

Thabeban Wastewater Treatment Plant Recycled Water Scheme (SRN050)

Annual Report
July 2022 to June 2023

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1. Introduction

The purpose of this annual report is to provide the Department of Regional Development, Manufacturing and Water (the Regulator or DRDMW) with information on the overall performance of the single-entity Thabeban Recycled Water Scheme SRN050 (the Scheme) for the annual reporting period 1st July 2022 to 30th June 2023.

On 04/07/2023 Council submitted to the Regulator the *Notice of intent to permanently stop supply* form WSR010 and *Notice of having permanently stopped supply* form WSR012 for the Thabeban Recycled Water Scheme for the supply of recycled water for the irrigation of minimally processed food crops. Correspondence received from the Regulator on 21/07/2023 acknowledged the cancellation for the approved RWMP for the Thabeban Recycled Water Scheme.

1.1 Scheme Overview

The Thabeban Wastewater Treatment Plant (WWTP) receives raw sewage via the Thabeban sewerage network for treatment. Once treated, the final effluent produced meets the quality requirements of Class C recycled water under the *Public Health Regulation 2018*. The recycled water is distributed to neighbouring private agricultural properties. Bundaberg Regional Council has approved Recycled Water Third Party Agreements with the landholders for the supply of recycled water and a subsequent approved Recycled Water Management Plan (RWMP).

Condition 7.5 of the Scheme Information Notice identifies the supply of recycled water has been approved for the irrigation of minimally processed food crops: chillies and peas.

An extension to the Recycled Water Third Party Agreement between Council and one of the Recycled Water Users was signed on 06/06/2023. Under this Agreement extension, recycled water is supplied for the irrigation of highly processed crops (sugarcane only) and cover crops (eg. sorghum, brassica – not for human consumption). Council has ceased the supply of recycled water for the irrigation of minimally processed food crops: chillies and peas, therefore no minimally processed food crops are approved to be irrigated with this supply.

1.2 Annual Reporting Compliance

It is a requirement under Section 273 of the *Water Supply (Safety & Reliability) Act 2008* (the Act) and Condition 7.4 of the Thabeban Recycled Water Scheme Information Notice issued by DRDMW on the 4th February 2020, that an annual report is prepared and submitted to the Regulator within 120 Business days of the end of each financial year. Table 1 outlines this Annual Report's compliance against Section 273 of the Act and the *Annual Reporting Guideline for Recycled Water Schemes – September 2010*.

Table 1: Annual RWMP Report Requirements

Act Section	Details	Annual reporting guideline section	Compliance
s273(1)	The relevant entity for a recycled water scheme must prepare an annual report for each financial year after a recycled water management plan for the scheme has been approved	Section 2.3	This completed report is for the 2022-2023 financial year.
S273(2)(a)	The annual report must— be prepared in accordance with the guidelines, if any, made by the regulator about the preparation of annual reports; and	Entire document	The content of this report aligns with the <i>Annual Reporting Guideline for Recycled Water Schemes – September 2010</i> .
S273(2)(b)	state the outcome of any review of the recycled water management plan in the financial year to which the annual report relates, and how the matters raised in the review have been addressed; and	Section 2.4(a)	Section 4.1 Reviews: - A regular review of the RWMP was not conducted in 2022-2023.
S273(2)(c)	contain details of the findings of, and any recommendations stated in, an internal audit report under section 260 or a regular audit report under section 261 given to the regulator in the financial year; and	Section 2.4(b)	Section 4.2 Audits: -An internal audit of the RWMP was undertaken in 2022-2023. -An external regular audit of the RWMP was not undertaken in 2022-2023.
S273(2)(d)	contain details of the information given to the regulator under section 270 or 271 in the financial year.	Section 2.4(c)	Section 2 Recycled Water Compliance: -Four (4) notices of non-compliance with water quality criteria were reported in 2022-2023. Section 3 Prescribed Incidents and Events: -There was one (1) recorded incident / event reported during 2022-2023.
S273(3)(3) Condition 7.4 Notice 04/02/2020	The relevant entity must give a copy of the annual report to the regulator within 120 business days after the end of the financial year.	Section 2.3	This report has been submitted to the Regulator within the specified timeframe.
S273(3)(4)	If a relevant entity is a recycled water provider for a single entity recycled water scheme, the annual report may be combined with a report given to the regulator under section 141.	NA	Bundaberg Regional Council's Drinking Water Quality Management Plan is submitted separately to this report.

2. Recycled Water Quality Criteria Compliance

Council is required to produce recycled water for the irrigation of minimally processed food crops to the quality standards specified in Condition 7.5 of the Scheme Information Notice as outlined in Table 2 below. The verification monitoring point identified in this Condition is located at the end of the Thabeban Storage Lagoon (Sample Point B) as described in the Thabeban RWMP Section 6.3 and Figure 2.

Table 2: Water Quality Criteria Class C – Thabeban Recycled Water Scheme

Parameter	Sampling Frequency	Initial Sample Value criteria	Annual Value criteria
<i>Escherichia coli</i>	Weekly	Must be less than 1000 cfu/100mL or 1000 MPN/100mL	At least 95% of the samples taken for a 12-month period must contain less than 1000 cfu/100mL or 1000 MPN/100mL

Water quality is sampled and analysed weekly in accordance with the verification monitoring requirements under the *Public Health Regulation 2018* for Class C recycled water and the Scheme Information Notice. The additional water quality results conducted at the outfall of the Chlorine Contact Tank (Sample Point A) are provided with these results. The annual value is calculated at the end of each calendar month utilising the water quality results for the previous fifty-two (52) weekly samples.

2.1 Non-compliance reported to DRDMW

An **incident** is described as a non-compliance with the relevant water quality criteria stated in this notice, including the frequency, initial value or annual value.

During the 2022-2023 reporting year Council reported three (3) exceedances of the *E. coli* initial value and one (1) exceedance of the *E. coli* annual value to the Regulator, details outlined in Appendix 2. Council is required to provide monthly updates to the Regulator until such time as the Scheme returns to compliance. Details of these exceedances are displayed in Appendix 2. There were no instances of a recorded test result of 'no result' or 'laboratory error'. The fifty-two (52) weekly monitoring results for the Scheme are displayed in Appendix 1.

Table 3: Monthly Annual Value compliance summary – Thabeban Recycled Water Scheme 2022-2023

Period		Outfall of Chlorine Contact Tank (Sample Point A)		approved point - Thabeban Storage Lagoon (Sample Point B)	
Start	Reporting Month	Number of Exceedances	Compliance Percentage	Number of Exceedances	Compliance Percentage
Aug-21	Jul-22	2	96	0	100
Sep-21	Aug-22	2	96	0	100
Oct-21	Sep-22	2	96	0	100
Nov-21	Oct-22	2	96	0	100
Dec-21	Nov-22	2	96	0	100
Jan-22	Dec-22	1	98	1	98
Feb-22	Jan-23	1	98	2	96
Mar-22	Feb-23	1	98	3	94
Apr-22	Mar-23	1	98	3	94
May-22	Apr-23	0	100	3	94
Jun-22	May-23	0	100	3	94
Jul-22	Jun-23	1	98	3	94

2.2 Any Failures to Test and Missing Data Information

Council has conducted all the required weekly *E.coli* analysis during the reporting period 1st July 2022 to 30th June 2023 to complete the annual report, as shown in Table 4 below.

Table 4: Frequency of testing required – 2022-2023 reporting period

Parameter	Regulated standard (units)	Frequency of test	Required number of tests	Number of tests undertaken	Number of tests missed	Date/s notified to Regulator	Comments
<i>E.coli</i>	cfu/100mL	weekly	52	52	0	NA	Scheduled number of tests complete

3. Prescribed Incidents and Events

A **prescribed incident** means an incident prescribed under a regulation. There are no incidents prescribed currently under the *Water Supply (Safety and Reliability) Regulation 2021*.

An **event** is described as anything that has happened or is likely to happen in relation to the scheme, which may adversely impact public health.

There was one (1) prescribed incident / event reported to the Regulator for the Thabeban Recycled Water Scheme during this reporting period. Details of this exceedance is displayed in Appendix 2.

4. Scheme Assessments

Council received email notification from QWSR on 04/01/2023 revising the Thabeban, and Childers, Recycled Water Schemes audit schedule.

Table 5: revised Thabeban Recycled Water Scheme audit schedules (as per QWSR notification)

Assessment Requirement	Frequency	Due Date
Internal audit	Four (4) years	14/10/2026
Regular review	Two (2) years	14/10/2025
External regular audit	Four (4) years	14/10/2024
Additional information	~	17/04/2023

Council submitted the required additional information to the Regulator on 14/04/2023.

4.1 Regular Review

No regular review was undertaken within the 2022-2023 financial year.

4.2 Audits

The internal audit of the Scheme was conducted by Council's audit team to ensure compliance of the approved Recycled Water Management Plan with the completed report and associated documents being submitted to the Regulator within the specified timeframes.

Within the current financial year, an internal audit of the Scheme was conducted on 11th October 2022 to ensure compliance of the approved Recycled Water Management Plan with the completed report and associated documents being submitted to the Regulator on 12th December 2022.

No external audit was conducted within the 2022-2023 financial year.

Table 6. Thabeban RWMP audit outcomes / actions

Audit Item No.	Audit item	Recommendation / Opportunity for Improvement (OFI)	Action	Action status	Responsible Officer / Position
Internal Audit Date: 11/10/2022					
REC-22-1	Management considers servicing all equipment which is identified in the FOCUS system as being out of service date.	Recommendation	Scheduled equipment calibration service for 2022 was delayed. Equipment calibrations were completed in September and October 2022. The equipment calibration was completed at Thabeban WWTP on 17/10/22.	completed	Treatment Team Manager
REC-22-2	Management considers reviewing the current practices in place regarding the maintenance and servicing of equipment to ensure that equipment remains in service date.	Recommendation	Servicing of equipment is organised by Central Laboratory. Current equipment servicing is engaged year to year. Laboratory staff are exploring the option of a three (3) year service contract for minor Laboratory equipment in the first half of 2023. As part of the upcoming tender process, the inclusion of the capacity and availability of contractor resources to ensure the calibration program is maintained.	Completed, Management has assessed the risk associated with this recommendation and will take further action if there is a reoccurrence and calibration schedules are not adhered to in the future.	Process and Asset Management Manager
REC-22-3	Management considers investigating options to ensure that the PH buffer solution that is available for use at the Thabeban WWTP is in date.	Recommendation	Central Laboratory emails consumables ordering sheet to Operators on 6 month schedule – March and September. Treatment Team Leader Sewer to review order process.	Progressing	Treatment Team Manager
REC-22-4	Management considers increasing the level of awareness for WWTP operators for correct calibration processes including the single use of buffer solutions.	Recommendation	Service Delivery to engage Central Laboratory to conduct refresher training for Operators.	Progressing	Treatment Team Manager
REC-22-5	Management considers reiterating the importance of record keeping for the WWTP operators for any instances where equipment shutdowns result in RWMP testing requirements not being met.	Recommendation	Reminder to be provided to Operators of the importance of accurate comments/data capture in log sheets - Toolbox meetings.	Completed	Treatment Team Manager
REC-22-6	Management considers as part of the transition from physical log sheets to the FOCUS system, investigating the ability to incorporate reminders or escalation points for instances	Recommendation	FOCUS Works Management System development of treatment plant log sheets in progress, incorporation of reminders/escalation points to be considered.	Progressing	Treatment Team Manager

	where there are no entries for required testing analysis.				
IMP-22-1	Management considers correcting the inconsistencies identified within the numbering of tables within the Thabeban RWMP.	OFI	RWMP and associated risk assessment currently under review with external contractor. All inconsistencies with the table numbers will be addressed during this process.	Completed	Water Governance Officer
IMP-22-2	Management considers ensuring that any recommendations from external review is captured within the Thabeban Improvement Plan.	OFI	RWMP Section 14. Improvement Plan to be updated to include statement regarding the capture of all audit recommendations and improvement opportunities identified through both internal and external audits to be entered in the Wastewater Improvement Plan.	Completed	Water Governance Officer
IMP-22-3	Management considers reviewing the PD-7-249 as it is currently out of the review timeframe.	OFI	Recycled Water Management Plan - Review Procedure PD-7-249 reviewed 22/11/22. Council's IMS provides notifications to Document Author when reviews are required.	Completed	Governance Team Leader

4.3 Annual Site Inspection

Council conducted an annual inspection of the Thabeban Recycled Water Scheme and the Recycled Water User property on 23rd March 2023. The site inspection found the activities conducted on the property were in accordance with the Recycled Water Third Party Agreement and associated legislation. The compliance outcomes are detailed in Table 7 below. The next inspection is scheduled to occur in early 2024.

Table 7. Recycled Water User Site Inspection outcomes

Site Inspection Component	Details	Recycled Water Third Party Agreement section	Compliance
Site Inspection Date:			
Customer documentation	The customer shall ensure that all persons exposed to the recycled water are instructed in personal hygiene measures and appropriate health and safety procedures associated with using recycled water.	Section 3.4 (a)	Compliant, inductions and annual refresher training conducted.
Customer documentation	The customer shall inform visitors to the site that recycled water is being used on the site and to observe the signage and minimise contact with the recycled water.	Section 3.7 (b)	Compliant, visitors informed and escorted.
Signage and colour coding	The customer shall install and maintain warning signs on their property. The warning signs are to meet compliance standards stated in AS 1319 Safety Signs for the Occupational Environment.	Section 3.2	Compliant, signage installed across property.
Recycled water use	The Recycled Water Third Party Agreement and Recycled Water Management Plan specify the types of crops which are approved to be grown.	Section 1.9 RWMP Section 1.1 Irrigation Management Plan Section 4	Compliant for approved crops grown on site, no addition of new crops.
Irrigation practices	Irrigation practices for recycled water are specified in the <i>Public Health Regulation 2018</i> and the Queensland Health 'Guideline for Low-exposure Recycled Water Schemes'. The Recycled Water Third Party Agreement and Recycled Water Management Plan specify the irrigation practices to be utilised at the property.	Section 1.9 RWMP Section 3.5 Irrigation Management Plan Section 4	Compliant with specified irrigation practices.

Appendix 1: Thabeban WWTP *E.coli* monitoring data – July 2022 to June 2023

Sample Date	Chlorine Contact Tank (Sample Point A)	Effluent Storage Lagoon (Sample Point B)
4/07/2022	1	27
11/07/2022	0	1
18/07/2022	0	0
25/07/2022	0	28
2/08/2022	0	6
9/08/2022	1	3
15/08/2022	2	7
22/08/2022	0	4
29/08/2022	3	80
5/09/2022	0	3
12/09/2022	1	6
19/09/2022	0	1
26/09/2022	0	1
3/10/2022	1	2
10/10/2022	4	8
17/10/2022	0	114
24/10/2022	0	816
31/10/2022	0	8
7/11/2022	1	158
14/11/2022	0	52
21/11/2022	170	1
28/11/2022	1	7
5/12/2022	0	23
12/12/2022	0	1
19/12/2022	9	2420
28/12/2022	0	1
3/01/2023	2	147
9/01/2023	0	3
16/01/2023	3	6
23/01/2023	1	2420
30/01/2023	0	12
6/02/2023	0	101
13/02/2023	2	23
20/02/2023	0	2420
27/02/2023	4	36
6/03/2023	1	117
13/03/2023	0	6
21/03/2023	0	1
27/03/2023	0	63
3/04/2023	0	403
11/04/2023	0	37
17/04/2023	0	63
24/04/2023	2	192
2/05/2023	4	0
8/05/2023	0	147
15/05/2023	1	344
22/05/2023	0	866
29/05/2023	2	14
6/06/2023	1	230
13/06/2023	3900	130
20/06/2023	1	90
27/06/2023	1	180

Appendix 2: Thabeban Recycled Water Scheme reported Exceedance / Event breakdown July 2022 – June 2023

Incident date	Incident description	Exceedance description	Reported to Regulator	Incident circumstance	Comment
19/12/2022	<i>E.coli</i> exceedance >2420 cfu/100mL – approved Sample Point B	Initial value	22/12/2022	Dead eel located in lagoon, lagoon covered in algae and other aquatic plants, no issues identified with plant processes, Sample Point A compliant	RWI-SRN050-22-10089
23/01/2023	<i>E.coli</i> exceedance >2420 cfu/100mL – approved Sample Point B	Initial value	17/02/2023	High presence of duckweed in lagoon, no issues identified with plant processes, Sample Point A compliant	RWI-SRN050-23-10186
20/02/2023	<i>E.coli</i> exceedance >2420 cfu/100mL – approved Sample Point B	Initial value	24/02/2023	High number of birds noted around lagoons, no issues identified with plant processes, Sample Point A compliant	RWI-SRN050-23-10187
February 2023	approved Sample Point B Annual value 94%	Annual value	07/03/2023	Initial report submitted, monthly updates to be provided until scheme compliant	RWI-SRN050-23-10205
March 2023	approved Sample Point B Annual value 94%	Annual value	03/04/2023	Monthly update	~
April 2023	approved Sample Point B Annual value 94%	Annual value	05/05/2023	Monthly update	~
May 2023	approved Sample Point B Annual value 94%	Annual value	08/06/2023	Monthly update	~
13/06/2023	<i>E.coli</i> exceedance 3800 cfu/100mL – Sample Point A	Scheme event	19/06/2023	Chlorine dosing not turned back on after scheduled chlorine gas leak test, approved Sample Point B compliant	RWI-SRN050-23-10307
June 2023	approved Sample Point B Annual value 94%	Annual value	03/07/2023	Monthly update	~