



# **MURWEH SHIRE RWMP ANNUAL REPORT**

## **1 July 2023 – 30 June 2024**

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Service Provider ID - 97

## Document Control

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18/03/2025	Council Review	Jacob Barton
19/03/2025	Report Released to Client	Michael Williams

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## **1.0 INTRODUCTION**

This is the Recycled Water Management Plan (RWMP) Annual Report for Murweh Shire Council (MSC) for the 2023-2024 Financial Year. The purpose of this report is to provide the Department of Local Government, Water and Volunteers (the Regulator) with information on the overall performance of the Charleville Recycled Water Scheme, to assist in determining whether the approved RWMP (including any approval conditions) have been complied with. It also provides a mechanism for service providers to publicly report on their performance in managing recycled water.

This report will be accessible to the public through the MSC website or upon request at the Council office located in Charleville.

### **1.1. Summary of Schemes Operated**

Murweh Shire operates one recycled water scheme, located in the town of Charleville. This scheme uses effluent from the Charleville Sewerage Treatment Plant (STP) that meets the required standard for Class C recycled water.

Raw sewage from Charleville is pumped to the town's STP into two Imhoff Tanks. While it is difficult to determine the exact composition of the sewage being received at all times, it is known to comprise of human waste (pathogens, nutrients, ammonia, pharmaceuticals and personal care products) and domestic household waste (food waste, nutrients, ammonia, detergents and heavy metals from plumbing / pipes). The composition and quantities of sewage corresponds to domestic life patterns of a stable population (approximately 3,000 residents) and is largely unaffected by temporal and seasonal trends.

After treatment in the Imhoff Tanks, the sewage is released into a series of five aerobic ponds, which are each approximately 1m deep and cover an area of 48,000m<sup>2</sup>. The final aeration pond has been designed to direct flow into an elongated meandering flow path, with rock fill and vegetation. Upon exit from the final aerobic pond, flow passes over a V-notch weir, into a shallow channel lined with rocks and then onto a lagoon within an adjacent farm where the recycled water is utilised for the irrigation of Date Palms. A professionally designed irrigation system has been installed on the Date plantation which provides subsurface irrigation to the Date Palms. Note that Class C recycled water effluent is deemed satisfactory for Date Palm agriculture.

### **1.2. Annual Reporting Compliance**

It is a requirement under Section 273 of the *Water Supply (Safety & Reliability) Act 2008* (the Act) that an Annual Report is prepared and submitted to the Regulator within 120 Business Days of the end of each Financial Year. The Act requires the following details to be included in an Annual report:

- a) The outcome of any Reviews undertaken of the RWMP during the financial Year to which the Annual Report relates and how the matters raised in the Review have been addressed.
- b) Details of the findings of any recommendations stated in an Audit Report given to the Regulator during the Financial Year.
- c) Details of the information given to the Regulator under Section 270 or 271 of the Act which includes any non-compliances with water quality by the scheme and any incidents reported for the scheme during the Financial Year.

## 2.0 RECYCLED WATER QUALITY COMPLIANCE

Council is required to produce recycled water to the quality standards specified in Condition 8.7 of the current Information Notice for the Decision as outlined in Table 1 below. The water quality monitoring point described in Council's RWMP is located at the v-notch weir, situated at the end of the treatment process approximately 5m from the fenceline that is shared between the STP and the Date farm.

**Table 1: Water quality criteria for water being released from the Charleville STP (Condition 8.7).**

Parameter	Sampling Frequency	Initial Sample Value	Annual Value
<i>E. coli</i>	Weekly	<1000 CFU/100mL or MPN/100mL	A minimum of 95% of samples taken in a 12 month period must contain <1000 CFU/110mL or MPN/100mL

### 2.1. Incidents Reported to the Regulator

An incident is described as a non-compliance with the relevant water quality criteria specified in Condition 8.7 of Council's Information Notice for the Decision (Table 1).

During the reporting period, Council experienced two exceedances of the *E.coli* initial value, identified on the 6/06/2024 and the 23/06/2024. At the time, these exceedances were not reported to the Regulator as the *E.coli* annual value for the 12-month period was still above the 95% minimum (Table 2). Moreover, these exceedances form part of an Incident which was reported to the Regulator on the 23/08/2024. As this incident was reported during the 2024- 25 Financial Year, it will be discussed in more detail in the next Annual Report.

**Table 2: *E.coli* annual value for the 2023- 24 Financial Year.**

Reporting Period	Samples	Exceedances	Compliance Percentage (%)
July 2023- June 2024	46	2	95.7

*E.coli* monitoring data for the reporting period is provided in Appendix A.

### 2.2. Missed Water Testing

During the reporting period, Council missed six rounds of weekly *E.coli* monitoring. The majority of missed testing occurred as a result of flooding, limiting access to the STP and the sample location, however, a lack of available staff can also be attributed to some of the missing tests.

**Table 3: Missed *E.coli* testing for the 2023-24 Financial Year.**

Parameter	Required Number of Tests	Actual Number of Tests	Missed Tests
<i>E.coli</i>	52	46	6

### **3.0 REGULAR REVIEW**

As per Section 8.5 of Council's Information Notice for the Decision, the next regular review of the RWMP was scheduled to be completed by the 1<sup>st</sup> of June 2024. It should be noted that Council have missed this deadline. Council are currently in the process of determining if they will continue with the operation of the Recycled Water Scheme, following on from the Incident reported to the Regulator in August 2024. If Council do decide to continue with the operation of the scheme, then the missed Review will be undertaken immediately and reported upon in the 2024-25 Annual Report.

### **4.0 INTERNAL AUDIT FINDINGS**

As per Section 8.3 of Council's Information Notice for the Decision, the next internal audit of the RWMP must be completed by the 1<sup>st</sup> June 2025. This internal audit was undertaken by PRIZM Engineering in August of 2024. The Audit report has been attached for reference in Appendix B with a summary provided below.

#### **4.1. Internal Audit Summary**

An internal Audit of the Charleville recycled water scheme was undertaken by PRIZM Engineering to assess the scheme's compliance with the RWMP and to evaluate its effectiveness in managing recycled water quality, including identifying areas for improvement. Both major and minor non-compliances were identified in regards to Council's compliance with their RWMP and compliance with the RWMP conditions. In conclusion, the report identified significant challenges faced by Council in recruiting and retaining qualified staff in addition to assets at the STP reaching their end-of-life and major upgrades needed at the STP so that council can meet their Regulatory obligations.

The major recommendations and opportunities for improvement identified during the audit are summarised below:

- Council should review the sludge removal process and consider the replacement of the seized sludge valve and the cleaning of the imhoff tanks.
- Council should consider investigating and trialling algal control measures to assist in the reduction of Blue Green Algae within the aerobic ponds.
- Council should review all operation and maintenance procedures and develop missing procedures, including the development of a sludge management procedure, noting that procedures have not been reviewed or updated since 2006.
- Council should develop and implement a process to ensure monthly *E. coli* monitoring occurs as per the plan's approval conditions and ensure that all monitoring requirements are understood by STP staff.
- Council should review and thoroughly understand the corrective and preventative actions contained in the CCP procedure.
- Council should ensure that all staff are aware of their responsibilities and requirements under the RWMP.

In response to the audit, Council have submitted a variation to the State Government for additional funding under the Government Grants and Subsidies Program, which will address most of the major recommendations from the audit and assist Council in meeting their Regulatory obligations.

### **5.0 EXTERNAL AUDIT**

As per Section 8.4 of Council's Information Notice for the Decision, the next regular external audit of the RWMP must be completed by the 1<sup>st</sup> June 2027.

**APPENDIX A**  
***E.COLI* MONITORING DATA 2023-24 FINANCIAL YEAR**

**Table 4: Charleville STP *E.coli* monitoring data 1st July 2023- 30th June 2024.**

Sample Date	<i>E.coli</i> (MPN/100mL)	Sample Date	<i>E.coli</i> (MPN/100mL)
02/07/2023	128	17/12/2023	648
09/07/2023	84	03/01/2024	33
16/07/2023	93	07/01/2024	28
23/07/2023	59	14/01/2024	166
30/07/2023	139	28/01/2024	325
06/08/2023	157	11/02/2024	721
13/08/2023	52	18/02/2024	648
20/08/2023	62	25/02/2024	691
27/08/2023	57	03/03/2024	870
03/09/2023	60	10/03/2024	791
10/09/2023	63	17/03/2024	829
17/09/2023	37	24/03/2024	866
24/09/2023	26	07/04/2024	261
01/10/2023	63	14/04/2024	148
08/10/2023	24	21/04/2024	162
15/10/2023	48	28/04/2024	189
22/10/2023	72	12/05/2024	755
05/11/2023	100	19/05/2024	860
12/11/2023	113	26/05/2024	488
19/11/2023	277	02/06/2024	745
26/11/2023	93	09/06/2024	1413
03/12/2023	550	23/06/2024	1986
10/12/2023	960	30/06/2024	689
Total Samples = 46			



**APPENDIX B**  
**INTERNAL AUDIT REPORT**



**PRIZM Engineering Pty Ltd**

**Murweh Shire Council  
Regular Internal Audit – RWMP**

**Report Number: PE24-044-00-GE-RPT-001**

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## PRIZM ENGINEERING

REV	DESCRIPTION	ORG	REVIEW	PRIZM	DATE	CLIENT APPROVAL	DATE
		_____	_____	_____		_____	
B		Sarah Lunau	Will van de Pol	Chris Cilliers	28/08/24	Richard Ranson	28/08/24
A	Internal Review	Sarah Lunau Name	Will van de Pol Name	Chris Cilliers Name	27/08/24	_____	

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## **EXECUTIVE SUMMARY**

Murweh Shire Council (MSC) engaged Prizm Engineering to conduct the internal audit of its Recycled Water Management Plan (RWMP) as mandated by the Water Supply (Safety and Reliability) Act 2008. The audit aimed to assess compliance with the RWMP, evaluate its effectiveness in managing recycled water quality, and identify areas for improvement.

### **OBJECTIVES**

- Assess compliance with the approved RWMP.
- Evaluate the effectiveness of the RWMP in managing recycled water quality.
- Identify areas for improvement.

### **REGULATORY REQUIREMENTS**

The audit adhered to statutory requirements outlined in the Act, including sections 260, 261, 263, 264, and 265.

### **METHOD**

The audit followed the Queensland Recycled Water Management Plan Audit Reporting Guideline 2010 and ISO 19011:2018 standards. It was conducted by Sarah Lunau, who has extensive qualifications and experience in water quality management.

### **AUDIT SCOPE**

The audit assessed compliance with the approved RWMP 2022 and its conditions per the approval information notice dated June 20, 2016.

### **AUDIT PROCESS**

The process included:

- Initial information request.
- Preparation of Audit Plan.
- Opening Meeting.
- Interviews & Virtual Site Inspection.
- Further Information request.
- Preparation of Draft Audit report.
- Review of the Draft Audit report by the Council.
- Finalisation of the Audit Report.
- Submission of report to the Regulator.

### **AUDIT FINDINGS**

Murweh Shire Council staff were forthcoming with the current process and operational challenges. As is quite typical with remote locations, recruiting and retaining qualified staff can be difficult, and the Council has lost key staff members since the last audit. This makes spreading the workload and training other staff in the RWMP requirements very challenging. In addition, the assets are reaching end-of-life, and Council are planning major upgrades to the Charleville STP to meet their Regulatory obligations and community needs.

Notwithstanding the above statement, the minor and major non-compliances summarised below indicate systemic issues with the implementation of the plan, and one of the key recommendations is to develop an RWMP induction/ familiarisation session for all personnel involved in the implementation of the RWMP, with an annual renewal to ensure the team is familiar with the requirements and how the plan will be implemented, including managing staff absences etc.

Furthermore, a complementary opportunity for improvement is to establish a regular (monthly or quarterly) documented meeting/ forum with key stakeholders to track compliance with the plan, primarily focused on sampling, analysis of results, reporting requirements, improvement actions and emerging issues.

#### COMPLIANCE WITH THE RWMP

- **Minor Non-compliances:** Statements and figures in the RWMP, Procedures and procedural requirements, Quality assurance and quality control standards.
- **Major Non-compliances:** Operational and verification monitoring, Corrective and preventative actions.
- **Compliant:** Recommendations of previous audits, Ongoing requirements for revalidation of the scheme, and Annual reporting.

#### COMPLIANCE WITH THE PLAN CONDITIONS

- **Minor Non-compliance:** Internal audit timing.
- **Compliant:** Regular audits, Regular reviews, Annual reports.
- **Major Non-compliances:** Water quality criteria, Non-compliance with water quality criteria, Incidents, Stop supply, Source water monitoring program and results.

#### RECOMMENDATIONS

The audit identified several areas for improvement, particularly in operational and verification monitoring and corrective and preventative actions. Recommendations and opportunities for improvement are summarised below:

Auditable Criteria	Auditable Element	Compliance Score	Recommendations	Opportunity For Improvement
Compliance with the plan	Statements and figures in the RWMP	Minor Non-Compliance	REC1. Develop and implement a simple, repeatable audit/inspection template to guide the annual review of the onsite controls on the Date Farm.	

Auditable Criteria	Auditable Element	Compliance Score	Recommendations	Opportunity For Improvement
Compliance with the plan	Procedures and procedural requirements	Minor Non-Compliance	<p>REC2. Review the sludge removal process, including but not limited to considering the replacement of the seized sludge valve, increasing the manual sludge removal process, and cleaning Imhoff tanks. This review should also consider the condition of the sludge pipe.</p> <p>REC3. Develop a sludge management procedure, which includes manual sludge removal frequency, method and quality criteria (e.g. sludge depth). Even if the sludge valves are to be replaced, the manual sludge removal should be documented in the interim.</p> <p>REC4. Develop, review and update all other procedures to reflect maintenance requirements accurately.</p> <p>REC5. Develop and implement a Colilert QA/QC procedure.</p>	<p>OFI1. The communications flow chart has a minor inconsistency (logic loop error) concerning stopping supply if the water is not used for the correct purpose. In this scenario, a separate decision step should be added to the flowchart to stop supply.</p> <p>OFI2. Investigate and trial algal control measures, such as barley bales, natural enzymes, etc. Any method trialled should include a simple but effective monitoring program to test the efficacy of control measures.</p>
Compliance with the plan	Quality assurance and quality control standards	Minor Non-Compliance	REC6. Develop and implement a process to ensure monthly E. coli analysis occurs as per the approval conditions.	
Compliance with the plan	Operational & verification monitoring	Major non-compliance	REC7. Thoroughly review and understand the monitoring requirements and implement a robust QA process to ensure all monitoring is implemented as per the Plan.	
Compliance with the plan	Corrective & preventative actions	Major non-compliance	REC8. Thoroughly review and understand the corrective and preventive actions primarily contained in the CCP procedure and implement a robust QA process to ensure all corrective and preventative actions are implemented as per the Plan.	
Compliance with the plan	Previous audits	Compliant		
Compliance with the plan	Revalidation	Compliant		
Compliance with the plan	Annual reporting	Compliant		
Compliance with the Plan Conditions	Internal audit (condition 7.1)	Minor Non-Compliance	REC9. Develop an annual Water Quality Calendar for all Regulatory requirements and assign responsibility. It is recommended that it include other water and wastewater system requirements.	

Auditable Criteria	Auditable Element	Compliance Score	Recommendations	Opportunity For Improvement
Compliance with the Plan Conditions	Regular audits (condition 7.2)	Compliant		
Compliance with the Plan Conditions	Regular review (condition 7.3)	Compliant		
Compliance with the Plan Conditions	Annual reports (condition 7.4)	Compliant		
Compliance with the Plan Conditions	Water quality criteria, annual value and replacement sampling and testing (conditions 7.5, 7.6, 7.7)	Major non-compliance	REC10. Develop an RWMP induction/ familiarisation session for all personnel involved in implementing the RWMP, with an annual renewal to ensure the team is familiar with the requirements and how the plan will be implemented, including managing staff absences, etc.	OFI3. Establish a complementary regular (monthly or quarterly) documented meeting/ forum with key stakeholders to track compliance with the plan, especially focussed on sampling, analysis of results, reporting requirements, improvement actions and emerging issues
Compliance with the Plan Conditions	Non-compliance with water quality criteria - notification and investigation report (conditions 7.8, 7.9, 7.10)	Major non-compliance	REC11. Develop an RWMP induction/ familiarisation session for all personnel involved in implementing the RWMP, with an annual renewal to ensure the team is familiar with the requirements and how the plan will be implemented, including managing staff absences, etc.	
Compliance with the Plan Conditions	Incidents - notification and final investigation report (conditions 7.11, 7.12, 7.13)	Major non-compliance	REC12. Develop an RWMP induction/ familiarisation session for all personnel involved in implementing the RWMP, with an annual renewal to ensure the team is familiar with the requirements and how the plan will be implemented, including managing staff absences, etc.	
Compliance with the Plan Conditions	Stop supply (conditions 7.14, 7.15, 7.16)	Major non-compliance	REC13. Develop an RWMP induction/ familiarisation session for all personnel involved in implementing the RWMP, with an annual renewal to ensure the team is familiar with the requirements and how the plan will be implemented, including managing staff absences, etc.	
17. Compliance with the Plan Conditions	Source water monitoring program and results (condition 7.17)	Major non-compliance	REC14. Develop an RWMP induction/ familiarisation session for all personnel involved in implementing the RWMP, with an annual renewal to ensure the team is familiar with the requirements and	



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Auditable Criteria	Auditable Element	Compliance Score	Recommendations	Opportunity For Improvement
			how the plan will be implemented, including managing staff absences, etc.	

## **1. INTRODUCTION**

Murweh Shire Council (MSC) has engaged Prizm Engineering to undertake the regular internal audit of its Recycled Water Management Plan (RWMP).

As required under the Water Supply (Safety and Reliability) Act 2008 (the Act), MSC operates its Charleville recycled water service under an approved RWMP. A condition of that approval is to complete an internal audit by 22 June 2024 (every two years).

The purpose of this report is to present the findings and conclusions from the internal audit undertaken in 2024.

### **1.1 OBJECTIVES**

Auditing aims to assess the schemes' compliance with the approved RWMP and the conditions of approval.

The objectives of this audit were to:

- Assess compliance with the approved RWMP.
- Evaluate the effectiveness of the RWMP in managing recycled water quality.
- Identify areas for improvement.

### **1.2 REGULATORY REQUIREMENTS**

The statutory requirements related to RWMP audits are detailed in the Act. The relevant provisions in the Act are:

- Section 260 – providing internal audit reports
- Section 261 – providing regular audit reports
- Section 263 – auditor's responsibility to inform the Regulator
- Section 264 – declarations about audit reports
- Section 265 – access for conducting audits

## **2. METHOD**

The audit was conducted in accordance with the Queensland Recycled Water Management Plan Audit Reporting Guideline 2010.

### **2.1 AUDITOR**

Sarah Lunau undertook this audit. Her qualifications for completing this internal audit include:

- Master of Integrated Water Management
- Bachelor of Science, with Honours
- >17 years of Water Quality Risk Assessments, Operations & Maintenance management
- Development and review of Water Quality Management Systems for utilities across Queensland and New South Wales

### **2.2 AUDIT SCOPE**

The scope of this audit was to:

- Assess the compliance with the approved RWMP 2022.
- Assess compliance with the conditions of the RWMP, as per the approval information notice on 20th June 2016.

The Australian Guidelines for Water Recycling and the regulator RWMP Guidelines were considered in the assessment.

### **2.3 AUDIT STANDARD**

*ISO 19011:2018 Guidelines for auditing management systems* were used to ensure good auditing practices.

### **2.4 AUDIT PROCESS**

The internal audit process included:

- Initial information request
- Preparation of Audit Plan
- Opening Meeting
- Interviews & Virtual Site Inspection
- Further Information request
- Preparation of Draft Audit report
- Review of the Draft Audit report by the Council
- Finalisation of the Audit Report
- Submission of report to the Regulator.

### **2.5 AUDIT SCORES**

For each auditable element, a scoring system is used to assess compliance:

- Compliant – indicates compliance with audit criteria

- Minor Non-Compliance—does not comply with the criteria; however, the deficiency does not compromise the delivery of products or outcomes or the ability to achieve defined objectives.
- Major Non-Compliance - does not comply with the criteria. The deficiency compromises the delivery of products or outcomes and the ability to achieve defined objectives.
- No requirement – meeting the criteria within the audit period was not required.

A recommendation is provided for any non-compliance with the audit criteria.

An opportunity for improvement may be identified for activities that comply but might benefit from improvement, including process or implementation improvements.

## **2.6 QUALITY ASSURANCE**

This audit was undertaken in accordance with Prizm Engineering's certified ISO 90001: 2015 Quality Management System and Quality Policy.

An internal peer review was completed before issuance of the Audit Report to MSC.

## **2.7 SAMPLING**

Audits inherently involve sampling, which means there is a possibility that the examined audit evidence may not be fully representative. The audit sample encompassed a virtual inspection of the supply scheme, interviews with key staff, and reviews of documentation and records.

## **2.8 AUDITEES**

The following MSC personnel were interviewed during the audit:

- Richard Ranson, Director of Community and Health Services (DCHS)
- David Huxtable, Manager Program Delivery (MPD)

### 3. AUDIT FINDINGS

This section summarises the audit findings. The audit checklist in Appendix A provides details of the findings.

There were several Major Non-compliances recorded for both the RWMP and the Conditions, themed around the implementation of the verification and operational monitoring program and the implementation of corrective actions

#### 3.1 COMPLIANCE WITH THE RWMP

Compliance with the RWMP is summarised below:

Audit Element - RWMP	Audit Score
Statements and figures in the RWMP	Minor Non-compliance
Procedures and procedural requirements	Minor Non-compliance
Quality assurance and quality control standards	Minor Non-compliance
Operational and verification monitoring	Major Non-compliance
Corrective and preventative actions	Major Non-compliance
Recommendations of previous audits	Compliant
Ongoing requirements for revalidation of the scheme	Compliant
Annual reporting	Compliant

A minor non-compliance is recorded for 'Statements and figure in the RWMP' as the date farmer's onsite controls have not been audited as per the plan.

A minor non-compliance is recorded for 'Procedures and procedural requirements' for the maintenance procedures, which have not been reviewed since 2006. They do not reflect the current process or provide adequate task detail, and there is no QA/QC procedure for testing equipment.

A minor non-compliance is recorded for 'Quality assurance and quality standards' for the lack of a rolling 12-month monthly *E. Coli* analysis.

A major non-compliance is recorded for 'Operational and verification monitoring' for the missed source water, monthly effluent and CCP1 sampling. The auditor recognises the loss of key staff as a mitigating circumstance.

A major non-compliance is recorded for 'Corrective and preventative actions' because the regulator was not required to report non-compliant verification results.

A complaint score is recorded for 'Recommendations from previous audits', 'Ongoing requirements for the revalidation of the scheme' and 'Annual reporting'.

The executive summary and detailed findings appendix contains recommended actions and opportunities for improvement (OFIs).

#### 3.2 COMPLIANCE WITH THE PLAN CONDITIONS

Compliance with the conditions of the plan is summarised below:

Audit Element - Conditions	Audit Score
Internal audit must be conducted by 20 June every two years, in accordance with section 260 of the Act (condition 7.1)	Minor Non-compliance
Regular audits (external) must be conducted by 20 June every three years (condition 7.2)	Compliant
Regular review (condition 7.3)	Compliant
Annual reports (condition 7.4)	Compliant
Water quality criteria, annual value and replacement sampling and testing (conditions 7.5, 7.6, 7.7)	Major Non-compliance
Non-compliance with water quality criteria - verbal notification, initial notification and investigation report (conditions 7.8, 7.9, 7.10)	Major Non-compliance
Incidents - verbal notification, initial notification and final investigation report (conditions 7.11, 7.12, 7.13)	Major Non-compliance
Stop supply - permanent stoppage, temporary stoppage, stop supply to users (conditions 7.14, 7.15, 7.16)	Major Non-compliance
Source water monitoring program and results (condition 7.17)	Major Non-compliance

A minor non-compliance is recorded for 'Internal audits' as this current audit is two months past the due date.

Compliance is recorded for the conditions pertaining to 'Regular audits', 'regular review' and 'Annual reports'.

A major non-compliance is recorded for 'Water quality criteria, annual value and replacement sampling and testing' because there appear to be systemic issues with implementing the sampling plan, analysing results, and completing follow-up sampling, which has potentially contributed to the major non-compliance in reporting non-compliant results and incidents.

A major non-compliance is recorded for 'Non-compliance with water quality criteria - verbal notification, initial notification and investigation report (conditions 7.8, 7.9, 7.10)' for the non-reporting of non-compliant results.

A major non-compliance is recorded for 'Incidents—verbal notification, initial notification, and final investigation report' for the non-reporting of an incident. The regulator has since been notified of this.

A major non-compliance is recorded for 'Stop supply - permanent stoppage, temporary stoppage, stop supply to users' as temporary stoppage did not occur following *E. coli* detections above the critical limit.

A major non-compliance is recorded for 'Source water monitoring program and results', as this was identified during the previous audit but not rectified.

The executive summary and detailed findings appendix contains recommended actions and opportunities for improvement (OFIs).

## APPENDIX A - DETAILED AUDIT FINDINGS

Auditable Criteria	Auditable Element	Evidence	Findings & Discussion	Compliance Score	Recommendations	Opportunity For Improvement
1. Compliance with the plan	Statements and figures in the RWMP	Schematic Staff Interviews Virtual site tour	<p>A virtual site inspection was undertaken on 23rd August 2024 to verify the process and schematic. At the time of the inspection, the plant was online. Excessive sludge build-up was observed in the Imhoff tanks. This is considered further under Maintenance Procedures. The ponds were observed to be very green in places, signifying a high algal load.</p> <p>The schematic was verified as correctly representing the process. The following control measures were sampled:</p> <ul style="list-style-type: none"> <li>- The plan states that MSC will conduct an annual audit of the Date farmer's onsite controls (section 3.4.1). This has not occurred to date.</li> <li>- CCP implementation. TSS monitoring as per 'CCP1 Imhoff Tanks' has not been implemented, meaning the operation of CCP1 cannot be verified as effective. This is considered further under Operational and Verification Monitoring.</li> </ul> <p>A minor non-compliance is identified as the Date Farmer's onsite controls have not been audited.</p>	Minor Non-Compliance	REC1. Develop and implement a simple, repeatable audit/inspection template to guide the annual review of the onsite controls on the Date Fam.	

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2. Compliance with the plan	Procedures and procedural requirements of the RWMP: Incident & emergency response, Maintenance & calibration, Communications protocols	Staff Interviews  Virtual site tour  Procedures	<p><i>Incident &amp; Emergency Response, Communications Protocols.</i></p> <p>The Incident and emergency section of the plan was comprehensively updated in 2022. It defines incident levels, actions, and reporting requirements. The communications flow chart has a minor inconsistency (logic loop error) concerning stopping supply if the water is not used for the correct purpose. In this scenario, a separate decision step should be added to the flowchart to stop supply. This is not considered non-compliance; however, an opportunity for improvement in updating the flowchart has been identified.</p> <p><i>Maintenance.</i></p> <p>Procedure S01 Sewage Treatment—Imhoff Tanks includes maintenance of the Imhoff tanks, and procedure S02 Sewage Treatment—Aeration Lagoons mentions checks/maintenance of the Ponds. However, the procedures were created in 2006 and have not been reviewed.</p> <p>During the site inspection, the Imhoff tanks observed excessive sludge build-up. They were last taken offline for a full clean in 2022. The sludge valve has been seized for several years, and sludge is currently manually removed from the Imhoff tanks and moved to the drying beds via a hose and pump. According to the RW6 in the Risk Assessment, desludging occurs weekly. It is unknown if the sludge valve was working during the 2022 Risk Assessment, and the schedule for manual sludge removal could not be verified during the site tour.</p> <p>Algae (possibly BGA) was apparent during the site inspection in the ponds. Aerators installed in Pond 2 can be moved to other ponds as required. Council has also trialled the use of barley bales placed into the ponds for algae control, with reported limited success; however, no monitoring was</p>	Minor Non-Compliance	<p>REC2. Review sludge removal process, including but not limited to considering the replacement of the seized sludge valve, increasing the manual sludge removal process, and cleaning Imhoff tanks. This review should also consider the condition of the sludge pipe.</p> <p>REC3. Develop a sludge management procedure that includes manual sludge removal frequency, method, and quality criteria (e.g., sludge depth). Even if the sludge valves are to be replaced, manual sludge removal should be documented in the interim.</p> <p>REC4. Develop, review and update all other procedures to reflect maintenance</p>	<p>OFI1. The communications flow chart has a minor inconsistency (logic loop error) concerning stopping supply if the water is not used for the correct purpose. In this scenario, a separate decision step should be added to the flowchart to stop supply.</p> <p>OFI2. Investigate and trial algal control measures, such as barley bales, natural enzymes, etc. Any method trialled should include a simple but effective monitoring program to test the efficacy of control measures.</p>



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			<p>undertaken during the barley bale trial. It is recommended that barley bales be revisited, or other algae control measures considered. Desludging the ponds is very costly and will not proceed at this stage.</p> <p>A major non-compliance is not given as DES is aware of the issues, and the Council is undertaking some relevant works to address these, including an interim operating plan as they design and construct a new plant (not expected to be complete until 2027).</p> <p><i>Calibration.</i></p> <p><i>E. coli</i> is tested using Colilert and Quanti-tray. It was mentioned during the audit that all other analysis is completed externally. There is no servicing schedule or QC/QA for the Colilert system; however, a new incubator was purchased for the <i>E. coli</i> testing about three months ago. While Colilert does not require calibration, it is recommended that a QC/QA program be implemented to ensure the media is stored correctly, the media is in date, the lamps work as designed, etc.</p> <p>A minor non-conformance is recorded for the maintenance procedures, which have not been reviewed since 2006 and do not reflect the current process or provide adequate task detail, and there is a lack of QA/QC procedure for testing equipment.</p>		<p>requirements accurately.</p> <p>REC5. Develop and implement a Colilert QA/QC procedure.</p>	

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3. Compliance with the plan	Quality assurance and quality control standards	<p>Staff Interviews</p> <p>Virtual site tour</p> <p>Procedures</p>	<p>The QC (monitoring &amp; calibration) and QA (checking /analysing results) are partially effective. Samplers are trained in sampling techniques, either as Environmental Health Officers or Water &amp; Wastewater Operations Certificate III. A NATA-accredited lab is used for external analysis. As above, CCP1 has not been fully implemented (see section Statements &amp; Figures).</p> <p>As per the plan and approval notice, the QA task of assessing compliance with <i>E. coli</i> is not occurring. As required, the rolling 12-month <i>E. coli</i> compliance has not been calculated monthly. The requirement states that 95% of results in the previous 12 months must be less than 1000MPN, which must be calculated at the end of each month. The council reviews results as they come in and calculates <i>E. coli</i> compliance annually when the annual report is written. There appears to be a lack of understanding of this requirement.</p> <p>A minor non-compliance is recorded for the lack of monthly <i>E. Coli</i> analysis.</p>	Minor Non-Compliance	REC6. Develop and implement a process to ensure monthly <i>E. coli</i> analysis occurs as per the approval conditions.	

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4. Compliance with the plan	Operational & verification monitoring	<p>Effluent test results spreadsheet</p> <p>Virtual site inspection</p> <p>Staff interviews</p>	<p>Source water monitoring is covered in Section 5 of the Plan. Monthly monitoring of influent water includes the same physicochemical parameters as environmental compliance effluent monitoring (TSS, TDS, pH TN, TP, BOD) to allow analysis of the process's effectiveness. Section 6 covers verification monitoring, with effluent monitoring as mentioned above. Since 2022, monthly sampling has not occurred until 19 May 2024. Annual influent sampling has not occurred as per the plan.</p> <p>Three (3) <i>E. coli</i> verification samples were missed and not resampled in 2024 - 2 occurrences of no access and 1 occurrence of no sampling due to staff illness. As discussed,, monthly sampling of TSS for CCP1 Imhoff Tanks (from the V notch on Imhoff tanks) has not been implemented.</p> <p>A major non-compliance is recorded for the missed source water, monthly effluent, and CCP1 sampling. The auditor recognises the loss of key staff as a mitigating circumstance.</p>	Major non-compliance	REC7. Thoroughly review and understand the monitoring requirements and implement a robust QA process to ensure all monitoring is implemented as per the Plan.	

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5. Compliance with the plan	Corrective & preventative actions	Staff interviews  RWMP  Documented evidence where needed	<p>At least three (3) <i>E.coli</i> verification samples were missed in the 2024 calendar year to date - 2 occurrences of no access and 1 occurrence of no sampling due to staff illness. In Section 7 of the RWMP, which deals with incident and emergency management, missed verification samples are considered a level 3 Incident, and according to the communications flow chart, the end users and Regulator are to be notified of missed samples (as well as lab errors). These missed samples were not notified to the Regulator or end user.</p> <p>The operation of the pond system has been identified as CCP2. <i>E. coli</i> is monitored at the V-notch on the outlet of pond five before supply to the farmer for sub-surface irrigation. The critical limit for <i>E. coli</i> is either two consecutive samples (including follow-up) &gt;1000MPN or 95% of samples reviewed over the previous (rolling) 12 months are less than (&lt;)1,000MPN. On 9 June, an <i>E. coli</i> detection of 1413 MPN occurred. Follow-up sampling was not conducted, and the following regular sample wasn't taken due to staff illness. The following sample taken on 23 June was also &gt; 1000MPN. The Regulator was not notified of the breach of a critical limit, nor was the date the farmer was informed and directed to divert supply. Several samples &gt; 1000MPN occurred in July and August 2024. The Regulator has since been notified of the exceedances.</p> <p>This is recorded as a major non-conformance.</p>	Major non-compliance	REC8. Thoroughly review and understand the corrective and preventive actions in the CCP procedure and implement a robust QA process to ensure all corrective and preventative actions are implemented as per the Plan.	
6. Compliance with the plan	Recommendations of previous audits	Staff interviews  Documented evidence where needed	Most recommendations and opportunities for improvements (OFIs) from the 2022 audits have been completed or closed. The remaining open items have been included in the improvement plan, including REC 2: Review and document all maintenance requirements, REC 3: Develop and implement an equipment calibration schedule/program, REC 8: Format the effluent results spreadsheet to enable calculation of annual value every month, and OFI4: Develop an effluent sampling	Compliant		

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			<p>SOP. An improvement action plan was developed during the 2022 review and is managed by the DCHS.</p> <p>A compliant grade is identified as most actions have been completed or closed.</p>			
7. Compliance with the plan	Ongoing requirements for revalidation of the scheme	Staff interviews	<p>The triggers for revalidation are mentioned in Section 4.2 of the RWMP.</p> <p>There has been no material change that has negatively impacted the risk profile.</p> <p>A compliant grade is identified.</p>	Compliant		
8. Compliance with the plan	Annual reporting	<p>Annual reports</p> <p>Documented evidence where needed</p>	The annual report for 2022/23 was completed and submitted within the required timeframes. It meets the requirements as per the guidelines.	Compliant		
9. Compliance with the Plan Conditions	Internal audit must be conducted by 20 June every two years, in accordance with section 260 of the Act (condition 7.1)	Staff interviews	The internal audit (this audit) was due on 20 June 2024. It is two months late, and a minor non-compliance is recorded.	Minor Non-Compliance	REC9. Develop an annual Water Quality Calendar for all Regulatory requirements and assign responsibility. It is recommended that it include other water and wastewater system requirements.	
10. Compliance with the Plan Conditions	Regular audits (external) must be conducted by 20 June every three years (condition 7.2)	Staff interviews	A regular (external) audit was last conducted in 2022 and was not required in the timeframe covered by this internal audit.	Compliant		

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11. Compliance with the Plan Conditions	Regular review (condition 7.3)	Staff interviews	The regular review was last carried out in 2022 and was not required in the timeframe covered by this internal audit.	Compliant		
12. Compliance with the Plan Conditions	Annual reports (condition 7.4)	Staff interviews Annual report	The annual report for 2022/23 was completed and submitted within the required timeframes. The contents meet the requirements as per the guidelines.	Compliant		
13. Compliance with the Plan Conditions	Water quality criteria, annual value and replacement sampling and testing (conditions 7.5, 7.6, 7.7)	Staff interviews RWMP Documented evidence where needed	<p>Follow-up samples for the <i>E. coli</i> detections &lt;1000MPN were not taken as per auditable element 5. Samples have not been sent to a NATA lab for analysis every six months, per condition 7.5.</p> <p>The calculation for rolling 12-month <i>E. coli</i> compliance was not completed at the end of every month. A month-by-month compliance summary is included in the annual report. Rolling monthly analysis of annual results must occur at the end of each month. This was also picked up in the 2022 audit.</p> <p>Compliance sampling was missed on 21/1/24, 31/3/24, and 16/6/24 due to access issues and staff illness, with the March sample missed due to flooding. Replacement sampling was not completed, and the regulator was not notified, as per the requirement.</p> <p>A major non-compliance is recorded because there appear to be systemic issues in implementing the sampling plan, analysing results and follow-up sampling, which has potentially contributed to the major non-compliance in reporting non-compliant results and incidents (see below)</p>	Major non-compliance	REC10. Develop an RWMP induction/ familiarisation session for all personnel involved in implementing the RWMP, with an annual renewal, to ensure the team is familiar with the requirements and how the plan will be implemented, including managing staff absences, etc.	OFI3. Establish a complementary regular (monthly or quarterly) documented meeting/ forum with key stakeholders to track compliance with the plan, especially focussed on sampling, analysis of results, reporting requirements, improvement actions and emerging issues

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14. Compliance with the Plan Conditions	Non-compliance with water quality criteria - verbal notification, initial notification and investigation report (conditions 7.8, 7.9, 7.10)	Staff interviews RWMP Documented evidence where needed	<p><i>E. coli</i> is monitored at the V-notch on the outlet of pond five before supply to the farmer for sub-surface irrigation. The critical limit for <i>E. coli</i> is either two consecutive samples (including follow-up) &gt;1000MPN or 95% of samples reviewed over the previous (rolling) 12 months are less than (&lt;)1,000MPN. On 9 June, an <i>E. coli</i> detection of 1413 MPN occurred. Follow-up sampling was not conducted, and the next regular sample wasn't taken due to staff illness. The next sample, taken on 23 June, was also &gt; 1000MPN. The Regulator was not notified of the critical limit non-compliance. Several samples &gt; 1000MPN have occurred in July and August 2024. The Regulator has since been notified of the exceedances.</p> <p>This is recorded as a major non-conformance. The recommendation is the same as for the major non-compliance recorded in element 13.</p>	Major non-compliance	REC11. Develop an RWMP induction/ familiarisation session for all personnel involved in implementing the RWMP, with an annual renewal, to ensure the team is familiar with the requirements and how the plan will be implemented, including managing staff absences, etc.	
15. Compliance with the Plan Conditions	Incidents - verbal notification, initial notification and final investigation report (conditions 7.11, 7.12, 7.13)	Staff interviews RWMP Documented evidence where needed	<p>An incident as defined in the Plan includes non-compliance with WQ criteria, i.e. a critical limit breach, missed verification samples and non-compliance with environmental release limits, all of which require external reporting. This has not occurred for critical limit breach, missed verification sampling or missed environmental release sampling.</p> <p>This is recorded as a major non-compliance. The recommendation is similar to the major non-compliance recorded in element 13.</p>	Major non-compliance	REC12. Develop an RWMP induction/ familiarisation session for all personnel involved in implementing the RWMP, with an annual renewal, to ensure the team is familiar with the requirements and how the plan will be implemented, including managing staff absences, etc.	

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16. Compliance with the Plan Conditions	Stop supply - permanent stoppage, temporary stoppage, stop supply to users (conditions 7.14, 7.15, 7.16)	Staff interviews  RWMP  Documented evidence where needed	<p>According to the corrective actions in CCP2, a temporary stoppage of water (diversion from the date farm) should have occurred following a recent <i>E. coli</i> detection &gt;1000MPN; however, this has not occurred.</p> <p>There are no reports of the end user using the water for anything other than agreed.</p> <p>As temporary stoppage did not occur following <i>E. coli</i> detections are above the critical limit, a major non-compliance is recorded. The recommendation is similar to the major non-compliance recorded in element 13.</p>	Major non-compliance	REC13. Develop an RWMP induction/ familiarisation session for all personnel involved in implementing the RWMP, with an annual renewal, to ensure the team is familiar with the requirements and how the plan will be implemented, including managing staff absences, etc.	
17. Compliance with the Plan Conditions	Source water monitoring program and results (condition 7.17)	Staff interviews  RWMP  Documented evidence where needed	<p>Source water monitoring was to begin by 20 June 2017. However, consistent source water monitoring has not commenced. The 2022 audit also made this finding. There are numerous missing results in 2022, 2023 and 2024.</p> <p>This was identified during the previous audit but not rectified, so it is recorded as a major non-compliance. The recommendation is similar to the major non-compliance recorded in element 13.</p>	Major non-compliance	REC14. Develop an RWMP induction/ familiarisation session for all personnel involved in implementing the RWMP, with an annual renewal, to ensure the team is familiar with the requirements and how the plan will be implemented, including managing staff absences, etc.	



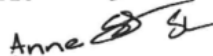
## APPENDIX B - STATUTORY DECLARATION

### Statutory Declaration by the Auditor

Oaths Act 1867

#### Statutory Declaration


QUEENSLAND }  
TO WIT

Anne 

I, Sarah Lunau, of 136 Goondoon St, Gladstone QLD, 4680, do solemnly and sincerely declare that in relation to the audit about the approved recycled water management plan for the Chareville Date Farm Scheme conducted by me on 23rd August 2024 that:

1. I hold the following qualifications and experience: Master of Integrated Water Management, Bachelor of Science (Hons), >17 years of water quality risk assessments, operations & maintenance management, development and review of WQMS for utilities across Queensland and New South Wales.
2. To the best of my knowledge, information and belief, I have not knowingly included any false, misleading or incomplete information in the report
3. To the best of my knowledge, information and belief, I have not knowingly failed to reveal any relevant information or document to the regulator; and
4. I certify that to the best of my knowledge, information and belief,
  - the report addresses the matters relevant to the audit to which it relates and is factually correct; and
  - the opinions expressed in it are honestly and reasonably held.

And I make this solemn declaration conscientiously believing the same to be true, and by virtue of the provisions of the *Oaths Act 1867*

 136 Goondoon St, Gladstone, 4680

Taken and declared before me at Gladstone, Queensland this 28th of August 2024, }

<<signature of person before whom the declaration is made—to be signed by a person who is able to witness a Statutory Declaration under the *Statutory Declarations Act 1959*—e.g. Justice of the Peace, Commissioner of Declarations>>  
Justice of the Peace/Commissioner for Declarations



SAMANTHA ANNE SPENCER  
SOLICITOR

at 136 Goondoon Street  
Gladstone QLD Gladstone Legal

28.08.24