monitored during wet weather discharges. See **Table 5-10**	
Electrical Conductivity	No substantial changes to the salinity of the water on site is predicted.	There have been no substantial changes to the salinity of the water on the site or exceedances to Electrical Conductivity.	Monitoring will continue to be undertaken to ensure any significant changes in the salinity of the water is picked up and appropriate measures can be implemented as required.	No additional management actions (other than what is detailed in the SWLMP) are proposed.
pH	pH of surface water accumulating in the Project Site would continue to have a slightly higher pH range (pH 8.0 to 8.5) than Blaxland Creek (pH 7.0 to 7.5).	There have been no substantial changes or exceedances to the predicted pH ranges during the Reporting Period. There was one exceedance of pH during the reporting period recorded on 29/11/2021 at LDP1 Dam 6. The pH value recorded was 8.72.	Monitoring will continue to be undertaken to ensure any significant changes in the pH of the water is picked up and appropriate measures can be implemented as required.	No additional management actions (other than what is detailed in the SWLMP) are proposed.
TSS and Turbidity	Experience to date confirms that both suspended solids concentration and turbidity levels need to be, and can be controlled for water discharged from site.	As described above, runoff is collected and discharged into sediment dams or temporary in-cell surface water storage areas, within the bunds, for initial treatment of sediment. 15 exceedances of the TSS 50 mg/L criteria were recorded. Of these, five were recorded at S7 Blaxland creak, upstream of the PLRCC. Higher than average rainfalls were experienced throughout the Reporting Period On all occasions the rainfall in the five days prior to sampling was above the blue-book design criteria (5-day 90th percentile rainfall of 47.6 mm). In accordance with EPL 20814 Condition L3.1, the Licensee is taken not to have exceeded a concentration limit specified in the licence for the discharge of total suspended solids (TSS) from Points (EPA ID) 1-3 (i.e. Dam 6 discharge point, weir monitoring point and Dam3 discharge point) if: the discharge from Points 1-3 occurs solely for rainfall events exceeding the 90th percentile 5-day rainfall event. Based on the above, the specified concentration limit for TSS do not apply for most of these exceedances. See **Table 5-10**.	Measures to minimise water pollution were undertaken. Monitoring of TSS and Turbidity will continue to be undertaken and the surface water monitoring schedules will be updated to ensure that water quality samples are collected quarterly from all internal and external dams at PLRRC.	No additional management actions (other than what is detailed in the SWLMP) are proposed and what is permitted in the EPL.

Aspect	EIS Prediction / requirements	Performance during the Reporting Period	Trend / key management implications	Implemented / proposed management actions
Leachate	The modelling is conservative and is expected to overestimate leachate generation volumes. These results demonstrate that the Initial Leachate Evaporation Pond and Long-Term Leachate Evaporation Pond, both with capacities of 12ML, would adequately store (and evaporate) all leachate generated throughout the life of the Project.	There was adequate storage available for the leachate that was generated during the Reporting Period. Should the level of leachate in the evaporation ponds reach the pond's freeboard, a signal is sent back to the pumps preventing them from pumping leachate and thereby preventing leachate overflowing from the evaporation pond and entering the stormwater system (with leachate temporarily fluctuating in level within Cell 1). Level sensors and visual indicators are included on the Cell 1 riser to identify if the leachate level is above the criteria. The criteria are: • a maximum leachate level of 0.3 m above the leachate barrier system • a maximum leachate level of 2 m below the inferred groundwater levels to promote the inward flow of groundwater.	Levels in the Initial Leachate Evaporation Pond and Long-Term Leachate Evaporation Pond will both continue to be monitored and the leachate modelling will be reviewed with actual site data to determine whether additional leachate storage capacity is required. If the validation assessment of the leachate water balance indicates excess leachate storage is required, then the dam will be extended to provide additional storage, up to a volume of 23 ML as per the Further Modified Preferred Project Report. If validation assessment of the leachate water balance indicates excess leachate storage is required above this volume, then potential contingency arrangements will be developed and implemented to the satisfaction of the NSW EPA.	Currently, no additional management actions (other than what is detailed in the SWLMP) are proposed. Contingency measures will be put in place in the event that the storage capacities are inadequate.
Leachate	Also, the volume of leachate which is generated (by each cell), stored and disposed of would be continuously monitored and compared to the model predictions. This data would be collated and reported to demonstrate that the Site continuously has sufficient storage capacity.	As above.	As above	As above
Groundwater	The Proponent would undertake a monitoring program to demonstrate the effectiveness of the proposed design and operational safeguards. The following program would be evaluated and reviewed annually to ensure that only meaningful data is being collected.	Groundwater is monitored quarterly and yearly at 15 locations around the site in accordance with the requirements of EPL 20814 and is being assessed against relevant assessment criteria outlined in *Australian and New Zealand Guidelines for Fresh and Marine Water Quality ANZECC/ARMCANZ 2000 (ANZECC 2000),* as well as background and historical pre-waste activities. **Section 5.6** and **Appendix B** details the monitoring results. Most monitoring data has been in compliance with the proposed criteria. Aluminium, zinc and copper were found to be	Groundwater will continue to be monitored in accordance with the approved SWLMP and EPL 20814. In the event any exceedances are identified during this monitoring, it is likely this will be due to leachate contamination. Contingency measures will be put in place and could include, but not limited to controlling the level of leachate in the landfill to maintain the inward flow of groundwater into the site and to potentially extract groundwater from impacted bores and manage as leachate.	Currently, no additional management actions (other than what is detailed in the SWLMP) are proposed. Contingency measures will be put in place in the event that the exceedance are identified.

Aspect	EIS Prediction / requirements	Performance during the Reporting Period	Trend / key management implications	Implemented / proposed management actions
		above the threshold stipulated *ANCECC 2000* and cadmium was equal to the threshold.		
Rehabilitation / visual	The Project would involve the removal of section of the north-western bund wall from the existing Blaxland Creek Core Riparian Zone and the reduction in slope of the bund wall itself. The Project would achieve the objectives of the local planning framework for its rural context via proposed progressive rehabilitation of the Project site through the proposed landform re-construction	As required under Sch4 C46, a Rehabilitation Plan was prepared and implemented to achieve the final landform and landscaping in Figure 2.22 of the *Further Modified Preferred Project Report (Ex Z in Appeal No 10928 of 2010)*. Rehabilitation activities commenced in January 2019 **Table 5-29** details the rehabilitation undertaken during the Reporting Period to achieve the requirements of the plan.	All fauna, vegetation and landscaping is managed in accordance with the BWLVMP approved in July 2019. All Site Resilience/Weed Management Zones are mapped on Huon Designs Drawing Nos PL2017/09/A and PL2017/10/A. The location, shape and final finish of the bund walls, dams and bioswales are shown on Drawing SK010 and SK024. The rehabilitation program will also continue to address the key performance indicators provided in Table 7 of the BWLVMP for Years 2-5.	Currently, no additional management actions (other than what is detailed in the BWLVMP) are proposed. The BWLVMP will also be supported by the implementation of the SWLMP in the event that there are issues with soil erosion and sedimentation.
Fauna	The habitat types represented within Project Site are either highly modified and/or well represented in the locality. Whilst three fauna species listed as vulnerable on the TSC Act occur or are likely to occur, the Project is unlikely to have a significant effect on any of these species or their habitats. AES (2009) concludes that there would be no fauna related constraints on the development and operation of the Project.	No impacts to flora or fauna which required reporting to the regulatory authorities occurred during this Reporting Period. The site does not currently provide significant habitat other than ponds/dams and pasture/grasslands. Native fauna visit the site to forage, drink and take advantage of isolated trees and vegetation. Sightings of wallabies, reptiles and a variety of birdlife have been reported anecdotally. The perimeter security fencing limits access or through-movement of larger species.	All fauna, vegetation and landscaping is managed in accordance with the Bund Wall, Landscaping and Vegetation Management Plan (BWLVMP) approved in July 2019.	Currently, no additional management actions (other than what is detailed in the BWLVMP) are proposed.
Aboriginal Heritage	As only two artefacts were recorded on degrading surfaces during the investigation the two locations are assessed to be of no research potential. Should any relic be uncovered during Project-related activities, work in the area surrounding the relic would cease and the DECCW, the three Aboriginal organisations that participated in the survey and the Police (if bone is discovered and not clearly identified as being of animal remains) would be informed of the find.	There were no unexpected find Aboriginal Heritage finds which required reporting to the regulatory authorities during this Reporting Period.	Not applicable	Not applicable

Aspect	EIS Prediction / requirements	Performance during the Reporting Period	Trend / key management implications	Implemented / proposed management actions
European Heritage	In the absence of any structures or relics of heritage interest on the Project Site ASR (2009b) concludes that there are no constraints on heritage grounds to the Project and provides no specific management recommendations.	There were no unexpected find European Heritage finds which required reporting to the regulatory authorities during this Reporting Period.	Not applicable	Not applicable
Traffic impacts	The results of the modelling reveal that: • the good Level of Service at the intersections modelled would not change with the estimated additional traffic generation of the proposed development; • the additional traffic demand on the intersections modelled as a consequence of the proposed development would only alter the Degree of Saturation and Total Average Delays minutely; and • the proposed driveway would operate at a very good level of service with minimal delays.	There were no traffic related incidents or issues relating to traffic impacting the level of service within the wider community and there have been no issues relating to delays in traffic entering or existing the site.	Traffic impacts will continue to be monitored and complaints assessed if and when they are received. Currently, as discussed below, the number of trucks entering the site are well within the limit.	Not applicable
Truck and light vehicle movements numbers	The Proponent has placed an upper limit on the combined number of heavy vehicles travelling to the Project Site daily, i.e. 158 truckloads (in or out) or 316 truck movements. Light vehicle movements are expected to vary from 40 to 60 per day, again with the bulk of those travelling to and from site near the start and end of the day's operations.	Sch3 C25 and C26 stipulate a limit of 250 heavy vehicle movements per day (a reduction on what was proposed in the EIS. **Figure 5-12** shows the traffic movements recorded for the Reporting Period. There were no exceedances of the daily heavy vehicle limit of 250.	An accurate register of daily heavy vehicle movements is maintained at the weighbridge. Truck numbers will continue to be monitored to ensure that the stipulated limit is not exceeded.	No additional management measures are currently proposed, other than what is detailed in the LEMP, the TNMP and the relevant Bingo SOPs.
Waste capacity	The facility would have the capacity to receive an average of approximately 300,000 tpa and a maximum of 600,000 tpa of general solid waste (non-putrescible) generated predominantly in the Sydney Metropolitan Area with some wastes potentially transported from the Blue Mountains. It is expected that the volume of waste received would ramp up over several years, with the level of 300,000 tpa of incoming wastes achieved by about Year 4 or 5.	That Conditions of Consent (Sch3 C22) provides the following limits: • Maximum of 4.3 M tonnes • Maximum annual receipt of waste: 450,000 tpa • Maximum annual emplacement: 205,000 tpa Operation of the PLRRC commenced in August 2019 and since operations commenced, 312,464 tonnes of waste has been received at the site. This is well below the current limits set by the Conditions of Consent.	Waste is managed in accordance with the WRRMP and the Bingo Standard Operating Procedures (SOP). The monthly WARRP reporting details the quantity, type and source of waste received; and quantity, type and quality of the outputs produced to ensure that the PLRRC operates within these limits.	No additional management actions (other than what is detailed in the WRRMP are proposed and ongoing monthly reporting via the WARRP

Aspect	EIS Prediction / requirements	Performance during the Reporting Period	Trend / key management implications	Implemented / proposed management actions
Type of Waste	It is anticipated that this waste would consist predominantly of Construction and Demolition (C&D) and Commercial and Industrial (C&I) waste. No liquid, restricted or dangerous materials would be accepted at the facility. The principal C&D wastes targeted for receipt (and re-processing) include concrete, bitumen, bricks and roofing tiles. It is recognised that C&D wastes delivered may contain very small quantities of asbestos in a bonded matrix	A total of 52,291 tonnes of waste was received at the site for the Reporting Period. This comprised 20 tonnes of C&I waste and 52,271 tonnes C&D waste.	As above	As above
Contaminated soil	The Proponent envisages receiving approximately 100,000 tpa of low level contaminated soil from a number of potential sources namely from remediation sites such as old petrol stations or ex-commercial and industrial sites that either have low level contaminated soils or construction and demolition waste that have the potential for low level contamination.	Both contaminated and non-contaminated soils have been received at the PLRRC for processing. During this Reporting Period a total of 2,504 tonnes of contaminated soil from C&D waste was received.	As above	As above
Waste suited to recycling and/or re-processing	The Proponent's preliminary market evaluation suggests that, during an average year receiving 300,000 tonnes of waste, between 50% and 67% of the waste received (150,000 tpa / 200,000 tpa on average) on site would be suited to recycling and/or re-processing with the remaining 50% to 33% of the waste received placed directly into the active emplacement cell.	During this Reporting Period, 113,607 tonnes of material was transported from the site for lawful recovery. This included mixed waste, bricks and concrete, and wood, trees or timber. More waste was transported for lawful recovery than received at the PLRRC during this Reporting Period. Around 2.3% of waste received at the site was emplaced at the landfill.	The site commenced operation in August 2019. The percentage of processed and material transported off-site for further processing or reuse has increase from 1% from the last Reporting Period to 60% for this Reporting Period,	As above

7 COMMUNITY

7.1 Community Liaison Committee

A Community Liaison Committee (CLC) was setup at the early stages of the project and was meeting quarterly from June 2017 until site establishment commenced in April 2018.

The CLC comprises an independent Chairperson (Peter Gordon), who has been a member of the committee since its inception. On 3 April 2017, the Proponent received the Secretary's approval of Peter Gordon to act as interim chairperson of the CLC in accordance with Sch5 C2.

The Proponent also received the Secretary's approval of the draft CLC members, procedures and meeting frequency in accordance with Sch5 C2. The draft procedures will be finalised by the CLC.

The CLC includes representatives from:

- Bingo and PLRRC representatives, including the Head of Project Development, General Manager Recycling, Stakeholder & Continuous Improvement Manager, and Community Liaison
- One representative of Penrith City Council
- Representatives of the local community and other stakeholders.

Details and frequency of these meetings are described below. Meeting minutes are prepared for each of the meetings and provide an overview of the activities occurring on site, action items, issues raised etc. The minutes of the CLC meetings are available from the PLRRC website

7.1.1 Reporting Period: September 2021 to August 2022

During this Reporting Period, the following CLC meetings occurred.

- 10 May 2022 via video conference

7.2 Community engagement

The CLC was also established as part of a continuing community liaison strategy for the PLRRC. In addition to the establishment and operation of the CLC, the following community engagement activities were undertaken:

- A dedicated Community Liaison Team operate a number of contact methods including email, website enquiry form, Facebook and community hotline, and respond to all enquiries within 48 hours.
- The Proponent continues to provide regular updates about the status of the Project and other relevant information on the PLRRC website.

7.3 Access to Information

Sch6 C10 requires that the Proponent make information freely available on a publicly accessible website as it is progressively required under the approval.

A website has been established for the PLRRC and up-to-date information about the site's operations has been uploaded. The website includes information relating to:

- Statutory approvals (planning approval, modification notice and EPLs)
- Project documentation, including all approved environmental management plans

- Recent monitoring data, including noise, air and water monitoring data
- How to register a complaint.

Relevant information applicable to the local community is summarised in **Table 7-1.**

Table 7-1: Contact information for the local community

Format	Details
Website:	https://www.patonslane.com.au/
Email:	enquiries@bingoindustries.com.au
Facebook:	https://www.facebook.com/patonslanerrc/
Phone:	1300 424 646
Postal Address:	Patons Lane Resource Recovery Centre, 123 Patons Lane, Orchard Hills NSW 2748

7.4 Community Complaints

No community complaints were received during the Reporting Period.

Complaints can be made directly to Bingo via email, dedicated phone number or the PLRRC Facebook page.

8 INDEPENDENT AUDITS

8.1 Pre-Operation Environmental Audit

In compliance with Sch3, C12, an *Independent Pre-operation Environmental Audit (IPEA)* was conducted in October 2019 by Pitt & Sherry. The audit comprised a series of five site inspections, as well as document reviews with personnel.

The findings of the audit were reported in *Pre-Operational Independent Environmental Audit Bingo Industries Patons Lane Resource Recovery Centre*, dated 21 October 2019.

8.2 Sch5, C6, Independent Environmental Audits

As required by Sch5, C6, *Independent Environmental Audits* of the Project are required to be undertaken every three years after the commencement of site establishment, unless the Secretary directs otherwise.

The audit was completed by Dickson Environmental Consulting and Audit Pty Ltd, consisting of a site inspection, as well as document reviews and interviews with personnel. The findings of the audit were reported in the *Independent Environmental Audit Bingo Industries - Operation of Patons Lane Resource and Recovery Centre,* dated 29 July 2022. All remaining audit non-compliances were closed out during the previous Reporting Period.

The next Independent Environmental Audit will be undertaken in June 2025.

Table 8-1: Summary of non-compliances identified in the April 2022 IEA

NC No	Condition	Aspect	Non- Compliance description / Recommendation	Status	Comment
1	Sch 4 C13 and C16(e)	Monitoring	Long term particulate monitoring has not been adequately implemented for more than 12 months due to malfunction / power issues with the real-time monitor	**OPEN**	BINGO has engaged specialist noise and air quality consultants to advise on and resolve power access and flooding impacts associated with the continuous air quality monitoring. The Air Quality Management Plan is under review for submission to the Department for approval and will accommodate any necessary changes to monitoring equipment and locations Correspondence has been sent to the EPA and DPE on 23 June 2023. BINGO is awaiting response.
2	Sch 5 C5(a), C10(e) Sch 4 C40(m)	Annual Environmental Management Review (AEMR)	No AEMRs have been prepared and submitted to DPE.	**CLOSED**	The AEMR for the Reporting Periods 1 April 2018 to 31 March 2019, 1 April 2019 to 31 March 2020 and 1 April 2020 to 31 August 2021 has been issued to the DPE. This current AEMR covers the Reporting Period 1 September 2021 to 31 August 2022.
3	Sch 5 C10(f)	Annual Environmental Management Review (AEMR)	• Whilst the Pre-operations Audit Report was of the Bingo website, the proponents' responses to the recommendations were not available on the website.	**CLOSED**	Responses to the recommendations in the Pre-operations Audit Report was uploaded to the Patons Lane / Bingo Industries website.

9 INCIDENTS AND NON-COMPLIANCES DURING THE REPORTING PERIOD

9.1 Non-compliances for the Reporting Period

The following table provides a summary of the non-compliances identified during the Reporting Period including actions taken or proposed by the proponent to address the non-compliance.

Table 9-1: Summary of non-compliances during the Reporting Period

NC #	Relevant Approval / Condition #	Condition Description	Actions taken to minimise and prevent recurrence if adverse effects of non-compliance	Status of compliance
1	Sch5 C5A of MP49_0074	Preparation of the AEMR for previous Reporting Period	The AEMR for the Reporting Period 1 April 2020 to 31 August 2021 has been issued to the DPE and includes the updates requested following review of the previous AEMR. This current AEMR covers the Reporting Period 1 September 2021 to 31 August 2022.	**CLOSED**
2		The Proponent shall submit a summary report of the real time monitoring results to Council.	A noise monitoring programme of attended and unattended (continuous) noise monitoring is undertaken by Wilkinson Murray and monthly reports are uploaded to the project website. These reports have not been submitted to Council as required by this Condition, however, Council participates in the Community Consultation Committee and is aware that these reports are available to the public on the PLRRC website and the Bingo website. To date there have been no exceedances of noise limits due to construction or operation of the site.	**CLOSED**
3	EPL 20814 Condition L2.4	Monitoring point 1 (LDP1) with elevated pH results, Monitoring point 3 (LDP3) with elevated Total Suspended Solids (TSS) results and Monitoring Point 2 (LDP2) with elevated Ammonia results (occurred 4 times)	There is no known environmental harm caused by the non-compliance. With ongoing maintenance of the surface water management system removing residual contamination, a declining trend in the ammonia concentrations was recorded for each subsequent discharge event. The Licensee will take all reasonable measures to prevent the discharge of stormwater with transfers of stormwater to the leachate management system undertaken where possible.	**CLOSED**

NC #	Relevant Approval / Condition #	Condition Description	Actions taken to minimise and prevent recurrence if adverse effects of non-compliance	Status of compliance
4	EPL 20814 Condition M2.2	Monitoring not in accordance with requirements (i.e. concentration of pollutants and/or sampling frequency) (occurred 3 times)	There is no known environmental harm caused by the non-compliance. Leachate has been transported to a licensed facility since October 2021, to remove leachate from the landfill and reduce the water around the riser. Higher than average rainfall in 2021 and 2022 hindered this process. To prevent recurrence, leachate will continue to be transported off site to a licensed facility to reduce leachate volume. Sampling will also continue when accessible.	**CLOSED**
5	EPL 21259 Condition	The Pollution Incident Response Management is required to be tested routinely at least once every 12 months	The PIRMMP was tested on 27 June 2022 and the plan updated on 28 June 2022	**CLOSED**

9.2 Incidents

The following table provides a summary of the incidents that occurred during the Reporting Period.

Table 9-2: Summary of incidents during the Reporting Period

Incident Number[11]	Date	Aspect / Area	Mechanism of environmental incident	Description and Action taken	Status
5751	14/09/2021 10:00 AM	Water - quantity	Site maintenance - pollution and pretreatment controls	Discharge from Dam 3 and 6. Sampler has completed special frequency sampling.	**CLOSED**
5977	02/10/2021 8:00 AM	Water - quantity	Site maintenance - housekeeping	Discharge from Dam 3, 6, and the HES Dam. Sampler has completed special frequency sampling	**CLOSED**
5978	12/10/2021 7:51 AM	Water - quantity	Site maintenance - housekeeping	Discharge from Dam 3 and 6. Sampler has completed special frequency sampling.	**CLOSED**

[11] Bingo Incident Reporting system generated number

Incident Number[11]	Date	Aspect / Area	Mechanism of environmental incident	Description and Action taken	Status
6152	08/11/2021 8:00 AM	Water - quantity	Site maintenance - pollution and pretreatment controls	Discharge from Dam 3, 6, and the HES Dam. Sampler has completed special frequency sampling.	**CLOSED**
6273	22/11/2021 7:30 AM	Water - quantity	Site maintenance - pollution and pretreatment controls	Discharge from Dam 3, 6, and the HES Dam. Special frequency sampling completed.	**CLOSED**
6595	06/01/2022 6:30 AM	Water - quantity	Site maintenance - pollution and pretreatment controls	Discharge from Dam 3, 6, and the HES Dam. Special frequency sampling completed.	**CLOSED**
6853	03/02/2022 10:30 AM	Water - quantity	Site maintenance - pollution and pretreatment controls	Discharge from Dam 3 and the HES Dam. Special frequency sampling completed.	**CLOSED**
6994	22/02/2022 10:00 AM	Water - quantity	Site maintenance - pollution and pretreatment controls	Discharge from Dam 3, 6, and the HES dam. Special frequency sampling completed.	**CLOSED**
7230	28/03/2022 12:15 PM	Water – quantity	Site maintenance – pollution and pretreatment controls	Discharge from Dam 3, 6, and the HES Dam. Special Frequency sampling completed. 63.2mm of rain since 23.03.22 - 28.03.22	**CLOSED**
8069	22/06/2022 9:56 AM	Land - soil and other pollution / contamination	Illegal Dumping	Items were illegally dumped beside Patons Lane. It is uncertain how the offender accessed the site considering it had been locked the previous night. The items were cleaned by site personnel.	**CLOSED**
8156	04/07/2022 8:00 AM	Water - quantity	Site maintenance - pollution and pretreatment controls	Discharge from Dam 3, 6, and the HES Dam. 146.2mm rain between 30/6/22 – 4/7/22. Special frequency sampling completed on 5/7/22 due to safety issues from flooding and no access to the site.	**CLOSED**
8286	12/07/2022 9:00 AM	Water - quantity	Site maintenance - pollution and pretreatment controls	Continued discharge from Dam 3, 6, and the HES Dam after 7 days. Sampling completed. 22mm rain between 7/7/22 - 12/7/22 (BOM Erskine Park Reservoir).	**CLOSED**

10 ACTIVITIES TO BE COMPLETED IN THE NEXT REPORTING PERIOD

Bingo is committed to delivering the highest standards of environmental performance to meet or exceed legal and other requirements.

This section identifies the measures to be implemented in the next Reporting Period to improve the environmental performance of the operation. This Section also briefly outlines forecast operations for the next Reporting Period with a focus on significant changes and any actions resulting from a condition of a relevant approval that will be triggered in the next Reporting Period.

The key activities to be completed in the next Reporting Period are provided in **Table 10-1.**

Table 10-1: Activities to be completed during forecasted Reporting Period

Activity #	Aspect	Activity	Responsibility	Timeframe
1	Environmental Data Management System (EDMS)	In 2019, Bingo implemented an Environmental Data Management System (EDMS) to improve environmental performance and compliance. The EDMS provides a platform to manage environmental data through the lifecycle of environmental monitoring, including planning, sampling, data validation, storage and reporting. During the Reporting Period the EDMS was further embedded within the environmental management of the operation by developing monitoring schedules, engaging with consultants for the use of the EDMS. During the next reporting period work will commence on creating custom reports and templates and documenting procedures.	Environmental Manager NSW	2022-2024
2	Environmental Management and Improvement Programs	The site will continue to implement the existing controls and monitoring plans of the site Environmental Management Plan and associated sub-plans. Additional improvement programs may be implemented in response to findings by ongoing inspections and monitoring as well as findings identified by regulatory inspections.	Site Environmental Officer PLRRC Site Operations Manager	Ongoing
3	Surface water quality monitoring	Surface water monitoring schedules will be updated to ensure that water quality samples are collected quarterly from all internal and external dams at PLRRC and also quarterly from Blaxland Creek both upstream and downstream of the PLRRC.	Site Environmental Officer PLRRC Site Operations Manager	Ongoing
4	Site rehabilitation	Ongoing site rehabilitation for Year 4 in accordance with the BWLVMP	Site Environmental Officer PLRRC Site Operations Manager	Ongoing

Activity #	Aspect	Activity	Responsibility	Timeframe
5	PM_{10} and TSP monitoring	The TEOMs were offline for the entire reporting period, therefore no data was available to assess compliance. Repairs or maintenance of the TEOM will be undertaken during the next reporting period. Air Quality Management plan to be reviewed including locations of monitors and equipment type.	Site Environmental Officer PLRRC Site Operations Manager	2022

APPENDIX A CONDITIONS OF CONSENT COMPLIANCE TRACKING

Compliant: Complies with all requirements of the condition(s)

Non-Compliant: Does not fully comply with all requirements of the condition.

Not Applicable: There were either no compliance issues related to the condition, or not applicable at the time of the audit

Not triggered: is a future required action

Schedule	Condition No.	Name of clause	Condition	Comments / Evidence	Compliance
1			**SCHEDULE 1 – APPLICATION AND SITE DESCRIPTION**	**NA**	**NA**
2			**SCHEDULE 2 - DEFINITIONS**	**NA**	**NA**
3			**SCHEDULE 3 - ADMINSTRATIVE CONDTIONS**	**NA**	**NA**
3	1	Obligation to minimise harm	The Proponent shall implement all reasonable and feasible measures to prevent and/or minimise harm to the environment that may result from the Project	NA	**Noted**
3	2	Terms of approval	The Proponent shall carry out the Project generally in accordance with the: a) *Environmental Assessment* prepared by RW Corkery & Co Pty Ltd dated April 2010; b) *Response to Submissions* prepared by RW Corkery & Co Pty Ltd dated July 2010; c) *Further Modified Preferred Project Report for the Orchard Hills Waste and Resource Management Facility September 2011* prepared by R.W. Corkery & Co. Pty. Ltd (Exhibit Z in Appeal No 10928 of 2010); d) *Report for Modifications to Modified Preferred Project – Overview Report: September 2011* prepared by GHD (Exhibit Z in Appeal No 10928 of 2010); e) The documents listed in Schedule 6.	This Pre-Site Establishment Audit has been conducted to determine compliance with the conditions of MP09_0074 in relation to documentation and approvals required to be completed and approved by the Secretary of DP&E prior to commencement of site establishment works on the Patons Lane RRC site.	**Compliant**
3	5	Terms of approval	The Proponent shall comply with any reasonable requirement of the Secretary arising from the Department's assessment of: a) any reports, plans, strategies, programs or correspondence that are submitted in accordance with this approval; and	Management plans have been prepared and approved by the Department.	**Noted**
3	5	Terms of approval	b) the implementation of any actions or measures contained in the submitted reports, plans, strategies, programs or correspondence.	Management plans have been prepared and approved by the Department.	**Noted**
3	5A	Terms of approval	The facility must not accept waste from members of the public.	No waste is accepted from members of the public.	**Compliant - ongoing**
3	6	Engineering plans	Detailed engineering plans must be prepared and certified by a registered NPER3 engineer prior to commencement of site establishment. The engineering plans must include: a) a detailed geotechnical investigation of the site, including an assessment of the stability of the cell and quarry walls;	The Detailed Engineering Plans for the PLRRC were prepared and Certified by a registered NER engineer (David Gamble NER 18489) and includes: Geotechnical investigation of the site, including an assessment of the stability of the cell and quarry walls (Douglas Partners April 2015);	**Compliant**
3	6	Engineering plans	b) design for battered slopes of the landfill waste no greater than 1:3 (Vertical:Horizontal), unless otherwise approved by the EPA;	Design for battered slopes of the landfill waste no greater than 1:3 (Vertical: Horizontal), (GHD 3D Terrain Modelling);	**Compliant**
3	6	Engineering plans	c) the engineering specifications for the internal haul road design, including sufficient width to carry two lanes of heavy vehicle traffic where appropriate, and all other internal roads, so as to minimise traffic conflicts within the site;	The engineering specifications for the internal haul road design, including sufficient width to carry two lanes of heavy vehicle traffic where appropriate, and all other internal roads, so as to minimise traffic conflicts within the site;	**Compliant**
		Engineering plans	d) a set of amended staging plans incorporating the results of the detailed geotechnical investigation and engineering design. The amended staging plans must include: • all stages of the quarrying and landfilling operations, to address the incorrect sub-vertical cut and batter slopes in the Further Modified Preferred Project Report Figures including Figure 2.10a, 2.10b, 2.10c, 2.11a, 2.11b, 2.11c, 2.11d, 2.12a, 2.12b, 2.12c, and more clearly show how the measures to be utilised to ensure separation between the landfilling and extraction operations will be undertaken, and the effect of the 1:3 (V:H) landfill batter slopes on the location of the acoustic mounds; • show all active quarrying and landfilling areas, internal bunds, batter slopes (of the earthworks, landfill cell walls, and landfill batter slopes), location of noise and visual bunds / barriers, location of landfill cell access roads and earthwork haul roads, stormwater drainage / management works and leachate manage works.	A set of amended staging plans incorporating the results of the detailed geotechnical investigation and engineering design (*Covering Report - Detailed Engineering Plans, Appendix 5, March 2017)*	**Compliant**
3	6	Engineering plans	e) These plans should be consistent with the *Further Modified Preferred Project Report,* other conditions of this approval and the Figure in Schedule 10.	The Detailed Design Plans are generally consistent with the *Further Modified Preferred Project Report*, and conditions of this approval.	**Compliant**

Schedule	Condition No.	Name of clause	Condition	Comments / Evidence	Compliance
3	**6A**	Engineering plans	The engineering plans and amended staging plans must be provided to the Secretary prior to the pre-site establishment compliance audit.	The detailed engineering plans and management plans required for the site establishment works were provided to the Secretary prior to this Pre-Site Establishment Audit (August 2017). • Letter from DP&E re Staging of Site Establishment Management Plans, 18 May 2016 • Letter from DP&E re Receipt of Detailed Engineering Plans, 9 Aug 2017	**Compliant**
3	**7**	Site rehab	Prior to the commencement of Operation, the Proponent shall lodge a rehabilitation bond in the form of a bank guarantee for the project with the Secretary to provide security for the carrying out of site rehabilitation in accordance with this Project approval. The sum of the bond shall be calculated at $5/m2 for the area marked with a red line and shown as 'Project Site Boundary' on the plans at schedule 8 and be to the satisfaction of the Secretary in consultation with the EPA. In determining the amount of the rehabilitation bond, the Secretary will have regard to the level of financial assurance provided to the EPA for the provision of the EPL so that the Proponent is not required to bond the rehabilitation of the site twice.	• Email From Bingo (David Taylor) to DPIE (Kelly McNicol) dated 13 June 2019 requesting confirmation of Rehabilitation Bond amount required. • Transmittal letter from Bingo Industries (D Taylor) to DPIE (B Zhang) dated 12 July 2019 referencing payment of $1,815,500 Rehabilitation Bond. • Letter from the NSW EPA (D Rose, Acting Unit Head Waste Compliance) to Bingo Environmental Manager (R Dent) dated 24 May 2019 relating to the application for variation of EPL 20814). The letter refers to the addition of a Rehabilitation Bond to the EPL. • Email from DPIE (B Zhang Senior Environmental Assessment Officer) to Bingo (D Taylor) dated 8 July 2019 confirming that the proposed Bond amount of $3,015,500 (less the $1,200,000 bond payable to the EPA) met the requirements of DPIE in accordance with Schedule 3 Condition 7.	**Compliant**
3	**8**	Site rehab	Within 3 months of each Independent Environmental Audit (see condition 6 of schedule 5), the Proponent shall review, and if necessary revise, the sum of the rehabilitation bond to the satisfaction of the Secretary. This review must consider: a) the effects of inflation (CPI); b) any changes to the total area of site disturbance as shown in schedule 8; and c) the performance of the rehabilitation and revegetation to date. In relation to (c) above, if the rehabilitation works or part thereof are completed to the satisfaction of the Secretary, the Secretary will release all or part of the rehabilitation bond. If the rehabilitation works are not completed to the satisfaction of the Secretary, the Secretary may call in all or part of the rehabilitation bond to arrange for the satisfactory completion of the relevant works to the extent that the bond allows.	This condition has not been triggered for this reporting The IEA was due three years after commencement of site establishment, and as such is due in 2021. The rehabilitation bond will to be reviewed after the IEA has been undertaken.	**Not triggered**
3	**9**	Deleted	**Deleted**	NA	**NA**
3	**10**	Deleted	**Deleted**	NA	**NA**
3	**11**	Pre-site establishment audit (IPEA)	The Proponent shall commission and pay the full cost of an independent pre-site establishment compliance audit. The audit must: a) be conducted by a suitably qualified, experienced and independent team of experts covering all facets of the Project whose appointment has been endorsed by the Secretary;.	The Pre-Site Establishment Compliance Audit was conducted by the Lead Auditor, whose appointment was endorsed by the Secretary of DP&E on 31 August 2015;	**Compliant**
3	**11**	Pre-site establishment audit	b) assess compliance with all pre-site establishment and pre-work conditions of this approval;	The audit assessed compliance with the Conditions of Consent that apply to approvals required prior to commencement of site establishment works (section 4);	**Compliant**
3	**11**	Pre-site establishment audit	c) assess all pre-site establishment and pre-work management plans, strategies and programs for consistency with the conclusions and recommendations in the documents listed in condition 2 of Schedule 3 and Schedule 6 and condition 6 of Schedule 3; and	Assessed that all pre-site establishment management plans, strategies and programs were prepared and approved by the Secretary of DP&E were generally consistent with the conclusions and recommendations in the documents listed in Schedule 3 condition 2 and Schedule 6, and Schedule 3 condition 6 (section 3 and 4); and	**Compliant**
3	**11**	Pre-site establishment audit	d) be submitted to the Department prior to the commencement of any work.	The Independent *Pre-site Establishment Audit* has been conducted for submission to the Secretary of DP&E prior to the commencement of any site establishment works.	**Compliant**
3	**12**	Pre-operation audit	The Proponent shall commission and pay the full cost of an independent pre-operation compliance audit. The audit must: a) be conducted by a suitably qualified, experienced and independent team of experts covering all facets of the Project whose appointment has been endorsed by the Secretary;	• An independent environmental audit was undertaken by Pitt & Sherry. The audit team conducted the site inspection (five site visits) component of the audit between May 2019 and July 2019. • Letter from the DPIE (C Ritchie Director Industrial Assessments) to Bingo (D. Taylor General Manager) approving the appointment of the Audit Team dated 12 March 2019	**Compliant**

Schedule	Condition No.	Name of clause	Condition	Comments / Evidence	Compliance
				• The audit report dated October 2019 was submitted to the DPIE and a response prepared.	
3	12	Pre-operation audit	b) assess compliance with all pre-operation conditions of this approval;	As above	Compliant
3	12	Pre-operation audit	c) assess all pre-operation management plans, strategies and programs for consistency with the conclusions and recommendations in the documents listed in condition 2 of Schedule 3 and Schedule 6 and condition 6 of Schedule 3; and	As above	Compliant
3	12	Pre-operation audit	d) be submitted to the Department prior to the commencement of operation.	Compliance with the pre-operational Conditions of Consent was reviewed by assessing compliance against the various documentation related to project approval.	Compliant
3	13	Deleted	**Deleted**	NA	NA
3	14	Surrender of exiting development consent	Prior to the commencement of site establishment or as otherwise agreed by the Secretary, the Proponent shall surrender all existing development consent(s) and project approval(s) for the site and project (apart from this approval and DA 2003/0627) in accordance with the EP&A Act.	• The surrender of all existing development consent(s) / project approval(s) for the site and project to the Penrith City Council occurred following receipt of approval to commence site establishment works from DP&E under the Project Consent 09_0074. • The PCC had no objections to deferring the surrender of the existing consents to prior to the commencement of operations. • A formal request to delay the surrender of the existing consents was lodged to the DP&E on 27 July 2017. DP&E advised on 9 August 2017 that surrender of the Consent should occur prior to commencement of operation. • The DPIE approved the surrender of the original consent to allow commencement of operations in July 2019.	Compliant
3	15	Licences and other approvals	The Proponent shall obtain any licence or approval required to undertake the project including, but not limited to, an EPL, a water access licence, and permission for work in the electricity easement, on-site sewage management, and Roads Act approval.	• EPL 20814, issued 20 August 2019 • EPL 21259 issued on 28 June 2019 • Engineering Construction Certificate No. v 05/0630 • TransGrid Easement Permission 2 Feb 2017 • Letter from Penrith Council approving the operation of the on-site sewage treatment system dated 9 August 2018 • Letter from the NSW Department of Primary Industries to SRC Properties granting Water Access Licence WAL24329, dated 2 June 2015. • Email from TransGrid (K O'Brien Pratt) granting approval to work within the TransGrid Easement, dated 27 February 2017. • Letter from the NSW Department of Primary Industries to SRC Properties granting approval for the Controlled Activity 10ERM2009/0789. • Letter from the NSW Natural Resources Regulator to Bingo Patons Lane Pty Ltd granting approval (10WA122909) under the water resources action for the construction and operation of a water supply bore, dated 4 December 2018. • Letter from RMS (D Dehghan-Khalaiji) to Bingo granting Roads Act Approvals for the road works associated with the project, dated 21 May 2019.	Compliant
3	16	Deleted	**Deleted**	NA	NA
3	17	Project duration	The Project, including operation and all rehabilitation but excluding site establishment, shall not exceed 25 years duration from the date of commencement of work. This limitation does not apply to any ongoing environmental management and monitoring of the site.	Future requirements	Not triggered
3	18	Site establishment duration	Site establishment shall not exceed 6 months duration from the date of commencement of work, unless otherwise agreed to by the Secretary.	The Project Approval Conditions were modified on 30 March 2016. Under Schedule 3 Condition 18, the timeframe for site establishment was extended from 6 months to 18 months to allow sufficient timeframes for activities such as bulk earthworks and dewatering of void to occur. Operation on the site commenced in August 2019	Compliant
3	19	Lapsing of approval	This approval lapses 5 years from the date of issue unless Site Establishment is completed.	Site establishment was completed and operation on the site commenced in August 2019	Compliant

Schedule	Condition No.	Name of clause	Condition	Comments / Evidence	Compliance
3	20	Waste receipt, emplacement and throughput	The Proponent shall only receive waste on the site after an occupation certificate has been issued and while the Recycling and Re-Processing Area is operational.	Occupancy Certificate 19/124832-5, issued by McKenzie Group Consulting (NSW) Pty Ltd - the certifier.	Compliant
3	21	Waste receipt, emplacement and throughput	The Proponent shall obtain the Secretary's written approval prior to the emplacement of waste in Cell 3. Before granting approval, the Secretary must consider whether rehabilitation has been adequately progressed according to the approved Rehabilitation Plan.	Not triggered – Cell 3 (stage 3) expected to occur in year 20 of operations (2039)	Not triggered
3	22	Waste receipt, emplacement and throughput	The Proponent shall not exceed the waste receipt and waste emplacement volumes specified in Table 1 **See Table 1 on NOTES TAB**	Addressed in the LEMP and OEMP - Waste tracking undertaken to ensure that the threshold are not exceeded.	Compliant - ongoing
3	23	Resource extraction	The Proponent shall not exceed clay/shale extraction and despatch specified in Table 2. **See Table 2 on NOTES TAB**	Quarrying operations commenced during the development of Cells 1b, 1c, 2 and 3.	Compliant - ongoing
3	24	Stockpile Height	No stockpile of any material shall exceed RL 54 metres AHD.	Addressed in the LEMP and OEMP - No stockpiles exceed the RL 54m in this Reporting Period	Compliant - ongoing
3	25	HV movements	Despite any other limit in this approval, the Proponent shall ensure that heavy vehicle traffic generation for the Project does not exceed 250 daily heavy vehicle movements	Waste tracking and truck numbers show that to date the 250 daily heavy vehicle movements has not been exceeded.	Compliant - ongoing
3	26	HV movements	The Proponent shall keep an accurate register of daily heavy vehicle movements and provide the register to the Secretary upon request.	The weighbridge operations, waste receival process (including load rejection process) and Weighbridge database operation allows the tracking of waste and heavy vehicle movements	Compliant - ongoing
3	27	Structural adequacy	The Proponent shall ensure that all new buildings and structures, and any alterations or additions to existing buildings and structures, are constructed in accordance with the requirements of the BCA	Occupancy Certificate 19/124832-5, issued by McKenzie Group Consulting (NSW) Pty Ltd - the certifier.	Compliant
3	28	Demolition	The Proponent shall ensure that all demolition work is carried out in accordance with *Australian Standard AS 2601:2001: The Demolition of Structures.*	No demolition works had occurred on Patons Lane site	NA
3	29	Operation of plant and equipment	The Proponent shall ensure that all plant and equipment used for the Project is: a) maintained in a proper and efficient condition; and b) operated in a proper and efficient manner.	Inspections of plant are undertaken in accordance with **STANDARD OPERATING PROCEDURE (SOP) – SOP-BDR009 Mobile Plant Operations**	Compliant - ongoing
3	30	Public infrastructure	Prior to commencement of any work, the Proponent shall: a) prepare a dilapidation report of the public infrastructure in the vicinity of the site (including roads, gutters, footpaths, etc) in consultation with Council; and b) submit a copy of this report to the Secretary.	Dilapidation Report (dated January 2017) was prepared by National Project Consultants Pty Ltd (NPC) Engineers and lodged with the Penrith City Council on 27 January 2017. PCC approved the Dilapidation Report on 2 February 2017. The Dilapidation Report was submitted to DP&E and a letter confirming receipt was received on 9 August 2017.	Compliant
3	31	Public infrastructure	The Proponent shall: a) repair, or if the Secretary agrees pay the full costs associated with repairing, any public infrastructure that is damaged by the Project; and	No public infrastructure had been relocated or damaged due to the PLRRC construction and operation	Compliant
3	31	Public infrastructure	b) relocate, or if the Secretary agrees pay the full costs associated with relocating, any public infrastructure that needs to be relocated as a result of the Project.	No public infrastructure had been relocated or damaged due to the PLRRC construction and operation	Compliant
3	32	Staged submission	The Proponent may submit any plan or program required by this approval on a progressive basis with the approval of the Secretary.	DP&E approved Staging of Site Establishment Management Plans for the PLRRC on 18 May 2016: **1. Stage 1-** would cover the period to the end of the excavation of Cell 1; **2.** Stage 2 - would cover the period to the end of the excavation of Cell 2; and **3.** Stage 3 - would cover the period to the end of the excavation of Cell 3. Staging of the submission of the management plans was approved on 1 June 2016 by DPIE	Compliant - ongoing

Schedule	Condition No.	Name of clause	Condition	Comments / Evidence	Compliance
4			**SCHEDULE 4 - SPECIFIC ENVIRONMENTAL CONDITIONS**		NA
4	1	Waste management	The Proponent shall only receive and/or emplace waste on-site that is classified as general solid (non-putrescible waste) unless otherwise authorised for receipt and/or emplacement by an EPL.	The WRRMP (Revision C) prepared by Arcadis dated 10 July 2019 was approved on 26 July 2019. The WRRMP (Table 5) specifies the wastes that are permitted to be disposed of into the Landfill.	Compliant - ongoing
4	2	Waste management	No restricted solid waste shall be permitted to enter the site.	WRRMP Revision C, prepared by Arcadis dated 10 July 2019 and approved on 26 July 2019. The WRRMP (Table 5) specifies the wastes that are permitted to be disposed of into the Landfill.	Compliant - ongoing
4	3	Waste management	Stockpiles of construction and demolition waste shall only be stored within the Material Recycling Facility Warehouse.	WRRMP Revision C, prepared by Arcadis dated 10 July 2019 and approved on 26 July 2019. The WRRMP (Table 5) specifies the wastes that are permitted to be disposed of into the Landfill.	Compliant - ongoing
4	4	Waste management	The Proponent shall store all chemicals, fuels and oils on-site in accordance with the requirements of all relevant Australian standards, including DECCW's Environment Protection Manual, Technical Bulletin Bunding and Spill Management.	• Fuel for mobile plant will delivered in mobile tanker. 400l emergency fuel (diesel) is stored in two small bunded tanks adjacent to the Resource Recovery Building. • Lubricating oil, machine oil is stored in a dedicated storage container located to the north of the Resource Recovery Building. • Flocculant (for water treatment) is located in a roofed bund between Cell 1A and the licenced discharge point.	Compliant - ongoing
4	5	Waste management	The Proponent shall prepare and implement a **Waste and Resource Recovery Monitoring Program (WRRMP)** for the Project to the satisfaction of the Secretary. This program must: a) be prepared in consultation with the EPA;	• The WRRMP Revision C, prepared by Arcadis dated 10 July 2019. • Email (trail) from Bradley Searle (Arcadis) to DPIE agreeing to update the draft Waste and Resource Recovery Program - dated 5 June 2019. • The email trail contains comments from DPIE on the draft program and a statement from DPIE that acknowledges that the EPA has been consulted and requesting that any comments from the EPA be addressed in the final version of the program.	Compliant
4	5	Waste management	b) be approved by the Secretary prior to commencement of operation; and	• Letter from DPIE (B. Zhang) to Bingo Industries (D. Taylor) dated 26 July 2019, stating at all plans and programs required under the Approval have been reviewed and approved by the Department.	Compliant
4	5	Waste management	c) include Except for the following, the Proponent shall dispose of all outputs produced from the Material Recycling Facility Warehouse to the landfill on-site: monitoring for: i) the quantity, type and source of waste received; and ii) quantity, type and quality of the outputs produced.	Section 4.1.2 of the WRRMP Revision C, prepared by Arcadis dated 10 July 2019 and approved on 26 July 2019, describes the waste quantities that may be processed at the site. Section 4.1.3 describes the waste types that may be received at the site.	Compliant
4	6	Waste management	Except for the following, the Proponent shall dispose of all outputs produced from the Material Recycling Facility Warehouse to the landfill on-site: a) recyclables extracted and exported off-site for resource recovery purposes;	The WRRMP details of wastes that are not permitted to be placed in the landfill and therefore disposed off-site.	Compliant
4	6	Waste management	b) waste not authorised by an EPL extracted from the input waste stream, which shall be exported for lawful disposal off-site; and	The WRRMP details of wastes that are not permitted to be placed in the landfill and therefore disposed off-site.	Compliant
4	6	Waste management	c) output waste derived materials approved for use under the POEO Act and Regulations.	The WRRMP provides details of wastes that are permitted to be exported from the site for reuse or recycling.	Compliant
4	7	Contamination and asbestos management	The Proponent shall prepare and implement a **Contamination and Asbestos Management Plan (CAMP)** for the Project. This plan must:	The CAMP to satisfy Schedule 4 condition 7 was updated in March 2019 and was approved by the DPIE on 27 July 2019.	Compliant
4	7	Contamination and asbestos management	a) be prepared by an independent expert whose appointment is endorsed by the Secretary;	Was prepared by Hibbs and Associates whose appointment was endorsed by the Secretary of DP&E on 31 August 2015;	Compliant

Schedule	Condition No.	Name of clause	Condition	Comments / Evidence	Compliance
4	7	Contamination and asbestos management	b) be prepared in consultation with WorkCover NSW, NOW and EPA;	Was prepared in consultation with WorkCover NSW, NOW and EPA;	Compliant
4	7	Contamination and asbestos management	c) be reviewed and endorsed at each stage by an independent accredited site auditor	The CAMP was reviewed and endorsed at each stage by Dr Ian Swane independent accredited site auditor;	Compliant
4	7	Contamination and asbestos management	d) be approved by the Secretary prior to commencement of site establishment;	The CAMP was submitted to DP&E on 15 March 2017 and approved by the Secretary on 9 August 2017. The CAMP was updated in March 2019 and was approved by the DPIE on 27 July 2019	Compliant
4	7	Contamination and asbestos management	e) be based on the results of such further testing or monitoring of the contaminated bunds, the site or groundwater as may be required by the independent accredited site auditor;	The CAMP was based on the results of further testing and monitoring of the contaminated bunds, the site or groundwater as may be required by the independent accredited site auditor;	Compliant
4	7	Contamination and asbestos management	f) adequately characterise the types and quantities of contaminants within the bunds that are proposed to be disturbed and in groundwater in the area of the bunds;	Includes section 5 which characterises the types and quantities of contaminants within the bunds that are proposed to be disturbed and in groundwater in the area of the bunds;	Compliant
4	7	Contamination and asbestos management	g) provide for the appropriate remediation of any contaminated material;	Includes section 6 that describes the appropriate remediation of any contaminated material;	Compliant
4	7	Contamination and asbestos management	h) ensure that the environmental and human health risks posed by contamination are adequately addressed;	Includes section 11 that describes environmental and human health risks posed by contamination;	Compliant
4	7	Contamination and asbestos management	i) provide a protocol for addressing the environmental and human health risks posed by any unexpected finds of contaminants;	Includes sections 8.4 and 11.3, and provides a protocol for addressing the environmental and human health risks posed by any unexpected finds of contaminants;	Compliant
4	7	Contamination and asbestos management	j) demonstrate that the proposed control measures will minimise emissions to the atmosphere of asbestos to the maximum extent achievable in accordance with the "Approved methods for the sampling and analysis air pollutants in NSW";	Sections 11.3 and 11.6, and describe monitoring and handling procedures to demonstrate that proposed control measures will minimise emissions to the atmosphere of asbestos to the maximum extent achievable in accordance with the "*Approved methods for the sampling and analysis air pollutants in NSW";*	Compliant
4	7	Contamination and asbestos management	k) include a Section B Site Audit Statement under the CLM Act; and	Section B includes a Site Audit Statement under the CLM Act which was issued by Dr Ian Swane on 23 December 2016; and	Compliant
4	7	Contamination and asbestos management	l) include a regime for the issue of Section A Site Audit Statements under the CLM Act at appropriate stages of work.	A regime for the issue of Section A Site Audit Statements under the CLM Act is included in section 8.3, 10.7, 10.8 and 12.6 of the CAMP for each appropriate stages of work.	Compliant
4	8	Cover and capping	The Proponent shall ensure that all material used to cover and cap waste is Virgin Excavated Natural Material, or excavated natural material provided the use of the excavated natural material is approved in writing by EPA.	Only Virgin Excavated Natural Material sourced from onsite is used.	Compliant - ongoing
4	8A	Cover and capping	The proponent may emplace up to 7,500m3 of special waste (asbestos) identified under Condition 7 Schedule 4 above in the landfill. All other special waste (asbestos) shall be disposed of off site at a licenced facility unless agreed to by the Secretary and EPA. Nothing in this condition permits an exceedance of the limits of heavy vehicle movements, air quality limits and noise limits set out in this approval.	• The CAMP prepared by Hibbs Associates, dated 3 May 2019, states that Special waste will be placed in the Bunds (not the landfill), and is documented in the Asbestos and Waste Management Plan. • Letter from the Unit Head for Waste Compliance (EPA) to the Senior Planning Offices (DPIE) dated 3 May 2017 commenting on the CAMP	Compliant - ongoing
4	9	Litter	The Proponent shall prepare a **Litter Management Plan (LMP)** which includes:	A LMP (Revision B), prepared by Arcadis, dated 9 July 2019 was approved by DPIE on 26 July 2019.	Compliant
4	9	Litter	a) measures to prevent the proliferation of litter, including the installation and maintenance of a mesh fence of not less than 1.8 metres high around the landfill; and .	The LMP states that the provision of the 1.8 metre fence, inspection program and other litter management actions	Compliant
4	9	Litter	b) establish a regime for daily inspections and a program to clear the site and surrounds of litter.	As above	Compliant

Schedule	Condition No.	Name of clause	Condition	Comments / Evidence	Compliance
4	9	Litter	The proponent shall include the plan in the **Landfill Operations Management Plan (LEMP)** and implement the plan.	The LEMP (Revision 4), prepared by GHD and dated 25 June 2019, was approved by DPIE on 26 July 2019.	Compliant
4	11	Energy management	The Proponent shall implement all reasonable and feasible measures to minimise energy use.	Low energy use lighting, IT equipment and appliances are in use on site.	Compliant - ongoing
4	12	Air quality and odour	The Proponent shall not cause or permit the emission from the site of offensive odours as defined under Section 129 of the POEO Act.	Two odour complaints were received during this Reporting Period. According to the Complaint Register, an investigation was initiated and no source of odour were detected on site. Complaints dated 12/05/2020 and 29/05/2020.	Compliant - ongoing
4	13	Air quality and odour	The Proponent shall ensure that dust and particulates generated by the Project do not exceed the criteria listed in tables 4, 5 and 6 at any residence or on more than 25 percent of any privately owned land surrounding the Site. **See Table 4 on NOTES TAB**	Monthly monitoring of PM10 and Deposited dust (DD) have been monitored since the July 2018. There have been no exceedances of the PM_{10} or DD limits detailed in Table 4, that could be related to the operation of the site have occurred since monitoring commenced. There were exceedance recorded in November 18 to March 2019 due to the bushfires in the area. Currently Total Suspended Particulate (TSP) matter is not continuously monitored, however, estimates of the annual average background TSP concentrations can be determined from a relationship between measured PM_{10} concentrations. This relationship was established as part of a review of ambient monitoring data collected by co-located TSP and PM_{10} monitors operated for reasonably long periods of time in the Hunter Valley (NSW Minerals Council, 2000) and assumes that 40% of the TSP is PM_{10}. This approach to estimating ambient TSP concentrations in the absence of monitoring data is common throughout NSW and is generally accepted by NSW EPA. Compliance with the TSP annual criteria will be automatically achieved when compliance with PM_{10} annual criteria is achieved. Eight exceedances of the EPL limit for dust and particulate generation was noted in the period between 8 November 2019 and 7 November 2020.	Compliant
4	14	Air quality and odour	Prior to commencement of operation, all operating, storage, unloading and loading areas, including the recycling and re-processing areas of the facility must be paved.	All of the waste receiving and processing area (and roads leading to that area) have been paved.	Compliant - ongoing
4	15	Air quality and odour	The Proponent must employ all feasible and practicable measures to minimise as far as possible any visible dust emissions from the site.	There have been no dust complaints during the Reporting Period.	Compliant - ongoing
4	16	Air quality and odour	The Proponent shall prepare and implement an **Air Quality and Greenhouse Gas Management Plan (AQGHGMP)**. This plan must:	The Air Quality and Greenhouse Gas Management Plan (AQGHGMP) to satisfy Schedule 4 condition 16:	Compliant
4	16	Air quality and odour	a) be prepared in consultation with EPA by a suitably qualified and experienced expert whose appointment has been endorsed by the Secretary;	Was prepared in consultation with EPA by Todoroski Air Sciences whose appointment was endorsed by the Secretary of DP&E on 31 August 2015;	Compliant
4	16	Air quality and odour	b) be approved by the Secretary prior to commencement of any work;	The plan was submitted to the Secretary on 15 March 2017 and approved on the 9 August 2017, prior to commencement of any site establishment works An updated AQGHGMP was submitted to the Department for Approval prior to the commencement of operation of the landfill. The AQGHGMP was approved on 27 July 2019	Compliant
4	16	Air quality and odour	c) describe in detail the measures that would be implemented to manage the air quality and greenhouse gas impacts of the Project to ensure compliance with this approval and other relevant statutory controls;	Section 6.1 - Air quality monitoring network of the AQGGMP on page 24 details the measures that would be implemented to manage the air quality and greenhouse gas impacts of the Project to ensure compliance with this approval and other relevant statutory controls.	Compliant
4	16	Air quality and odour	d) Include a protocol for the observations and recording of site dust levels on a daily basis. Instances of visible dust must be noted in a log along with date, time, cause and response/remedy;	Section 6.3 - Monitoring data validation and Section 9.8 - Observations of visible dust of the AQGGMP details the protocol for observations and recording of site dust levels on a daily basis.	Compliant
4	16	Air quality and odour	e) include a monitoring program for real-time air quality impacts of the Project;	Section 6 - Air quality monitoring network of the AQGGMP on page 24 details a monitoring program for real-time air quality impacts of the project.	Compliant

Schedule	Condition No.	Name of clause	Condition	Comments / Evidence	Compliance
4	16	Air quality and odour	f) identify the number and location of continuous monitoring points for fine particulates (PM_{10});	Figure 6.1 - Location of air quality monitoring network for PLRRC and Table 6.1 - Summary of monitoring locations in the AQGGMP details that the number and location of continuous monitoring points for fine particulates is based on two real-time PM_{10} monitors located in accordance with predominate wind patterns and residential receiver locations.	Compliant
4	16	Air quality and odour	g) include development and identification of PM10 concentration trigger levels at which: i. dust management actions shall be taken, and specification of the relevant actions; and ii. when work at the site shall cease;	Section 5.3 - contingency actions and Table 5.1 - Air quality management actions PM_{10} trigger actions of the AQGGMP detail development and identification of PMIs concentration trigger levels at which: ¡ dust management actions shall be taken, and specification of the relevant actions; and ii when work at the site shall cease; is real-time air quality trigger levels based on multi-level system to promote awareness and prevent dust generation.	Compliant
4	16	Air quality and odour	h) include a program for monitoring subsurface gas, surface gas emission, and gas accumulation in general accordance with the guidance in sections 15-18 of Appendix A of the Environmental Guidelines for Solid Waste Landfills EPA, 1996;	Section 7 - Gas Monitoring of the AQGGMP include a program for monitoring subsurface gas, surface gas emission, and gas accumulation in general accordance with the guidance in sections 15-18 of *Appendix A of the Environmental Guidelines for Solid Waste Landfills EPA, 1996*.	Compliant
4	16	Air quality and odour	i) include a protocol to remedy any-non-compliance	Section 9.4 - Compliance evaluation and Section 9.6 - Corrective and preventative actions of the AQGGMP include a protocol to remedy any-non-compliances.	Compliant
4	17	Soil and water	Except as may be expressly provided in the EPL, the Proponent shall comply with Section 120 of the POEO Act. Note: Section 120 of the POEO Act prohibits the pollution of waters.	The have been no reportable incidents of pollution of water	Compliant - ongoing
4	18	Soil and water	The Proponent shall: a) minimise soil loss;	The Soil, Water and Leachate Management Plan - PLRRC 10/05/2019 prepared by GHD, and approved by the Department on 27 July 2019 includes the following: Section 6.6 - Soil and stockpile management and Section 6.7 - Vegetation establishment details the requirements to minimise soil loss;	Compliant - ongoing
4	18	Soil and water	b) set aside any topsoil won on-site for the revegetation and rehabilitation of the site; and	Set aside any topsoil won on-site for the revegetation and rehabilitation of the site; and	Compliant - ongoing
4	18	Soil and water	c) ensure that any topsoil stockpiles on-site are suitably managed to ensure that the topsoil in these stockpiles can be beneficially used in the proposed revegetation and rehabilitation of the site.	Ensure that any topsoil stockpiles on-site are suitably managed to ensure that the topsoil in these stockpiles can be beneficially used in the proposed revegetation and rehabilitation of the site in the SWLMP.	Compliant - ongoing
4	19	Soil and water	The Proponent shall not track mud or waste from vehicles on public roads.	There have been no complaints regarding the tracking of mud onto the public roads. Minimising this impact is detailed in Section 6.3 and Section 6.4 of the SWLMP.	Compliant - ongoing
4	20	Soil and water	The Proponent shall prepare and implement a **Soil, Water and Leachate Management Plan (SWLMP)** for the Project. This plan must: a) be prepared in consultation with the Council, EPA and NOW by a suitably qualified and experienced expert whose appointment has been endorsed by the Secretary;	The SWLMP to satisfy Schedule 4 condition 20: was prepared in consultation with the Penrith City Council, EPA and DPI-Water by GHD whose appointment has been endorsed by the Secretary of DP&E on 31 August 2015. The SWLMP was updated by GHD, Revision 1 dated 11 July 2019 and was approved on 27 July 2019	Compliant
4	20	Soil and water	b) be approved by the Secretary prior to commencement of site establishment;	The SWLMP was updated by GHD, Revision 1 dated 11 July 2019 and was approved on 27 July 2019	Compliant
4	20	Soil and water	c) include a site water balance;	Included section 4.4 and Appendix 4 that present a site water balance	Compliant
4	20	Soil and water	d) include an erosion and sediment control plan that is consistent with the requirements in the latest version of Managing Urban Stormwater: Soils and Construction (Volume 1, Landcom, and Volume 2b: Waste Landfills, DECCW, 2008);	Included section 5 that presents an erosion and sediment control plan that is consistent with the requirements in the latest version of M*anaging Urban Stormwater: Soils and Construction (Volume 1, Landcom, and Volume 2b: Waste Landfills, DECCW, 2008)*	Compliant
4	20	Soil and water	e) include a stormwater management scheme that is consistent with the latest version of Managing Urban Stormwater: Volume 2b: Waste Landfills (DECCW, 2008)	Included section 4 - a stormwater management scheme that is consistent with the latest version of *Managing Urban Stormwater: Volume 2b: Waste Landfills (DECCW, 2008)*	Compliant
4	20	Soil and water	f) include design specifications and plans for the leachate containment system that comply with the minimum design specifications in Schedule 7 of this Approval and the relevant Benchmark Techniques in Appendix A of the Environmental Guidelines for Solid Waste Landfills EPA, 1996, unless otherwise approved by the EPA;	Section 6 and Appendix 6 include design specifications and plans for the leachate containment system that comply with the minimum design specifications in Schedule 7 of the Project Approval and the relevant Benchmark Techniques in Appendix A of the	Compliant

Schedule	Condition No.	Name of clause	Condition	Comments / Evidence	Compliance
				Environmental Guidelines for Solid Waste Landfills EPA, 1996, unless otherwise approved by the EPA The leachate system was installed prior to commencement of landfilling activities. See *Patons Lane Resource Recovery Centre Construction Quality Assurance Report Cell 1A-1 and Initial Leachate Pond July 2019,* prepared by SRC Operations Pty Ltd	
4	**20**	Soil and water	g) includes a surface water, groundwater and leachate monitoring program that: (i) is in accordance with the requirements of the EPL; (ii) includes: • collection of baseline data; • details of the proposed monitoring network; and • parameters for testing and respective trigger levels for action under the surface water, groundwater and leachate response plan;	Includes section 7 that presents a surface water, groundwater and leachate monitoring program in accordance with the requirements of the EPL 20814; and includes collection of baseline data, details of the proposed monitoring network; and parameters for testing and respective trigger levels for action under the surface water, groundwater and leachate response plan	**Compliant**
4	**20**	Soil and water	h) specifies that any stormwater from all areas of the site which has the potential to interact with waste shall be managed as leachate and directed into the leachate containment system	Included section 6 that specifies that any stormwater from all areas of the site which has the potential to interact with waste shall be managed as leachate and directed into the leachate containment system	**Compliant**
4	**20**	Soil and water	i) include a sampling and testing program to be developed in consultation with the EPA, to further characterise the quality of the water in the quarry void as well as any settled sediment at the base of the flooded quarry void. This is to occur prior to any of the permitter bunds being disturbed;	References the *Stormwater Dewatering Management Plan, Niche Environment & Heritage, 2016* approved by the EPA includes a sampling and testing program to further characterise the quality of the water in the quarry void as well as any settled sediment at the base of the flooded quarry void. This is to occur prior to any of the permitter bunds being disturbed	**Compliant**
4	**20**	Soil and water	j) includes a surface water, ground water and leachate response plan that: (i) includes a protocol for the investigation, notification to the EPA and mitigation of any exceedances of the respective trigger levels; and (ii) describes the array of measures that could be implemented to respond to any surface or groundwater contamination that may be caused by any development.	Included section 7.6 – The surface water, ground water and leachate response plan includes a protocol for the investigation, notification to the EPA and mitigation of any exceedances of the respective trigger levels; and measures that could be implemented to respond to any surface or groundwater contamination that may be caused by any development.	**Compliant**
4	**21**	Noise	The Proponent shall ensure that the noise generated by the Project does not exceed the limits in Table 7. Noise is to be measured in accordance with the relevant modifying/correction factors and meteorological conditions in the NSW Industrial Noise Policy.**See Table 7 on NOTES TAB**	Noise monitoring for the site commenced in July 2018. Monthly attended noise monitoring is undertaken and unattended noise monitors are installed at relevant locations in accordance with the requirements of the Conditions of Consent and the EPL. There have been no exceedances of noise related to the construction and operation of the site since monitoring commenced.Monthly reports are uploaded to the PLRRC websites	**Compliant**
4	**22**	Noise	The Proponent shall submit a noise compliance assessment to the Secretary three months after the commencement of site establishment. The assessment shall be prepared by a suitably qualified and experienced acoustic consultant and assess compliance with noise limits in Table 7 for the first three months of work.	Noise compliance assessment was conducted for submission to the Secretary DP&E three months after commencement of site establishment.	**Compliant**
4	**23**	Noise	The Proponent shall comply with the operating hours in Table 8. **See Table 8 on NOTES TAB**	Operation of the PLRRC commenced in August 2019. Operation only occurs within the hours stipulated in the Conditions of Consent.	**Compliant - ongoing**
4	**24**	Noise	Notwithstanding the provisions of Table 8 the Proponent shall ensure that: a) heavy vehicles travelling to or from the Site shall not arrive at the site prior to 7am or leave the site after 5pm on a weekday and shall not arrive at the site prior to 8 am or leave the site after 2pm on a Saturday, or any time on a Sunday or Public Holiday; and b) heavy vehicles travelling to or from the Site do not travel upon Luddenham Road south of its junction with Patons Lane.	The Transport Code of Conduct: The code of conduct details a) truck arrival times b) heavy vehicle routes	**Compliant - ongoing**
4	**25**	**Deleted**	**Deleted**		**NA**
4	**26**	Noise management plans	The Proponent shall prepare and implement a **Site Establishment Noise Management Plan (SENMP).** This plan must:	The Site Establishment Noise Management Plan to satisfy Schedule 4 condition 26.	**Compliant**
4	**26**	Noise management plans	a) be prepared by a suitably qualified expert whose appointment has been approved by the Secretary;	Was prepared by Wilkinson Murray whose appointment has been approved by the Secretary of DP&E on 31 August 2015;	**Compliant**

Schedule	Condition No.	Name of clause	Condition	Comments / Evidence	Compliance
4	26	Noise management plans	a) be prepared in consultation with the EPA;	Prepared in consultation with the EPA;	Compliant
4	26	Noise management plans	b) be approved by the Secretary prior to commencement of site establishment;	Submitted to the DP&E on 15 March 2017 and approved by the Secretary on 9 August 2017 as follows:	Compliant
4	26	Noise management plans	c) identify each site establishment work area, site compound and access route (both private and public);	Identified each site establishment work area, site compound and access route (both private and public);	Compliant
4	26	Noise management plans	d) identify all potentially affected sensitive receivers;	Identified in Table 4.1 all potentially affected sensitive receivers;	Compliant
4	26	Noise management plans	e) specify the construction noise and vibration objectives;	Specified in Table 3.1 the construction noise and vibration objectives;	Compliant
4	26	Noise management plans	f) include an assessment of potential noise and vibration from the proposed construction methods (including noise from traffic) against those objectives;	Addressed in section 4 and Tables 4.1 and 4.2 the assessment of potential noise and vibration from the proposed construction methods (including noise from traffic) against those objectives;	Compliant
4	26	Noise management plans	g) identify where additional Feasible and Reasonable noise mitigation measures can be implemented;	Addressed in section 5.2 where additional Feasible and Reasonable noise mitigation measures can be implemented;	Compliant
4	26	Noise management plans	h) describe management methods, procedures and specific noise mitigation treatments that will be implemented to control noise and vibration during site establishment, including the early erection of noise control barriers and the relevant matters outlined in Schedule 9;	Described in section 5 management methods, procedures and specific noise mitigation treatments that will be implemented to control noise and vibration during site establishment, including the early erection of noise control barriers and the relevant matters outlined in Schedule 9;	Compliant
4	26	Noise management plans	i) include procedures for notifying residents of site establishment activities that are likely to affect amenity;	Included in section 7.8 procedures for notifying residents of site establishment activities that are likely to affect amenity;	Compliant
4	26	Noise management plans	j) include a program for monitoring the noise impacts of the Project, including real time noise monitors to measure noise emissions during site establishment;	Outlined in section 6 and Figure 6.1 the program for monitoring the noise impacts of the Project, including real time noise monitors to measure noise emissions during site establishment;	Compliant
4	26	Noise management plans	k) describe procedures for remedial action when a non-compliance is identified in real time monitoring;	Described in section 7.6 procedures for remedial action when a non-compliance is identified in real time monitoring;	Compliant
4	26	Noise management plans	l) include procedures for reporting non-compliances to the relevant government agencies;	Provided in section 7.5 procedures for reporting non-compliances to the relevant government agencies;	Compliant
4	26	Noise management plans	m) include specifications and protocols for the installation and relocation of mobile noise barriers; and	Included in section 5.3 and Appendix A specifications and protocols for the installation and relocation of mobile noise barriers; and	Compliant
4	26	Noise management plans	n) identify the extent of and/or limitations of the work area behind or associated with mobile noise barriers to maintain compliance with noise limits.	Described in section 5.3 the extent of and/or limitations of the work area behind or associated with mobile noise barriers to maintain compliance with noise limits	Compliant
4	27	Noise management plans	The Proponent shall prepare and implement an **Operation Noise Management Plan (ONMP)**. This plan must:	See below	Compliant
4	27	Noise management plans	a) be prepared by a suitably qualified expert whose appointment has been endorsed by the Secretary;	An email from Email from DPIE (B Zhang Senior Assessment Officer) to Arcadis (B Searle, Environment Director), titled "RE: Submission of Paton Lane Operational Environmental Management Plans", dated 1 May 2019, requested that a copy of DPIE's letter endorsing the appointment of Mr Brian Clarke (from Wilkinson Murray) to prepare the ONMP.	Compliant
4	27	Noise management plans	b) be prepared in consultation with the EPA;	• Email from DPIE (B Zhang Senior Assessment Officer) to Arcadis (B Searle, Environment Director), titled "RE: Submission of Paton Lane Operational Environmental Management Plans", dated 1 May 2019, confirmed the ONMP had been issued by DPIE to the EPA for review and comment. • Email from DPIE (B Zhang Senior Assessment Officer) to Bingo (D Taylor), dated 8 July 2019, confirming that the EPA has notified DPIE that they will not be providing comments on, or approving any Plans relating the this Approval.	Compliant

Schedule	Condition No.	Name of clause	Condition	Comments / Evidence	Compliance
4	27	Noise management plans	c) be approved by the Secretary prior to commencement of operation;	ONMP (Revision B) dated 11 July 2019 was approved by DPIE on 27 July 2019.	Compliant
4	27	Noise management plans	d) include a system that allows for periodic assessment of BMP and BATEA that has the potential to minimise noise levels from the Project;	Section 5 - management measures detail that the measures in the following sections include the BMP and BATEA, and are intended to mitigate noise impacts at nearby sensitive receivers. The ONMP, will be periodically (at least every six months) reviewed and updated to include the latest BMP and BATEA.	Compliant
4	27	Noise management plans	e) specify effective implementation of identified BMP and BATEA measures and describe management methods, procedures and specific noise mitigation treatments that will be implemented to control noise and vibration during site operations, including the early erection of noise control barriers and the relevant matters outlined in Schedule 9;	Section 5.1- Section 5.6 of the ONMP specify effective implementation of identified BMP and BATEA measures and describe management methods, procedures and specific noise mitigation treatments that will be implemented to control noise and vibration during site operations, including the early erection of noise control barriers and the relevant matters outlined in Schedule 9.	Compliant
	27	Noise management plans	f) include a program for monitoring the noise impacts of the Project, including real time noise monitors to measure noise emissions during operation;	Section 6 - Monitoring and review on page 31 details the proposed operational noise monitoring program and review procedure for the Project.	Compliant
	27	Noise management plans	g) describe procedures for remedial action when a non-compliance is identified by real-time monitoring;	Section 6.1.5 Non-compliance and Remedial Measures describe procedures for remedial action when a noncompliance is identified by real-time monitoring in the ONMP.	Compliant
4	27	Noise management plans	h) include measures to record and respond to complaints;	Section 7 - Complaints Handling Procedure & Consultation details measures to record and respond to complaints in the ONMP.	Compliant
4	27	Noise management plans	i) include measures for community consultation including site contact details; and	Section 7 - Complaints Handling Procedure & Consultation include measures for community consultation including site contact details promoted within the immediate local community with signage on the front gate and the Community Liaison Committee (CLC), a phone hotline, email system will be available.	Compliant
4	27	Noise management plans	j) identify the extent of and / or limitations of the work area behind or associated with mobile noise barriers and earth-mounds to maintain compliance with noise limits.	Section 5.6 - Mobile Barriers and Section 5.5 - Staging Plan Measures detailing earth mounding that has been constructed on the northern, eastern and southern boundaries of Site during the periods when operations within the site require them are to be maintained in good condition are not to be degraded without assessment.	Compliant
4	28	Traffic noise management	The Proponent shall prepare and implement a **Traffic Noise Management Plan (TNMP)**, which shall ensure that feasible and reasonable noise management strategies for vehicle movements associated with the facility are identified and applied. This plan must:	See below	Compliant
4	28	Traffic noise management	i. be prepared by a suitably qualified expert whose appointment has been endorsed by the Secretary;	Email from DPIE (B Zhang Senior Assessment Officer) to Arcadis (B Searle, Environment Director), titled "RE: Submission of Paton Lane Operational Environmental Management Plans", dated 1 May 2019, requested that a copy of DPIE's letter endorsing the appointment of Mr Brian Clarke (from Wilkinson Murray) to prepare the TNMP.	Compliant
4	28	Traffic noise management	ii. be prepared in consultation with the EPA;	Email from DPIE (B Zhang Senior Assessment Officer) to Arcadis (B Searle, Environment Director), titled "RE: Submission of Paton Lane Operational Environmental Management Plans", dated 1 May 2019, confirmed the TNMP had been issued by DPIE to the EPA for review and comment. The EPA did not provide comments.	Compliant
4	28	Traffic noise management	iii. be approved by the Secretary prior to commencement of operation;	The TNMP, Revision B prepared by Arcadis, dated 11 July 2019 was approved by the DPIE on 27 July 2019	Compliant
4	28	Traffic noise management	iv. include driver training to ensure that noisy practices, such as the use of compression engine brakes, are not used near sensitive receivers unless necessary;	Section 5- Management measures, TNM2 states that all drivers accessing the site will be subject to a site induction and would be required to agree to the Transport Code of Conduct which includes measures to minimise traffic noise impacts during operations with the responsibility of the Site Supervisor to implement.	Compliant
4	28	Traffic noise management	v. include BATEA for noise suppression in the selection and maintenance of vehicle fleets;	Section 5- Management measures, TNM4 states that when selecting large vehicles aim to procure equipment with lower noise levels, where feasible and reasonable.	Compliant

Schedule	Condition No.	Name of clause	Condition	Comments / Evidence	Compliance
4	28	Traffic noise management	vi. include communication and management strategies for non-licensee/proponent owned and operated vehicles to ensure the provision of the plan are implemented;	Section 5- Management measures, TNM3 states that all heavy vehicles will need to comply with RMS Noise Emission standards for individual vehicles. Any vehicle deemed not to comply with these standards will not be permitted to enter the site. Vehicles deemed by the weighbridge not to comply with noise emission requirements will be excluded from the site until such time that a suitable repair has been undertaken. Contractors accessing the site will be required to supply equipment and trucks that comply with the required noise emission criteria during operations and with the responsibility of the Site Supervisor and Maintenance Supervisor.	**Compliant**
4	28	Traffic noise management	vii. include a system of audited management practices that identifies nonconformances, initiates and monitors corrective and preventative action (including disciplinary action for breaches of noise minimisation procedures) and assesses the implementation and improvement of the plan;	Section 6.1.5 Non-compliance and Remedial Measures details the process that would be implemented by the Site Supervisor.	**Compliant**
4	28	Traffic noise management	viii. specify procedures for drivers to minimise impacts at identified sensitive receivers; and	Section 5 - Management measures, TNMP6, TNMP8, TNMP9 and TNMP12 specifies procedures for drivers to minimise impacts at identified sensitive receivers.	**Compliant**
4	28	Traffic noise management	ix. describe methods for the prevention of heavy vehicle parking outside and near the site. This plan must be documented in the Transport Code of Conduct.	Section 5 - Management measures, TNMP12 states heavy vehicle parking outside or near the site would be managed in accordance with the Transport Code of Conduct.	**Compliant**
4	29	Weather monitoring	The Proponent shall install a weather station to monitor (by sampling and obtaining results by analysis) the parameters specified in column 1 of Table 9, using the sampling method, units of measure, averaging period and sampling frequency specified in columns 2 to 5 of Table 9. All data (including raw data and/or reports derived from raw data) shall be made available to the Secretary and EPA on request. **See Table 9 on NOTES TAB**	A meteorological monitoring station was installed at the PLRRC site on 29 March 2017 in accordance with the requirements of condition 29. The weather station is equipped to provide data on: • Temperature at 2m and 10m • Wind Speed and Direction • Sigma-Theta • Rainfall (mm) • Relative Humidity • Solar Radiation and • Barometric Pressure	**Compliant**
4	30	Traffic and transport	The Proponent shall prepare and implement a **Construction Traffic Management Plan (CTMP)**. The plan must be prepared in consultation with Council and the RMS and approved by the Secretary prior to the commencement of site establishment.	The CTMP was prepared by Traffic Solution Pty Ltd in consultation with RMS and Penrith City Council and was submitted to DP&E and Penrith City Council in March 2017. The Penrith City Council approved the Plan on 3 April 2017. DP&E approved the Construction Traffic Management Plan on 9 August 2017.	**Compliant**
4	31	Traffic and transport	Prior to commencement of site establishment, the Proponent shall engage a suitably qualified person to carry out an investigation of the existing bridge over South Creek on Luddenham Road to assess its capacity to accommodate the anticipated heavy vehicle traffic loadings from the proposed development. If inadequate, the investigation shall make recommendations to render the bridge adequate. The investigation must be carried out in consultation with Council and to the satisfaction of the Secretary.	The Level 3 Bridge over South Creek Load Rating and Inspection Report prepared by Integrity Testing Pty Ltd, dated 21 Feb 2017 concluded: *"The bridge is suitable for traversing by all legally loaded trucks to the Higher Mass Limit (HML) loadings for all categories, in essence this means that ALL legally loaded trucks are safe to use the bridge."*	**Compliant**
4	32	Traffic and transport	Prior to commencement of Operation, the Proponent must upgrade the bridge according to any recommendations made in the investigation specified in Condition 31 above to the satisfaction of the Secretary.	Email from DPIE (B. Zhang) to Bingo (D. Taylor) dated 18 July 2019, stating that DPIE is satisfied that Schedule 4, Condition 32 has been satisfied.	**Compliant**
4	33	Traffic and transport	B-Double trucks must not be used for the Project, including for delivering waste or materials to the site or for removing waste or materials from the site, unless conditions 34(a) and 35(c) are complied with.	There are no current plans to accept B-Doubles for this operation.	**Not triggered**
4	34	Traffic and transport	Prior to the commencement of operation the Proponent must: a) if the Proponent proposes to use B-Double vehicles for the Project, the Proponent must obtain approval for a Restricted Access Vehicle route on Patons Lane and Luddenham Road to service the Project; b) obtain Roads Act approval for the works in Patons Lane and Luddenham Road required in Condition 35 below.	• Letter from Penrith Council (D. Dehghan-Khalaji, Senior Engineer - Major Developments) titled "CCX190004/A Roads Act Approval for Patons Lane Orchard Hills, dated 30 Jan 2019 for the works associated with Schedule 4 Condition 35 (a). • Letter from Penrith Council (D. Dehghan-Khalaji, Senior Engineer - Major Developments) titled "CCX190004/A Roads Act Approval for Patons Lane Orchard Hills, dated 21 May 2019 for the works associated with Schedule 4 Condition 35 (b).	**Compliant**

Schedule	Condition No.	Name of clause	Condition	Comments / Evidence	Compliance
4	35	Road upgrades and approvals	Prior to the commencement of operation the Proponent must: a) upgrade Patons Lane in the following manner: i. pavement widening and reconstruction of the existing road pavement; ii. trafficable pavement width of 6.6m; iii. 1.2m wide sealed shoulders; iv. 3m wide table drains; v. design loading for the full life of the development; b) upgrade Luddenham Road in the following manner: i. pavement reconstruction from chainage 1.45 to 1.9km south of Mamre Road to accommodate a design traffic loading of 5.31 x 106 Equivalent Standard Axles (ESA). c) if the Proponent proposes to use B-Double vehicles for the Project, the Proponent must upgrade the intersection on the corner of Mamre Road and Luddenham Road in consultation with Council and to the satisfaction of the RTA. The intersection upgrade must provide: i. an acceleration lane and an extension to the acceleration lane contained within the painted 'seagull treatment' on Mamre Road; and ii. adequate storage and acceleration distance within the acceleration lanes for 'B-double' vehicles; d) provide truck turning warning signs in both directions on Mamre Road to the satisfaction of the RTA; and e) provide adequate car-parking on the site in accordance with Australian Standard 2890.1 Parking Facilities to the satisfaction of the Secretary; f) provide a contribution of $31,200 to the Council towards Council's upgrade of 1.45km of Luddenham Road, south of Mamre Road.	RMS approved upgrade plans. Letter from Dean Dehghan-Khalaji (Senior Engineer - Major Developments Penrith City Council) to Mr Kathiresu Nandapalan dated 30 January 2019 RE: CCX19/0004/A Roads Act Approval for Patons Lane Orchard Hills including approved Documents listing plans by J Wyndham Prince	**Compliant**
4	36	Road upgrades and approvals	Prior to the commencement of operation the applicant must enter a Deed of Agreement with Public Domain and City Works at Council in relation to the upkeep of Patons Lane. The agreement is to include management of illegal dumping, litter removal, security, sweeping of Patons Lane, and routine pavement maintenance along Patons Lane.	Deed of Maintenance Agreement between SRC Operations and Penrith Council has been executed.	**Compliant**
4	37	Road upgrades and approvals	Prior to the commencement of any roadwork in Patons Lane and Luddenham Road a performance bond is to be lodged with Council for the roadwork in Patons Lane and Luddenham Road and any required bridge works. The value of the bond shall be determined in accordance with Penrith City Council's Bond Policy to the satisfaction of the Secretary.	Deed of Maintenance Agreement between SRC Operations and Penrith Council has been executed.	**Compliant**
4	37A	Road upgrades and approvals	The Proponent shall ensure that heavy vehicles travelling to or from the site do not travel upon Luddenham Road south of its junction with Patons Lane.	The Transport Code of Conduct specifies the routes permitted to be taken by heavy vehicles associated with the PLRRC.	**Compliant**
4	38	Transport code of conduct	The Proponent shall prepare and implement a **Transport Code of Conduct**. This code must: a) be prepared in consultation with the RTA and Council, and approved by the Secretary prior to the commencement of operation;	The Transport Code of Construct is included in Appendix B of the Traffic Noise Management Plan, which was approved by the DPIE on 27 July 2019.	**Compliant**
4	38	Transport code of conduct	b) describe the measures to be implemented to minimise the impacts of: i. the Project on the local and regional road network including traffic noise; ii. ensure compliance with the Traffic Noise Management Plan; and iii. minimise conflicts with other road users e.g. school bus operators.	The Transport Code of Conduct does specifies the actions to be taken to minimise impacts on other road users (for example school buses) and drivers general compliance obligations.	**Compliant**
4	38	Transport code of conduct	c) include measures to ensure truck drivers are aware of the approved routes for the transport of waste by road; and	The Transport Code of Conduct specifies the routes permitted to be taken by heavy vehicles associated with the PLRRC	**Compliant**
4	38	Transport code of conduct	d) include the Traffic Noise Management Plan;	The TNMP, Revision B prepared by Arcadis, dated 11 July 2019 was approved by the DPIE on 27 July 2019. The Code of Conduct references this plan	**Compliant**
4	38	Transport code of conduct	e) include a monitoring program and record movements of vehicles out of the site.	The Transport Code of Conduct specifies the truck movement monitoring requirements for the site.	**Compliant**
4	38	Transport code of conduct	f) require that heavy vehicles travelling to or from the site do not travel upon Luddenham Road south of its junction with Patons Lane.	The Transport Code of Conduct specifies the routes permitted to be taken by heavy vehicles associated with the PLRRC	**Compliant**

Schedule	Condition No.	Name of clause	Condition	Comments / Evidence	Compliance
4	39	Landscaping	Prior to site establishment the Proponent shall offer and implement (if the offer is accepted) landscaping treatments, including fencing, to the residents at 202 Luddenham Rd. These measures must be reasonable and feasible and directed toward minimising visual and acoustic impacts of the operation on the residents. If within 3 months of receiving the offer, the proponent and owner cannot agree on landscaping treatment or if there is a dispute about the implementation of these measures then either party may refer the matter to the Director- General for resolution.	Consultation with the owners of 202 Luddenham Road occurred between 8 February 2016 and 24 March 2017 in relation to Schedule 4 condition 39.A Deed of Agreement was signed on 24 March 2017 by Mr Joseph Mifsud accepting double glazing treatment provided and paid for by SRC Operations Pty Limited.The signed Deed of Agreement was submitted to the DP&E. Receipt of the Deed was acknowledged by DP&E on 9 August 2017.	**Compliant**
4	40	Landscaping	The Proponent shall prepare and implement a **Bund Wall, Landscaping and Vegetation Management Plan (BWLVMP)** to achieve the final landform and landscaping in Figure 2.22 of the Further Modified Preferred Project Report (Ex Z in Appeal No 10928 of 2010). This plan must:	The BWLVMP was prepared by Rodney Cox of Huon Designs whose appointment was approved by the Secretary on 31 August 2015 to satisfy Schedule 4 condition 40 and includes the Rehabilitation Plan required under Schedule 4 condition	**Compliant**
4	40	Landscaping	a) be prepared in consultation with OEH, EPA and NOW by a suitably qualified and experienced expert(s);	Was prepared in consultation with OEH, EPA, and DPI-Water;	**Compliant**
4	40	Landscaping	b) be approved by the Secretary prior to the commencement of site establishment;	Was submitted to the Secretary of DP&E on 15 March 2017 and approved on 9 August 2017, as follows;	**Compliant**
4	40	Landscaping	c) specify the staging milestones for implementation of landscaping works;	Includes Table 2.5 - Indicative Emplacement and Cell Rehabilitation that specifies the staging milestones for implementation of landscaping works;	**Compliant**
4	40	Landscaping	d) detail specifications for the approved removal, reshaping and/or landscaping of the bund walls;	Includes section 3 that provides specifications for the approved removal, reshaping and/or landscaping of the bund walls;	**Compliant**
4	40	Landscaping	e) specify riparian zone management within 50m of Blaxland Creek (measured from the top of the bank);	Includes section 3 that outlines riparian zone management within 50m of Blaxland Creek;	**Compliant**
4	40	Landscaping	f) include measures to minimise native vegetation loss and additional tree planting to offset this loss;	Section 3.2 that includes measures to minimise native vegetation loss and additional tree planting to offset this loss;	**Compliant**
4	40	Landscaping	g) include a landscape plan identifying locations of planting and identifying species to be planted;	Section 3.2 that includes a landscape plan identifying locations of planting and identifying species to be planted;	**Compliant**
4	40	Landscaping	h) specify the use of only indigenous species propagated from provenant seed;	Section 3.7 and Table 5 that specify the use of indigenous species propagated from provenant seed;	**Compliant**
4	40	Landscaping	i) specify the measures which shall be undertaken to protect the EECs on adjacent lands (particularly to the southern and western boundaries of the site), in particular measures to:	Includes section 3 and reference to the SW&LMP that specify measures to be undertaken to protect the EECs on adjacent lands (particularly the southern and western boundaries of the site), in particular measures to:	**Compliant**
4	40	Landscaping	i) stabilise exposed soils;	i) stabilise exposed soils (SW&LMP);	**Compliant**
4	40	Landscaping	ii) control of invasive weeds to prevent weeds from migrating to the EECs;	ii) section 3.6 addresses control of invasive weeds to prevent weeds from migrating to the EECs;	**Compliant**
4	40	Landscaping	iii) prevent dust from impacting on the EECs;	iii) prevent dust from impacting on the EECs;	**Compliant**
4	40	Landscaping	iv) control sediment, stormwater and surface run-off from impacting on the EECs;	iv) section 3.4 addresses control sediment, stormwater and surface run-off from impacting on the EECs;	**Compliant**
4	40	Landscaping	v) prevent leachate from entering into the groundwater or migrating off-site; and	v) prevent leachate from entering into groundwater or migrating off-site (SW&LMP); and	**Compliant**
4	40	Landscaping	vi) include all of the above measures in corresponding management plans.	vi) include all of the above measures in corresponding management plans.	**Compliant**
4	40	Landscaping	j) identify protection measures for the vegetation and controls for each phase of the development;	Includes section 5 Table 8 that address protection measures for the vegetation and controls for each phase of the development;	**Compliant**
4	40	Landscaping	k) specify details of maintenance actions to ensure the vegetation is maintained at all times including during the operations and for the post-closure period stipulated by the OEH and EPA;	Includes section 4 that presents maintenance actions to ensure the vegetation is maintained at all times including during the operations and for the post-closure period stipulated by the OEH and EPA;	**Compliant**
4	40	Landscaping	l) specify details of a monitoring and compliance program; and	Includes section 4 that details a monitoring and compliance program; and	**Compliant**

Schedule	Condition No.	Name of clause	Condition	Comments / Evidence	Compliance
4	40	Landscaping	m) require an annual review for inclusion in the Annual Environmental Management Review that reports on the performance of the landscaping and vegetation management, including further recommendations to ensure the successful establishment of vegetation.	Section 4 also outlines the annual review for inclusion in the Annual Environmental Management Review that reports on the performance of the landscaping and vegetation management, including further recommendations to ensure the successful establishment of vegetation.	**Compliant**
4	41	Landscaping	The Proponent shall maintain all landscaping and protection measures to satisfaction of the Secretary over the life of the Project and for a post-closure period stipulated by the OEH and EPA.		**Noted**
4	42	pests, vermin and declared noxious weeds	The Proponent shall: a) implement suitable measures to manage **pests, vermin and declared noxious weeds** on-site; and b) inspect the site on a weekly basis to ensure that these measures are working effectively, and that pests, vermin or noxious weeds are not present on-site in sufficient numbers to pose an environmental hazard, or cause the loss of amenity in surrounding area. Note: For the purposes of this condition, noxious weeds are those species subject to an order declared under the Noxious Weed Act 1993.	Weed management is ongoing, as per described on the Bund wall, landscaping and Vegetation Management Plan (BWL&VMP) and Rehabilitation Plan (Dated July 2019).	**Compliant - ongoing**
4	43	Fire and emergency management	The Proponent shall prepare and implement a **Fire and Emergency Management Plan (FERMP)** for the Site. This plan must: a) be prepared by a suitably qualified expert whose appointment has been endorsed by the Secretary;	The Fire and Emergency Management Plan Schedule 4 condition 43: was prepared by Planager Consulting P/L whose appointment has been endorsed by the Secretary DP&E on 31 August 2015;	**Compliant**
4	43	Fire and emergency management	b) be approved by the Secretary prior to the commencement of any work;	Was submitted to the Secretary on 28 March 2017 and approved on 9 August 2017, prior to the commencement of any work;	**Compliant**
4	43	Fire and emergency management	c) identify all threats to the environment and public health that could arise from the operation of the Project (e.g. fire, overflow or dam failure);	Includes section 2 Tables 2 and 3, and section 3 that identify all threats to the environment and public health that could arise from the operation of the Project;	**Compliant**
4	43	Fire and emergency management	d) detail a communication strategy for notifying the relevant government agencies and potentially affected community in the event of an emergency; and	Included section 5 and section 8 to detail a communication strategy for notifying the relevant government agencies and potentially affected community in the event of an emergency; and	**Compliant**
4	43	Fire and emergency management	e) identify strategies to contain and minimise the effects of any threats to the environment and public health such as (but not limited to) measures to: i) minimise the risk of fire on-site, including in the landfill area; ii) promptly extinguish any fires on-site; and iii) ensure adequate fire-fighting capacity on-site, including a fire-fighting tanker	Included section 4, 6 and 7 to address strategies to contain and minimise the effects of any threats to the environment and public health to extinguish any fires on-site and minimise the risk of fire on- site and ensure adequate fire-fighting capacity on-site, including a fire-fighting tanker.	**Compliant**
4	44	Fire and emergency management	The Proponent shall ensure that the lighting associated with the Project: a) complies with the latest version of AS 4282(INT) - Control of Obtrusive Effects of Outdoor Lighting; and b) is mounted, screened and directed in such a manner that it does not create a nuisance to surrounding properties or the public road network.	Site Inspection 21 June. The Auditor sighted the external lighting at the site. All operational areas are below the bunds and not visible outside of the site.	**Compliant**
4	45	Fire and emergency management	The Proponent shall: a) install and maintain a perimeter fence and security gates on-site prior to the commencement of site establishment and which shall be maintained for the life of the Project; and b) ensure that the security gates on-site are locked whenever the site is unattended.	The perimeter fence and security gates on the PLRRC site have been erected in accordance with the requirements of Consent Condition Schedule 4 condition 45. The security gates on-site are locked whenever the site is unattended.	**Compliant**
4	46	Rehabilitation	The Proponent shall prepare and implement a **Rehabilitation Plan** to achieve the final landform and landscaping in Figure 2.22 of the Further Modified Preferred Project Report (Ex Z in Appeal No 10928 of 2010). This plan must: a) be prepared by a suitably qualified expert whose appointment has been approved by the Secretary;	The Rehabilitation Plan was prepared as part of the Bund Wall, Landscaping and Vegetation Management and Rehabilitation Plan to satisfy Schedule 4 conditions 40 and 46. The Bund Wall, Landscaping and Vegetation Management and Rehabilitation Plan: was prepared by Rodney Cox of Huon Designs whose appointment was approved by the Secretary on 31 August 2015;	**Compliant**
4	46	Rehabilitation	b) be prepared in consultation with EPA, NOW and Council;	Was prepared in consultation with OEH, EPA, DPI-Water and Penrith City Council;	**Compliant**
4	46	Rehabilitation	c) be submitted to and approved by the Secretary prior to commencement of the site establishment works;	Was submitted to and approved by the Secretary prior to commencement of the site establishment works;	**Compliant**

Schedule	Condition No.	Name of clause	Condition	Comments / Evidence	Compliance
4	46	Rehabilitation	d) define the objectives and criteria for rehabilitation and closure;	Defined the objectives and criteria for rehabilitation and closure;	Compliant
4	46	Rehabilitation	e) comply with the minimum design specifications and operational/post closure requirements in Schedule 7 unless specified by the EPA;	Complies with the minimum design specifications and operational/post closure requirements in Schedule 7 unless specified by the EPA;	Compliant
4	46	Rehabilitation	f) identify the works required and the progressive timing to complete the rehabilitation of each part of the Project;	Identifies the works required and the progressive timing to complete the rehabilitation of each part of the Project;	Compliant
4	46	Rehabilitation	g) investigate options for the removal of Dam 2 outside the riparian corridor as part of the final landform once the operational purpose of the dam is complete;	Investigated options for the removal of Dam 2 outside the riparian corridor as part of the final landform once the operational purpose of the dam is complete;	Compliant
4	46	Rehabilitation	h) investigate options for the future use of the site;	Investigated options for the future use of the site;	Compliant
4	46	Rehabilitation	i) include provisions to monitor and manage settlement impacts during and after the operations;	Includes provisions to monitor and manage settlement impacts during and after the operations;	Compliant
4	46	Rehabilitation	j) describe the measures that would be implemented to achieve the specified objectives and criteria for the rehabilitation and closure;	Describes the measures that would be implemented to achieve the specified objectives and criteria for the rehabilitation and closure;	Compliant
4	46	Rehabilitation	k) calculate the cost of implementing these measures;	Calculates the cost of implementing these measures;	Compliant
4	46	Rehabilitation	l) describe how the performance of these measures would be monitored over time;	Described how the performance of these measures would be monitored over time;	Compliant
4	46	Rehabilitation	m) address the issue of settlement post-closure and provide designs and ongoing maintenance procedures such as backfilling to maintain slope, drainage and prevent ponding.	Addressed the issue of settlement post-closure and provide designs and ongoing maintenance procedures such as backfilling to maintain slope, drainage and prevent ponding.	Compliant
5			**SCHEDULE 5 - ENVIRONMENTAL MANAGEMENT, REPORTING & AUDITING**		
5	1	Community liaison committee	The Proponent shall establish and operate a CLC comprising representatives of the Proponent, local community and Council. Representatives of relevant government agencies may be invited to attend meetings of the CLC, if required. The Chairperson and procedures for the Committee including frequency of meetings shall be determined by the CLC and the CLC must convene at least twice annually over the life of the Project.	The Community Liaison Committee(CLC) has been established and the interim Chairperson and procedures approved by the DP&E. The inaugural CLC meeting was held on 21 June 2016 with a site visit followed by a formal meeting. Regular meetings are held and the minutes of the meeting are uploaded to the PLRRC website	Compliant - ongoing
5	2	Community liaison committee	Within three months of the commencement of work, the Proponent shall submit details of the CLC members (including the Chairperson, procedures and frequency of meetings) for the Secretary's approval.	As above	Compliant - ongoing
5	3	Community liaison committee	The Proponent shall inform the Secretary of any change in the composition of the CLC.	As above	Noted
5	4	Quarry operation plan	The Proponent shall prepare and implement a **Quarry Operation Management Plan (QOMP)** for the Project. This plan must:	The Quarry Operations Management Plan Version 6 (dated December 2016) of the excavation of Cell 1):	Compliant
5	4	Quarry operation plan	a) be prepared by a suitably qualified team of experts;	Prepared by RW Corkery & Co P/L whose appointment was approved by the Secretary on 31 August 2015;	Compliant
5	4	Quarry operation plan	b) be prepared in consultation with the EPA and Council;	Prepared in consultation with the EPA and Penrith City Council;	Compliant
5	4	Quarry operation plan	c) be approved by the Secretary prior to the commencement of site establishment;	The QOMP was approved by the Secretary on 21 December 2016, prior to commencement of site establishment;	Compliant
5	4	Quarry operation plan	d) include stockpile construction methods that minimise the visibility and acoustic impact of the use of equipment during the placement or removal of materials from any part of the stockpile, in particular where any part of the equipment would be above RL 54m AHD;	Included in section 8.3 which addresses stockpile construction methods that minimise the visibility and acoustic impact of the use of equipment during the placement or removal of materials from the stockpiles;	Compliant
5	4	Quarry operation plan	e) shows the active land fill cell separate from all extraction activities at all times;	Includes section 7.3 and Figure 7 which show the active landfill cell separate from all extraction activities at all times;	Compliant
5	4	Quarry operation plan	f) include a protocol to ensure stockpiles of clay/shale materials for use by the brick industry are kept separate from material to be used for cell construction, daily waste covering and capping;	Includes section 8.2 which describes stockpiles of clay /shale materials for use by the brick industry kept separate from material to be used for cell construction, daily waste covering and capping;	Compliant

Schedule	Condition No.	Name of clause	Condition	Comments / Evidence	Compliance
5	4	Quarry operation plan	g) include provision for all clay/shale stockpiles for brick industry to be sign posted with a description of the material to ensure there is no contamination, and that plant operators know where to place the different materials;	Includes section 8.4 which includes provision for all clay/shale stockpiles for brick industry to be sign posted with a description of the material to ensure there is no contamination, and that plant operators know where to place the different materials;	Compliant
5	4	Quarry operation plan	h) include provision for regular staff or contractor training is to be undertaken to reinforce the importance of keeping the clay types separate;	Includes section 9.3 which addresses regular staff or contractor training to reinforce the importance of keeping the clay types separate;	Compliant
5	4	Quarry operation plan	i) specify management practices so that stockpiles are constructed, accessed and managed as follows:	Includes section 8 which specifies management practices for stockpiles. There will be several stockpiles on site at any one time based on the type of material.	Compliant
5	4	Quarry operation plan	• The clay material to be sold to the brick manufacturing industry will be kept separated from the material to be used during the cell, construction, daily waste covering and capping of the finished areas.	as above	Compliant
5	4	Quarry operation plan	• The light-firing shale stockpiles will be located so as not to interfere with the construction of the cells or the emplacement of waste and all stockpiles will be sign posted with a description of the material to ensure there is no contamination. The sign posting will also ensure that the plant operators and the Stockpile Management Supervisor know where to place the different materials and regular training will take place to reinforce the importance of keeping the clay types separated.	as above	Compliant
5	4	Quarry operation plan	• There will be several stockpiles on site at any one time based on the type of material, i.e. cream-firing clay, light pink-firing clay and red-firing clay. Stockpile Construction	as above	Compliant
5	4	Quarry operation plan	• The construction will use scrapers for placement of the first 5 to 6 metres and then dump trucks and a dozer for the final 2 to 3 metres. Management of Stockpiled Materials	as above	Compliant
5	4	Quarry operation plan	• Once an area on the site has been designated as a stockpile location, signs will be erected describing the material to be deposited within that location. The plant operator responsible for preparing the stockpile will have responsibility for ensuring that only the designated clay is deposited there.	as above	Compliant
5	4	Quarry operation plan	• The Site Manager will arrange for quarterly surveys to be carried out on the stockpiles. The survey results will be correlated against the surveys undertaken on the site as a whole and the information provided in the original geological report undertaken on the site.	as above	Compliant
5	4	Quarry operation plan	• All vehicles exporting material from the site will be required to do so via the weighbridge. A record will be maintained of the type, quantity and destination of the material exported on each vehicle.	as above	Compliant
5	4	Quarry operation plan	• Monthly reports detailing the type of material exported from the site will be prepared for I&I NSW and the EPA if required	as above	Compliant
5	4	Quarry operation plan	j) Includes a protocol that requires surveys of the stockpiles once every three months, with the first survey being on or before the date that operations commence.	as above	Compliant
5	4	Quarry operation plan	k) The batter slopes of stockpiles must be no more than 1:3 (Vertical: Horizontal), unless otherwise approved by the EPA.	as above	Compliant
5	5	Landfill environmental management plan	The Proponent shall prepare and implement a **Landfill Environmental Management Plan (LEMP)** for the Project to the satisfaction of the Secretary. This plan must:	The LEMP was prepared by GHD, dated May 2019 and approved by DPIE on 27 July 2019	Compliant
5	5	Landfill environmental management plan	a) be prepared by a suitably qualified team of experts whose appointment has been endorsed by the Secretary;	A copy if the letter from DPIE approving GHD to prepare the LEMP is provided in Appendix 1 of the report.	Compliant
5	5	Landfill environmental management plan	b) be prepared in consultation with the EPA, NOW and Council;	• Email from DPIE (B Zhang Senior Assessment Officer) to Arcadis (B Searle, Environment Director), titled "RE: Submission of Paton Lane Operational Environmental Management Plans", dated 1 May 2019, confirmed the plans had been issued by DPIE to the EPA for review and comment.	Compliant

Schedule	Condition No.	Name of clause	Condition	Comments / Evidence	Compliance
				• Email from DPIE (B Zhang Senior Assessment Officer) to Bingo (D Taylor), dated 8 July 2019, confirming that the EPA has notified DPIE that they will not be providing comments on, or approving any Plans relating the this Approval.	
5	**5**	Landfill environmental management plan	c) be approved by the Secretary prior to the commencement of site establishment;	The LEMP was prepared by GHD, dated May 2019 and approved by DPIE on 27 July 2019	**Compliant**
5	**5**	Landfill environmental management plan	d) be updated every five years from the commencement of operation;	Included in the review section of the LEMP	**Compliant**
5	**5**	Landfill environmental management plan	e) provide the strategic framework for environmental management of the Project;	Section 7 of the LEMP provides an overview of the Strategic Framework for the operation.	**Compliant**
5	**5**	Landfill environmental management plan	f) identify the statutory approvals that apply to the Project;	Section 3 of the LEMP provides an overview of the Statutory Approvals for the Project. It is noted that no reference has been made to the requirements of the two Environment Protection Licences that apply to this operation.	**Compliant**
5	**5**	Landfill environmental management plan	g) describe the role, responsibility, authority and accountability of all key personnel involved in the environmental management of the Project;	Sections 6 and 7 of the LEMP provides an overview of the roles and responsibilities related to the implementation of the LEMP.	**Compliant**
5	**5**	Landfill environmental management plan	h) include interim cell rehabilitation measures for the site including landscape details;	Sections 6.11 and 9 of the LEMP provides an overview of the interim cell rehabilitation measures.	**Compliant**
5	**5**	Landfill environmental management plan	i) address the operational requirements and minimum design specifications in Schedule 7;	Appendix C Schedule 7 of the LEMP provides summary of the minimum design specifications that apply to the landfill.	**Compliant**
5	**5**	Landfill environmental management plan	j) describe the procedures that would be implemented to: i. keep the community and relevant agencies informed about the operation and environmental performance of the Project; ii. receive, handle, respond to, and record complaints; iii. resolve any disputes that may arise during the course of the Project; iv. respond to any non-compliance; and v. respond to emergencies;	Section 8.7 of the LEMP provides an overview of the community and stakeholder consultation and liaison processes.	**Compliant**
5	**5**	Landfill environmental management plan	k) include: i. copies of the various strategies, plans and programs that are required under the conditions of this approval once they have been approved; and ii. a clear plan depicting all the monitoring currently being carried out within the Project area;	Section 7 of the LEMP provides an overview of the Strategic Framework for the operation.	**Compliant**
5	**5**	Landfill environmental management plan	l) include the design and operation of the Construction and Industrial Waste Warehouse	Design and operation of the C&I Waste Warehouse was included in Appendix E of the LEMP approved on 27 July 2019	**Compliant**
5	**5A**	Annual Environmental Management Report	One year after the commencement of site establishment, and annually from the date of approval thereafter, the Proponent shall submit an Annual Environmental Management Report to review the environmental performance of the Project to the satisfaction of the Secretary. This report must: a) describe the operations that were carried out in the past year; b) analyse the monitoring results and complaints records of the Project over the past year, which includes a comparison of these results against the: i. relevant statutory requirements, limits or performance measures/criteria; ii. monitoring results of previous years; and iii. relevant predictions in the EA; c) identify any non-compliance over the last year, and describe what actions were (or are being) taken to ensure compliance; d) identify any trends in the monitoring data over the life of the Project; and e) describe what measures will be implemented over the next year to improve the environmental performance of the Project.	The AEMR date October 2020 addresses the first two years of site establishment and operation of the site This current AEMR covers the Reporting Period 1 September 2021 to 31 August 2021. With the preparation of this AEMR, a template has now been established and the relevant data requirements have been established and sourced. This will ensure that the next AEMR required for 1 September August 2022 to 31 August 2023 will occur timeously.	**Not compliant**

Schedule	Condition No.	Name of clause	Condition	Comments / Evidence	Compliance
5	**6**	Independent Environmental Audit	Every three years after the commencement of site establishment, unless the Secretary directs otherwise, the Proponent shall commission and pay the full cost of an independent environmental audit of the Project. This audit must: a) be conducted by a suitably qualified, experienced, and independent team of experts covering all facets of the Project whose appointment has been endorsed by the Secretary; b) assess the environmental performance of the Project, and its effects on the surrounding environment; c) assess whether the Project is complying with the relevant standards, performance measures and statutory requirements; d) review the adequacy of any strategy/plan/program required under this approval; and e) recommend measures or actions to improve the environmental performance of the Project, and/or any strategy/plan/program required under this approval.	The first Independent Environmental Audit was conducted in April 2022. The audit comprised of a site inspection, document reviews and interviews with personnel. Some non-compliances were observed, as described in Section 9.1.	**Compliant**
5	**7**	Incident reporting	Upon detecting an exceedance of the limits/performance criteria in this approval or the occurrence of an incident that causes (or may cause) material harm to the environment, the Proponent shall immediately notify EPA and notify the Department as soon as practicable thereafter of the exceedance/incident.	Where required in accordance with the EPL and the Conditions of Consent, any exceedances of limits will be reported within the timeframes stipulated.One minor exceedance of pH in a water discharge was reported to EPA in the annual return for EPL 20814, however this was not considered to have caused material harm to the environment.	**Compliant - ongoing**
5	**8**	Incident reporting	Within six days of notifying the Department and EPA of an exceedance/incident, the Proponent shall provide the Department and these agencies with a written report that: a) describes the date, time, and nature of the exceedance/incident; b) identifies the cause (or likely cause) of the exceedance/incident; c) describes what action has been taken to date; and d) describes the proposed measures to address the exceedance/incident.	No reportable incidents requiring reporting to the DPIE or EPA has occurred. For this Reporting Period, two exceedances of 1.25% v/v for methane were identified and EPA was notified as required on 18 September 2020 and 10 December 2021	**Compliant**
5	**9**	Revision of plans and programs	Within three months of the submission of an: a) annual review under condition 6 of Schedule 5; b) audit under condition 7 of Schedule 5; and / or c) incident report under condition 8 of Schedule 5; the Proponent shall review and, if necessary, revise the plans and programs required under this approval to the satisfaction of the Secretary. Note: This is to ensure the plans and programs are updated on a regular basis, and incorporate any recommended measures to improve the environmental performance of the Project.	The management plans were updated to address the issues identified in the pre-operation IEA undertaken in October 2019. The management plans were approved by the DPIE in July 2019.	**compliant**
5	**10**	Access to Information	From the commencement of site establishment the Proponent shall make the following information freely available on a publicly accessible website as it is progressively required under the approval: a) all current statutory approvals, including this approval; b) plans and programs required under this approval; c) technical analysis/reports of monitoring results, which have been reported in accordance with the various plans and programs approved under the conditions of this approval; d) a complaints register, which is to be updated on a monthly basis; e) a copy of any Annual Environmental Management Report (over the last 5 years); f) a copy of any Independent Environmental Audit and the Proponent's response to the recommendations; g) real time monitoring data (noise and air quality); and h) any other material as required by the Secretary.	The website for the PLRRC has been established as required under the approval. The website will be progressively updated as documentation becomes available including: • current statutory approvals, including this Consent; • approved plans and programs required under this consent; • technical analysis/reports of monitoring results; • complaints register; • a copy of any Independent Environmental Audit and the Proponent's response to the recommendations; • real time monitoring data (noise and air quality); and • other material as required by the DP&E.	**Compliant - ongoing**

Schedule	Condition No.	Name of clause	Condition	Comments / Evidence	Compliance
6			**SCHEDULE 6 - DOCUMENTS COMPRISING THE PROJECT**		
6	**1**	Environmental Impact Assessment	Environmental Assessment prepared by RW Corkery & Co Pty Ltd dated April 2010 (Ex A in Appeal No 10928 of 2010), including: a) Preliminary In-Situ Waste Classification prepared by Douglas Partners Pty Ltd dated September 2009; b) Aboriginal Heritage Assessment prepared Archaeological Surveys and Report Pty Ltd dated September 2009; c) European Heritage Assessment prepared by Archaeological Surveys and Report Pty Ltd dated September 2009; d) Soils and Land Capability Assessment prepared by Geoff Cunningham Natural Resource Pty Ltd dated September 2009; e) Cell Design and Groundwater Assessment prepared by Aquaterra Consulting Pty Ltd dated March 2010; f) Surface Water Assessment prepared by GSS Environmental & BMT WBM Pty Ltd dated February 2010; g) Air Quality Assessment prepared by PAE Holmes dated February 2010; h) Traffic and Parking Assessment prepared by Traffic Solutions Pty Ltd dated February 2010; i) Visual Assessment prepared by Design Collaborative Pty Ltd dated February 2010; j) Flora Assessment prepared by Geoff Cunningham Natural Resources Pty Limited dated September 2009; and k) Fauna Assessment prepared by Aquila Ecological Surveys dated September 2009.	NA	**NA**
6	**2**	Response to Submission	Response to Submissions prepared by RW Corkery & Co Pty Ltd (Ex A in Appeal No 10928 of 2010), comprising: a) Response to Submissions raised dated July 2010; b) Final Statement of Commitments; c) Supplementary Asbestos Assessment prepared by Douglas Partners Pty Ltd dated 19 July 2010; d) Draft Asbestos Management Plan prepared by Douglas Partners Pty Ltd dated May 2010; e) Correspondence re Asbestos Management Plan from Hibbs & Associates Pty Ltd dated 18 May 2010; f) Recycling Resources Recovery Capacity prepared by Mike Ritchie & Associates; g) Justifiable Demand for a Class 2 Landfill prepared by Mike Ritchie & Associates; h) Consultation Record with the Local Community; i) Valuation Letter prepared by CB Richard Ellis;	NA	**NA**
6	**3**	Modified Preferred Project Report	Modified Preferred Project Report ("MPPR") prepared by RW Corkery & Co Pty Ltd dated January 2011 (Ex C in Appeal No 10928 of 2010), but only in relation to: a) Planning Assessment prepared by Design Collaborative Pty Ltd (Appendix 1); b) Visual Assessment prepared by Richard Lamb & Associates (Appendix 3);	NA	**NA**
6	**5**	Additional information	Additional information in response to Court Order made 12 May 2011 ("Court Order") filed with the Court on 17 June 2011 (Ex D in Appeal No 10928 of 2010),: a) Letter prepared by Wilkinson Murray dated 18 May 2011; b) Report prepared by Mr Ron Wainberg dated 23 May 2011; c) Report prepared by Natural Resource Consultant Pty Ltd dated 19 May 2011; d) Report prepared by GHD Pty Ltd and GSS Environmental dated 19 May 2011; e) Supplementary Air Quality Assessment prepared by PAEHolmes dated 19 May 2011.	NA	**NA**
6	**6**	Revised overview report	(Revised) Overview Report for the Further Modified Project Report prepared by GHD Pty Ltd dated September 2011 (received 30 September 2011, and incorporating Additional Information in Appendix G. Note this is a revised version of a document with the same name and date) (Ex Z in Appeal No 10928 of 2010).	NA	**NA**

Schedule	Condition No.	Name of clause	Condition	Comments / Evidence	Compliance
6	**7**	Further modified preferred project report	Further Modified Preferred Project Report prepared by R.W Corkery and GHD Pty Ltd dated September 2011 (Ex Z in Appeal No 10928 of 2010), including the following Figures: (a) Figure 2.5 'Indicative Project Site Layout (Amended)'; (b) Figure 2.6 'Site Establishment Activities (Amended)'; (c) Figure 2.8 'Recycling and Reprocessing Area (Amended)'; (d) Figure 2.9 'Leachate Collection System (Amended)'; (e) Figures 2.10a-c (Amended), 2.11a-d (Amended), 2.12a-c (Amended) and 2.13 (Amended) comprising 'Stages 0 to 11 Operations'; (f) Figure 2.14 'Activities Sequence in Cross Section North/South (Amended)'; (g) Figure 2.15 ''Activities Sequence in Cross Section East/West (Amended)'; (h) Figure 2.16 'Northern Face Typical Sections (Amended)'; (i) Figure 2.17 'Indicative Deconstruction of the Eastern Face (Amended)'; (j) Figure 2.18 'Patons Lane – Approved Road Design'; (k) Figure 2.20 'Indicative Final Landform (Amended)'; (l) Figure 2.21 'Rehabilitation Status following Site Establishment (Amended)'; (m) Figure 2.22 'Final Landform and Landscaping (Amended)'.	NA	**NA**
6	**8**	Acoustic report	Updated Consolidated Acoustic Report by Wilkinson Murray dated February 2012 (Ex DD in Appeal No 10928 of 2010).	NA	**NA**
6	**9**	Contamination assessment	Report on Stage 1 – Investigation and Contamination Assessment prepared by Douglas Partners dated February 2012 (Ex BB in Appeal No 10928 of 2010).	NA	**NA**
6	**10**	Bund deconstruction	Draft Bund Deconstruction Management Plan prepared by Douglas Partners dated February 2012 (Ex EE in Appeal No 10928 of 2010).	NA	**NA**
7			**SCHEDULE 7 – MINIMUM DESIGN SPECIFICATIONS AND OPERATIONAL/POST CLOSURE REQUIREMENTS.**		
7	**A**	Designs	The C&I Waste Stockpile building must include the following measures unless otherwise approved by the EPA: (a) Stormwater management measures i. The design of the C&I storage facility stormwater conveyance system must be for the 20 year ARI stormwater event and discharge to stormwater management system (SMS). ii. The sediment dams storage for the SMS is are to be designed for a 90th percentile 5 day rainfall event to ensure that stormwater and leachate are not mixed. The conveyance system is to be designed for the 20 year ARI stormwater event. (b) Leachate management measures i. Washdown water from within the C&I Waste Stockpile building is to be separated from stormwater and managed as leachate. ii. The SMS and the LMS must be completely separate around the border of the C&+C102:C111I waste stockpile building. iii. The concrete floor must be designed to support the mass of C&I waste and to shed washdown water to the LMS. The concrete floor must have a slope to facilitate flows of washdown water into the leachate management system (LMS).	Specifications addressed in the Landfill Environmental Management Plan(LEMP) and the Soil Water and Leachate Management Plan (SWLMP). Specifically, LEMP Appendix C – Schedule 7 Reconciliation and SWLMP Appendix F – Reconciliation of minimum design specifications in Schedule 7. Stormwater, Drainage and Civil Works (design and construction) certification - Certifier S Bridge (CB Commercial) dated 9 May 2019.	**Compliant - ongoing**

Schedule	Condition No.	Name of clause	Condition	Comments / Evidence	Compliance
7	B	Gas collection system design	(a) The lateral collection pipes of the gas collection system are to be located not more than 50m apart. (b) Chimney drains are to be no more than 200 metres apart and must comprise non calcareous granular material with a permeability greater than 1x10-3 m/sec. (c) Chimney drains will be installed on the side liner to facilitate gas venting and prevent perching of leachate. **Appeal No. 10928 of 2010** 41d The landfill gas management system should be designed in accordance with the Handbook for the design, construction, operation, monitoring and maintenance of a passive landfill gas drainage and biofiltration system, UNSW and GHD, NSW DECCW, March 2010 unless otherwise approved by the EPA.	• Stormwater, Drainage and Civil Works (design and construction) certification - Certifier S Bridge (CB Commercial) dated 9 May 2019. • Installation Certificate - Structural - Certifier A Bethune (Davis, Naismith & McGovern), dated 28 May 2019. – Certification of Design and installation of structural works for the Resource Recovery Facility including the concrete footings and slab. • Foundation Inspection Reports - Certifier M. Gallo (Ground Technologies) for the Resource Recovery Facility, dated 20 November 2018. • Pre-pour inspection reports - Certifier B. Smith (Triaxial Consulting) dated 7 December 2018. Certifying that the stormwater system was designed and constructed in accordance with BCA 2016, AS3500.3-2015 and the approved Construction Certificate. • Installation Certificate - Carparks and Roadways - certifier N. Carlos (Jeffsann Excavations P/L) certifying that all roads and carparks had been designed and constructed in accordance with BCA 2016, AS2090.1-2004, AS2890.2-2002, AS2890.6-2009 and the approved Construction Certificate.	**Compliant - ongoing**
7	C	Cell liners	(a) The clay basal liner within each cell must: i. Extend up the side of the quarry wall for at least 2m to provide for capture of leachate and prevent leakage at the join of the HDPE side liner and the clay base liner. ii. Achieve an infiltration rate equivalent to or less than 90cm of compacted clay with a maximum permeability of 1 x 10 -9 m/sec. iii. The extension of the clay liner up the side of the quarry wall shall be of equivalent thickness (when measured perpendicular to the liner surface) and permeability as the basal liner. iv. Refer to additional conditions regarding cell 2 below.	• Report titled "*SRC Operations Pty Ltd - Patons Lane Resource Recovery Centre - Construction Quality Assurance* • Report Cell 1A-1 and Initial Leachate Pond " by GHD, dated July 2019. Section 3.1, 3.2. and 3.3. Table 5 (Compacted Clay Material Conformance) documents that the permeability requirement has been meet.	**Compliant**
7	C	Cell liner design	(b) A groundwater depressurisation system (as described in Appendices of the (Revised) Overview Report for the Further Modified Project Report (Ex Z in Appeal No 10928 of 2010), accompanying the Further Modified Preferred Project Report (Ex Z in Appeal No 10928 of 2010) must be installed between the landfill cell liner and the natural geology where the cells are below the ground level. The design for the groundwater depressurisation system must be included in the design for the landfill cells and accompany the application for the EPL.	Report titled *"SRC Operations Pty Ltd - Patons Lane Resource Recovery Centre - Construction Quality Assurance Report Cell 1A-1 and Initial Leachate Pond* " by GHD, dated July 2019.	**Compliant**
7	C	Cell liner design	(c) The HDPE side liner must: i. Overlap with the basal clay liner (which must extend up the side wall for at least 2m). ii. Be placed against an appropriate geotextile cushion material against the side of the quarry wall. iii. If, in the opinion of a certified CQA assessor, the HDPE will be damaged by the roughness of the inside wall surface, then a composite clay-HDPE liner system must be placed against the entire quarry wall unless otherwise approved by the EPA. iv. Have a minimum thickness of 1.5mm, and conform to the relevant Australian Standards	Report titled "*SRC Operations Pty Ltd - Patons Lane Resource Recovery Centre - Construction Quality Assurance Report Cell 1A-1 and Initial Leachate Pond* " by GHD, dated July 2019. The CQA report confirms compliance of the compacted HDPE liner with the requirements of this Condition.	**Compliant**
7	C	Cell liner design	(d) Geotextile must be placed on either side of the HDPE side liner.	The CQA report confirms compliance of the compacted geotextile layer with the requirements of this Condition.	**Compliant**
7	C	Cell liner design	(e) All cell construction works are to be assessed by the CQA assessor and certified as suitable before emplacement of waste begins.	The Cell 1A-1 Construction Quality Report has certified that this landfill cell meets all relevant requirements to permit the receival of wastes.	**Compliant**
7	C	Cell liner design	(f) All cells and sub cells must include an active leachate extraction or drainage system as per Section 2.8.4 of the FMPPR	Site Inspection from 27 June 2019 (Surface and Groundwater management specialist auditor confirmed that the leachate extraction system.	**Compliant**
7	D	Capping design	(a) The capping design must be the modified cap design incorporating a geomembrane liner and drainage layer (as specified in Table 2.4 of the FMPPR) (note that the drainage layer is not optional).	This condition has not been triggered as the landfill cap has not yet been designed	**Not triggered**

Schedule	Condition No.	Name of clause	Condition	Comments / Evidence	Compliance
7	D	Capping design	(b) The drainage layer permeability must be greater than 1x10-3 m/sec. The aggregate used in the drainage layer must not include crushed concrete.	This condition has not been triggered as the landfill cap has not yet been designed	**Not triggered**
7	D	Capping design	(c) The sealing clay layer must be a minimum of 600mm thick and have a permeability of not greater than 10 -8 m/sec.	This condition has not been triggered as the landfill cap has not yet been designed	**Not triggered**
7	D	Capping design	(d) The subsoil layer must be a minimum thickness of 750mm	This condition has not been triggered as the landfill cap has not yet been designed	**Not triggered**
7	D	Capping design	(e) The bund walls on the north eastern and eastern boundaries of the site must be conditioned as part of the site development works and before any waste is placed on the site.	This condition has not been triggered as the landfill cap has not yet been designed	**Not triggered**
7	D	Capping design	(f) All barrier and drainage layers, including geomembrane, must be the subject of approval by the EPA.	This condition has not been triggered as the landfill cap has not yet been designed	**Not triggered**
7	E	Cell 2 design	An additional groundwater depressurisation layer behind the HDPE side liner of Cell 2 must be installed if required to relieve groundwater pressure caused by the increase in depth.	This condition has not been triggered as Cell 2 has not yet been designed.	**Not triggered**
7	F	Landfill operation requirements	1. In addition to the leachate management system specifications indicated above, the landfill operation must comply with the following requirements to ensure that leachate is minimised and that leachate is separated from stormwater throughout the operation of the Project unless otherwise approved by the EPA:	See below	**Compliant - ongoing**
7	F	Landfill operation requirements	(a) The active landfilling face must not exceed 420 m2 in plan area at any time.	Section 6.7.2 - Waste deposition on page 37 states that the active landfilling (uncovered) face will not exceed 420 m2 in plan area at any time. The active landfilling face will be bunded to prevent run-off and run-on of stormwater/leachate from the exposed waste. **STANDARD OPERATING PROCEDURE (SOP) – SOP-BDR012 Daily Landfill Procedures**	**Compliant - ongoing**
7	F	Landfill operation requirements	(b) The daily cover must be placed on the active landfill area to a minimum thickness of 150mm. The area of landfilled waste with daily cover should not exceed 1ha.	Section 6.10 - Daily and intermediate cover on page 38 details that the daily cover will be placed on the active landfill area to a minimum thickness of 150 mm. The area of landfilled waste with daily cover should not exceed 1 ha. **STANDARD OPERATING PROCEDURE (SOP) – SOP-BDR012 Daily Landfill Procedures**	**Compliant - ongoing**
7	F	Landfill operation requirements	(c) The active cell must be covered with intermediate cover of clay rich soil, to a minimum thickness of 300mm should it not be landfilled within 90 days of placement of daily cover.	Section 6.10 - Daily and intermediate cover on page 38 details that the active cell will be covered with intermediate cover of clay rich soil, to a minimum thickness of 300 mm should it not be landfilled within 90 days of placement of daily cover. **STANDARD OPERATING PROCEDURE (SOP) – SOP-BDR012 Daily Landfill Procedures**	**Compliant - ongoing**
7	F	Landfill operation requirements	(d) The combined area of daily cover and intermediate cover should not exceed 3 ha at any one time, excluding temporary batter slopes and any sub-cell that is undergoing final capping and revegetation, unless otherwise approved by the EPA.	Section 6.10 - Daily and intermediate cover on page 38 details that the combined area of daily cover and intermediate cover will not exceed 3 ha at any one time, excluding temporary batter slopes and any sub-cell that is undergoing final capping and revegetation, unless otherwise approved by the EPA. **STANDARD OPERATING PROCEDURE (SOP) – SOP-BDR012 Daily Landfill Procedures**	**Compliant - ongoing**
7	F	Landfill operation requirements	(e) Batter slopes must be covered with intermediate cover where exposed for more than 90 days. The final capping and revegetation works of any subcell should be completed within 3 months of all of the landfilled waste in that subcell reaching the approved final landform, unless otherwise approved by the EPA.	Section 6.10 - Daily and intermediate cover on page 38 details that the Batter slopes will be covered with intermediate cover where exposed for more than 90 days. Section 6.11 - Final capping and revegetation on page 38 details that the final capping and revegetation works of any sub cell should be completed within 3 months of all of the landfilled waste in that sub cell reaching the approved final landform, unless otherwise approved by the EPA. However, it is noted that the Proponent has advised that the filling in sub cells 1A and 1B will not reach the approved final landform during Stage 1. Accordingly, the final capping layer will not be implemented during Stage 1. **STANDARD OPERATING PROCEDURE (SOP) – SOP-BDR012 Daily Landfill Procedures**	**Compliant - ongoing**

Schedule	Condition No.	Name of clause	Condition	Comments / Evidence	Compliance
7	F	Landfill operation requirements	(f) The cell must be progressively capped with the final capping profile as per condition D(a-f) of Schedule 7.	Section 6.11 - Final capping and revegetation on page 38 details that the landfill will be progressively capped and rehabilitated as filling reaches the proposed final landform. This will involve placing an engineered final capping layer over each landfilled area as it is completed, and revegetating the final cap as per Figure 2.20 and Table 2.4 of the Further Modified Preferred Project Report (FMPPR). **STANDARD OPERATING PROCEDURE (SOP) – SOP-BDR012 Daily Landfill Procedures**	**Compliant - ongoing**
7	F	Landfill operation requirements	(g) The active landfilling faces must be bunded to prevent run-off and run-on of stormwater/leachate from the exposed waste.	Section 6.7.2 - Waste deposition on page 37 states that the active landfilling face will be bunded to prevent runoff and run-on of stormwater/leachate from the exposed waste.	**Compliant - ongoing**
7	F	Landfill operation requirements	(h) Collect and extract stormwater runoff from daily and intermediate covered areas and discharge this water as stormwater subject to testing and compliance with the specifications in the EPL.	Section 5.2 - Soil and water management principles on page 21 refers to ensuring all surface water run-off from disturbed areas of the site is managed prior to reuse or discharge off site, by utilising the indicated sediment control measures.	**Compliant - ongoing**
7	F	Landfill operation requirements	(i) All leachate drainage and capping drainage material must achieve a permeability of greater than 1x10-3 m/sec and comprise non calcareous granular material.	Section 7.3.2 - Containment on page 31 details that the leachate drainage aggregate: A 0.3 m thick aggregate layer will be installed to collect and convey leachate for eventual disposal. The aggregate will consist of non-calcareous material and have a permeability of greater than 1 x 10-3 m/s and meet the requirements of the landfill guidelines. No reference to capping material in the SWLMP. LEMP Section 5.5.3 on page 26 details that the compacted clay layer will comprise of 0.9 m thick re-compacted clay with a maximum permeability of 1 x 10-9 m/s. The compacted clay layer will extend up the sidewall by a minimum of 2 m to facilitate leachate collection and to key into the sidewall liner system and the leachate drainage aggregate would consist of a 0.3 m thick aggregate layer will be installed to collect and convey leachate for eventual disposal. The aggregate will consist of non-calcareous material and have a permeability of greater than 1 x 10-3 m/s and meet the requirements of the landfill guidelines.	**Compliant - ongoing**
7	F	Landfill operation requirements	(j) The leachate head is to be monitored as part of the monitoring program.	A suitably qualified consultant has been engaged to undertake the regular monitoring (quarterly)	**Compliant - ongoing**
7	F	Landfill operation requirements	(k) The leachate head on the liner system should not exceed 300mm above the cell	SWLMP Section 7.3.3 - Collection and extraction on page 32 details that a vertical leachate riser arrangement will be installed to extract leachate from the sump in Cell 1. The riser will be linked to the leachate pond via a leachate line connected to a pump within the riser, with level switches to control the pumping and maintain the maximum leachate head over the leachate barrier system. The system will be designed to extract leachate in accordance with the landfill guidelines and the FMPPR, specifically: • To maintain a maximum leachate level of 0.3 m above the leachate barrier system • To maintain a maximum leachate level of 2 m below the inferred groundwater levels to promote the inward flow of groundwater. QOMP figure 7 - Approved site layout on page 19 details the plan and location of leachate controls such as the leachate riser and initial leachate evaporation pond.	**Compliant - ongoing**
7	F	Landfill operation requirements	(l) If the leachate head exceeds 300mm, additional leachate, extraction measures are to be implemented immediately to reduce the leachate head to acceptable level.	1. SWLMP Section 8.6 - Response Plan on page 39 and table 10 on page 40 details the incident response plan and table 10 details the mitigation and response measures. Measures include to extract leachate from cells and transfer to the leachate pond for storage, provided the leachate storage pond's freeboard is not exceeded and to extract stormwater from cell when below grade and manage as either stormwater or leachate depending on water quality.	**Compliant - ongoing**
7	F	Landfill operation requirements	(m) The Leachate Management Plan must include contingency measures in the event of failure or severe storm event or excess leachate volumes greater than the modelled predictions or fugitive leachate emission.	SWLMP Section 8.6 - Response Plan on page 39, 40 and tables 8, 9 and 10 list the potential events requiring a response and the suitable response measures for each event.	**Compliant - ongoing**

Schedule	Condition No.	Name of clause	Condition	Comments / Evidence	Compliance
7	F	Landfill operation requirements	(n) During site establishment, the material within the dam in the Cell 1 area is to be treated as follows: i. Water is to be tested prior to pumping and appropriately disposed of; ii. Sediment is to be tested, classified and appropriately disposed of; iii. Testing procedures are to be carried out in accordance with EPA procedures and for EPA analyte list.	Section 8.5 - Quarry Void on page 38 details that the Principal will conduct a sampling and testing program for the quarry void water within the Cell 1 area to characterise the quality of the water as well as any settled sediment at the base of the void. This will be completed prior to any of the perimeter bunds being disturbed. This is program is described in the Stormwater Dewatering Management Plan (Niche Environment and Heritage, 2016), refer Appendix G. Quarry / void dewatering monitoring was undertaken and wet weather monitoring is undertaken	Compliant - ongoing
7	G	Waste inspection procedures	1. Detailed waste screening procedures for all waste received at the site and all waste extracted from bund walls are to be prepared and implemented to ensure that all waste meets the classification of general solid (non-putrescible) or special waste for asbestos recovered from the on-site bunds. The procedures must include:	See below and **ONE PAGE LESSON (OPL) – OPL-BDR002 EPA Waste Classifications** **STANDARD OPERATING PROCEDURE (SOP) – SOP-BDR001 Asbestos at Recycling Centres** **STANDARD OPERATING PROCEDURE (SOP) – SOP-BDR004 Management of Outbound Materials for Disposal, Recycling or Re-use** **STANDARD OPERATING PROCEDURE (SOP) – SOP-BDR005 Weighbridge Operation and Maintenance** **STANDARD OPERATING PROCEDURE (SOP) – SOP-BDR007 Visual Inspection and Management of Non-Conforming Waste** **STANDARD OPERATING PROCEDURE (SOP) – SOP-BDR011 Process for Non-Conforming Waste**	Compliant - ongoing
7	G	Waste inspection procedures	(a) Visual inspection of all received waste;	**STANDARD OPERATING PROCEDURE (SOP) – SOP-BDR007 Visual Inspection and Management of Non-Conforming Waste** The operation of the weighbridge waste receival process (including load rejection process) and Weighbridge database operation was verified during the pre-operation audit in June 2019	Compliant - ongoing
7	G	Waste inspection procedures	(b) All staff members that monitor the site entrance shall be trained in the identification and classification of solid waste. Vehicles with unacceptable loads of waste will be refused entry to the site;	**ONE PAGE LESSON (OPL) – OPL-BDR002 EPA Waste Classifications** All materials accepted at the site for disposal or recovery are inspected and identified by site staff at the site entrance. All staff involved in acceptance of waste at the site entrance or in the relevant operational areas are appropriately trained in the identification and classification of solid waste.	Compliant - ongoing
7	G	Waste inspection procedures	(c) Require documentation for all soils received from the site to confirm their origin;	LEMP Section 6.5 - waste screening program page 35 requires documentation for all soils received from the site to confirm their origin	Compliant - ongoing
7	G	Waste inspection procedures	(d) Random sampling and testing of soils to confirm that they meet the classification of general solid (non-putrescible) waste;	Random sampling and testing of soils is undertaken to confirm that they meet the classification of general solid (non-putrescible) waste	Compliant - ongoing
7	G	Waste inspection procedures	(e) Prominent signage at the entrance to the landfill defining acceptable wastes and directing users to contact the gate person for information regarding disposal of other wastes;	Prominent signage is installed at the entrance to the site which defines acceptable wastes and directing users to contact the gate person for information regarding disposal of other wastes	Compliant - ongoing
7	G	Waste inspection procedures	(f) Random daily inspection of vehicles entering the landfill. All vehicles suspected of containing unacceptable waste will be refused permission to deposit waste until the waste is verified as being acceptable. Staff shall require and collect appropriate evidence from the driver of the vehicle, e.g. test certificate, approvals, etc, as appropriate, as verification that the waste is acceptable;	Random daily inspection of vehicles entering the landfill is undertaken. All vehicles suspected of containing unacceptable waste are refused permission to deposit waste until the waste is verified as being acceptable. Site staff collect the appropriate evidence from the driver of the vehicle, e.g. test certificate, approvals, as appropriate, as verification that the waste is acceptable.	Compliant - ongoing
7	G	Waste inspection procedures	(g) Directing vehicles with unacceptable wastes to an appropriate disposal facility;	Vehicles with unacceptable wastes are directed to an appropriate disposal facility.	Compliant - ongoing
7	G	Waste inspection procedures	(h) Random monitoring and inspection of wastes as they are discharged from vehicles at the waste disposal areas by site personnel. All waste suspected of being unacceptable will be segregated and checked as to its acceptability, e.g. by detailed inspection and/or testing, as deemed appropriate by site staff;	Random monitoring and inspection of wastes is undertaken by site personnel.as waste is discharged from vehicles at the waste disposal areas. All waste suspected of being unacceptable is segregated and checked as to its acceptability, e.g. by detailed inspection and/or testing, as deemed appropriate by site staff	Compliant - ongoing

Schedule	Condition No.	Name of clause	Condition	Comments / Evidence	Compliance
7	G	Waste inspection procedures	(i) Monitoring of the deposited waste during spreading, compaction and covering at the landfill or stockpiling at the site. All waste suspected of being unacceptable will be segregated and checked to determine its acceptability e.g. by detailed inspection and/or testing, as deemed appropriate by site staff; and	Monitoring of the deposited waste is undertaken by site staff during spreading, compaction and covering at the landfill or stockpiling at the site. All waste suspected of being unacceptable is segregated and checked to determine its acceptability e.g. by detailed inspection and/or testing, as deemed appropriate by site staff.	Compliant - ongoing
7	G	Waste inspection procedures	(j) Recording of all incidences of identification of unacceptable wastes in the site's daily log. The record will include: i. Details of the waste e.g. type; ii. Source of the waste e.g. vehicle identification, driver identification and generator of the waste; iii. Recommended waste management facility(s); iv. Result(s) of contacting the waste management facility; and v. Date contacting the EPA.	All incidences of identification of unacceptable wastes is recorded in the site's daily log. Records will include: • Details of the waste e.g. type • Source of the waste e.g. vehicle identification, driver identification and generator of the waste • Recommended waste management facility(s) • Result(s) of contacting the waste management facility • Date contacted EPA (if required).	Compliant - ongoing
7	G	Waste inspection procedures	(k) In the event that unacceptable waste is identified in an incoming vehicle, the vehicle will be refused entry, re-directed, and details of the incident recorded as described above. Site personnel will advise the driver of the vehicle of appropriate waste management facilities, or to contact the EPA for advice on appropriate management of the unacceptable waste;	In the event that unacceptable waste is identified in an incoming vehicle, the vehicle is refused entry, re-directed, and details of the incident recorded as described above. Site personnel advise the driver of the vehicle of appropriate waste management facilities, or to contact the EPA for advice on appropriate management of the unacceptable waste.	Compliant - ongoing
7	G	Waste inspection procedures	(l) In the event that unacceptable waste is identified during deposition by a vehicle, staff will immediately segregate and contain the waste away from the active landfilling area or recycling & re-processing area. Site personnel will record the details of the waste, such as type, the source, and the vehicle and driver identification. Site personnel will advise the driver of the vehicle that the waste is not acceptable and may load the waste back onto the vehicle where practical and safe to do so. The vehicle will then be escorted from the landfill by Site personnel. Site personnel will advise the driver of the vehicle to contact the EPA for advice on the appropriate management of the unacceptable waste	In the event that unacceptable waste is identified during deposition by a vehicle, staff immediately segregate and contain the waste away from the active landfilling area or recycling & re-processing area. Site personnel record the details of the waste, such as type, the source, and the vehicle and driver identification. Site personnel advise the driver of the vehicle that the waste is not acceptable and may load the waste back onto the vehicle where practical and safe to do so. The vehicle is then escorted from the landfill by site personnel. Site personnel advise the driver of the vehicle to contact the EPA for advice on the appropriate management of the unacceptable waste.	Compliant - ongoing
7	G	Waste inspection procedures	(m) In the event that unacceptable waste is identified during the spreading and compaction of deposited waste or stockpiling at the site, site personnel will segregate and contain the waste away from the active waste disposal or recycling & re-processing areas. Site personnel will make all practical efforts to identify the source of the waste, including: i. Inspecting the waste for possible identification labels on containers; and ii. ii. Identifying the type of waste and consequently the possible sources	In the event that unacceptable waste is identified during the spreading and compaction of deposited waste or stockpiling at the site, site personnel segregate and contain the waste away from the active waste disposal or recycling & re-processing areas. Site personnel make all practical efforts to identify the source of the waste, including: • Inspecting the waste for possible identification labels on containers • Identifying the type of waste and consequently the possible sources.	Compliant - ongoing
7	G	Waste inspection procedures	(n) Site personnel will contact the EPA to confirm appropriate management options and will document the final disposition of the unacceptable waste in accordance with the EPA's requirements.	If required, site personnel contact the EPA to confirm appropriate management options and will document the final disposition of the unacceptable waste in accordance with the EPA's requirements.	Compliant - ongoing
7	G	Waste inspection procedures	(o) In the case of asbestos and other waste contained in the bund walls a screening procedure must be developed based on information contained in the Preliminary In-Situ Waste Classification dated September 2009 to identify the procedures for ensuring all extracted waste from the bunds is appropriately classified and managed. This procedure should be implemented before waste activities commence at the site.	For asbestos and other waste contained in the bund walls, a screening procedure has been developed based on information contained in the Douglas Partners' Preliminary In-Situ Waste Classification (2009) to identify the procedures for ensuring all extracted waste from the bunds is appropriately classified and managed. This procedure has been implemented and is described in the Asbestos and Contamination Management Plan.	Compliant - ongoing
7	H	Surface water and groundwater management	1. A minimum total of seven groundwater observation bores will be drilled around the perimeter of the facility as part of the site establishment works. Bore construction will be in accordance with EPA requirements and sampling will be carried out in accordance with monitoring plan in the LEMP and in accordance with the EPL.	Groundwater and landfill gas are currently monitored in the following boreholes BH3 (LDP4) BH10A (LDP9) BH12B (LDP14) BH5 (LDP5) BH10B (LDP10) BH13A (LDP15) BH6 (LDP6) BH11A (LDP11) BH13B (LDP16) BH9A (LDP7) BH11B (LDP12) BH14A (LDP17) BH9B (LDP8) BH12A (LDP13) BH14B (LDP18)	Compliant - ongoing

Schedule	Condition No.	Name of clause	Condition	Comments / Evidence	Compliance
7	H	Surface water and groundwater management	2. Prior to commencement of waste emplacement the groundwater will be sampled and monitored for an EPA approved analyte list using the bores to establish background conditions in surface water and groundwater.	Baseline groundwater monitoring was undertaken and samples analysed in accordance with the SWLMP	Compliant - ongoing
7	H	Surface water and groundwater management	3. Groundwater will be sampled and monitored throughout the operation of the facility and post closure for as long as deemed necessary by the EPA and at intervals specified by the EPA.	As per 7H(1) above - quarterly monitoring is currently undertaken	Compliant - ongoing
7	H	Surface water and groundwater management	4. Stormwater runoff from intermediate cover areas (minimum 300mm thick) and bunded areas of the cell floor will be isolated from contact with the waste and will be collected and pumped from the landfill area and treated as stormwater in the stormwater management system.	Surface water runoff from intermediate cover areas and bunded areas of the cell floor is being isolated from contacting waste and is being collected and pumped from the landfill area. It is being treated as stormwater in the surface water management system.	Compliant - ongoing
7	H	Surface water and groundwater management	5. Surface water runoff and leachate must be kept separate at all times. To ensure this occurs the applicant is to ensure the control and mitigation measures referred to in the surface water report of GSS are to be incorporated into the design and implemented during each stage/phase/cell of the development, including but not limited to: a. Construct sedimentation dams for sediment-laden runoff. b. The surface water management system is to include measures to treat run off to where required to reach acceptable discharge under the EPL, according to guidelines from Managing Urban Stormwater - Soils and Construction Manual (DECC 2004) and EPA requirements. c. Re-use water from sedimentation dams for dust suppression and revegetation. d. Water discharged from site via a licensed discharge point where its quality is monitored. e. Temporary erosion and sediment control measures to be installed during construction. f. Clean runoff must be directed away from disturbed areas. g. Maintenance of sediment control structures. h. Contingency procedures for breaches and cross-contamination between stormwater and leachate.	Surface water from Cell 1 that has not come into contact with waste (other than virgin excavated natural material (VENM) and approved cover materials) drains to the temporary Cell 1 stormwater storage areas for primary treatment and reuse. Excess surface water is pumped from the cell for further treatment before discharge off site. The active landfilling faces are bunded to prevent run-off and run-on of stormwater/ leachate from the exposed waste. The internal faces of the bunds surrounding cells 1, 2 and 3 drain to a series of drains, swales and pipes to Dams 4A, 3A, 2A and 2 (to the north west), and Dam 6 to the south east.	Compliant - ongoing
7	H	Surface water and groundwater management	6. Only stormwater is to be reused onsite for dust suppression and revegetation, with excess stormwater managed and treated where required for monitored licensed discharge.	Water from the sediment dams is reused on site where possible for operational purposes (such as dust suppression) and in accordance with the SWLMP. Water that is not re-used transferred to external dams beyond the bunds and discharged if above the design rainfall event or otherwise once testing for appropriate water quality has been undertaken. All wet water discharges are sampled to ensure compliance with the limits	Compliant - ongoing
7	H	Surface water and groundwater management	7. The Stormwater Soil, Water and Leachate Management Plan must identify the location of licensed discharge points for stormwater, and monitoring parameters and frequency of monitoring.	The plan was updated to include these requirements and the plan was approved by DPIE in July 2019	Compliant
7	H	Surface water and groundwater management	8. The stormwater system must be designed in accordance with the Managing Urban Stormwater – Soils and Construction Manual (the “Blue Book”) – DECC, 2004.	The stormwater management system was designed in accordance with Volume 2B of the Blue Book. This is stated within the SWLMP which was approved by DPIE in July 2019	Compliant - ongoing
7	H	Surface water and groundwater management	9. Monitoring requirements for surface water and groundwater (parameters and frequency) must be included in the Plan.	A number of groundwater piezometers have been installed around the site to provide initial monitoring points during site establishment. Further piezometer were installed during site establishment works when access to monitoring locations for piezometer was available. A groundwater monitoring programme has been implemented and monitoring is undertaken in accordance with the EPL and the SWLMP	Compliant - ongoing
7	I	Monitoring	1. All groundwater piezometers must be installed around the site as per Annexure 5 in Appendix 1 contained the Cell Design and Groundwater Assessment (Aquaterra 2010). These piezometers must be installed and appropriately sampled during site establishment, and before any waste is received at the site, to determine background groundwater characteristics (groundwater quality and groundwater flow conditions).	Groundwater piezometers have been installed as per Annexure 5 BH3 (LDP4) BH10A (LDP9) BH12B (LDP14) BH5 (LDP5) BH10B (LDP10) BH13A (LDP15) BH6 (LDP6) BH11A (LDP11) BH13B (LDP16) BH9A (LDP7) BH11B (LDP12) BH14A (LDP17) BH9B (LDP8) BH12A (LDP13) BH14B (LDP18)	Compliant - ongoing

Schedule	Condition No.	Name of clause	Condition	Comments / Evidence	Compliance
7	I	Monitoring	2. The piezometers must be sampled during the detailed engineering design and site establishment phases to identify and confirm background groundwater characteristics and clarify the connectivity between groundwater and the creek	A number of groundwater piezometers have been installed around the site to provide initial monitoring points during site establishment. Further piezometer were installed during site establishment works when access to monitoring locations for piezometer was available. A groundwater monitoring programme has been implemented and monitoring is undertaken in accordance with the EPL and the SWLMP. Site Inspection 27 June 2019 by the Groundwater / Surface Water Specialist observed that all required groundwater monitoring bores had been installed.	**Compliant - ongoing**
7	I	Monitoring	3. The operator must engage an independent party (or parties) to monitor the following during the life of the project in accordance with the LEMP and the EPL: a. Groundwater levels and quality b. Leachate levels in cells and quality; c. Leachate levels in dams and quality; d. Surface water quality at offsite discharge point; e. Cover and capping operations on waste cells; f. Background groundwater characteristics; and g. Clarify the connectivity between the groundwater and Blaxland Creek.	Independent consultants (GHD and Catalyst Environmental Solutions) have been engaged to monitor groundwater, leachate, surface water in accordance with the SWLMP.	**Compliant - ongoing**
7	I	Monitoring	4. Leachate modelling must be validated through independent assessment and monitoring of leachate flows, levels and volumes in leachate storage ponds.	The leachate model was validated by GHD in a leachate water balance assessment undertaken on 1 August 2022. Leachate monitoring is ongoing. Landfilling commenced but has been intermittent during the Reporting Period.	**Compliant - ongoing**
7	I	Monitoring	5. If validation assessment of the leachate model indicates excess leachate storage is required then potential contingency arrangements must be developed and implemented to the satisfaction of the EPA. If directed by the EPA, further waste receipt must be suspended until the EPA is satisfied with the arrangements.	As per 7H(1) above - quarterly monitoring is currently undertaken	**Compliant - ongoing**
7	I	Monitoring	6. Results of leachate validation assessment compared to the model provisions must be provided to the EPA upon request.	The leachate model was validated by GHD in a leachate water balance assessment undertaken on 1 August 2022. Leachate monitoring is ongoing. Landfilling commenced but has been intermittent during the Reporting Period.	**Compliant - ongoing**
7	J	Construction Quality Assurance Plan	1. A Construction Quality Assurance Plan (CQA) must be prepared and implemented for the entire site, including development works, cell construction, stormwater and leachate management measures, capping and post closure rehabilitation.	A CQA Plan was prepared by GHD dated September 2016 for the development works, cell construction, stormwater and leachate management measures, capping and post closure rehabilitation. A QA Report "*SRC Operations Pty Ltd - Patons Lane Resource Recovery Centre - Construction Quality Assurance Report Cell 1A-1 and Initial Leachate Pond*" was prepared by GHD, dated July 2019.	**Compliant**
7	J	Construction Quality Assurance Plan	2. The CQA plan must include provisions for the following in accordance with the POEO Act:	The CQA Plan includes provisions for the following in accordance with the POEO Act:	**Compliant**
7	J	Construction Quality Assurance Plan	a. Sources of construction material;	Sections 3 discusses sources of construction material;	**Compliant**
7	J	Construction Quality Assurance Plan	b. Testing of construction materials;	Construction quality control testing and independent conformance testing sections for each material;	**Compliant**
7	J	Construction Quality Assurance Plan	c. Inspection and testing procedures for constructed cell liners (basal and side);	Section 4 addresses inspection and testing procedures for constructed cell liners (basal and side);	**Compliant**
7	J	Construction Quality Assurance Plan	d. Construction methodology for compacting clays, including number of lifts and moisture conditioning for each cell;	Section 4 addresses construction methodology for compacting clays, number of lifts and moisture conditioning for each cell;	**Compliant**
7	J	Construction Quality Assurance Plan	e. Inspection and testing procedures for HDPE and geomembrane liners;	Section 8 addresses inspection and testing procedures for HDPE and geomembrane liners;	**Compliant**

Schedule	Condition No.	Name of clause	Condition	Comments / Evidence	Compliance
7	J	Construction Quality Assurance Plan	f. Rectification of non conforming components;	Section 2.9 addresses rectification of non- conforming components;	Compliant
7	J	Construction Quality Assurance Plan	g. Certification / sign off by suitably qualified assessor on the completion of each of the specified works;	Section 2.4.4 and 14.13 address certification/sign off by qualified assessor on completion of each specified works;	Compliant
7	J	Construction Quality Assurance Plan	h. An independent certification report must be prepared to confirm that each of the specified works were completed as required and in accordance with the CQA plan and any EPL conditions. This report is to be submitted to the EPA at the completion of each of the specified works;	Section 124.13 addresses independent certification reporting to confirm each of the specified works were completed as required and in accordance with the CQA plan and any EPL conditions;	Compliant
7	J	Construction Quality Assurance Plan	i. The CQA plan must be included in the LEMP;	The CQA Plan is referenced in the LEMP and forms part of the LEMP;	Compliant
7	J	Construction Quality Assurance Plan	j. Contingency measures in the event of failure or sever storm event or fugitive leachate emission; and	Contingency measures are addressed in the SWLMP; and	Compliant
7	J	Construction Quality Assurance Plan	k. Leachate modelling for the Project must be provided to confirm the efficacy/adequacy of the proposed final leachate management and surface water management design and incorporated into the SWLMP.	Leachate modelling of the proposed final leachate management and surface water management design will be incorporated into the SWLMP.	Compliant
7	K	Rehabilitation and Post Closure Management	1. The cap design must include a drainage layer.	Future requirement	Not triggered
7	K	Rehabilitation and Post Closure Management	2. Appropriate vegetation must be properly established on site and cap.	Future requirement	Not triggered
7	K	Rehabilitation and Post Closure Management	3. Erosion must be controlled and managed.	Future requirement	Not triggered
7	K	Rehabilitation and Post Closure Management	4. Surface water runoff must meet discharge water quality requirements as specified in the surface water assessment dated February 2010 prepared by GSS Environmental and the EPL.	Future requirement	Not triggered
7	K	Rehabilitation and Post Closure Management	5. Surface water and testing must be incorporated into the monitoring plan of management.	Future requirement	Not triggered
7	K	Rehabilitation and Post Closure Management	6. The final landform height and profile is not to exceed the height and shape specified in Figure 2.20 of the FMPPR.	Future requirement	Not triggered
7	K	Rehabilitation and Post Closure Management	7. In order to ensure there is no need to increase the height of the landform, any settlement areas that may result in ponding of surface water will need to be backfilled and this process will continue until the EPA determines that the facility is stable and does not represent a risk to human health or the environment. The following actions must be undertaken: a. Regular maintenance of slopes through backfilling and revegetation of settled areas to prevent ponding of water and facilitate runoff; and b. All backfilling activities are to be undertaken with subsoil of the same composition as proposed subsoil (on site clays) referred to the in the cap profile.	Future requirement	Not triggered
7	K	Rehabilitation and Post Closure Management	8. Regular inspection and reporting by an independent, suitably qualified assessor, on an annual basis to assess the integrity of the cap, the grade and the existence of differential settlement areas where ponding could occur.	Future requirement	Not triggered
7	K	Rehabilitation and Post Closure Management	9. All reports identified above are to be provided to the EPA and relevant certifying bodies within four weeks of the inspection date. Reports are also to be made publicly.	Future requirement	Not triggered

Schedule	Condition No.	Name of clause	Condition	Comments / Evidence	Compliance
7	K	Rehabilitation and Post Closure Management	10. Monitoring is to continue until the EPA determines the facility is stable and no longer represents a risk to human health or the environment.	Future requirement	Not triggered
8			**SCHEDULE 8 PROJECT SITE BOUNDARY (Referred to in conditions 7 and 8 of Schedule 3)**		
9			**SCHEDULE 9 – MANAGEMENT METHODS, PROCEDURES AND SPECIFIC NOISE MITIGATION MEASURES (EX DD IN APPEAL NO 10928 OF 2010)**		
9	a	Noise	The waste recycling and re-processing facility must be sited on the project site at the furthest distance from residences, as shown in Appendix A to the Updated Consolidated Acoustic Report;	The Site Establishment Noise Management Plan Section 5 – Noise and Vibration Mitigation Methods details the specific responses to Schedule 9. The Site Establishment Noise Management Plan was approved by the DP&E on 9 August 2017. The site inspection undertaken on 21 June 2019 confirmed the location of the Resource Recovery Area is located within a sound bund, in accordance with Schedule 9 Condition a).	Compliant
9	b	Noise	Earth mounding must be used on the northern, eastern and southern boundaries of the site, as shown in Appendix A to the Updated Consolidated Acoustic Report, during the periods when operations within the site require them;	The site inspection undertaken on 21 June 2019 confirmed the location of the Resource Recovery Area is located within a sound bund, in accordance with Schedule 9 Condition a).	Compliant
9	c	Noise	Earth mounds must be provided within the site at the Central and Southern locations at specified times, as shown in Appendix A to the Updated Consolidated Acoustic Report;	The site inspection undertaken on 21 June 2019 confirmed the location of the Resource Recovery Area is located within a sound bund, in accordance with Schedule 9 Condition a).	Compliant
9	d	Noise	Acoustic mounding must be used to enclose the waste recycling and re-processing cell;	The site inspection undertaken on 21 June 2019 confirmed the location of the Resource Recovery Area is located within a sound bund, in accordance with Schedule 9 Condition a).	Compliant
9	e	Noise	The fixed recycling and re-processing equipment must be housed within acoustic enclosures;	The Site Inspection undertaken on the 21 June 2019 confirmed that the location of the Resource Recovery Area was within a sound bund, in accordance with Schedule 9 Condition e).	Compliant
9	f	Noise	During the construction phase, 4m-high mobile acoustic barriers must be deployed on the external perimeter of both the northern and eastern faces, and will be relocated on the outer surface of those faces to acoustically screen the works as required;	Construction is now complete	Compliant
9	g	Noise	Acoustic treatment must be applied to selected mobile earthmoving and other equipment to be used on site, to achieve the specified noise criteria shown in Table 5.2 in the Updated Consolidated Acoustic Report;	Construction is now complete. Acoustic testing undertaken by Wilkinson Murray confirmed compliance with Schedule 9 Condition 1.	Compliant
9	h	Noise	Acoustic screening must be used for clay/shale loading operations, specifically in Cell 3, through strategic placement of 4m-high barriers in an east-west orientation across the active stockpile area, so as to always acoustically screen earthmoving equipment during loading operations;	Future requirement - Cell 3 is not due for construction still Stage 3 of the project	Not triggered
9	i	Noise	No operational equipment having a sound power level greater than 106 dBA (unshielded) or 111 dBA (shielded) will be located on top of stockpiles;	Noise testing of the plant working on top of the stockpiles was previously undertaken but was halted due to the limited operation activities during the Reporting Period.	Compliant
9	j	Noise	No bobcats, front end loaders or bulldozers will be located on top of the stockpiles around the processing plant, other than during construction stage.	No bobcats, front end loaders or bulldozers are located on top of the stockpiles around the processing plant, in accordance with the ONMP	Compliant - ongoing

Schedule	Condition No.	Name of clause	Condition	Comments / Evidence	Compliance
9	**k**	Noise	The following procedure for determining and verifying the location of "moveable"/"temporary fixed" barriers, and of any work conducted behind them, should be implemented: i. marking off an area behind the new barriers at which the RL of the ground is no more than 1m higher than that at the base of the barrier, (or lower at greater distances behind), in general accordance with Appendix A to the Updated Consolidated Acoustic Report, and within which there is no line of sight to any residence to the side of the barrier. The permitted work area must be marked off with tape, fibreglass poles or similar, to represent the area within which equipment must operate behind the barrier; and ii. an acoustic engineer must attend the site to formally verify the location of the barrier and the new working area.	The Site Establishment Noise Management Plan Section 5 – Noise and Vibration Mitigation Methods details the specific responses to Schedule 9. The Site Establishment Noise Management Plan was approved by the DP&E on 9 August 2017. The Operation Noise Management Plan provides details of the noise management processes to be implemented to meet the requirements of Schedule 9 Condition k. There have been no noise complaints and no exceedances of the noise limits have been identified during the attended and unattended noise monitoring	**Compliant - ongoing**
9	**l**	Noise	No work will be conducted outside the site's perimeter bunds or the temporary fixed barriers during the above process, except that work required to actually move the barriers.	The Site Establishment Noise Management Plan Section 5 – Noise and Vibration Mitigation Methods details the specific responses to Schedule 9. The Site Establishment Noise Management Plan was approved by the DP&E on 9 August 2017. The Operation Noise Management Plan provides details of the noise management processes to be implemented to meet the requirements of Schedule 9 Condition k. There have been no noise complaints and no exceedances of the noise limits have been identified during the attended and unattended noise monitoring	**Compliant - ongoing**
9	**m**	Noise	Earth mounds are to be used to shield equipment working close to the top of the final landform to control noise from this equipment.	Future requirement	**Not triggered**
9	**n**	Noise	The procedure for removing a bund to provide the final landform for the project must involve: i. initial removal of the top of the bund from behind (south) using a long-reach excavator; and ii. final shaping of the landform using a bobcat, with a sound power level not exceeding 106 dBA.	Future requirement	**Not triggered**
9	**o**	Noise	No work will be conducted outside the shielded areas of the site during the process referred to in (n) above.	Future requirement	**Not triggered**
9	**p**	Noise	The Proponent shall undertake real time continuous noise monitoring, and separately, an ongoing attended noise monitoring program, for the operational life of the project, to be documented in the Site Establishment Noise Management Plan (identified at Condition 26) and Operation Noise Management Plan (identified at Condition 27).	A noise monitoring programme attended and unattended (continuous) noise monitoring is undertaken by Wilkinson Murray and monthly reports are uploaded to the project website.	**Compliant - ongoing**
9	**q**	Noise	The Proponent shall submit a summary report of the real time monitoring results to Council and the OEH, which documents all non-compliances with Table 7, and any rectification works or modification of work practices undertaken to obtain compliance: • at 3 month intervals during Site Establishment and the first two years of operation; and • thereafter, on a six monthly basis.	A noise monitoring programme of attended and unattended (continuous) noise monitoring is undertaken by Wilkinson Murray and monthly reports are uploaded to the project website. These reports have not been submitted to Council as required by this Condition. It is noted that Council participates in the Community Consultation Committee and is aware that these reports are available to the public on the PLRRC website and the Bingo website To date there have been no exceedances of noise limits due to construction or operation of the site.	**Not compliant**
9	**r**	Noise	The ongoing attended noise monitoring program must include environmental noise monitoring of the Project site's total noise emissions including fixed plant and mobile earthmoving equipment auditing, and identify whether fixed plant earthmoving equipment noise levels exceed the sound power levels in Table 5.2 contained in the Updated Consolidated Acoustic Report.	A noise monitoring programme attended and unattended (continuous) noise monitoring is undertaken by Wilkinson Murray and monthly reports are uploaded to the project website. To date there have been no exceedances of noise limits due to construction or operation of the site.	**Compliant - ongoing**

Schedule	Condition No.	Name of clause	Condition	Comments / Evidence	Compliance
9	**s**	Noise	The real time continuous noise monitoring data must be made available to the Council within 14 days of the Council requesting access to that data.	A noise monitoring programme attended and unattended (continuous) noise monitoring is undertaken by Wilkinson Murray and monthly reports are uploaded to the project website. To date there have been no exceedances of noise limits due to construction or operation of the site.	**Compliant - ongoing**
10			**SCHEDULE 10 - INTERACTION BETWEEN LANDFILL CELL AND QUARRYING WORK (referred to in condition 6 of Schedule 3)**		

APPENDIX B GROUNDWATER MONITORING DATA

BH3 - EPL Monitoring Point 4												
Monitoring Frequency	**Pollutant**	**Unit**	**Feb-20**	**May-20**	**Aug-20**	**Nov-20**	**Feb-21**	**May-21**	**Aug-21**	**Nov-21**	**Feb/Mar-22**	**May/Jun-22**
Quarterly	Ammonia (as N)	mg/L	2.7	3	3.1	3.3	2.8	2.6	2.46	2.8	2.66	2.43
	Bicarbonate Alkalinity (as CaCO3)	mg/L	780	1200	850	890	880	910	850	880	848	712
	Calcium	mg/L	370	370	350	420	430	460	315	430	343	302
	Carbonate Alkalinity (as CaCO3)	mg/L	10	10	10	10	10	10	1	10	1	1
	Chloride	mg/L	10000	10000	9300	8600	8600	9400	8700	8600	8890	8280
	Hydroxide Alkalinity (as CaCO3)	mg/L	20	20	20	20	20	20	1	20	1	1
	Magnesium	mg/L	680	740	670	860	830	950	712	830	769	751
	Nitrate & Nitrite (as N)	mg/L	1.3	0.05	0.1	0.05	0.05	0.05	0.02	0.05	0.01	0.01
	Nitrate (as N)	mg/L	0.35	0.02	0.06	0.02	0.02	0.02	0.02	0.02	0.01	0.01
	Nitrite (as N)	mg/L	0.97	0.02	0.04	0.02	0.02	0.02	0.01	0.02	0.01	0.01
	Phosphate total (as P)	mg/L	0.05	0.05	0.34	0.01	0.02	0.03	0.06	0.02	0.05	0.09
	Potassium	mg/L	42	42	40	49	45	42	34	45	35	30
	Sodium	mg/L	4300	4100	3800	5100	4700	4900	3970	4700	4270	4060
	Sulphate (as SO4)	mg/L	210	330	190	190	300	340	330	300	300	333
	Total Alkalinity (as CaCO3)	mg/L	780	1200	850	890	880	910	850	880	848	712
	Total Dissolved Solids	mg/L	14000	13000	15000	15000	20000	17000	17000	20000	18600	15500
	Total Organic Carbon	mg/L	5	40	91	5.5	5	5	1	5	19	20
	pH	pH	6.3	6.5	6.5	6.7	6.5	6.4	6.4	6.5	6.9	6.5
	Redox	mV	-114.7	-165.8	-187.1	-240.8	-101.7	-100.7	-89.1	-101.7	-59.9	-63.1
	Standing Water Level	mAHD	30.5	30.6	30.7	30.7	30.6	30.7	30.5	30.6	31.3	31.0
	Temperature	°C	19.7	19.1	18.7	19.9	18.9	20.4	19.7	18.9	20.6	18.5

BH3 - EPL Monitoring Point 4												
Monitoring Frequency	**Pollutant**	**Unit**	**Aug-22**	**Nov-22**								
Quarterly	Ammonia (as N)	mg/L	2.54	2.26								
	Bicarbonate Alkalinity (as CaCO3)	mg/L	865	862								
	Calcium	mg/L	344	330								
	Carbonate Alkalinity (as CaCO3)	mg/L	1	1								
	Chloride	mg/L	9020	8630								
	Hydroxide Alkalinity (as CaCO3)	mg/L	1	1								
	Magnesium	mg/L	764	741								
	Nitrate & Nitrite (as N)	mg/L	0.01	0.01								
	Nitrate (as N)	mg/L	0.01	0.01								
	Nitrite (as N)	mg/L	0.01	0.01								
	Phosphate total (as P)	mg/L	0.05	0.05								
	Potassium	mg/L	36	32								
	Sodium	mg/L	4220	4150								
	Sulphate (as SO4)	mg/L	326	314								
	Total Alkalinity (as CaCO3)	mg/L	865	862								
	Total Dissolved Solids	mg/L	17000	22800								
	Total Organic Carbon	mg/L	13	2								
	pH	pH	6.6	6.66								
	Redox	mV	-130.7	-79.90								
	Standing Water Level	mAHD	30.7	30.62								
	Temperature	°C	18.4	19.40								

BH3 - EPL Monitoring Point 4					
Monitoring Frequency	**Pollutant**	**Unit**	**Aug-20**	**Aug-21**	**Aug-22**
Yearly	Aluminium	mg/L	0.05	0.94	0.01
	Arsenic	mg/L	0.001	0.006	0.001
	Barium	mg/L	1.2	15.6	0.241
	Benzene	mg/L	0.001	0.001	1
	Benzo(a)pyrene	mg/L	0.001	0.0005	0.5
	Cadmium	mg/L	0.0004	0.0001	0.0001
	Chromium (hexavalent)	mg/L	0.005	0.01	0.01
	Chromium (total)	mg/L	0.001	0.002	0.001
	Cobalt	mg/L	0.001	0.002	0.001
	Copper	mg/L	0.01	0.007	0.001
	Ethyl benzene	mg/L	0.001	0.002	2
	Fluoride	mg/L	0.7	0.4	0.4
	Lead	mg/L	0.002	0.005	0.001
	Manganese	mg/L	0.34	0.36	0.333
	Mercury	mg/L	0.0001	0.0001	0.0001
	Nickel	mg/L	0.023	0.008	0.001
	Organochlorine pesticides	mg/L	0.01	0.002	2
	Organophosphate pesticides	mg/L	0.02	0.002	2
	PAHs	mg/L	0.001	0.0005	1
	PCBs	mg/L	0.001	0.001	1
	Phenols	mg/L	0.1	0.002	1
	Selenium	mg/L	0.002	0.01	0.01
	Toluene	mg/L	0.001	0.001	2
	Total Petroleum hydrocarbons	mg/L	0.1	0.05	100
	Xylene	mg/L	0.003	0.002	2
	Zinc	mg/L	0.024	0.044	0.005

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BH5 - EPL Monitoring Point 5												
Monitoring Frequency	**Pollutant**	**Unit**	**Feb-20**	**May-20**	**Aug-20**	**Nov-20**	**Feb-21**	**May-21**	**Aug-21**	**Nov-21**	**Feb/Mar-22**	**May/Jun-22**
Quarterly	Ammonia (as N)	mg/L	0.51	0.5	0.22	0.26	0.44	0.18	0.01	0.44	0.06	0.06
	Bicarbonate Alkalinity (as CaCO3)	mg/L	960	860	480	560	490	490	323	490	283	290
	Calcium	mg/L	120	120	100	110	120	120	49	120	38	31
	Carbonate Alkalinity (as CaCO3)	mg/L	10	10	10	10	10	10	1	10	1	1
	Chloride	mg/L	2900	2500	2800	2900	2700	2700	2870	2700	2570	2470
	Hydroxide Alkalinity (as CaCO3)	mg/L	20	20	20	20	20	20	1	20	1	1
	Magnesium	mg/L	160	170	180	220	190	230	169	190	163	157
	Nitrate & Nitrite (as N)	mg/L	0.08	0.05	0.13	0.05	0.05	0.05	0.01	0.05	0.01	0.01
	Nitrate (as N)	mg/L	0.08	0.02	0.13	0.02	0.02	0.03	0.01	0.02	0.01	0.01
	Nitrite (as N)	mg/L	0.02	0.02	0.02	0.02	0.02	0.02	0.01	0.02	0.01	0.01
	Phosphate total (as P)	mg/L	0.1	0.4	0.41	0.02	0.05	0.04	0.04	0.05	0.02	0.08
	Potassium	mg/L	6.4	9.8	6.9	12.5	6.6	5.5	3	6.6	2	2
	Sodium	mg/L	1200	1200	1300	1700	1700	1700	1500	1700	1510	1430
	Sulphate (as SO4)	mg/L	240	270	220	240	290	340	399	290	519	525
	Total Alkalinity (as CaCO3)	mg/L	960	860	480	560	490	490	323	490	283	290
	Total Dissolved Solids	mg/L	4500	3700	4700	4500	4600	4400	5360	4600	5060	4690
	Total Organic Carbon	mg/L	5.4	34	61	21	5	5	2	5	2	6
	pH	pH	6.5	6.6	6.49	5.9	6.3	6.1	6.1	6.3	6.3	5.8
	Redox	mV	49.3	-81.2	80.1	-258.4	43.5	38.3	48.5	43.5	80.4	146.6
	Standing Water Level	mAHD	29.8	29.9	30.02	30.1	30.0	30.2	30.2	30.0	30.5	30.9
	Temperature	°C	18.4	18.1	16.6	18.4	17.7	18.4	18.0	17.7	18.1	17.6

BH5 - EPL Monitoring Point 5

Monitoring Frequency	Pollutant	Unit	Aug-22	Nov-22								
Quarterly	Ammonia (as N)	mg/L	0.64	0.69								
	Bicarbonate Alkalinity (as CaCO3)	mg/L	560	655								
	Calcium	mg/L	144	161								
	Carbonate Alkalinity (as CaCO3)	mg/L	1	1								
	Chloride	mg/L	3320	3280								
	Hydroxide Alkalinity (as CaCO3)	mg/L	1	1								
	Magnesium	mg/L	221	231								
	Nitrate & Nitrite (as N)	mg/L	0.01	0.01								
	Nitrate (as N)	mg/L	0.01	0.01								
	Nitrite (as N)	mg/L	0.01	0.01								
	Phosphate total (as P)	mg/L	0.05	0.06								
	Potassium	mg/L	9	10								
	Sodium	mg/L	1660	1690								
	Sulphate (as SO4)	mg/L	255	219								
	Total Alkalinity (as CaCO3)	mg/L	560	655								
	Total Dissolved Solids	mg/L	5980	6550								
	Total Organic Carbon	mg/L	11	4								
	pH	pH	6.6	6.6								
	Redox	mV	-150.9	-163.0								
	Standing Water Level	mAHD	30.5	30.4								
	Temperature	°C	16.5	18.6								

BH5 - EPL Monitoring Point 5					
Monitoring Frequency	**Pollutant**	**Unit**	**Aug-20**	**Aug-21**	**Aug-22**
Yearly	Aluminium	mg/L	0.05	0.36	0.01
	Arsenic	mg/L	0.001	0.003	0.001
	Barium	mg/L	0.11	0.237	0.182
	Benzene	mg/L	0.001	0.001	1
	Benzo(a)pyrene	mg/L	0.001	0.0005	0.5
	Cadmium	mg/L	0.0009	0.0001	0.0001
	Chromium (hexavalent)	mg/L	0.005	0.01	0.001
	Chromium (total)	mg/L	0.001	0.001	0.001
	Cobalt	mg/L	0.005	0.007	0.002
	Copper	mg/L	0.068	0.002	0.001
	Ethyl benzene	mg/L	0.001	0.002	2
	Fluoride	mg/L	0.7	0.3	0.4
	Lead	mg/L	0.003	0.001	0.001
	Manganese	mg/L	0.79	0.776	0.695
	Mercury	mg/L	0.0001	0.0001	0.0001
	Nickel	mg/L	0.02	0.007	0.003
	Organochlorine pesticides	mg/L	0.01	0.002	2
	Organophosphate pesticides	mg/L	0.02	0.002	2
	PAHs	mg/L	0.001	0.0005	1
	PCBs	mg/L	0.001	0.001	1
	Phenols	mg/L	0.1	0.002	1
	Selenium	mg/L	0.001	0.01	0.01
	Toluene	mg/L	0.001	0.002	2
	Total Petroleum hydrocarbons	mg/L	0.1	0.5	100
	Xylene	mg/L	0.003	0.002	2
	Zinc	mg/L	0.18	0.009	0.005

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BH6 - EPL Monitoring Point 6												
Monitoring Frequency	**Pollutant**	**Unit**	**Feb-20**	**May-20**	**Aug-20**	**Nov-20**	**Feb-21**	**May-21**	**Aug-21**	**Nov-21**	**Feb/Mar-22**	**May/Jun-22**
Quarterly	Ammonia (as N)	mg/L	0.008	0.08	0.1	0.12	0.08	0.01	0.1	0.08	0.16	0.1
	Bicarbonate Alkalinity (as CaCO3)	mg/L	110	220	81	68	63	73	191	63	68	92
	Calcium	mg/L	18	43	12	12.5	4.1	5	29	4.1	1	6
	Carbonate Alkalinity (as CaCO3)	mg/L	10	10	10	10	10	10	1	10	1	1
	Chloride	mg/L	6800	8100	7000	5900	6200	5600	6090	6200	6120	5660
	Hydroxide Alkalinity (as CaCO3)	mg/L	20	20	20	20	20	20	1	20	1	1
	Magnesium	mg/L	380	420	420	450	510	380	359	510	374	336
	Nitrate & Nitrite (as N)	mg/L	0.05	0.05	0.05	0.05	0.05	0.05	0.01	0.05	0.02	0.01
	Nitrate (as N)	mg/L	0.02	0.02	0.02	0.02	0.02	0.05	0.01	0.02	0.02	0.01
	Nitrite (as N)	mg/L	0.02	0.02	0.02	0.02	0.02	0.02	0.01	0.02	0.01	0.01
	Phosphate total (as P)	mg/L	0.88	1.5	1.2	0.99	0.7	0.15	0.87	0.7	0.76	0.18
	Potassium	mg/L	5	7.5	5	12.5	7.1	5	1	7.1	1	1
	Sodium	mg/L	0	3100	3300	3600	4000	2900	2860	4000	3060	2830
	Sulphate (as SO4)	mg/L	220	270	160	150	200	180	186	200	174	177
	Total Alkalinity (as CaCO3)	mg/L	110	220	81	68	63	73	191	63	68	92
	Total Dissolved Solids	mg/L	11000	10000	9500	11000	9800	7900	10800	9800	11000	9370
	Total Organic Carbon	mg/L	270	23	38	6	7.6	5	7	7.6	21	14
	pH	pH	5.5	5.57	5.69	5.47	5.5	4.66	5.15	5.5	5.52	5.56
	Redox	mV	-641.2	77.9	-9.9	67.9	99.7	116.4	109.4	99.7	110.7	98.6
	Standing Water Level	mAHD	38.3	38.62	38.64	38.75	38.46	38.82	38.31	38.46	38.92	39.38
	Temperature	°C	20.5	19.4	18.5	19.2	19.5	20.3	18.7	19.5	21.2	18.2

BH6 - EPL Monitoring Point 6												
Monitoring Frequency	**Pollutant**	**Unit**	**Aug-22**	**Nov-22**								
Quarterly	Ammonia (as N)	mg/L	0.04	0.1								
	Bicarbonate Alkalinity (as CaCO3)	mg/L	73	73								
	Calcium	mg/L	3	3								
	Carbonate Alkalinity (as CaCO3)	mg/L	1	1								
	Chloride	mg/L	5560	5410								
	Hydroxide Alkalinity (as CaCO3)	mg/L	1	1								
	Magnesium	mg/L	309	328								
	Nitrate & Nitrite (as N)	mg/L	0.03	0.01								
	Nitrate (as N)	mg/L	0.02	0.01								
	Nitrite (as N)	mg/L	0.01	0.01								
	Phosphate total (as P)	mg/L	0.05	0.03								
	Potassium	mg/L	1	1								
	Sodium	mg/L	2640	2730								
	Sulphate (as SO4)	mg/L	166	173								
	Total Alkalinity (as CaCO3)	mg/L	73	73								
	Total Dissolved Solids	mg/L	8780	10400								
	Total Organic Carbon	mg/L	14	10								
	pH	pH	5.58	6.7								
	Redox	mV	125.3	50.2								
	Standing Water Level	mAHD	39.12	39.1								
	Temperature	°C	16.8	18.7								

BH6 - EPL Monitoring Point 6					
Monitoring Frequency	**Pollutant**	**Unit**	**Aug-20**	**Aug-21**	**Aug-22**
Yearly	Aluminium	mg/L	0.05	11.5	0.02
	Arsenic	mg/L	0.001	0.008	0.001
	Barium	mg/L	0.13	0.365	0.113
	Benzene	mg/L	0.001	0.001	1
	Benzo(a)pyrene	mg/L	0.001	0.0005	0.5
	Cadmium	mg/L	0.0006	0.0002	0.0001
	Chromium (hexavalent)	mg/L	0.005	0.01	0.01
	Chromium (total)	mg/L	0.001	0.016	0.001
	Cobalt	mg/L	0.056	0.08	0.052
	Copper	mg/L	0.092	0.074	0.005
	Ethyl benzene	mg/L	0.001	0.002	2
	Fluoride	mg/L	0.5	0.2	0.2
	Lead	mg/L	0.004	0.019	0.001
	Manganese	mg/L	1.8	1.9	1.43
	Mercury	mg/L	0.0001	0.0001	0.0001
	Nickel	mg/L	0.088	0.054	0.013
	Organochlorine pesticides	mg/L	0.01	0.002	2
	Organophosphate pesticides	mg/L	0.02	0.002	2
	PAHs	mg/L	0.001	0.0005	1
	PCBs	mg/L	0.001	0.001	1
	Phenols	mg/L	0.1	0.002	1
	Selenium	mg/L	0.003	0.01	0.01
	Toluene	mg/L	0.001	0.002	2
	Total Petroleum hydrocarbons	mg/L	0.2	0.05	100
	Xylene	mg/L	0.003	0.002	2
	Zinc	mg/L	0.18	0.11	0.021

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BH9A - EPL Monitoring Point 7												
Monitoring Frequency	**Pollutant**	**Unit**	**Feb-20**	**May-20**	**Aug-20**	**Nov-20**	**Feb-21**	**May-21**	**Aug-21**	**Nov-21**	**Feb/Mar-22**	**May/Jun-22**
Quarterly	Ammonia (as N)	mg/L	1.3	1.4	0.86	1.2	2.8	0.02	1.12	2.8	1.14	1.3
	Bicarbonate Alkalinity (as CaCO3)	mg/L	1600	1500	1300	1300	1200	1400	1150	1200	1200	1000
	Calcium	mg/L	270	290	280	340	380	340	270	380	287	240
	Carbonate Alkalinity (as CaCO3)	mg/L	10	10	10	10	10	10	1	10	1	1
	Chloride	mg/L	8900	7800	8400	7600	7800	7400	7610	7800	6990	7410
	Hydroxide Alkalinity (as CaCO3)	mg/L	20	20	20	20	20	20	1	20	1	1
	Magnesium	mg/L	950	1000	960	1100	940	1200	852	940	958	892
	Nitrate & Nitrite (as N)	mg/L	0.26	0.05	0.22	0.84	0.05	0.9	0.01	0.05	1	0.03
	Nitrate (as N)	mg/L	0.03	0.02	0.08	0.14	0.02	0.9	0.01	0.02	1	0.03
	Nitrite (as N)	mg/L	0.23	0.03	0.14	0.7	0.02	0.02	0.01	0.02	1	0.01
	Phosphate total (as P)	mg/L	0.05	0.05	0.11	0.2	0.02	0.66	0.1	0.02	0.05	0.35
	Potassium	mg/L	24	28	23	41	48	27	26	48	25	24
	Sodium	mg/L	4500	4200	4000	4700	4100	4600	3690	4100	4050	3830
	Sulphate (as SO4)	mg/L	1800	1700	1500	1400	1700	1700	1630	1700	1610	1510
	Total Alkalinity (as CaCO3)	mg/L	1600	1500	1300	1300	1200	1400	1150	1200	1200	1000
	Total Dissolved Solids	mg/L	16000	7000	14000	13000	16000	11000	16000	16000	16600	15300
	Total Organic Carbon	mg/L	7.7	16	100	5	5	5	4	5	1	6
	pH	pH	6.2	6.5	6.5	6.6	6.6	N/A	6.5	6.6	6.6	6.9
	Redox	mV	55.1	25.4	38.6	-56.2	-92.9	N/A	27.6	-92.9	-14.2	-13.8
	Standing Water Level	mAHD	43.9	43.9	44.0	43.8	43.8	43.8	43.7	43.8	43.6	43.5
	Temperature	°C	19.8	19.4	19.3	20.0	22.1	N/A	19.1	22.1	19.8	18.9

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BH9A - EPL Monitoring Point 7												
Monitoring Frequency	**Pollutant**	**Unit**	**Aug-22**	**Nov-22**								
Quarterly	Ammonia (as N)	mg/L	1.24	1.19								
	Bicarbonate Alkalinity (as CaCO3)	mg/L	1210	1210								
	Calcium	mg/L	282	285								
	Carbonate Alkalinity (as CaCO3)	mg/L	1	1								
	Chloride	mg/L	7970	8010								
	Hydroxide Alkalinity (as CaCO3)	mg/L	1	1								
	Magnesium	mg/L	895	908								
	Nitrate & Nitrite (as N)	mg/L	0.01	0.01								
	Nitrate (as N)	mg/L	0.01	0.01								
	Nitrite (as N)	mg/L	0.02	0.01								
	Phosphate total (as P)	mg/L	0.1	0.12								
	Potassium	mg/L	26	24								
	Sodium	mg/L	3880	3950								
	Sulphate (as SO4)	mg/L	1720	1590								
	Total Alkalinity (as CaCO3)	mg/L	1210	1210								
	Total Dissolved Solids	mg/L	16400	19200								
	Total Organic Carbon	mg/L	36	2								
	pH	pH	6.6	6.5								
	Redox	mV	28.1	12.1								
	Standing Water Level	mAHD	43.6	43.6								
	Temperature	°C	19.1	20.0								

BH9A - EPL Monitoring Point 7					
Monitoring Frequency	**Pollutant**	**Unit**	**Aug-20**	**Aug-21**	**Aug-22**
Yearly	Aluminium	mg/L	0.05	1.38	0.1
	Arsenic	mg/L	0.001	0.002	0.001
	Barium	mg/L	0.02	0.032	0.029
	Benzene	mg/L	0.001	0.001	1
	Benzo(a)pyrene	mg/L	0.001	0.0005	0.5
	Cadmium	mg/L	0.0003	0.0001	0.0001
	Chromium (hexavalent)	mg/L	0.005	0.01	0.01
	Chromium (total)	mg/L	0.001	0.003	0.001
	Cobalt	mg/L	0.001	0.002	0.001
	Copper	mg/L	0.084	0.007	0.004
	Ethyl benzene	mg/L	0.001	0.002	2
	Fluoride	mg/L	0.5	0.4	0.4
	Lead	mg/L	0.002	0.004	0.001
	Manganese	mg/L	0.24	0.333	895
	Mercury	mg/L	0.0001	0.0001	0.0001
	Nickel	mg/L	0.017	0.006	0.002
	Organochlorine pesticides	mg/L	0.01	0.002	2
	Organophosphate pesticides	mg/L	0.02	0.002	2
	PAHs	mg/L	0.001	0.0005	1
	PCBs	mg/L	0.001	0.001	1
	Phenols	mg/L	0.1	0.002	1
	Selenium	mg/L	0.001	0.01	0.01
	Toluene	mg/L	0.001	0.002	2
	Total Petroleum hydrocarbons	mg/L	0.1	0.05	100
	Xylene	mg/L	0.003	0.002	1
	Zinc	mg/L	0.24	0.02	0.008

BH9B - EPL Monitoring Point 8												
Monitoring Frequency	**Pollutant**	**Unit**	**Feb-20**	**May-20**	**Aug-20**	**Nov-20**	**Feb-21**	**May-21**	**Aug-21**	**Nov-21**	**Feb/Mar-22**	**May/Jun-22**
Quarterly	Ammonia (as N)	mg/L	0.006	0.02	0.03	0.05	0.03	0.02	0.05	0.03	0.01	0.02
	Bicarbonate Alkalinity (as CaCO3)	mg/L	160	500	200	250	260	290	399	260	154	137
	Calcium	mg/L	29	91	53	48	64	54	83	64	21	9
	Carbonate Alkalinity (as CaCO3)	mg/L	10	10	10	10	10	10	1	10	1	1
	Chloride	mg/L	4000	7200	5300	4300	5600	4200	6410	5600	2590	1880
	Hydroxide Alkalinity (as CaCO3)	mg/L	20	20	20	20	20	20	1	20	1	1
	Magnesium	mg/L	370	980	590	560	700	480	694	700	270	182
	Nitrate & Nitrite (as N)	mg/L	5.8	0.21	0.62	0.37	0.06	0.05	0.01	0.06	0.05	0.09
	Nitrate (as N)	mg/L	5.8	0.21	0.6	0.37	0.06	0.04	0.01	0.06	0.05	0.09
	Nitrite (as N)	mg/L	0.02	0.02	0.02	0.02	0.02	0.02	0.01	0.02	0.01	0.01
	Phosphate total (as P)	mg/L	0.14	0.05	0.06	0.01	0.1	0.16	9.01	0.1	0.05	0.09
	Potassium	mg/L	6.3	15	8.9	12.5	11	8.5	11	11	6	4
	Sodium	mg/L	1900	3400	2300	2500	2800	2100	2780	2800	1410	1040
	Sulphate (as SO4)	mg/L	670	1500	850	650	1100	650	997	1100	424	334
	Total Alkalinity (as CaCO3)	mg/L	160	500	200	250	260	290	399	260	154	137
	Total Dissolved Solids	mg/L	6900	6200	9000	7300	8700	6300	15000	8700	5620	3940
	Total Organic Carbon	mg/L	27	21	55	5	5	8.2	1	5	12	14
	pH	pH	5.8	6.1	5.9	6.2	6.2	6.2	5.6	6.2	5.9	5.8
	Redox	mV	-238.8	91.3	32.5	31.5	44.4	87.6	6.9	44.4	124.3	100.7
	Standing Water Level	mAHD	48.9	48.3	48.8	49.5	47.1	50.0	46.1	47.1	52.4	50.9
	Temperature	°C	20.6	20.2	19.1	20.5	20.1	20.1	19.4	20.1	21.5	18.6

BH9B - EPL Monitoring Point 8												
Monitoring Frequency	**Pollutant**	**Unit**	**Aug-22**	**Nov-22**								
Quarterly	Ammonia (as N)	mg/L	0.03	0.1								
	Bicarbonate Alkalinity (as CaCO3)	mg/L	184	206								
	Calcium	mg/L	22	38								
	Carbonate Alkalinity (as CaCO3)	mg/L	1	1								
	Chloride	mg/L	3120	3910								
	Hydroxide Alkalinity (as CaCO3)	mg/L	1	1								
	Magnesium	mg/L	268	387								
	Nitrate & Nitrite (as N)	mg/L	0.01	0.01								
	Nitrate (as N)	mg/L	0.01	0.01								
	Nitrite (as N)	mg/L	0.01	0.01								
	Phosphate total (as P)	mg/L	0.05	0.12								
	Potassium	mg/L	6	7								
	Sodium	mg/L	1440	1920								
	Sulphate (as SO4)	mg/L	414	604								
	Total Alkalinity (as CaCO3)	mg/L	184	206								
	Total Dissolved Solids	mg/L	5570	8080								
	Total Organic Carbon	mg/L	6	5								
	pH	pH	6.6	6.1								
	Redox	mV	25.1	77.9								
	Standing Water Level	mAHD	48.9	47.6								
	Temperature	°C	19.1	19.8								

BH9B - EPL Monitoring Point 8					
Monitoring Frequency	**Pollutant**	**Unit**	**Aug-20**	**Aug-21**	**Aug-22**
Yearly	Aluminium	mg/L	0.05	83	0.01
	Arsenic	mg/L	0.001	0.049	0.001
	Barium	mg/L	0.04	0.88	0.057
	Benzene	mg/L	0.001	0.001	1
	Benzo(a)pyrene	mg/L	0.001	0.0005	0.5
	Cadmium	mg/L	0.0007	0.0014	0.0001
	Chromium (hexavalent)	mg/L	0.005	0.01	0.01
	Chromium (total)	mg/L	0.001	0.13	0.001
	Cobalt	mg/L	0.007	0.167	0.029
	Copper	mg/L	0.074	0.418	0.005
	Ethyl benzene	mg/L	0.001	0.002	2
	Fluoride	mg/L	0.7	0.3	0.5
	Lead	mg/L	0.003	0.244	0.001
	Manganese	mg/L	1.3	11.4	2.52
	Mercury	mg/L	0.0001	0.0005	0.0001
	Nickel	mg/L	0.038	0.256	0.027
	Organochlorine pesticides	mg/L	0.01	0.002	2
	Organophosphate pesticides	mg/L	0.02	0.002	2
	PAHs	mg/L	0.001	0.0005	1
	PCBs	mg/L	0.001	0.001	1
	Phenols	mg/L	0.1	0.002	1
	Selenium	mg/L	0.002	0.1	0.01
	Toluene	mg/L	0.001	0.002	2
	Total Petroleum hydrocarbons	mg/L	0.1	0.05	100
	Xylene	mg/L	<0.003	0.002	2
	Zinc	mg/L	0.24	1.22	0.036

1300 424 646
enquiries@bingoindustries.com.au
www.bingoindustries.com.au

BH10A - EPL Monitoring Point 9												
Monitoring Frequency	**Pollutant**	**Unit**	**Feb-20**	**May-20**	**Aug-20**	**Nov-20**	**Feb-21**	**May-21**	**Aug-21**	**Nov-21**	**Feb/Mar-22**	**May/Jun-22**
Quarterly	Ammonia (as N)	mg/L	0.3	0.25	0.21	0.24	0.49	0.03	0.12	0.49	0.25	0.35
	Bicarbonate Alkalinity (as CaCO3)	mg/L	1100	1200	1000	1100	1000	1200	1010	1000	972	804
	Calcium	mg/L	310	300	390	340	450	430	304	450	323	285
	Carbonate Alkalinity (as CaCO3)	mg/L	10	10	10	10	10	10	1	10	1	1
	Chloride	mg/L	11000	9600	10000	9400	8900	9400	8760	8900	9130	8490
	Hydroxide Alkalinity (as CaCO3)	mg/L	20	20	20	20	20	20	1	20	1	1
	Magnesium	mg/L	1100	1000	1300	1200	1400	1300	928	1400	1080	980
	Nitrate & Nitrite (as N)	mg/L	0.05	0.05	0.05	0.05	0.05	0.05	0.01	0.05	0.01	0.01
	Nitrate (as N)	mg/L	0.02	0.02	0.02	0.02	0.02	0.02	0.01	0.02	0.01	0.01
	Nitrite (as N)	mg/L	0.02	0.02	0.02	0.02	0.03	0.02	0.01	0.03	0.01	0.01
	Phosphate total (as P)	mg/L	0.05	0.05	0.02	0.01	3.1	0.05	0.06	3.1	0.05	0.09
	Potassium	mg/L	29	34	34	33	43	36	31	43	33	28
	Sodium	mg/L	4700	4100	4900	5000	5500	4900	3890	5500	4280	4030
	Sulphate (as SO4)	mg/L	1500	1200	1200	970	1200	1100	1180	1200	1110	1090
	Total Alkalinity (as CaCO3)	mg/L	1100	1200	1000	1100	1000	1200	1010	1000	972	804
	Total Dissolved Solids	mg/L	19000	6600	14000	15000	20000	14000	18200	20000	19400	16200
	Total Organic Carbon	mg/L	5	11	89	5	5	12	3	5	4	8
	pH	pH	6.2	6.5	6.48	6.6	6.4	6.4	6.3	6.4	6.6	6.5
	Redox	mV	-391.0	-85.2	-47.7	-59.0	53.9	20.0	74.1	53.9	90.3	12.1
	Standing Water Level	mAHD	43.7	44.2	44.153	44.0	44.0	44.3	43.9	44.0	44.8	45.2
	Temperature	°C	19.2	19.8	19	19.9	19.7	19.2	19.1	19.7	19.6	18.6

BH10A - EPL Monitoring Point 9												
Monitoring Frequency	**Pollutant**	**Unit**	**Aug-22**	**Nov-22**								
Quarterly	Ammonia (as N)	mg/L	0.26	0.29								
	Bicarbonate Alkalinity (as CaCO3)	mg/L	1000	901								
	Calcium	mg/L	325	286								
	Carbonate Alkalinity (as CaCO3)	mg/L	1	1								
	Chloride	mg/L	9280	8040								
	Hydroxide Alkalinity (as CaCO3)	mg/L	1	1								
	Magnesium	mg/L	1040	913								
	Nitrate & Nitrite (as N)	mg/L	0.01	0.04								
	Nitrate (as N)	mg/L	0.01	0.04								
	Nitrite (as N)	mg/L	0.01	0.01								
	Phosphate total (as P)	mg/L	0.05	0.05								
	Potassium	mg/L	36	29								
	Sodium	mg/L	4220	3900								
	Sulphate (as SO4)	mg/L	1200	1110								
	Total Alkalinity (as CaCO3)	mg/L	1000	901								
	Total Dissolved Solids	mg/L	18100	17500								
	Total Organic Carbon	mg/L	12	5								
	pH	pH	6.6	7.4								
	Redox	mV	11.9	7.2								
	Standing Water Level	mAHD	45.0	45.0								
	Temperature	°C	19.3	20.8								

BH10A - EPL Monitoring Point 9					
Monitoring Frequency	**Pollutant**	**Unit**	**Aug-20**	**Aug-21**	**Aug-22**
Yearly	Aluminium	mg/L	0.05	0.88	0.01
	Arsenic	mg/L	0.002	0.024	0.001
	Barium	mg/L	0.04	0.042	0.044
	Benzene	mg/L	0.001	0.001	1
	Benzo(a)pyrene	mg/L	0.001	0.0005	0.5
	Cadmium	mg/L	0.0008	0.0001	0.0001
	Chromium (hexavalent)	mg/L	0.005	0.01	0.01
	Chromium (total)	mg/L	0.001	0.002	0.001
	Cobalt	mg/L	0.003	0.004	0.005
	Copper	mg/L	0.11	0.008	0.004
	Ethyl benzene	mg/L	0.001	0.002	2
	Fluoride	mg/L	1	0.4	0.4
	Lead	mg/L	0.006	0.004	0.001
	Manganese	mg/L	0.82	0.821	0.845
	Mercury	mg/L	0.0001	0.0001	0.0001
	Nickel	mg/L	0.016		0.006
	Organochlorine pesticides	mg/L	0.01	0.01	2
	Organophosphate pesticides	mg/L	0.02	0.002	2
	PAHs	mg/L	0.001	0.002	1
	PCBs	mg/L	0.001	0.001	1
	Phenols	mg/L	0.1	0.001	1
	Selenium	mg/L	0.002	0.002	0.01
	Toluene	mg/L	0.001	0.01	2
	Total Petroleum hydrocarbons	mg/L	0.1	0.05	100
	Xylene	mg/L	0.003	0.002	2
	Zinc	mg/L	0.15	0.033	0.03

BH10B - EPL Monitoring Point 10												
Monitoring Frequency	**Pollutant**	**Unit**	**Feb-20**	**May-20**	**Aug-20**	**Nov-20**	**Feb-21**	**May-21**	**Aug-21**	**Nov-21**	**Feb/Mar-22**	**May/Jun-22**
Quarterly	Ammonia (as N)	mg/L	0.1	0.1	0.05	0.01	0.01	0.01	0.1	0.01	0.17	0.1
	Bicarbonate Alkalinity (as CaCO3)	mg/L	1200	1100	840	1200	900	1200	958	900	1000	570
	Calcium	mg/L	210	200	260	270	200	340	255	200	236	118
	Carbonate Alkalinity (as CaCO3)	mg/L	10	10	10	10	10	10	1	10	1	1
	Chloride	mg/L	12000	11000	12000	12000	11000	11000	10900	11000	11000	9630
	Hydroxide Alkalinity (as CaCO3)	mg/L	20	20	20	20	20	20	1	20	1	1
	Magnesium	mg/L	1400	1600	2000	2000	1800	2000	1590	1800	1670	1530
	Nitrate & Nitrite (as N)	mg/L	0.87	1.8	1.1	0.13	0.77	0.18	0.01	0.77	0.19	2.7
	Nitrate (as N)	mg/L	0.78	1.6	0.98	0.13	0.75	0.18	0.01	0.75	0.01	2.31
	Nitrite (as N)	mg/L	0.1	0.22	0.13	0.02	0.03	0.02	0.01	0.03	0.18	0.39
	Phosphate total (as P)	mg/L	0.05	0.05	0.01	0.01	0.02	0.02	0.05	0.02	0.05	0.11
	Potassium	mg/L	49	60	65	57	58	57	47	58	51	50
	Sodium	mg/L	5500	5200	4800	6500	6300	6000	4850	6300	5180	4780
	Sulphate (as SO4)	mg/L	2700	1600	2000	2300	2900	2700	2670	2900	2580	2730
	Total Alkalinity (as CaCO3)	mg/L	1200	1100	840	1200	900	1200	958	900	1000	570
	Total Dissolved Solids	mg/L	22000	9100	20000	20000	22000	20000	25400	22000	26000	21000
	Total Organic Carbon	mg/L	7.5	26	71	36	5	5	2	5	2	6
	pH	pH	6.37	6.34	7.26	6.5	6.5	6.4	6.3	6.5	6.4	6.4
	Redox	mV	94.4	87.8	-138.6	47.4	59.2	35.4	105.5	59.2	104.6	142.7
	Standing Water Level	mAHD	43.728	44.348	43.878	44.0	44.0	45.3	44.9	44.0	44.1	44.9
	Temperature	°C	20.2	21.3	18.6	19.1	20.1	19.5	18.4	20.1	19.8	17.3

BH10B - EPL Monitoring Point 10												
Monitoring Frequency	**Pollutant**	**Unit**	**Aug-22**	**Nov-22**								
Quarterly	Ammonia (as N)	mg/L	0.1	Well Damaged - Unable to obtain sample.								
	Bicarbonate Alkalinity (as CaCO3)	mg/L	387									
	Calcium	mg/L	142									
	Carbonate Alkalinity (as CaCO3)	mg/L	1									
	Chloride	mg/L	9280									
	Hydroxide Alkalinity (as CaCO3)	mg/L	1									
	Magnesium	mg/L	1090									
	Nitrate & Nitrite (as N)	mg/L	0.41									
	Nitrate (as N)	mg/L	0.4									
	Nitrite (as N)	mg/L	0.01									
	Phosphate total (as P)	mg/L	0.1									
	Potassium	mg/L	55									
	Sodium	mg/L	4690									
	Sulphate (as SO4)	mg/L	2910									
	Total Alkalinity (as CaCO3)	mg/L	387									
	Total Dissolved Solids	mg/L	19600									
	Total Organic Carbon	mg/L	24									
	pH	pH	6.6									
	Redox	mV	117.5									
	Standing Water Level	mAHD	45.4									
	Temperature	°C	18.4									

BH10B - EPL Monitoring Point 10					
Monitoring Frequency	**Pollutant**	**Unit**	**Aug-20**	**Aug-21**	**Aug-22**
Yearly	Aluminium	mg/L	0.05	0.91	0.01
	Arsenic	mg/L	0.001	0.015	0.001
	Barium	mg/L	0.05	0.048	0.031
	Benzene	mg/L	0.001	1	1
	Benzo(a)pyrene	mg/L	0.001	0.5	0.5
	Cadmium	mg/L	0.0009	0.0002	0.0023
	Chromium (hexavalent)	mg/L	0.005	0.01	0.01
	Chromium (total)	mg/L	0.001	0.003	0.001
	Cobalt	mg/L	0.19	0.02	0.04
	Copper	mg/L	0.098	0.011	0.004
	Ethyl benzene	mg/L	0.001	2	2
	Fluoride	mg/L	0.9	0.6	0.6
	Lead	mg/L	0.002	0.003	0.004
	Manganese	mg/L	2.4	1.82	8.57
	Mercury	mg/L	0.0001	0.0001	0.0001
	Nickel	mg/L	0.044	0.082	0.111
	Organochlorine pesticides	mg/L	0.01	0.002	2
	Organophosphate pesticides	mg/L	0.02	0.002	2
	PAHs	mg/L	0.001	0.001	1
	PCBs	mg/L	0.001	0.001	1
	Phenols	mg/L	0.1	0.002	1
	Selenium	mg/L	0.002	0.01	0.01
	Toluene	mg/L	0.001	0.002	16
	Total Petroleum hydrocarbons	mg/L	0.01	0.05	100
	Xylene	mg/L	0.003	0.002	2
	Zinc	mg/L	0.1	0.046	0.026

BH11A - EPL Monitoring Point 11												
Monitoring Frequency	**Pollutant**	**Unit**	**Feb-20**	**May-20**	**Aug-20**	**Nov-20**	**Feb-21**	**May-21**	**Aug-21**	**Nov-21**	**Feb/Mar-22**	**May/Jun-22**
Quarterly	Ammonia (as N)	mg/L	2.2	3	1.5	2.6	2.7	0.53	2.22	2.7	1.72	1.95
	Bicarbonate Alkalinity (as CaCO3)	mg/L	1100	1200	850	840	840	880	928	840	805	821
	Calcium	mg/L	420	370	400	420	530	530	436	530	463	395
	Carbonate Alkalinity (as CaCO3)	mg/L	10	10	10	10	10	10	1	10	1	1
	Chloride	mg/L	13000	10000	13000	22000	11000	11000	10800	11000	11400	10500
	Hydroxide Alkalinity (as CaCO3)	mg/L	20	20	20	20	20	20	1	20	1	1
	Magnesium	mg/L	1300	740	1300	1500	1600	1500	1310	1600	1430	1460
	Nitrate & Nitrite (as N)	mg/L	0.05	0.05	0.05	0.05	0.05	0.05	0.04	0.05	0.54	0.17
	Nitrate (as N)	mg/L	0.02	0.02	0.02	0.02	0.02	0.02	0.04	0.02	0.08	0.16
	Nitrite (as N)	mg/L	0.02	0.02	0.02	0.02	0.02	0.02	0.01	0.02	0.62	0.01
	Phosphate total (as P)	mg/L	0.02	0.05	0.02	0.02	0.02	0.02	0.05	0.02	0.05	0.24
	Potassium	mg/L	36	42	23	34	35	36	33	35	33	27
	Sodium	mg/L	4900	4100	4800	5800	6200	5400	4610	6200	5300	4960
	Sulphate (as SO4)	mg/L	1700	330	1500	1500	1900	1700	1710	1900	1710	1670
	Total Alkalinity (as CaCO3)	mg/L	1100	1200	850	840	840	880	928	840	805	821
	Total Dissolved Solids	mg/L	25000	13000	20000	17000	23000	16000	23400	23000	24800	21200
	Total Organic Carbon	mg/L	11	40	110	5	5	28	3	5	3	8
	pH	pH	6.4	6.5	587	6.5	6.6	6.3	6.3	6.6	6.6	6.2
	Redox	mV	-118	-165.8	-78.2	-76.4	-87.4	-19.3	-35.3	-87.4	-19.9	7.7
	Standing Water Level	mAHD	32.268	30.6	30.778	34.2	32.3	36.4	36.3	32.3	33.7	32.0
	Temperature	°C	20	19.1	18.9	19.2	19.6	19.3	18.2	19.6	20.9	18.7

BH11A - EPL Monitoring Point 11												
Monitoring Frequency	**Pollutant**	**Unit**	**Aug-22**	**Nov-22**								
Quarterly	Ammonia (as N)	mg/L	0.4	0.27								
	Bicarbonate Alkalinity (as CaCO3)	mg/L	66	109								
	Calcium	mg/L	92	96								
	Carbonate Alkalinity (as CaCO3)	mg/L	1	1								
	Chloride	mg/L	10800	9280								
	Hydroxide Alkalinity (as CaCO3)	mg/L	1	1								
	Magnesium	mg/L	1140	934								
	Nitrate & Nitrite (as N)	mg/L	0.01	0.07								
	Nitrate (as N)	mg/L	0.01	0.05								
	Nitrite (as N)	mg/L	0.02	0.02								
	Phosphate total (as P)	mg/L	0.05	0.05								
	Potassium	mg/L	5	5								
	Sodium	mg/L	4990	4430								
	Sulphate (as SO4)	mg/L	1420	1320								
	Total Alkalinity (as CaCO3)	mg/L	66	109								
	Total Dissolved Solids	mg/L	17600	19500								
	Total Organic Carbon	mg/L	17	9								
	pH	pH	5.4	5.6								
	Redox	mV	131.5	104.0								
	Standing Water Level	mAHD	33.4	35.4								
	Temperature	°C	19.1	23.2								

BH11A - EPL Monitoring Point 11					
Monitoring Frequency	**Pollutant**	**Unit**	**Aug-20**	**Aug-21**	**Aug-22**
Yearly	Aluminium	mg/L	0.05	0.28	0.01
	Arsenic	mg/L	0.002	0.026	0.001
	Barium	mg/L	9	0.064	0.043
	Benzene	mg/L	0.001	0.001	1
	Benzo(a)pyrene	mg/L	0.001	0.0005	0.5
	Cadmium	mg/L	0.0003	0.0001	0.0001
	Chromium (hexavalent)	mg/L	0.005	0.01	0.01
	Chromium (total)	mg/L	0.001	0.001	0.001
	Cobalt	mg/L	0.03	0.01	0.315
	Copper	mg/L	0.03	0.006	0.017
	Ethyl benzene	mg/L	0.001	0.002	2
	Fluoride	mg/L	1	0.8	0.1
	Lead	mg/L	0.001	0.001	0.001
	Manganese	mg/L	1.2	0.502	2.5
	Mercury	mg/L	0.0001	0.0001	0.0001
	Nickel	mg/L	0.033	0.072	0.161
	Organochlorine pesticides	mg/L	0.01	0.002	2
	Organophosphate pesticides	mg/L	0.02	0.002	2
	PAHs	mg/L	0.001	0.001	1
	PCBs	mg/L	0.001	0.001	1
	Phenols	mg/L	0.1	0.002	1
	Selenium	mg/L	0.002	0.01	0.01
	Toluene	mg/L	0.001	0.002	2
	Total Petroleum hydrocarbons	mg/L	0.1	0.05	100
	Xylene	mg/L	0.003	0.002	2
	Zinc	mg/L	0.11	0.036	0.246

BH11B - EPL Monitoring Point 12												
Monitoring Frequency	**Pollutant**	**Unit**	**Feb-20**	**May-20**	**Aug-20**	**Nov-20**	**Feb-21**	**May-21**	**Aug-21**	**Nov-21**	**Feb/Mar-22**	**May/Jun-22**
Quarterly	Ammonia (as N)	mg/L	0.19	0.22	0.13	0.19	0.17	0.09	0.04	0.17	0.2	0.15
	Bicarbonate Alkalinity (as CaCO3)	mg/L	87	80	120	60	64	73	62	64	67	51
	Calcium	mg/L	30	40	62	29	41	56	32	41	37	24
	Carbonate Alkalinity (as CaCO3)	mg/L	10	10	10	10	10	10	1	10	1	1
	Chloride	mg/L	9700	13000	16000	13000	13000	13000	11000	13000	12300	10300
	Hydroxide Alkalinity (as CaCO3)	mg/L	20	20	20	20	20	20	1	20	1	1
	Magnesium	mg/L	890	1500	2100	1600	2000	1800	1300	2000	1550	1320
	Nitrate & Nitrite (as N)	mg/L	3.6	0.05	0.05	0.05	0.07	0.07	0.01	0.07	0.01	0.01
	Nitrate (as N)	mg/L	2.8	0.02	0.02	0.03	0.06	0.07	0.01	0.06	0.01	0.01
	Nitrite (as N)	mg/L	0.7	0.02	0.02	0.02	0.02	0.02	0.01	0.02	0.01	0.01
	Phosphate total (as P)	mg/L	0.33	0.05	0.03	0.02	0.03	0.05	0.34	0.03	0.1	0.12
	Potassium	mg/L	5	9.4	5	3.3	3.3	5	3	3.3	2	2
	Sodium	mg/L	3900	5600	5100	6400	8100	6500	4930	8100	6160	4820
	Sulphate (as SO4)	mg/L	1200	1600	1500	1400	1900	1800	1560	1900	1690	1480
	Total Alkalinity (as CaCO3)	mg/L	87	80	120	60	64	73	62	64	67	51
	Total Dissolved Solids	mg/L	16000	8600	17000	19000	24000	12000	23300	24000	26000	19000
	Total Organic Carbon	mg/L	810	23	27	5	5	12	5	5	5	5
	pH	pH	5.51	5.38	5.66	5.1	5.3	5.1	5.0	5.3	5.6	5.2
	Redox	mV	-615.8	101.7	52.8	100.0	97.7	141.0	146.7	97.7	115.3	124.4
	Standing Water Level	mAHD	42.725	42.865	42.825	43.0	42.9	43.4	43.2	42.9	43.6	43.6
	Temperature	°C	20.7	19.6	18.4	18.8	20.1	19.5	18.3	20.1	19.7	18.0

BH11B - EPL Monitoring Point 12												
Monitoring Frequency	**Pollutant**	**Unit**	**Aug-22**	**Nov-22**								
Quarterly	Ammonia (as N)	mg/L	0.22	0.16								
	Bicarbonate Alkalinity (as CaCO3)	mg/L	48	112								
	Calcium	mg/L	21	46								
	Carbonate Alkalinity (as CaCO3)	mg/L	1	1								
	Chloride	mg/L	10500	11800								
	Hydroxide Alkalinity (as CaCO3)	mg/L	1	1								
	Magnesium	mg/L	6.6	1470								
	Nitrate & Nitrite (as N)	mg/L	0.01	0.01								
	Nitrate (as N)	mg/L	0.01	0.01								
	Nitrite (as N)	mg/L	0.01	0.01								
	Phosphate total (as P)	mg/L	0.05	0.18								
	Potassium	mg/L	2	3								
	Sodium	mg/L	4870	5970								
	Sulphate (as SO4)	mg/L	1160	1660								
	Total Alkalinity (as CaCO3)	mg/L	48	112								
	Total Dissolved Solids	mg/L	18400	26000								
	Total Organic Carbon	mg/L	13	6								
	pH	pH	5.5	6.8								
	Redox	mV	96.7	-50.1								
	Standing Water Level	mAHD	43.6	43.9								
	Temperature	°C	17.8	20.1								

BH11B - EPL Monitoring Point 12					
Monitoring Frequency	**Pollutant**	**Unit**	**Aug-20**	**Aug-21**	**Aug-22**
Yearly	Aluminium	mg/L	0.05	14.4	0.7
	Arsenic	mg/L	0.003	0.346	0.004
	Barium	mg/L	0.04	0.08	0.063
	Benzene	mg/L	0.001	0.001	1
	Benzo(a)pyrene	mg/L	0.001	0.0005	0.5
	Cadmium	mg/L	0.001	0.0004	0.0001
	Chromium (hexavalent)	mg/L	0.005	0.01	0.01
	Chromium (total)	mg/L	0.001	0.018	0.001
	Cobalt	mg/L	0.46	0.465	0.351
	Copper	mg/L	0.096	0.035	0.005
	Ethyl benzene	mg/L	0.001	0.002	2
	Fluoride	mg/L	0.5	0.3	0.6
	Lead	mg/L	0.005	0.026	0.005
	Manganese	mg/L	9.5	7.8	1170
	Mercury	mg/L	0.0001	0.0001	0.0001
	Nickel	mg/L	0.17	0.201	0.153
	Organochlorine pesticides	mg/L	0.01	0.002	2
	Organophosphate pesticides	mg/L	0.02	0.002	2
	PAHs	mg/L	0.001	0.001	1
	PCBs	mg/L	0.001	0.001	1
	Phenols	mg/L	0.1	0.002	1
	Selenium	mg/L	0.017	0.04	0.02
	Toluene	mg/L	0.001	0.002	2
	Total Petroleum hydrocarbons	mg/L	0.01	0.05	100
	Xylene	mg/L	0.003	0.002	2
	Zinc	mg/L	0.26	0.281	0.236

BH12A - EPL Monitoring Point 13												
Monitoring Frequency	**Pollutant**	**Unit**	**Feb-20**	**May-20**	**Aug-20**	**Nov-20**	**Feb-21**	**May-21**	**Aug-21**	**Nov-21**	**Feb/Mar-22**	**May/Jun-22**
Quarterly	Ammonia (as N)	mg/L	0.96	0.99	0.79	1	1.2	0.25	0.87	1.2	1.04	1.07
	Bicarbonate Alkalinity (as CaCO3)	mg/L	930	950	810	700	690	870	635	690	701	549
	Calcium	mg/L	320	330	360	370	480	420	343	480	354	299
	Carbonate Alkalinity (as CaCO3)	mg/L	10	10	10	10	10	10	1	10	1	1
	Chloride	mg/L	22000	14000	17000	19000	14000	14000	12400	14000	12700	12200
	Hydroxide Alkalinity (as CaCO3)	mg/L	20	20	20	20	20	20	1	20	1	1
	Magnesium	mg/L	1400	1500	1500	1700	1900	1700	1460	1900	1590	1540
	Nitrate & Nitrite (as N)	mg/L	0.05	0.05	0.05	0.05	0.05	0.05	0.01	0.05	0.01	0.08
	Nitrate (as N)	mg/L	0.02	0.04	0.05	0.02	0.02	0.02	0.01	0.02	0.01	0.08
	Nitrite (as N)	mg/L	0.02	0.02	0.02	0.02	0.02	0.02	0.01	0.02	0.01	0.01
	Phosphate total (as P)	mg/L	2.4	0.21	0.04	0.29	1.7	0.18	0.08	1.7	0.56	0.13
	Potassium	mg/L	16	17	14	18	26	17	16	26	15	14
	Sodium	mg/L	5700	6100	6600	7100	7900	6400	5560	7900	6420	5620
	Sulphate (as SO4)	mg/L	1300	1300	1200	1000	1300	1100	1180	1300	1130	1090
	Total Alkalinity (as CaCO3)	mg/L	930	950	810	700	690	870	635	690	701	549
	Total Dissolved Solids	mg/L	24000	8800	2500	22000	29000	22000	27000	29000	27500	23700
	Total Organic Carbon	mg/L	140	29	80	5	5	11	1	5	2	8
	pH	pH	6.37	6.45	6.91	6.5	6.5	6.5	6.4	6.5	6.6	6.5
	Redox	mV	-6.5	-9.4	-161.6	-13.7	-36.2	255.0	-2.3	-36.2	20.5	44.8
	Standing Water Level	mAHD	39.297	39.777	39.707	39.8	39.7	40.2	40.3	39.7	39.7	40.2
	Temperature	°C	19.5	18.5	15.8	19.2	19.3	18.8	18.4	19.3	18.8	17.4

BH12A - EPL Monitoring Point 13												
Monitoring Frequency	**Pollutant**	**Unit**	**Aug-22**	**Nov-22**								
Quarterly	Ammonia (as N)	mg/L	1.12	0.76								
	Bicarbonate Alkalinity (as CaCO3)	mg/L	698	689								
	Calcium	mg/L	345	350								
	Carbonate Alkalinity (as CaCO3)	mg/L	1	1								
	Chloride	mg/L	13200	12500								
	Hydroxide Alkalinity (as CaCO3)	mg/L	1	1								
	Magnesium	mg/L	1450	1500								
	Nitrate & Nitrite (as N)	mg/L	0.11	0.13								
	Nitrate (as N)	mg/L	0.11	0.13								
	Nitrite (as N)	mg/L	0.01	0.01								
	Phosphate total (as P)	mg/L	0.14	0.11								
	Potassium	mg/L	15	15								
	Sodium	mg/L	5860	6220								
	Sulphate (as SO4)	mg/L	831	1110								
	Total Alkalinity (as CaCO3)	mg/L	698	689								
	Total Dissolved Solids	mg/L	25300	27600								
	Total Organic Carbon	mg/L	10	2								
	pH	pH	6.6	6.6								
	Redox	mV	12.4	19.1								
	Standing Water Level	mAHD	40.2	40.2								
	Temperature	°C	18.1	18.3								

BH12A - EPL Monitoring Point 13					
Monitoring Frequency	**Pollutant**	**Unit**	**Aug-20**	**Aug-21**	**Aug-22**
Yearly	Aluminium	mg/L	0.05	2.68	0.01
	Arsenic	mg/L	0.001	0.044	0.001
	Barium	mg/L	0.04	0.101	0.048
	Benzene	mg/L	0.001	0.001	1
	Benzo(a)pyrene	mg/L	0.001	0.0005	0.5
	Cadmium	mg/L	0.0003	0.0001	0.0001
	Chromium (hexavalent)	mg/L	0.005	0.01	0.01
	Chromium (total)	mg/L	0.001	0.004	0.001
	Cobalt	mg/L	0.015	0.018	0.017
	Copper	mg/L	0.043	0.023	0.005
	Ethyl benzene	mg/L	0.001	0.002	2
	Fluoride	mg/L	0.05	0.3	0.3
	Lead	mg/L	0.001	0.009	0.001
	Manganese	mg/L	1.4	1.27	1.41
	Mercury	mg/L	0.0001	0.0001	0.0001
	Nickel	mg/L	0.027	0.025	0.024
	Organochlorine pesticides	mg/L	0.01	0.002	2
	Organophosphate pesticides	mg/L	0.02	0.002	2
	PAHs	mg/L	0.001	0.001	1
	PCBs	mg/L	0.001	0.001	1
	Phenols	mg/L	0.1	0.002	1
	Selenium	mg/L	0.002	0.01	0.01
	Toluene	mg/L	0.001	0.002	2
	Total Petroleum hydrocarbons	mg/L	<0.1	0.05	100
	Xylene	mg/L	0.003	0.002	2
	Zinc	mg/L	0.067	0.058	0.052

BH12B - EPL Monitoring Point 14												
Monitoring Frequency	**Pollutant**	**Unit**	**Feb-20**	**May-20**	**Aug-20**	**Nov-20**	**Feb-21**	**May-21**	**Aug-21**	**Nov-21**	**Feb/Mar-22**	**May/Jun-22**
Quarterly	Ammonia (as N)	mg/L	0.05	0.04	0.01	0.02	0.03	0.05	0.01	0.03	0.07	0.24
	Bicarbonate Alkalinity (as CaCO3)	mg/L	380	630	540	630	770	890	739	770	840	755
	Calcium	mg/L	120	150	140	210	190	160	179	190	262	275
	Carbonate Alkalinity (as CaCO3)	mg/L	10	10	10	10	10	10	1	10	1	1
	Chloride	mg/L	470	300	100	75	89	640	156	89	101	153
	Hydroxide Alkalinity (as CaCO3)	mg/L	20	20	20	20	20	20	1	20	1	1
	Magnesium	mg/L	45	42	38	47	48	96	50	48	62	70
	Nitrate & Nitrite (as N)	mg/L	0.05	0.05	0.05	0.05	0.05	0.05	0.01	0.05	0.01	0.01
	Nitrate (as N)	mg/L	0.02	0.02	0.02	0.02	0.02	0.02	0.01	0.02	0.01	0.01
	Nitrite (as N)	mg/L	0.02	0.02	0.02	0.02	0.02	0.02	0.01	0.02	0.01	0.01
	Phosphate total (as P)	mg/L	0.08	0.05	0.02	0.03	0.02	0.12	0.08	0.02	0.05	0.1
	Potassium	mg/L	5	2.6	5	12.5	2.5	5	2	2.5	2	2
	Sodium	mg/L	300	210	97	150	150	420	146	150	115	136
	Sulphate (as SO4)	mg/L	340	150	130	100	160	130	162	160	141	399
	Total Alkalinity (as CaCO3)	mg/L	380	630	540	630	770	890	739	770	840	755
	Total Dissolved Solids	mg/L	1700	7900	790	960	1100	1700	1220	1100	1170	1550
	Total Organic Carbon	mg/L	370	32	47	5	10	18	12	10	18	22
	pH	pH	6.64	6.6	6.91	6.9	6.7	6.4	5.9	6.7	6.7	6.9
	Redox	mV	-518	-125.8	-161.6	-97.8	-3.3	-81.3	7.8	-3.3	-42.3	-106.8
	Standing Water Level	mAHD	45.0	47.9	48.4	48.6	46.8	48.5	49.1	46.8	48.6	48.5
	Temperature	°C	19.4	16.6	15.8	18.1	19.1	18.1	18.8	19.1	18.6	16.1

BH12B - EPL Monitoring Point 14

Monitoring Frequency	Pollutant	Unit	Aug-22	Nov-22								
Quarterly	Ammonia (as N)	mg/L	0.11	0.13								
	Bicarbonate Alkalinity (as CaCO3)	mg/L	715	762								
	Calcium	mg/L	304	249								
	Carbonate Alkalinity (as CaCO3)	mg/L	1	1								
	Chloride	mg/L	144	103								
	Hydroxide Alkalinity (as CaCO3)	mg/L	1	1								
	Magnesium	mg/L	73	64								
	Nitrate & Nitrite (as N)	mg/L	0.01	0.1								
	Nitrate (as N)	mg/L	0.01	0.1								
	Nitrite (as N)	mg/L	0.01	0.1								
	Phosphate total (as P)	mg/L	0.01	0.09								
	Potassium	mg/L	2	2								
	Sodium	mg/L	148	140								
	Sulphate (as SO4)	mg/L	433	348								
	Total Alkalinity (as CaCO3)	mg/L	715	762								
	Total Dissolved Solids	mg/L	1550	1460								
	Total Organic Carbon	mg/L	44	19								
	pH	pH	7.0	6.8								
	Redox	mV	-78.8	-115.2								
	Standing Water Level	mAHD	48.2	48.5								
	Temperature	°C	14.1	16.9								

BH12B - EPL Monitoring Point 14					
Monitoring Frequency	**Pollutant**	**Unit**	**Aug-20**	**Aug-21**	**Aug-22**
Yearly	Aluminium	mg/L	0.05	2.89	0.01
	Arsenic	mg/L	0.002	0.004	0.001
	Barium	mg/L	0.07	0.101	0.126
	Benzene	mg/L	0.001	0.001	1
	Benzo(a)pyrene	mg/L	0.001	0.0005	0.5
	Cadmium	mg/L	0.0002	0.0001	0.0001
	Chromium (hexavalent)	mg/L	0.005	0.01	0.01
	Chromium (total)	mg/L	0.001	0.004	0.001
	Cobalt	mg/L	0.004	0.016	0.009
	Copper	mg/L	0.095	0.015	0.001
	Ethyl benzene	mg/L	0.001	0.002	2
	Fluoride	mg/L	0.6	0.2	0.3
	Lead	mg/L	0.001	0.008	0.001
	Manganese	mg/L	1.2	2.47	5.25
	Mercury	mg/L	0.0001	0.0001	0.0001
	Nickel	mg/L	0.012	0.019	0.004
	Organochlorine pesticides	mg/L	0.01	0.002	2
	Organophosphate pesticides	mg/L	0.02	0.002	2
	PAHs	mg/L	0.001	0.001	1
	PCBs	mg/L	0.001	0.001	1
	Phenols	mg/L	0.1	0.002	1
	Selenium	mg/L	0.001	0.01	0.01
	Toluene	mg/L	0.001	0.002	2
	Total Petroleum hydrocarbons	mg/L	0.01	0.05	100
	Xylene	mg/L	0.003	0.002	2
	Zinc	mg/L	0.072	0.054	0.005

BH13A - EPL Monitoring Point 15												
Monitoring Frequency	**Pollutant**	**Unit**	**Feb-20**	**May-20**	**Aug-20**	**Nov-20**	**Feb-21**	**May-21**	**Aug-21**	**Nov-21**	**Feb/Mar-22**	**May/Jun-22**
Quarterly	Ammonia (as N)	mg/L	0.21	0.46	0.29	0.39	0.55	0.32	0.36	0.55	0.43	0.42
	Bicarbonate Alkalinity (as CaCO3)	mg/L	690	630	500	600	460	560	504	460	437	451
	Calcium	mg/L	270	270	250	270	310	390	221	310	235	184
	Carbonate Alkalinity (as CaCO3)	mg/L	10	10	10	10	10	10	1	10	1	1
	Chloride	mg/L	15000	14000	14000	27000	11000	12000	10800	11000	11000	10300
	Hydroxide Alkalinity (as CaCO3)	mg/L	20	20	20	20	20	20	1	20	1	1
	Magnesium	mg/L	1100	1100	970	1200	1200	1400	950	1200	1080	1160
	Nitrate & Nitrite (as N)	mg/L	1	0.05	0.18	0.03	0.16	0.05	0.03	0.16	0.01	0.01
	Nitrate (as N)	mg/L	0.72	0.03	0.13	0.09	0.1	0.02	0.03	0.1	0.01	0.01
	Nitrite (as N)	mg/L	0.32	0.03	0.06	0.21	0.06	0.02	0.01	0.06	0.01	0.01
	Phosphate total (as P)	mg/L	2	1.8	0.42	0.46	0.02	0.47	2.34	0.02	0.18	0.13
	Potassium	mg/L	16	16	10	16	17	23	10	17	10	8
	Sodium	mg/L	5300	5400	4600	6000	6100	6500	4830	6100	5220	5040
	Sulphate (as SO4)	mg/L	370	400	300	300	380	370	361	380	361	368
	Total Alkalinity (as CaCO3)	mg/L	690	630	500	600	460	560	504	460	437	451
	Total Dissolved Solids	mg/L	24000	17000	17000	17000	22000	15000	20400	22000	24100	19600
	Total Organic Carbon	mg/L	5	22	14	5	5	5.3	3	5	2	4
	pH	pH	5.98	6.3	6.55	6.4	6.3	6.3	5.6	6.3	6.4	6.4
	Redox	mV	54.4	13.9	-50.5	4.5	48.8	-17.1	121.8	48.8	-31.4	26.7
	Standing Water Level	mAHD	34.744	35.144	35.582	35.4	35.3	35.4	35.1	35.3	35.2	35.4
	Temperature	°C	19.3	18.3	18.6	19.1	19.2	19.3	18.5	19.2	18.8	17.7

1300 424 646
enquiries@bingoindustries.com.au
www.bingoindustries.com.au

BH13A - EPL Monitoring Point 15												
Monitoring Frequency	**Pollutant**	**Unit**	**Aug-22**	**Nov-22**								
Quarterly	Ammonia (as N)	mg/L	0.36	0.31								
	Bicarbonate Alkalinity (as CaCO3)	mg/L	426	433								
	Calcium	mg/L	220	232								
	Carbonate Alkalinity (as CaCO3)	mg/L	1	1								
	Chloride	mg/L	11300	10800								
	Hydroxide Alkalinity (as CaCO3)	mg/L	1	1								
	Magnesium	mg/L	1020	1080								
	Nitrate & Nitrite (as N)	mg/L	0.01	0.02								
	Nitrate (as N)	mg/L	0.01	0.02								
	Nitrite (as N)	mg/L	0.01	0.01								
	Phosphate total (as P)	mg/L	0.05	0.08								
	Potassium	mg/L	10	10								
	Sodium	mg/L	5100	5320								
	Sulphate (as SO4)	mg/L	369	383								
	Total Alkalinity (as CaCO3)	mg/L	426	433								
	Total Dissolved Solids	mg/L	21200	25800								
	Total Organic Carbon	mg/L	8	2								
	pH	pH	6.4	6.4								
	Redox	mV	22.1	1.9								
	Standing Water Level	mAHD	35.4	35.2								
	Temperature	°C	18.4	18.8								

BH13A - EPL Monitoring Point 15					
Monitoring Frequency	**Pollutant**	**Unit**	**Aug-20**	**Aug-21**	**Aug-22**
Yearly	Aluminium	mg/L	0.05	27.8	0.01
	Arsenic	mg/L	0.001	0.094	0.001
	Barium	mg/L	0.13	0.683	0.104
	Benzene	mg/L	0.001	0.001	1
	Benzo(a)pyrene	mg/L	0.001	0.0005	1
	Cadmium	mg/L	0.0003	0.0005	0.0001
	Chromium (hexavalent)	mg/L	0.005	0.01	0.01
	Chromium (total)	mg/L	0.001	0.059	0.001
	Cobalt	mg/L	0.02	0.124	0.033
	Copper	mg/L	0.075	0.292	0.005
	Ethyl benzene	mg/L	0.001	0.002	2
	Fluoride	mg/L	0.6	0.2	0.4
	Lead	mg/L	0.002	0.167	0.001
	Manganese	mg/L	4.5	8.35	5.12
	Mercury	mg/L	0.0001	0.0003	0.0001
	Nickel	mg/L	0.021	0.142	0.014
	Organochlorine pesticides	mg/L	0.01	0.002	2
	Organophosphate pesticides	mg/L	0.02	0.002	2
	PAHs	mg/L	0.001	0.001	1
	PCBs	mg/L	0.001	0.001	1
	Phenols	mg/L	0.1	0.002	2
	Selenium	mg/L	0.002	0.03	0.01
	Toluene	mg/L	0.001	0.002	2
	Total Petroleum hydrocarbons	mg/L	0.1	0.05	100
	Xylene	mg/L	0.003	0.002	2
	Zinc	mg/L	0.11	0.572	7

BH13B – EPL Monitoring Point 16												
Monitoring Frequency	**Pollutant**	**Unit**	**Feb-20**	**May-20**	**Aug-20**	**Nov-20**	**Feb-21**	**May-21**	**Aug-21**	**Nov-21**	**Feb/Mar-22**	**May/Jun-22**
Quarterly	Ammonia (as N)	mg/L	0.01	0.02	0.01	0.01	0.02	0.02	0.01	0.02	0.01	0.01
	Bicarbonate Alkalinity (as CaCO3)	mg/L	26	44	20	20	20	20	5	20	10	8
	Calcium	mg/L	5	4.6	5	12.5	1.8	11	2	1.8	2	1
	Carbonate Alkalinity (as CaCO3)	mg/L	10	10	10	10	10	10	1	10	1	1
	Chloride	mg/L	1200	710	490	690	920	810	611	920	249	268
	Hydroxide Alkalinity (as CaCO3)	mg/L	20	20	20	20	20	20	1	20	1	1
	Magnesium	mg/L	47	29	14	23	34	50	21	34	6	6
	Nitrate & Nitrite (as N)	mg/L	1.1	1.4	1.6	1.4	0.66	0.82	1.2	0.66	1.03	0.68
	Nitrate (as N)	mg/L	1.1	1.4	1.6	1.4	0.66	0.82	1.2	0.66	1.03	0.68
	Nitrite (as N)	mg/L	0.02	0.02	0.02	0.02	0.02	0.02	0.01	0.02	0.01	0.01
	Phosphate total (as P)	mg/L	0.03	0.05	0.02	0.02	0.02	0.04	0.07	0.02	0.02	0.02
	Potassium	mg/L	5	1.4	5	12.5	0.7	5	1	0.7	1	1
	Sodium	mg/L	660	480	300	470	600	530	365	600	159	164
	Sulphate (as SO4)	mg/L	150	130	120	140	150	140	148	150	51	50
	Total Alkalinity (as CaCO3)	mg/L	26	44	20	20	20	20	5	20	10	8
	Total Dissolved Solids	mg/L	2300	1000	960	1300	1000	1700	1260	1000	561	556
	Total Organic Carbon	mg/L	21	5	5	5	5	5	3	5	4	2
	pH	pH	5.59	5.17	5.18	4.7	4.8	4.7	4.1	4.8	5.7	4.4
	Redox	mV	198.7	185.4	29.4	148.2	134.1	281.4	398.6	134.1	190.7	207.3
	Standing Water Level	mAHD	32.977	40.427	39.927	39.6	39.2	40.7	40.6	39.2	40.0	41.3
	Temperature	°C	22.1	15.9	17.5	18.2	19.1	19.3	16.4	19.1	21.7	16.3

BH13B – EPL Monitoring Point 16												
Monitoring Frequency	**Pollutant**	**Unit**	**Aug-22**	**Nov-22**								
Quarterly	Ammonia (as N)	mg/L	0.01	0.01								
	Bicarbonate Alkalinity (as CaCO3)	mg/L	6	10								
	Calcium	mg/L	1	1								
	Carbonate Alkalinity (as CaCO3)	mg/L	1	1								
	Chloride	mg/L	474	389								
	Hydroxide Alkalinity (as CaCO3)	mg/L	1	1								
	Magnesium	mg/L	13	9								
	Nitrate & Nitrite (as N)	mg/L	0.58	0.42								
	Nitrate (as N)	mg/L	0.58	0.42								
	Nitrite (as N)	mg/L	0.01	0.01								
	Phosphate total (as P)	mg/L	0.03	0.02								
	Potassium	mg/L	1	1								
	Sodium	mg/L	274	232								
	Sulphate (as SO4)	mg/L	84	55								
	Total Alkalinity (as CaCO3)	mg/L	6	10								
	Total Dissolved Solids	mg/L	844	766								
	Total Organic Carbon	mg/L	3	2								
	pH	pH	4.4	5.3								
	Redox	mV	404.8	120.2								
	Standing Water Level	mAHD	38.4	40.4								
	Temperature	°C	15.8	18.8								

BH13B - EPL Monitoring Point 16					
Monitoring Frequency	**Pollutant**	**Unit**	**Aug-20**	**Aug-21**	**Aug-22**
Yearly	Aluminium	mg/L	0.13	1.56	0.1
	Arsenic	mg/L	0.001	0.009	0.001
	Barium	mg/L	0.04	0.051	0.046
	Benzene	mg/L	0.001	0.001	1
	Benzo(a)pyrene	mg/L	0.001	0.0005	0.5
	Cadmium	mg/L	0.0002	0.0001	0.0001
	Chromium (hexavalent)	mg/L	0.005	0.01	0.01
	Chromium (total)	mg/L	0.001	0.003	0.001
	Cobalt	mg/L	0.009	0.013	0.007
	Copper	mg/L	0.078	0.007	0.007
	Ethyl benzene	mg/L	0.001	0.002	2
	Fluoride	mg/L	0.5	0.1	0.1
	Lead	mg/L	0.004	0.004	0.001
	Manganese	mg/L	0.25	0.224	0.086
	Mercury	mg/L	0.0001	0.0001	0.0001
	Nickel	mg/L	0.014	0.02	0.004
	Organochlorine pesticides	mg/L	0.01	0.002	2
	Organophosphate pesticides	mg/L	0.02	0.002	2
	PAHs	mg/L	0.001	0.001	1
	PCBs	mg/L	0.001	0.001	1
	Phenols	mg/L	0.1	0.002	2
	Selenium	mg/L	0.001	0.01	0.01
	Toluene	mg/L	0.001	0.002	2
	Total Petroleum hydrocarbons	mg/L	0.12	0.05	100
	Xylene	mg/L	0.003	0.002	2
	Zinc	mg/L	0.12	0.077	0.014

BH14A - EPL Monitoring Point 17												
Monitoring Frequency	**Pollutant**	**Unit**	**Feb-20**	**May-20**	**Aug-20**	**Nov-20**	**Feb-21**	**May-21**	**Aug-21**	**Nov-21**	**Feb/Mar-22**	**May/Jun-22**
Quarterly	Ammonia (as N)	mg/L	0.48	0.46	1.4	0.3	0.37	0.6	0.3	0.37	0.48	0.79
	Bicarbonate Alkalinity (as CaCO3)	mg/L	1400	1400	1100	1200	1100	1200	988	1100	573	716
	Calcium	mg/L	240	250	270	250	240	380	236	240	177	157
	Carbonate Alkalinity (as CaCO3)	mg/L	10	10	10	10	10	10	1	10	1	1
	Chloride	mg/L	8400	6900	8700	7600	7000	6900	6960	7000	6990	7140
	Hydroxide Alkalinity (as CaCO3)	mg/L	20	20	20	20	20	20	1	20	1	1
	Magnesium	mg/L	790	780	800	940	780	1100	678	780	716	645
	Nitrate & Nitrite (as N)	mg/L	0.05	0.05	0.05	0.08	0.05	0.05	0.03	0.05	0.01	0.01
	Nitrate (as N)	mg/L	0.02	0.04	0.05	0.08	0.02	0.02	0.03	0.02	0.01	0.01
	Nitrite (as N)	mg/L	0.02	0.02	0.02	0.02	0.02	0.02	0.01	0.02	0.01	0.01
	Phosphate total (as P)	mg/L	0.05	0.05	0.89	0.02	0.01	0.08	0.05	0.01	0.05	0.28
	Potassium	mg/L	26	30	35	31	26	38	26	26	22	24
	Sodium	mg/L	3700	3300	3500	4400	3600	4800	3260	3600	3840	3330
	Sulphate (as SO4)	mg/L	790	680	680	600	800	680	657	800	711	754
	Total Alkalinity (as CaCO3)	mg/L	1400	1400	1100	1200	1100	1200	988	1100	573	716
	Total Dissolved Solids	mg/L	16000	7300	12000	15000	12000	14000	14100	12000	15300	13700
	Total Organic Carbon	mg/L	30	5	120	5	6	5	3	6	21	12
	pH	pH	6.37	6.42	6.61	6.6	6.6	6.6	5.9	6.6	6.4	6.4
	Redox	mV	25.8	51.8	-180.5	21.8	24.7	-6.1	108.7	24.7	-6.6	-110.0
	Standing Water Level	mAHD	40.018	39.608	40.088	40.2	40.1	40.4	40.1	40.1	40.7	41.1
	Temperature	°C	20.6	20.6	18.5	19.9	20.3	19.6	19.3	20.3	20.4	18.9

BH14A - EPL Monitoring Point 17												
Monitoring Frequency	**Pollutant**	**Unit**	**Aug-22**	**Nov-22**								
Quarterly	Ammonia (as N)	mg/L	0.31	0.33								
	Bicarbonate Alkalinity (as CaCO3)	mg/L	809	998								
	Calcium	mg/L	187	208								
	Carbonate Alkalinity (as CaCO3)	mg/L	1	1								
	Chloride	mg/L	7640	6600								
	Hydroxide Alkalinity (as CaCO3)	mg/L	1	1								
	Magnesium	mg/L	758	637								
	Nitrate & Nitrite (as N)	mg/L	0.01	0.02								
	Nitrate (as N)	mg/L	0.01	0.02								
	Nitrite (as N)	mg/L	0.01	0.01								
	Phosphate total (as P)	mg/L	0.2	0.06								
	Potassium	mg/L	20	22								
	Sodium	mg/L	3880	3370								
	Sulphate (as SO4)	mg/L	757	772								
	Total Alkalinity (as CaCO3)	mg/L	809	998								
	Total Dissolved Solids	mg/L	14100	14100								
	Total Organic Carbon	mg/L	17	4								
	pH	pH	6.4	6.7								
	Redox	mV	5.9	-5.4								
	Standing Water Level	mAHD	40.9	40.9								
	Temperature	°C	17.3	19.1								

BH14A - EPL Monitoring Point 17					
Monitoring Frequency	**Pollutant**	**Unit**	**Aug-20**	**Aug-21**	**Aug-22**
Yearly	Aluminium	mg/L	0.05	0.26	0.01
	Arsenic	mg/L	0.001	0.001	0.001
	Barium	mg/L	0.08	0.043	0.088
	Benzene	mg/L	0.001	0.001	1
	Benzo(a)pyrene	mg/L	0.001	0.0005	0.5
	Cadmium	mg/L	0.0002	0.0001	0.0001
	Chromium (hexavalent)	mg/L	0.005	0.01	0.01
	Chromium (total)	mg/L	0.001	0.001	0.001
	Cobalt	mg/L	0.003	0.002	0.169
	Copper	mg/L	0.058	0.04	0.006
	Ethyl benzene	mg/L	0.001	0.002	2
	Fluoride	mg/L	0.5	0.2	0.4
	Lead	mg/L	0.001	0.001	0.001
	Manganese	mg/L	0.42	0.458	6.16
	Mercury	mg/L	0.0001	0.0001	0.0001
	Nickel	mg/L	0.048	0.018	0.09
	Organochlorine pesticides	mg/L	0.01	0.002	2
	Organophosphate pesticides	mg/L	0.02	0.002	2
	PAHs	mg/L	0.001	0.001	1
	PCBs	mg/L	0.001	0.001	1
	Phenols	mg/L	0.1	0.002	2
	Selenium	mg/L	0.001	0.01	0.01
	Toluene	mg/L	0.001	0.002	2
	Total Petroleum hydrocarbons	mg/L	0.3	0.05	100
	Xylene	mg/L	0.003	0.002	2
	Zinc	mg/L	0.13	0.029	0.078

	BH14B - EPL Monitoring Point 18											
Monitoring Frequency	**Pollutant**	**Unit**	**Feb-20**	**May-20**	**Aug-20**	**Nov-20**	**Feb-21**	**May-21**	**Aug-21**	**Nov-21**	**Feb/Mar-22**	**May/Jun-22**
Quarterly	Ammonia (as N)	mg/L	0.01	0.04	0.03	0.04	0.05	0.02	0.1	0.05	0.03	0.04
	Bicarbonate Alkalinity (as CaCO3)	mg/L	630	480	380	570	240	93	518	240	207	221
	Calcium	mg/L	120	110	92	130	79	86	115	79	67	54
	Carbonate Alkalinity (as CaCO3)	mg/L	10	10	10	10	10	10	1	10	1	1
	Chloride	mg/L	10000	9600	8800	11000	8800	10000	8910	8800	8220	8270
	Hydroxide Alkalinity (as CaCO3)	mg/L	20	20	20	20	20	20	1	20	1	1
	Magnesium	mg/L	760	730	4.3	850	690	940	718	690	793	725
	Nitrate & Nitrite (as N)	mg/L	0.21	0.1	0.05	0.05	0.05	0.05	0.01	0.05	0.02	0.08
	Nitrate (as N)	mg/L	0.21	0.1	0.03	0.02	0.02	0.02	0.01	0.02	0.02	0.08
	Nitrite (as N)	mg/L	0.02	0.02	0.02	0.02	0.02	0.02	0.01	0.02	0.01	0.01
	Phosphate total (as P)	mg/L	0.05	0.05	0.02	0.02	0.04	0.05	0.18	0.04	0.05	0.06
	Potassium	mg/L	5.9	6.3	5	12.5	5.3	6.7	5	5.3	5	3
	Sodium	mg/L	5300	4600	660	5100	4600	5600	4370	4600	4590	4030
	Sulphate (as SO4)	mg/L	850	870	3800	600	740	510	700	740	617	652
	Total Alkalinity (as CaCO3)	mg/L	630	480	380	570	240	93	518	240	207	221
	Total Dissolved Solids	mg/L	16000	9500	14000	18000	17000	11000	18000	17000	17400	15500
	Total Organic Carbon	mg/L	6.2	26	58	5	5	5	4	5	6	11
	pH	pH	5.99	5.95	6.17	6.1	5.9	5.4	5.7	5.9	5.8	5.9
	Redox	mV	56	92.1	-32.6	45.3	46.7	206.8	162.3	46.7	5.1	-1.8
	Standing Water Level	mAHD	38.943	38.673	38.603	39.4	38.9	40.0	40.0	38.9	39.7	40.7
	Temperature	°C	22.2	22.7	18.6	19.7	20.5	19.9	17.5	20.5	22.4	17.4

	BH14B - EPL Monitoring Point 18											
Monitoring Frequency	**Pollutant**	**Unit**	**Aug-22**	**Nov-22**								
Quarterly	Ammonia (as N)	mg/L	0.01	0.1								
	Bicarbonate Alkalinity (as CaCO3)	mg/L	456	516								
	Calcium	mg/L	111	118								
	Carbonate Alkalinity (as CaCO3)	mg/L	1	1								
	Chloride	mg/L	9210	9040								
	Hydroxide Alkalinity (as CaCO3)	mg/L	1	1								
	Magnesium	mg/L	747	786								
	Nitrate & Nitrite (as N)	mg/L	0.01	0.02								
	Nitrate (as N)	mg/L	0.01	0.01								
	Nitrite (as N)	mg/L	0.01	0.01								
	Phosphate total (as P)	mg/L	0.05	0.06								
	Potassium	mg/L	5	5								
	Sodium	mg/L	45440	4570								
	Sulphate (as SO4)	mg/L	770	784								
	Total Alkalinity (as CaCO3)	mg/L	456	516								
	Total Dissolved Solids	mg/L	16300	20900								
	Total Organic Carbon	mg/L	14	3								
	pH	pH	6.1	6.5								
	Redox	mV	57.2	48.0								
	Standing Water Level	mAHD	38.8	39.9								
	Temperature	°C	17.5	23.4								

BH14B - EPL Monitoring Point 18					
Monitoring Frequency	**Pollutant**	**Unit**	**Aug-20**	**Aug-21**	**Aug-22**
Yearly	Aluminium	mg/L	0.05	5.53	0.01
	Arsenic	mg/L	0.001	0.002	0.001
	Barium	mg/L	0.1	0.072	0.057
	Benzene	mg/L	0.001	0.001	1
	Benzo(a)pyrene	mg/L	0.001	0.0005	0.5
	Cadmium	mg/L	0.0005	0.0002	0.0002
	Chromium (hexavalent)	mg/L	0.005	0.01	0.01
	Chromium (total)	mg/L	0.001	0.009	0.001
	Cobalt	mg/L	0.12	0.117	0.136
	Copper	mg/L	0.071	0.067	0.004
	Ethyl benzene	mg/L	0.001	0.002	2
	Fluoride	mg/L	0.6	0.7	0.6
	Lead	mg/L	0.004	0.009	0.001
	Manganese	mg/L	570	4.75	6.5
	Mercury	mg/L	0.0001	0.0001	0.0001
	Nickel	mg/L	0.08	0.163	
	Organochlorine pesticides	mg/L	0.01	0.002	0.093
	Organophosphate pesticides	mg/L	0.02	0.002	2
	PAHs	mg/L	0.001	0.001	2
	PCBs	mg/L	0.001	0.001	1
	Phenols	mg/L	0.1	0.002	1
	Selenium	mg/L	0.002	0.01	2
	Toluene	mg/L	0.001	0.002	0.01
	Total Petroleum hydrocarbons	mg/L	0.1	0.05	2
	Xylene	mg/L	0.003	0.002	100
	Zinc	mg/L	0.15	0.801	2

Leachate sump riser - EPL monitoring point 20										
Monitoring Frequency	**Pollutant**	**Unit**	**Feb-20**	**May-20**	**Aug-20**	**Nov-20**	**Feb-21**	**May-21**	**Aug-21**	**Nov-21**
Quarterly	Electroconductivity	ms/cm	1419	5554	4809	4971	4632	N/A*	N/A*	3206
	pH	pH	7.29	8.15	7.15	8.08	7.8	N/A*	N/A*	8.56
	Standing Water Level	mAHD	27.76	26.62	26.8	27.71	28.36	N/A*	N/A*	N/A*

Monitoring Frequency	**Pollutant**	**Unit**	**Feb/Mar-22**	**May-22**	**Aug-22**	**Nov-22**				
Quarterly	Electroconductivity	ms/cm	N/A*	N/A*	N/A*	5878				
	pH	pH	N/A*	N/A*	N/A*	7.05				
	Standing Water Level	mAHD	N/A*	N/A*	N/A*	27.3				

* - N/A – not accessible

1300 424 646
enquiries@bingoindustries.com.au
www.bingoindustries.com.au

Leachate Dam Entry - EPL monitoring point 21										
Monitoring Frequency	**Pollutant**	**Unit**	**Feb-20**	**May-20**	**Aug-20**	**Nov-20**	**Feb-21**	**May-21**	**Aug-21**	**Nov-21**
Quarterly	Electroconductivity	ms/cm	1537	3014	3248	3870	3759	2938	Result to be verified	3847
	pH	pH	7.94	7.62	7.68	8.25	8.25	7.73	8.7	7.82
	Standing Water Level	mAHD	45.6	48.1	49.1	48.78	48.75	49.05	49	49.18

Monitoring Frequency	**Pollutant**	**Unit**	**Feb/Mar-22**	**May-22**	**Aug-22**	**Nov-22**				
Quarterly	Electroconductivity	ms/cm	2500	1954	2206	2.4				
	pH	pH	8.45	9.29	8.9	7.99				
	Standing Water Level	mAHD	49.27	49.18	49.1	49.05				

Leachate Annual Monitoring						
	Pollutant	**Unit**	**08/2020 Sump riser - EPL MP20**	**1/08/2020 dam entry - EPL MP21**	**08/2021 Sump riser - EPL MP20**	**08/2021 dam entry - EPL MP21**
Monitoring Frequency - Annual	Alkalinity (as CaCO3)	mg/L	1300	1200	Not Accessible	596
	Aluminium	mg/L	0.05	0.05	Not Accessible	0.17
	Arsenic	mg/L	0.007	0.01	Not Accessible	0.009
	Barium	mg/L	0.34	0.2	Not Accessible	0.131
	Benzene	mg/L	0.0001	0.001	Not Accessible	0.001
	Bicarbonate Alkalinity (as CaCO3)	mg/L	1300	1200	Not Accessible	583
	Biochemical Oxygen Demand	mg/L	110	160	Not Accessible	6
	Cadmium	mg/L	0.0003	0.0003	Not Accessible	<0.0001
	Calcium	mg/L	150	100	Not Accessible	75
	Chemical Oxygen Demand	mg/L	420	640	Not Accessible	257
	Chloride	mg/L	1000	590	Not Accessible	608
	Chromium (hexavalent)	mg/L	0.075	0.075	Not Accessible	<0.10
	Chromium (total)	mg/L	0.023	0.03	Not Accessible	0.020
	Cobalt	mg/L	0.002	0.03	Not Accessible	0.003
	Copper	mg/L	0.037	0.094	Not Accessible	0.007
	Ethyl benzene	mg/L	0.007	0.001	Not Accessible	0.002
	Fluoride	mg/L	0.8	0.6	Not Accessible	0.2
	Lead	mg/L	0.003	0.006	Not Accessible	0.001
	Magnesium	mg/L	91	72	Not Accessible	77
	Manganese	mg/L	0.51	0.18	Not Accessible	0.037
	Mercury	mg/L	0.0001	0.0001	Not Accessible	<0.0001
	Nickel	mg/L	0.022	0.025	Not Accessible	0.018
	Nitrate	mg/L	0.1	0.2	Not Accessible	37.8
	Nitrite (as N)	mg/L	0.1	0.2	Not Accessible	0.42
	Organochlorine pesticides	mg/L	0.01	0.01	Not Accessible	0.002
	Organophosphate pesticides	mg/L	0.02	0.02	Not Accessible	0.002
	Phenols	mg/L	0.1	0.01	Not Accessible	0.002
	Phosphate total (as P)	mg/L	0.29	0.5	Not Accessible	N/A
	Phosphorus (total as P)	Mg/L			Not Accessible	0.38
	Polycyclic aromatic hydrocarbons (PAH)	mg/L	0.001	0.001	Not Accessible	0.0005
	Potassium	mg/L	48	61	Not Accessible	71
	Sodium	mg/L	600	390	Not Accessible	440
	Sulphate (as SO4)	mg/L	120	95	Not Accessible	115
	Toluene	mg/L	0.007	0.004	Not Accessible	0.002
	Total Dissolved Solids	mg/L	2600	1900	Not Accessible	2010
	Total Organic Carbon	mg/L	110	250	Not Accessible	92
	Total Petroleum hydrocarbons	mg/L	4.5	6.9	Not Accessible	0.51
	Total Suspended Solids	mg/L	39	77	Not Accessible	18
	Xylene	mg/L	0.02	0.007	Not Accessible	<2
	Zinc	mg/L	0.081	0.12	Not Accessible	0.081

Leachate Annual Monitoring						
	Pollutant	**Unit**	**08/2022 Sump riser - EPL MP20**	**08/2022 dam entry - EPL MP21**		
Monitoring Frequency - Annual	Alkalinity (as CaCO3)	mg/L	Not Accessible	366		
	Aluminium	mg/L	Not Accessible	0.01		
	Arsenic	mg/L	Not Accessible	0.006		
	Barium	mg/L	Not Accessible	0.028		
	Benzene	mg/L	Not Accessible	1		
	Bicarbonate Alkalinity (as CaCO3)	mg/L	Not Accessible	312		
	Biochemical Oxygen Demand	mg/L	Not Accessible	2		
	Cadmium	mg/L	Not Accessible	0.0001		
	Calcium	mg/L	Not Accessible	17		
	Chemical Oxygen Demand	mg/L	Not Accessible	163		
	Chloride	mg/L	Not Accessible	487		
	Chromium (hexavalent)	mg/L	Not Accessible	<0.001		
	Chromium (total)	mg/L	Not Accessible	0.004		
	Cobalt	mg/L	Not Accessible	0.002		
	Copper	mg/L	Not Accessible	0.006		
	Ethyl benzene	mg/L	Not Accessible	2		
	Fluoride	mg/L	Not Accessible	0.2		
	Lead	mg/L	Not Accessible	0.001		
	Magnesium	mg/L	Not Accessible	60		
	Manganese	mg/L	Not Accessible	0.003		
	Mercury	mg/L	Not Accessible	0.0001		
	Nickel	mg/L	Not Accessible	0.012		
	Nitrate	mg/L	Not Accessible	17.2		
	Nitrite (as N)	mg/L	Not Accessible	0.04		
	Organochlorine pesticides	mg/L	Not Accessible	2		
	Organophosphate pesticides	mg/L	Not Accessible	2		
	Phenols	mg/L	Not Accessible	2		
	Phosphate total (as P)	mg/L	Not Accessible	0.06		
	Phosphorus (total as P)	Mg/L	Not Accessible	0.06		
	Polycyclic aromatic hydrocarbons (PAH)	mg/L	Not Accessible	1		
	Potassium	mg/L	Not Accessible	56		
	Sodium	mg/L	Not Accessible	354		
	Sulphate (as SO4)	mg/L	Not Accessible	70		
	Toluene	mg/L	Not Accessible	2		
	Total Dissolved Solids	mg/L	Not Accessible	1400		
	Total Organic Carbon	mg/L	Not Accessible	56		
	Total Petroleum hydrocarbons	mg/L	Not Accessible	100		
	Total Suspended Solids	mg/L	Not Accessible	5		
	Xylene	mg/L	Not Accessible	2		
	Zinc	mg/L	Not Accessible	0.018		