CLUTHA DISTRICT COUNCIL

Notice is hereby given that a Meeting of the Infrastructure Strategy & Operations Committee will be held in the Council Chambers, 1 Rosebank Terrace, Balclutha on Thursday 6 June 2024, following the Corporate & Policy Committee meeting.

Steve Hill
CHIEF EXECUTIVE OFFICER

Committee Members

Councillor Bruce Graham (Chairman)
Councillor Kevin Barron
Councillor Dane Catherwood
Councillor Wayne Felts
Councillor Gaynor Finch
Councillor John Herbert
Councillor Michele Kennedy
Councillor Alison Ludemann
Mayor Bryan Cadogan
Councillor Simon McAtamney
Councillor Dean McCrostie
Councillor Brent Mackie
Councillor Jock Martin
Councillor Ken Payne
Councillor Bruce Vollweiler

INFRASTRUCTURE STRATEGY & OPERATIONS COMMITTEE

6 June 2024

APOLOGIES
None advised at the time of printing this agenda.

DECLARATIONS OF INTEREST
No declarations of interest advised at the time of printing this agenda.

Item	Page #	Title
1.	**3**	**Operations Update – Transportation** *(For the Committee's Information)* Reports progress on transportation items within the department.
2.	**6**	**Operations Update – Greenspace and Waste** *(For the Committee's Information)* Reports progress on greenspace and waste matters within the department.
3.	**11**	**Operations Update – Three Waters** *(For the Committee's Information)* Reports progress on Three Waters matters within the department.
4.	**18**	**Infrastructure Strategy & Delivery Update** *(For the Committee's Information)* The report provides information on various Projects/Contracts that are in progress at this time.
5.	**39**	**Compliance Update Report** *(For the Committee's Information)* The report provides updates on compliance-related issues across the Service Delivery Department.

Infrastructure Strategy & Operations Committee

Item for INFORMATION

Report	Operations Update – Transportation
Meeting Date	6 June 2024
Item Number	1
Prepared By	James Allison – Transportation Operations Manager
File Reference	898114

REPORT SUMMARY

The report details items from the Operations Transportation Team that are for information only.

RECOMMENDATIONS

1. **That the Infrastructure Strategy & Operations Committee receives the 'Operations Update – Transportation' report dated 6 June 2024.**

REPORT

1. Health and Safety

There were 4 incidents, and 9 near hits reported on the roading contract last month, with sun strike being a concern at this time of year.

2. Roading

The metaling trucks have been working out of the Warnock Rd (Catlins), Lucas's (Greenfield) and Milton quarries, with over 7,000 tonnes laid on the network during April. They are now working from Lyders (Waitahuna) quarry.

Sealed road stabilisation repairs have finished for the season, as the weather has become too cold. The crew have completed over 90% of the programmed work with 13,400m² done this year.

Last month the digger crews cleared close to 7km of water tables. SouthRoads have also jetted 68 culverts and replaced 5 culverts.

The site line improvements programmed for May on Cannibal Bay Road have been completed. The scope of this work was amended while the contractor was onsite after consultation with locals, this work was a funded from Minor Improvements budget, due to the Port Molyneux sealed car parks, being completed under budget and improvements were prioritised by available funds.

SouthRoads sub-contracted Intergroup to clear a culvert on Owaka Highway just before South Otago Grain Co. The culvert was blocked with willow roots and the operator thought it was one of the most difficult jobs that they have had recently.

The replacement of a collapsed culvert on Dalvey Rd will start about 4 June and is expected to take about a month to complete at a cost of over $200,000. This culvert is 8m below the road and we believe it was damaged in the 2020 flood. However, the damage was only discovered when the road started to slump.

We have programmed a round of tree trimming for June to improve sight lines and safety around the network. Most of this is native bush that requires cutting back every 3 or 4 years.

SouthRoads have claimed 83% of their Contract 821 budget at 83% of the way through the year.





3. Streetlight Maintenance Contract

NES have started the infill program and have completed most of Heriot and Tapanui. They are currently in Balclutha and plan to move onto Lawrence after that.

Infrastructure Strategy & Operations Committee

Item for INFORMATION

Report	Operations Update – Greenspace & Waste
Meeting Date	6 June 2024
Item Number	2
Prepared By	Jason Foster – Head of Infrastructure Operations
File Reference	898119

REPORT SUMMARY

The report details items from the Operations Greenspace & Waste Team that are for information only.

RECOMMENDATIONS

1. **That the Infrastructure Strategy & Operations Committee receives the 'Operations Update – Greenspace & Waste' report dated 6 June 2024.**

REPORT

1. **Health and Safety**

Green Space: -

Three recent safety reports have been highlighted from our Greenspace contractor. A mower operator nearly lost control while mowing a sloped berm, a trailer incident involving a missing coupler bolt underlining the importance of pre-trip inspections, and our contractors witnessed a 3rd party trailer become partially detached due to an unsecured connection.

These incidents were all reviewed with our contractor, and we continue to actively collaborate on a series of internal safety audits to proactively identify and address potential hazards. A good example of this was our recent round of audits with an arboriculture subcontractor, which revealed exemplary safety practices, particularly in their approach to hazard control.

Waste: -

A safety audit and methane level review at the Mt Cooee landfill revealed deficiencies in our contractor's safety plan. This audit prompted the development of a new safety plan, increased hazard identification, and the rectification of defects with on-site equipment. The appointment of new team members dedicated to safety and

environmental aspects of landfill and waste management at the infrastructure operations team facilitated the early identification of these issues. So far this resource has led to improvements in signage, safety equipment, gas monitoring, and staff training.

Internal safety audits of kerbside collection commended our contractor, particularly their drivers for good overall safe practices. Discussions were also undertaken on fatigue management, handling difficult customers, and incident response procedures.

Addressing environmental and consent concerns, construction of a new pump station at Mt Cooee will begin soon, with recommendations made to ensure proper subcontractor safety management practices are implemented.

2. Greenspace

Service Delivery and Quality Management:

Our contractor maintains their commitment to delivering greenspace services in accordance with the agreed-upon outcomes. The coming months will see a focus on developing an improved quality management system to ensure consistent services.

Operating Budgets

The current expenditure for Greenspace routine operational costs in the townships, toilets and cemeteries is tracking to just be within the respective budget overall by the end of June 2024.

The non-routine budgets however are currently 170% over budget when combined, the majorly overspent budgets consist of Lawrence, Milton, Tapanui, Waihola, Cemeteries and Public toilets.

To keep within these non-routine budgets is difficult to manage as the non-routine budgets are used to try and keep on top of repairs, vandalism, maintenance, or low-level improvements usually tied in with community-based additions that are outside the scope of the LoS of routine maintenance within the current Greenspace contract.

Going forward to the end of the 23/24 period any further spending is for essential safety work.

Using existing non-routine budget allocations into the 24/25 period will limit what can be accomplished outside of the routine maintenance and run the risk of going overbudget with events outside of planned works. Some examples for the 23/24 period include the requirement to remove the Silver Birches due to construction damage alongside the Whitehaven Street Playground that exceeded the Lawrence budget in a singular works. In Milton a requirement to trim the Taylor Park and Showgrounds trees away from the powerlines exceeded the entire yearly non-routine budget for Milton.

Another is for Tapanui, a fence replacement at Bushyhill Street playground took 90% of the non-routine budget there early in the financial year,

Community Engagement:

Beyond service delivery, the team has actively engaged with the community. They have collaborated with residents on various greenspace improvement projects, fostering a spirit of partnership. A recent example of this collaborative approach was a meeting with the Waihola community to provide information and guidance on erosion control measures around the lake.

Following a review of contractor performance, several key improvements/changes have been implemented as detailed below:

Clinton:

In preparation for the installation of image panels as part of the "Our Place" plan by Clinton, repairs have been completed on toilet door latches and hinges.

Catlins:

Jacks Bay: Following a lock malfunction that may have resulted in a woman becoming trapped inside, repairs were facilitated for both the lock and the door.

Pounawea Playground: To address the issue of debris accumulation after strong winds in the old-growth Totara trees surrounding the playground, arborists recently completed a significant deadwood removal project. This initiative will significantly reduce the need for maintenance in the area for years to come, barring extreme weather events.

Milton:

Milton Memorial Park: A recent safety assessment necessitated the removal of one of the plum trees. Our greenspace supervisor is currently in consultation with the RSA regarding the potential removal of the remaining plum tree and exploring suitable replacement options.

Moore Park: Repairs have been completed on both flying fox structures at Moore Park. The larger structure received new compacted soil around its base, and the handle on the smaller structure will be repaired shortly.

Mount Stuart Park: A park bench at Mount Stuart Park recently required reseating due to what is presumed to be vehicle damage.

Balclutha: Gormack Street Playground: A safety inspection necessitated repairs to both the aging slide and swing set to ensure continued usability. However, it's important to note that these pieces of equipment are nearing the end of their useful life and replacement should be considered in the near future.

Henley Ferry Road:

We have identified that an existing public toilet located just off Henley Ferry Road is not serviced under the current contract and are unsanitary and represent a health risk.

These toilets are not a Council asset.

We understand the importance of accessible public toilets in our community. However, due to the age and condition of these facilities, they present a potential safety and environmental hazard. In light of this, we have facilitated a closure and removal.

3. Waste

Service Delivery and Quality Management:

Collection trucks breakdowns resulted in several missed and delayed collections, but overall waste and recycling services remained reasonably stable this period and the resident requests were managed well. The new replacement trucks as part of our contract extension will hopefully mitigate the regular breakdowns.

Contract Extension

March 2024, Council approved a report which authorised increased operating budgets for solid waste collection and disposal services. This rise reflected the need to renegotiate contractor costs associated with the extension, as well as projected increases in costs associated with sorting recycling at 3rd party vendors.

The extension has now been completed, with the Notice to Contractor being approved and signed on 21 May 2024 with the new termination date being 30 June 2026.

The new contractor costs have impacted both landfill gate fees and collection rates and this will be considered by Council as part of the Long-Term plan process. However, through negotiations this increased has been reduced owing to Council purchasing our own collection vehicles.

A database with all the ratepayers in the district has also been sent to the contractor to cross check with drivers to find out discrepancies in the collection numbers and properties with extra wheelie bins.

Community Engagement:

The team visited the elder care in Milton and spoke with members providing guidance on identifying different recyclable items and what bins they go to. In addition, both the operations team and the strategy team visited the transfer stations with the goal of discussing cost effective community-based waste management ideas moving forward.

Operating Budgets

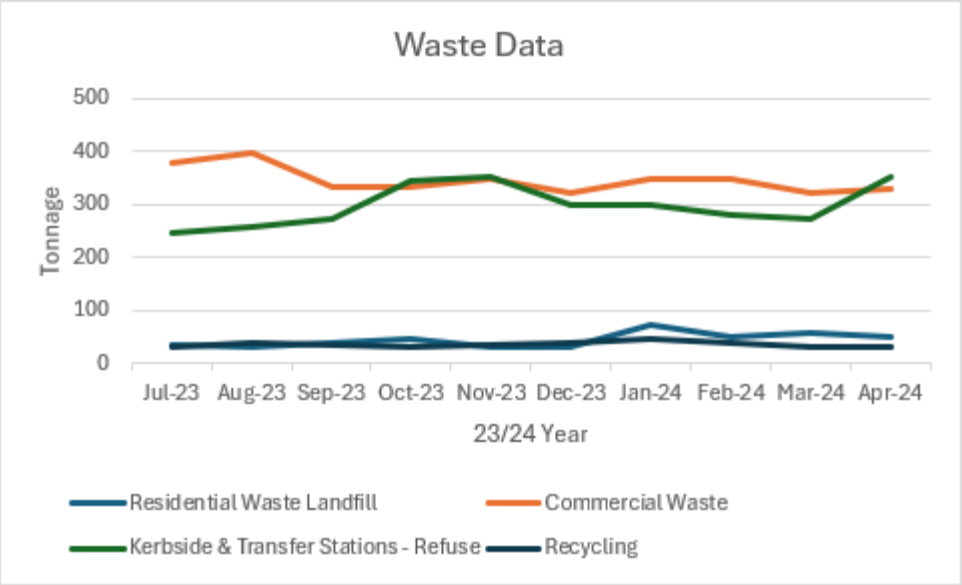
The current expenditure for Kerbside collection and Mt Cooee Operations costs has exceeded the budget for 2023/2024. For the 2024/2025 Budget, adjustments are considered with the new collection costs, loans for new vehicles and environmental monitoring.

With the increase in collection costs and the purchase of 2 new vehicles, a report suggesting proposed gate fee changes and associated rates increases was submitted during the consultation process of the LTP.

Drainage improvements

The site establishment works has started for the new pumpstation project at Mt Cooee Landfill. The work includes reshaping of the leachate pond, installation of new pump station and installation of new manhole. The work is estimated to finish by the end of July 2024.

Waste and Recycling Monitoring



Infrastructure Strategy & Operations Committee

Item for INFORMATION

Report	Operations Update – Water
Meeting Date	6 June 2024
Item Number	3
Prepared By	Linda Till – Head of Three Waters
File Reference	898121

REPORT SUMMARY

The report provides updates from the Operations Water Team that are for information only.

RECOMMENDATIONS

1. **That the Infrastructure Strategy & Operations Committee receives the 'Operations Update – Water' report dated 6 June 2024.**

REPORT

1. Water

Staffing

There are a number of operator and other requirements underway currently.

Phoenix Dam

The bypass of Bluejacket Creek around Phoenix Dam was fully commissioned on 8 May 2024. Since then, the pumps emptying Phoenix Dam have been running only intermittently, and from 16 – 24 May have not been pumping at all. Despite this, the bypass has delivered sufficient flow to supply Lawrence WTP without interruption.

The level of gauge D in Phoenix Dam is -4.326 m as of 20 May, more than a metre below the "unsafe" level of -3 m.

Work on the two sections of the Bungtown Race, from the weir in Bungtown Creek to the Old Tunnel (upstream section), and from the Old Tunnel to the discharge point into Bluejacket Creek (downstream section), has begun. The syphon and piping of the upstream section is expected to be complete by 7 June 2024. The downstream section's work is estimated to be complete by 30 June, but this is subject to change as the work progresses.

As of 20 May, Port Blakely Ltd have not officially informed us of their plan for decommissioning of Phoenix Dam, i.e. removal of a section of the dam wall to restore the dam to a creek and removing the risk of collapse of the wall. Sediment release from this work

poses a serious risk to the quality of Lawrence WTP's water source, and we will monitor their planning and execution of this project to mitigate this risk.

Lawrence

An aluminium advisory was issued for Lawrence on 17 January 2024 after an exceedance result was returned from the network in samples taken on 11 January 2024. This remains in place as further exceedances have been received. Limited flushing has been undertaken noting that the town remains on Stage 3 restrictions. Recent results have shown an improvement however the advisory remains in place at the time of writing.

Following the Taumata Arowai site visit/audit on 8 March we received notification of concerns over the condition of the plant and its ability to meet aspects of the Drinking Water Quality Assurance Rules. As a result, a Boil Water Notice was placed on the township. To try and avoid keeping the boil water notice on until delivery of the new Greenfield Scheme the Operations team has been working with contractors to develop a shorter-term solution involving upgrading the UV disinfection process at the plant. The notice remains in place at the time of writing.

Milton

Work is ongoing at the Milton Treatment Plant following the audit by Taumata Arowai and the issuing of a Compliance Order on 24 November 2023.

Work to install chlorine monitoring at the reservoir now fully complete - this was a requirement of the original Compliance order which required completion by late March but was approved by Taumata Arowai to be extended to 31 May.

Taumata Arowai Reviews and Audits

Monthly updates in April and May have been provided to Taumata Arowai for Clutha District Council's progress with requirements of the Compliance Order for the Milton water supply.

A Drinking Water Safety Plan review meeting was held with Taumata Arowai staff on April 16. Taumata Arowai staff provided feedback on the DWSPs for the Moa Flat, North Bruce, Stirling, Lawrence, Waitahuna, Tuapeka West, and Richardson Rural water supplies.

As for previous DWSP reviews, CDC was required to provide an action plan to Taumata Arowai for how these remaining DWSPs will be updated. DWSPs will not be developed for Lawrence, Tuapeka West, or Waitahuna Rural, as these will be replaced with a DWSP for the new Greenfields Scheme. This was provided to Taumata Arowai on May 14, with no feedback received on this action plan at the time of writing.

Reticulation Contract

Contractual negotiations for reticulation maintenance arrangements are reliant on back-to-back contract arrangements being agreed between the lead contractor and the sub-contractors partnering with them. The margin applicable for contract works between the lead contractor and Council has been agreed, with charges reduced effective 1 March. Staff are now working to finalising contract arrangements subject to any further approvals required.

Crown Street Capacity

The Crown Street fence and access gate have been re-arranged, to suit the new layout once we get additional portacoms. The foundations for the portacoms are expected to be completed by end of May 2024.

However, we are still struggling to get suppliers to provide the required certification for their portacoms. We are following up regularly and looking for more alternative suppliers.

2. Wastewater and Stormwater

Biofiltro sites

As reported last month, work is continuing to improve the performance of the five Biofiltro wastewater treatment plants (WWTPs). Replacement PLCs (programmable logic controller – the plant's 'brains') and associated control system have now been installed at the Stirling, Kaka Point and Lawrence sites. The new PLC and controls are scheduled to be installed at the Owaka site during w/c 20 May, with the remaining Tapanui site to follow during w/c 27 May.

- Following replacement of the wood shavings Biofiltro beds at the Lawrence and Kaka Point sites in February, both WWTPs are producing a much-improved effluent. Routine final effluent samples taken at both sites in April and May have been fully compliant, apart from the Total Nitrogen parameter, which is not able to be treated by the WWTPs without a dedicated treatment stage. On this matter, investigations of potential high concentration sources of Total Nitrogen within the sewer networks

- The Biofiltro bed at the Stirling WWTP was replaced during w/c 13 May (see attached photo). In conjunction with the new PLC and control system, this should enable the bed to remain in serviceable condition for at least the next five years.



Stirling WWTP Bed replacement prior to irrigation

- The Biofiltro bed at Owaka is scheduled to be replaced during w/c 20 May. Although initially planned for the summer of 2024/25, this work has been brought forward in response to its poor (flooded) condition (see attached photo) which would inevitably cause compliance issues over winter months. The Owaka sewer network is known to suffer from significant 'inflow and infiltration' (i.e. leakage and cross-connection) issues, causing excessive flows into the WWTP in winter months. In an effort to avoid flooding the bed due to the excessive flows, we are trialing a coarser bed material, making it more free draining. If successful, this material will be used at the Tapanui WWTP when the bed is replaced in the summer of 2024/25.



Owaka WWTP bed (looks like a pond) surface

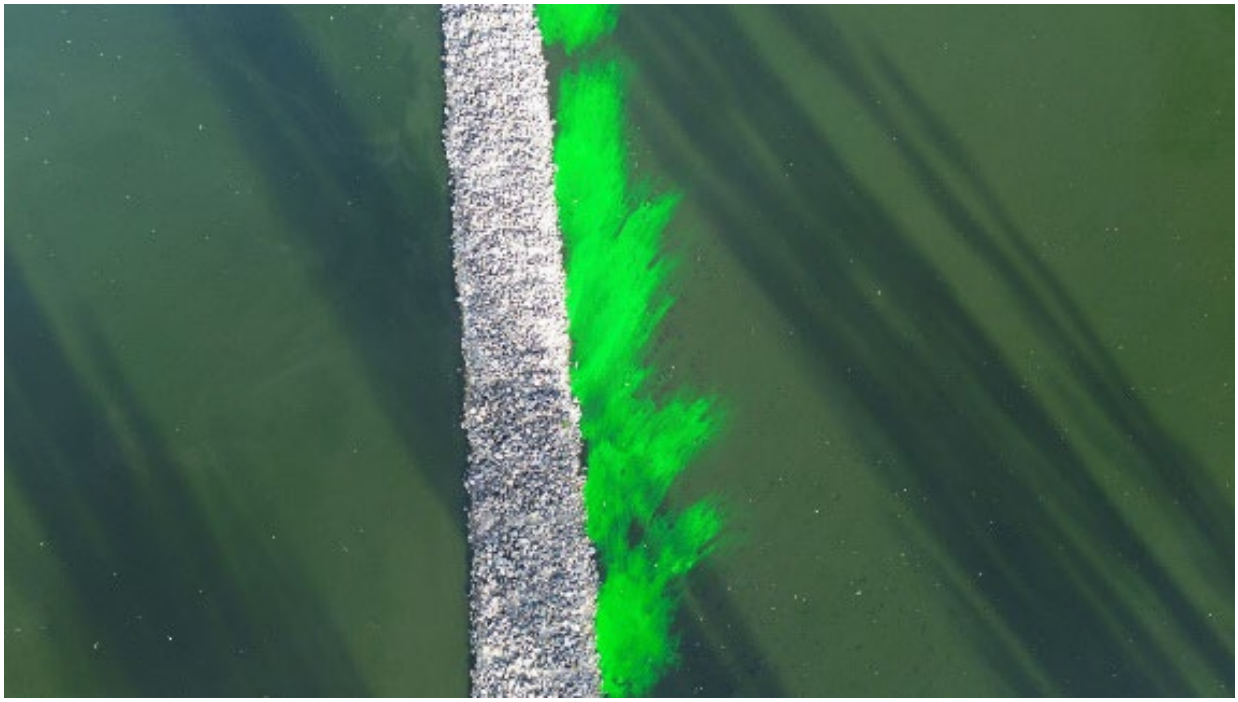
- As reported last month, Otago Regional Council (ORC) invited CDC to propose new consent conditions for effluent discharge compliance monitoring at all five Biofiltro sites. This reflects the poorly written, confusing, and unenforceable existing conditions, as identified by the presiding judge at the court case between ORC and Citycare Water in 2023. We have had confirmation that our proposed conditions have now been approved by ORC and we await the issue of the amended consents.

Other Wastewater Treatment Plants and General

- A major overhaul of the ultraviolet (UV) light disinfection modules at the Milton WWTP was undertaken on 13 May. This included replacement of most of the consumable parts, including all 12no. UV lamps. As a result, the disinfection efficacy of the modules has increased dramatically, with the routine sample taken in May recording a 'bug' count less than the limit of detection.

- Upgrades to the Balclutha, Clinton and Waihola WWTPs, reported last month, are still on-going. Power connections at Balclutha and Clinton are still to be established. Once commissioned in late May or June, improvements in discharged effluent quality should soon be seen at all three WWTPs.

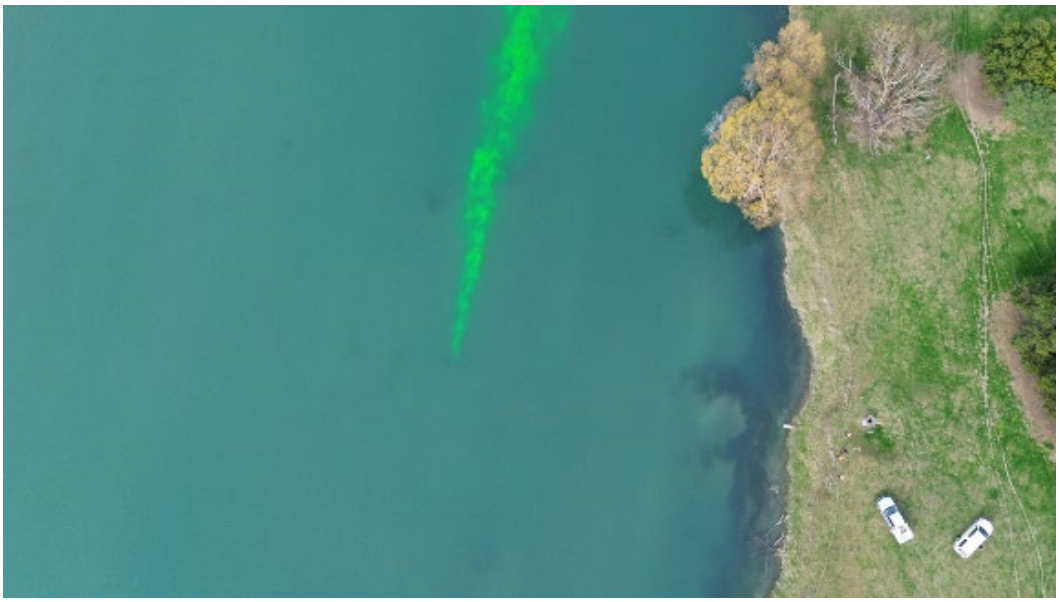
- Further to this recent dye testing was also undertaken at Balclutha Pond in late April. The purpose of this was twofold, firstly to assess the integrity of the newly constructed rock groyne across the pond and ensure there was no short circuiting through the groyne. Secondly, there is also a requirement to undertake testing of the outfall to ensure the effluent is being evenly distributed within the receiving water. The tests showed that there is no short circuiting within the pond system and that there is a good distribution of effluent within the receiving water.



Dye testing within the pond – no dye visible through groyne.



Dye testing within the pond – Faint Dye trace visible downstream of culverts.



Distribution testing within Clutha River

- Audits were undertaken by ORC at the Balclutha, Clinton, Milton and Waihola WWTPs on 15 Feb., with the remaining seven WWTP sites audited over two days in early April. We are awaiting here reports for all these audits.

  One key issue for ORC is the control of the bypass facility at the Milton WWTP. Although poorly defined in the consent, it is understood that only wet weather flows exceeding 40L/s should be allowed to bypass the full treatment process. This threshold does not appear to have been reached in bypass events, requiring urgent attention. We have recently obtained a copy of the control programme for the WWTP and have engaged a contractor to modify the programme to achieve the required control mechanism. This work should be completed by the end of May.

3 I&I Inspection Programme

There has been some slight progress since the previous report. For the month of April there has been at least one household from Tapanui and two households from Balclutha who have notified council on the completion of remedial works. It appears that property owners with houses on the market are much more willing to comply than the rest of the community. Another round of awareness campaigns is being initiated by council. Council has developed a draft action plan to resolve the current outstanding issues and move on to the next activity.

Table1: I&I Inspection Programme

Community	Contacted Council	Total non-compliant (Apr 2024)	Non-compliant gully trap(s) (initial)	Non-compliant gully trap(s) Apr 2024)	Stormwater pipe or drain directly connected to the sewerage system. (Initial)	Stormwater pipe or drain directly connected to the sewerage system (April 2024)	Some of the downpipe terminations are still unknown. (Initial)	Some of the downpipe terminations are still unknown. (April 2024)
Balclutha	321	38	413	20	160	12	241	12
Stirling	24	4	28	1	18	3	45	1
Tapanui	126	21	164	17	48	9	94	7
Clinton	38	6	39	3	28	6	21	0
Heriot	14	2	21	2	12	2	8	2
Kaitangata	62	13	61	6	67	12	100	4
Kaka	46	12	35	6	28	5	35	2
Lawrence	68	8	62	7	36	2	62	3
Owaka	40	5	66	3	25	4	29	0
Milton	225	44	311	39	67	4	169	10
Waihola	36	3	46	3	7	0	13	0
Grand Total	1000	156	1246	107	496	59	817	41

**Note - each property could have more than one gully trap(s), down pipes, and unknown downpipe terminations.*

Infrastructure Strategy & Operations Committee

Item for INFORMATION

Report	Infrastructure Strategy & Delivery Update
Meeting Date	6 June 2024
Item Number	4
Prepared By	Donna McArthur – Head of Infrastructure Strategy & Delivery
File Reference	898123

REPORT SUMMARY

The report details items from the Infrastructure Strategy & Delivery Team for information and discussion.

RECOMMENDATIONS

1. **That the Infrastructure Strategy & Operations Committee receives the 'Infrastructure Strategy & Delivery Update' report dated 6 June 2024.**

REPORT

1 Asset Management - THREE WATERS

1.1 Balclutha Water Treatment Plant Intake Upgrade

In May 2023, the Clutha District Council approached Stantec to request a re-assessment of the structure as part of the health and safety improvement program and renewals program. Considering that the previous assessment took place nearly five years ago and the recommendations have not been implemented, there is a possibility of further deterioration. Therefore, a reassessment of the structure is necessary to identify any issues (existing and new) and provide appropriate recommendations to ensure the safe use of the structure.

Detailed design drawings have been completed with collaboration from the Water Operations team and construction drawings are progressing along with tender documents.

The site is a popular diving spot with locals, and the design team has designed several options to create safe and accessible areas for diving and river activities. Cost estimates have been determined, and a report has been written for council to consider.

1.2 Lawrence Stormwater Modelling

Recent storms, including a 1 in 40-year event in February 2020, resulted in flooding to areas in Lawrence and underscored the need for action.

The project's main objectives are to identify flood-prone areas and investigate infrastructure solutions. This involves modelling storm events, assessing what the existing infrastructure can handle and what improvements can be made to protect properties and ensure better stormwater management.

A model has been developed and stormwater engineers are now undertaking an options analysis and flood mitigation options for Lawrence Township.

To mitigate flooding risks to properties on Colonsay Street, we have evaluated several options through modelling and propose a staged approach to address these concerns.

- **Stage 1:** Installation of a new 450mm diameter pipeline at the intersection of Colonsay Street and Lancaster Street. This initial step will improve drainage capacity.

- **Stage 2:** New kerb and channel will be installed to efficiently direct catchment runoff into the upgraded piped system along Colonsay Street.

- **Stage 3** Installation of a new 300mm diameter pipeline down Lancaster Street and an extension of the stormwater line at the top of Colonsay Street. These additional pipelines will be considered for a later stage as they are primarily required for more extreme weather events (1-in-100-year events).

Additional Measures:

- **Double sumps:** Double sumps will be installed in several locations throughout the project. These structures help capture debris and sediment, preventing them from entering the new piped system.



Figure 1: Proposed Staged Improvements - Colonsay/Lancaster Street

Ross Place Flooding:

Council staff and an engineering consultant GHD met to discuss options for preventing flooding on private property during extreme storm events (100-year storm) based off the model built. The goal was to minimise flooding on properties while allowing some flooding on roads.

Challenges:

- Ross Place is low-lying and drains poorly.
- There are three catchments that feed into this area.
- Upstream limitations prevent effective drainage improvements.

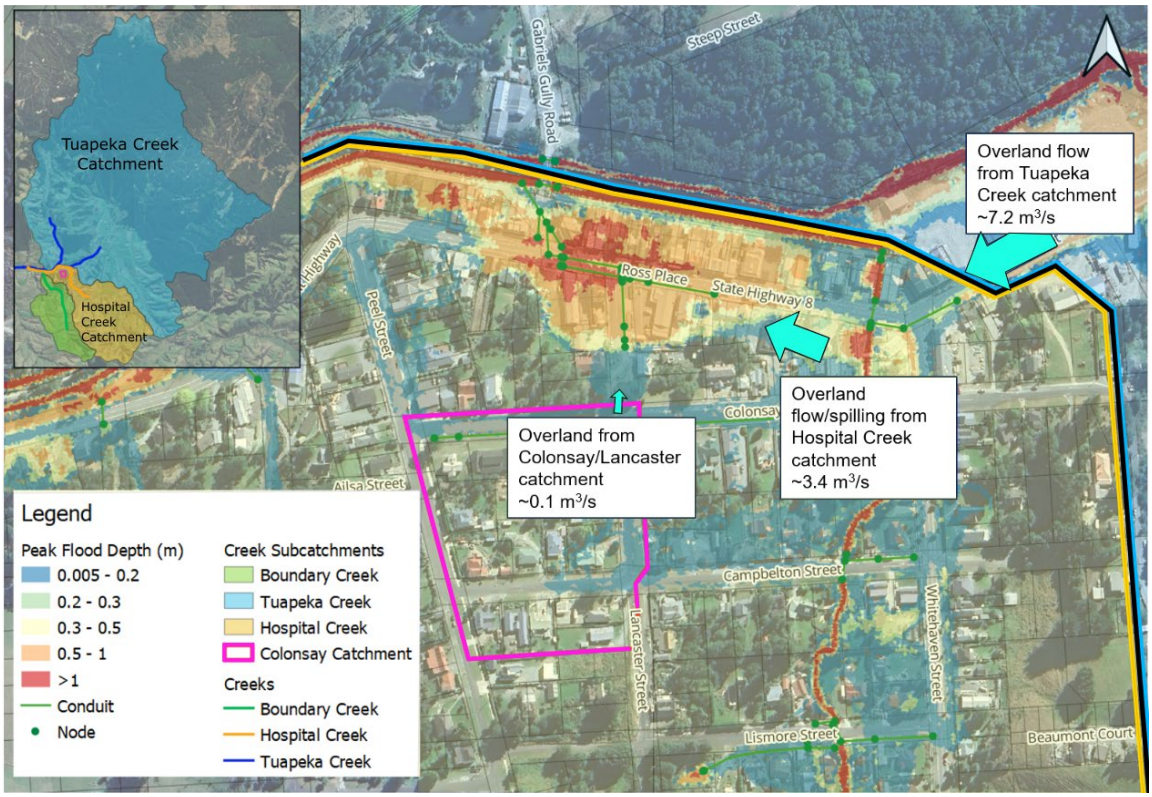


Figure 2: Catchments that feed into Ross Place

Council staff are currently evaluating cost-effective solutions, including detention ponds/tanks, to address these issues.

1.3 Wastewater – Initial Land Treatment Investigations

Driven by evolving regulations, rising costs, and a growing focus on environmental protection, the Clutha District Council (CDC) is reviewing its wastewater management practices for various communities. One potential option being explored is land-based discharge.

To evaluate this option, an environmental engineering consultant was engaged in early December 2022 to develop a report on potential disposal options. Building on this initial work, further investigations in 2023 focused on identifying suitable land treatment areas within a 10 km radius of all 11 existing CDC wastewater treatment plants.

This comprehensive report has now been presented to the council and the local Runanga.

Following initial discussions with the council and Runanga, the next steps involve comprehensive community engagement. This includes:

- Iwi and Hapu Engagement: Collaborative planning workshops will be held after an initial technical briefing, ensuring cultural considerations are integrated throughout the process.

- Detailed Investigations: Working with consultants, potential land treatment zones will be further refined, with engineering studies and cost estimates developed.

- Community Outreach: Public information sessions will be held alongside collaboration opportunities to ensure transparency and community input.

1.4 CDC Development Engineering Code of Practice

To promote efficiency and consistency across the Clutha District, we're proposing a collaborative effort with neighbouring councils to develop an engineering code of practice. This approach will benefit CDC, service providers and contractors.

Working together, we can avoid duplicating efforts and ensure a single, consistent code. Ultimately, a code will foster a more efficient and effective management and construction environment for everyone involved.

An initial kick-off meeting with CDC staff was held in March, and we are now in further discussions with Dunedin City Council.

1.5 Clutha District Water Supply Schemes Strategy

This Strategy is being developed to investigate connecting several rural water supply schemes operated by Council. The goal is to improve overall water system resilience, potentially postpone costly upgrades at individual treatment plants and amalgamation which could possibly reduce the number of plants and consents needed.

The proposal focuses on four potential connections:

- Richardson South and North: Connecting these schemes to either the Whitelea Rd WTP (with a capacity upgrade) or the Balclutha plant, allowing the Puerua WTP to be decommissioned or operate at a reduced capacity.

- Kaitangata: Connecting Kaitangata to either the Stirling plant (with an upgrade) or routing water through Stirling and then Balclutha (with a Balclutha plant upgrade). This would eliminate the need for a separate, recently tendered $3 million upgrade to the Kaitangata intake and improve network resilience.

The next steps outlined in the report involve using existing water network models to determine necessary pipeline upgrades for each connection scenario. Additionally, the report proposes estimating the capacity increase required at the water treatment plants to handle the additional demand. Finally, high-level cost estimates will be developed based on recent CDC water treatment plant upgrade projects.

1.6 Milton WTP – Capacity Increase and Iron and Manganese Removal Options Assessment

This assessment has been requested from Beca Limited to assess options for upgrading the Milton Water Treatment Plant. The project has three main goals:

1. Increase Treatment Capacity: Demand for treated water has grown due to the new pipeline connection to Waihola and population growth. The current capacity of 3 million litres per day (ML/day) needs to be increased to 5 ML/day.

2. Improve Water Quality: Residents have reported taste and aesthetic issues with the water, likely due to elevated iron and manganese levels. The proposal includes investigating treatment options to reduce these contaminants to acceptable levels as defined by the New Zealand Drinking Water Standards (NZDWS).

3. Wastewater Discharge: Current method using the old clarifier is malfunctioning. Consider new options like ponds with river discharge, treatment for wastewater network discharge, or land application.

This assessment will investigate solutions for all three problems. For the capacity increase, options like adding a new membrane processing unit are on the table. To improve water quality, various treatment technologies for iron and manganese removal will be evaluated. The project will also address the current, malfunctioning method of waste disposal from the treatment process. Possible solutions for backwash and waste streams include ponds with river discharge, treatment and discharge to the wastewater network, or land application. Ultimately, the goal is to ensure the Milton WTP can meet future water needs while delivering high-quality drinking water that complies with DWSNZ regulations.

1.7 Public Works Act 1981

The Public Works Act 1981 (PWA) empowers local authorities like our council to acquire land necessary for public works projects that benefit the community or is for necessary infrastructure. This memo discusses the current practices we employ when using the PWA for land acquisition for essential infrastructure, explores potential policy considerations for smoother implementation, and proposes next steps for further discussion.

Current Practices and Challenges

Clutha District Council prioritises a collaborative approach to land acquisition, aiming to achieve fair compensation and minimise disruption to landowners in order to maintain and install vital infrastructure. Our current practices predominantly consist of:

- **Negotiation and Dialogue:** We initiate open and transparent communication with landowners early in the process. This allows us to understand their concerns, answer questions, and explore options for achieving a mutually beneficial agreement.

- **Market Valuations:** We either engage qualified property valuers to determine the fair market value of the land being acquired or base an offer on the last CV per m^2/ha of land. This ensures landowners receive just compensation in accordance with the PWA.

- **Flexible Options:** We explore various options beyond straightforward purchase, such as land swaps or easements, alternate routes/sites, depending on the specific needs of the project and the landowner's situation.

- **Minimising Disruption:** We aim to minimise disruption to landowners throughout the process. This can involve providing clear timelines, keeping them informed of progress, and offering support services where needed.

- **Landowner Expectations:** Landowners may seek compensation exceeding fair market value, knowing the council's project needs the land.

- **Difficulties with Negotiation:** Some landowners are becoming increasingly difficult to negotiate with, causing project delays and financial burdens for the council.

- **Project Delays:** There are often lengthy negotiations that take time or there is a change of mind in decision, sometimes mid-way through projects which causes delays and cost council money and time.

Challenges of the Current Approach

Our current collaborative approach to land acquisition, while prioritising positive relationships, is encountering increasing challenges. Negotiations are becoming more protracted, with some landowners seeking compensation exceeding fair market value. This, coupled with a growing trend of landowners changing their minds or becoming difficult to work with, can significantly delay projects. These delays translate into financial losses for the council and ultimately hinder our ability to deliver essential public works projects in a timely manner. To address these issues, we need to explore alternative approaches, such as investigating more streamlined procedures or considering the use of the Public Works Act as a default option in situations where negotiations become excessively difficult or unproductive.

Using the Public Works Act

While utilising the Public Works Act (PWA) can ultimately secure the land needed for public projects, it's not without drawbacks. The process can be adversarial, leading to legal action from disgruntled landowners. This can extend project timelines and increase overall costs. Additionally, resorting to the PWA can damage relationships with landowners, perception of council, fostering hostility and potentially leading to further challenges during construction or future projects in the area.

The PWA allows land acquisition for public works projects demonstrating a clear public need (e.g., essential infrastructure, public safety). Cost is a consideration, but public benefit takes priority. Compulsory Acquisition is usually reserved for "essential" projects where the owner is unwilling to sell. Alternatives options for non-essential projects, councils should explore voluntary purchase or land swaps before resorting to the PW Act.

The PWA as a Last Resort

Compulsory acquisition provisions of the PWA would only be used as a last resort, after exhausting all reasonable attempts to reach a negotiated settlement with the landowner. This has not been used to date by council and could result in costly, drawn out court proceedings.

Process Development and Decision Sought

In light of the challenges outlined above, we think that consideration of a potential shift in policy and process should be discussed. A vote is proposed to determine whether the council should prioritise using the Public Works Act (PWA) in situations where negotiations become difficult, or the landowner is uncooperative.

An escalation process would need to be developed so that internally there are clear steps of escalation towards using the Public Works Act.

However, it's important to acknowledge that this shift might come at the expense of landowner relationships. Careful consideration is needed to weigh the benefits of efficiency against the potential drawbacks of a more adversarial approach.

2 Asset Management – ROADING

2.1 Kelso Settlement Road - Bridge 390

A report for decision will be presented to Council at its meeting of 20 June 2024 as this issue has been ongoing for many years.

2.2 Safer Speeds Past Schools – Road to Zero

The Service Delivery Committee confirmed on 12 October 2023, for the purpose for budgeting and installation of School Speed Limit signs, that Permanent Speed Limit Signs to be installed at schools.

Transportation Minister, Simeon Brown confirmed that the new Setting of Speed Limits Rule will require **variable** speed limits on roads approaching schools only, during pick up and drop off times, rather than permanent reductions, to keep young New Zealanders safe when they arrive at or leaving school.

As the Committee had a preference for permanent static speed limit signs as in Figure 1, with the Minister's new directives, options exist to now install signs as in Figure 2 and Figure 3 below:



Figure 1: Example of Permanent Speed Limit Sign

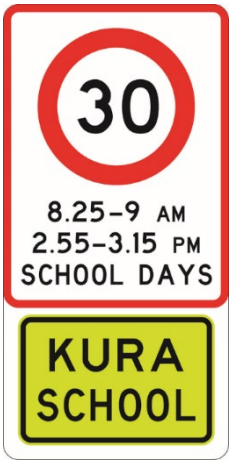


Figure 2: Example of Variable Speed Limit Sign



Figure 3: Electronic School Sign (30 or 60km/h)

For 2023-24, a total budget of $330K has been approved by the NZTA for the manufacture and installation of these signs, initially as per Figure 1, but now as per Figure 2 or Figure 3 to comply with the future Rule.

As such, Council still has the option to implement electronic signs as per Figure 3, but it should be noted that these can vary in cost from $10k to $15K. It is proposed to order the required signs by 30 June 2024 and install these once the new Rule and the mechanisms for Council to set the legal speed limits are in place.

Unless otherwise directed, Council officers will proceed with ordering the appropriate number of signs, as per Figure 2 for Schools to receive 30km/h speed limits (20 Schools) and signs as per Figure 3 for Schools to receive 60km/h speed limits (4 Schools).

Further advise was also sought of the NZTA re the “KURA” wording and we have been informed the signs as in Figure 1, 2 and 3 is the current approved standard.

2.3 NZTA - Emergency Works Investment Policies Consultation

NZ Transport Agency Waka Kotahi (NZTA) is seeking feedback on proposed changes to their Emergency Works Investment policies and associated funding assistance rates (FARs).

These policies and FARs support councils undertaking emergency works related to sudden events that damage transport infrastructure. To date, Council has experienced only one such event in February 2020, with the bulk of the work completed at base (65%) Financial Assistance Rate. Up to now, the policy allowed for an enhanced FAR, subject to the size of the work and council’s existing operational budgets.

In recent years, more frequent and intense weather-related events have put pressure on the National Land Transport Fund (NLTF) to fund emergency works response and recovery.

Substantial Crown funding has been required for severe nationally significant weather events, such as Cyclone Gabrielle in the upper North Island in February 2023.

The NZTA has reviewed their current policies and FARs because they want to make sure the NLTF can sustainably fund these emergency works in 2024-27 and into the future and ensure there is improved certainty of funding for councils.

Some of the changes the NZTA are proposing are designed to make their policies clearer and easier to interpret, and better aligned with legislative requirements. These changes are proposed to take effect on 1 July 2024.

The proposed associated FAR changes would take effect on 1 July 2025 to allow councils time to adapt to any changes.

Feedback is sought on the proposed emergency works changes by 19 June 2024.

Material is available to be read at emergency works consultation document and feedback to be submitted to EmergencyWorksReview@NZTA.govt.nz



Emergency works investment policies consultation

Consultation document on proposed changes to emergency works investment policies

1 May 2024

The main concerns Clutha District Council officers have will form part of a submission covering the following points:

- NZTA is proposing for the changes to take effect only from 1 July 2024 (policy) and 1 July 2025 (FAR) respectively. NZTA will be requested to reconsider the implementation dates to rather coincide with 1 July 2027, as part of the 2027-30

National Land Transport Programme to afford councils to take account of these changes accordingly.

- Potential for a damage value threshold based on budgets rather than a return period event to be promoted. That would take into account a widespread lower-level event (1 in 5 across the district) vs a larger localised event which may be greater than 1 in 20 year.

Council's ability to fund its share of an event is reliant on the available funding within in its Emergency Reserves.

3 Asset Management – FACILITIES & WASTE

3.1 Facilities Asset Management

Community Halls

Community Halls Condition

Community Halls are key hubs for community engagement and in most cases also hold historical and sentimental value for the local communities. The state of some of the council owned halls falls short of minimum requirements in terms of fire safety, earthquake safety, weather proofing, comfort and general aesthetics. These factors have led to low Level of Service and utilisation of the community halls. A general observation is that centres with heavy community involvement are in better condition than those with little or no community involvement. Community involvement is therefore a key success factor in bringing the community halls up to an acceptable level of service. The differences in condition can be seen between Moneymore and Owaka Halls below.

Current and Future Work

The asset register for community halls is now complete and is domiciled on Safety Culture. We carried out a physical inspection and review of reports on the condition of all council owned community halls. The halls are in various conditions and the Level of Service star rating for each hall is captured in the asset register. A proposed routine maintenance program has been shared with the operations team for their consideration. Proposals are being worked out on the future of each hall based on community preference, risk, cost of ownership and condition of the hall.

Council position is to vest the halls to the community and support with an annual grant. We will seek direction on whether the halls will need to meet certain safety and functional requirements before being vested to the community. The reports will propose alternatives where communities are not interested, or the hall cannot be operated sustainably any longer.

We will be engaging the community and facilities operations team to meet the communities and understand their preferred course of action for each hall. This will inform the proposal that will be sent to council for each hall.



Figure 1. **Moneymore Community Hall is in a dire state and the community have since stopped using it.**



Figure 2. Owaka Memorial Centre is one the halls in good condition complete with a BWOF.

3.2 Fleet Asset Management

The fleet asset register is 100% complete. The team has undergone training in monthly vehicle checks, Smartrak and safety culture systems. A proposal for the replacement strategy for the fleet is being discussed with the finance team. The thrust of the proposal is to support a graceful transition of the fleet to a lower cost of ownership, lower emissions and improved safety while remaining fit for purpose. This will see some diesel Utility vehicles being replaced by hybrid SUVs.

3.3 Asset Management Information System (AMIS)

We have reviewed Assetfinda, SafetyCulture, Smartrak and RAMM as possible tools for AMIS. We are currently using SafetyCulture as our source of truth. We have had a showcase with Thinkproject and are exploring the possibility of adopting RAMM as our base AMIS along with Roading and Three Waters teams. Over and above the key features that RAMM provides, this will possibly bring standardisation within the department.

Roading

4.1 Contract 860 – Rehabilitation 2022/24 - Catlins

Contractor has completed both sections of Mt Stuart Road traction seal (ready for Practical Completion), Sawmill Road Taieri Mouth has been completed (marking and small section of hand spraying to be done when Riverside Road is ready), Wetherstons Road, Waitahuna, drainage work completed, pavement material constructed, final surface preparation currently underway with view to seal later this week or early next, weather dependant, Riverside Road pavement constructed, accessway formed and final surface preparation currently in progress, accessway etc with view to seal early next week (minor drainage works still to be undertaken eg: headwalls), School Road initial site walkover, drainage work started.

4.2 Contract 825 – Box Culverts – Catlins/Heriot

All box culverts in the contract works have now been completed and have now been handed back to operations for their ongoing maintenance programs.

4.3 Contract 827 – Bridge Repairs 2021/22 – Waitahuna Bridges Remain

Bridge 482, Roberts Road has now been completed and is open, crack discovered at the TR abutment. With Council's approval, repairing is progressing. Suspension Bridge 476, Ashton Road is being strengthened and work is progressing on bridge anchors.

4.4 Contract 807 – Renewal of Bridge Abutments - Bridge 451 Waipori Road

All the works on the bridge are completed and it's open to the public. It's now in the defect's liability period.

4.5 Contract 829 – Bridge Repairs 2022/24 – District Wide

The contractor has completed all work within the waterway and progressing other items in the Contract.

4.6 Contract 858 – Reseal & Pre-Seal Repairs

The contract was awarded to Fulton Hogan, Two Streets are left to re-seal which is scheduled to be completed this week weather dependent for year 1. The year 2 re-seal list is with Fulton Hogan for the actual pricing of the pre-seal repair work.

4.7 Contract 791 – Bridge Renewals 106 & 112 – West Otago

The Contractor has poured the deck for Bridge 112, Ross Road, and is completing approaches.



Work on Bridge 106, Benny Road is progressing. The bridge deck will be poured on 28/05/2024 (weather permitting).



4.8 Contract 862 – The Nuggets Road Slip Remediation

Work on this project has been completed now, **this project was delivered 2 months ahead of time and under budget.** A practical completion certificate has been issued, now this project work is in the defects liability period.



4.9 Contract 842 – Footpath Kerb and Channel Renewals

The tender was awarded to SouthRoads, and works on Exmouth Street, Kaitangata, and Tarata St Kaka Point, are now completed. Concreting of work on Harrington St is scheduled for this week, the project is running smoothly on time, and under budget to date.

5 3 Waters

5.1 Contract 842 – Hub Pump Station

The Hub RMU installation is completed with the underground cabling, just need to replace one light pole on the State Highway 1, Clyde St, and Lanark St intersection. Delivery of the light will be delayed until end of May.

Four original light poles on the back of the Hub car park are kept in place until the new landscape project to ensure adequate lighting for health and safety.
(No new updates on site)





5.2 Contract 841 - Hospital Creek Floodbank

Stage: Completed

Certificate of Final Completion was issued in November 2023. Contract 841 is completed and handed over to Three Waters Operations. Wating on the NEWA funding at this stage.

5.3 Contract 846 – Sewerage Treatment Plant Upgrade (Balclutha, Clinton, Waihola, Heriot & Kaitangata) – Contractor: Marshall Projects Ltd

Kaitangata update: Weekly sampling has been arranged to monitor the pond and plant performance post upgrade. Practical completion certificate was issued in December 2023, and it is currently on defection period.

Heriot update: Weekly sampling has been arranged to monitor the pond and plant performance post upgrade. Practical completion certificate was issued in December 2023, and it is currently on defection period.

Clinton update: Bioshells and screen are in operation. The UV unit will arrive 30th May into Bluff.



Waihola update: One blower temporaily connected to power and the Bioshells are turned on. Swithboards have been completed and waiting on the power switch over.



Balclutha update: Bioshell has been installed. The contractor is working on temporay power supply for the aerator. Electrical board is being designed by Bremca at this stage.



5.4 Contract 849 - Milton to Waihola Pipeline

All of the pipeline has now been installed. The crossing over of the newly installed underpass by Waihola has also been completed. A final defects walkover has been scheduled for May 28 2024 and then practical completion for the project can be issued to the contractor.

We are now commencing the commissioning plan for trialing pressure of pipes and final connection to the Waihola community, this component is currently on track for completion by 30 June 2024.

5.5 Contract 850 - Greenfield Rural Water Scheme

Southern Trenching Limited is making good progress on the pipeline installation and laying the pipeline. All the testing will be completed by the end of May 2024 except for the Lawerance PRV and the last 100m of the pipeline.

Although initial Geotech reports had been carried out before the commencement of the project, there have been issues with bedding materials and additional rock has been required to be removed than what had originally been planned. These additional costs have been covered within the contingency budget. However, it is estimated that we will now have project cost overruns due to this, final figures are being sourced to enable us to provide the councillors with clarity of what these budget overruns look like, these additional budget requests will be reported to Council at the 12 June 2024 Meeting.





PE pipe being welded and Open pipe trench

5.6 Contract 865 - Greenfield and Milton to Waihola Pump Stations

Cowley Electrical Dairy and Pumps and Rutter Civil are making good progress, work is ahead of schedule. Milburn pump station work is complete except CL2 booster which is scheduled for 3rd week of June to be installed, and Milton WTP VSD cables to pumps have been installed. The lower Greenfield pump station pump building is completed, and installation of the electrical unit and pumps is completed. Upper Greenfield pump station building is completed, and we are installing the pump and electrical units in it. The Crain Road pump station building is almost complete as well with pump and electrical unit installation to be done in the coming months.

5.7 Taylor Park Cabins

The four cabins currently located at Taylor Park will be sold, which will be offered in the first instance to Clutha District camping grounds at market value. A staff report will be prepared for councillors which will provide options for the future of the additional six cabins, four of which are now nearing completion at Otago Corrections Facility.



5.8 Contract 845 - Milton Mainstreet Underground Utilities

The Contractor is working at Gray St. which is the last stage for Phase 1. The next phase will include the laying of power cables and water mains.

5.9 Contract 880 – Milton Community Pool/Library Hub Project

Following due diligence processes, we have the knowledge that original cost estimations had not included a number of items that are requirements for the construction of this project.

These updated values will be provided as part of the Staff Submissions Decision Report on 12 June 2024.

5.10 Contract 863 – Reservoir Civil Construction – North Bruce, Puerua, Lawrence and Moa Flat

North Bruce – Variation Inlet is in transit. Expected delivery end May.

Puerua – 2000l tank installation completed. Inlet, Outlet and overflow pipe work in progress.

Lawrence – Concrete foundation is in curing process and will be ready for the tank installation in July.

Moa Flat – Tank installation work started and on track for completion late June.

5.11 Contract 883 – Mt Cooee Leachate Pump Station and Owaka Wastewater Pump Station

On May 20, Isaac Construction started the work on both the Owaka and Mt Cooee sites.

Infrastructure Strategy & Operations Committee

Item for INFORMATION

Report	Compliance Update Report
Meeting Date	6 June 2024
Item Number	5
Prepared By	Keiran Medel – Senior Compliance Engineer Daniel Pickup – Team Leader Compliance and Reporting
File Reference	898124

REPORT SUMMARY

This report provides an update on all compliance-related issues across the Three Waters Operations department. It includes information that was previously provided in both the Operations and Infrastructure Strategy reports as well as additional specific information on compliance activities.

RECOMMENDATIONS

1 That the Infrastructure Strategy & Operations Committee receives the 'Compliance Update' report dated 6 June 2024.

REPORT

1 Water Treatment Plant (WTP) Compliance Focus

1.1 Drinking Water Quality Assurance Rules (DWQAR) Compliance Summary

Since the implementation of the DWQARs in November 2022, several of the Councils WTPs and distribution networks were identified, through routine sample analysis and monitoring, as having inadequate treatment processes, resulting in the supply of non-compliant drinking water to those consumers. Refer to Appendix A for an overview of the DWQARs that are not currently met by the WTPs and distribution networks subject to a Boil Water Notice (BWN) or Advisory Notice.

Monthly Compliance achieved / anticipated	Technical Non-compliance	Moderate Non-compliance	Significant Non-compliance

Balclutha WTP	Nov-23	Dec-23	Jan-24	Feb-24	Mar-24	Apr-24
T3 Bacto: 4.10.1.4 UV Treatment	93%	100%	100%	100%	100%	100%
T3 Proto: 4.10.2.5 Filters T3 Proto: 4.10.2.13 UV Treatment	100%	97%	97%	93%	100%	93%
D3 Bacto Balclutha: 4.11.4 Residual Disinfection	100%	100%	100%	100%	100%	100%
Compliance Comments	NA					

Milton WTP	Nov-23	Dec-23	Jan-24	Feb-24	Mar-24	Apr-24
T3 Bacto: 4.10.1.1 FAC Disinfection	97%	97%	94%	100%	94%	100%
T3 Proto: 4.10.2.11 Membranes	97%	74%	80%	52%	97%	100%
D3 Bacto Milton: 4.11.4 Residual Disinfection	100%	100%	100%	100%	100%	100%
D3 Bacto OCF: 4.11.4 Residual Disinfection	100%	100%	100%	92%	100%	100%
Compliance Comments	NA					

Stirling WTP	Nov-23	Dec-23	Jan-24	Feb-24	Mar-24	Apr-24
T3 Bacto: 4.10.1.4 UV Treatment	100%	97%	94%	93%	97%	100%
T3 Proto: 4.10.2.5 Filters T3 Proto: 4.10.2.13 UV Treatment	100%	100%	100%	100%	100%	100%
D3 Bacto Stirling: 4.11.4 Residual Disinfection	100%	92%	100%	100%	100%	100%
D3 Bacto South Bruce: 4.11.4 Residual Disinfection	100%	92%	100%	100%	100%	100%
Compliance Comments	NA					

Kaitangata WTP	Nov-23	Dec-23	Jan-24	Feb-24	Mar-24	Apr-24
T3 Bacto: 4.10.1.1 FAC Disinfection	100%	100%	100%	97%	100%	100%
T3 Bacto: 4.10.1.4 UV Treatment	100%	100%	97%	100%	100%	100%
T3 Proto: 4.10.2.5 Filters T3 Proto: 4.10.2.13 UV Treatment	83%	94%	97%	93%	100%	100%
D3 Bacto Kaitangata: 4.11.4 Residual Disinfection	100%	100%	100%	100%	100%	100%
D3 Bacto Wangaloa: 4.11.4 Residual Disinfection	100%	92%	100%	100%	100%	100%
Compliance Comments	NA					

Whitelea Rd WTP	Nov-23	Dec-23	Jan-24	Feb-24	Mar-24	Apr-24
T3 Bacto: 4.10.1.1 FAC Disinfection	47%	36%	0%	17%	39%	43%
T3 Proto: 4.10.2.11 Membranes	97%	100%	84%	93%	100%	100%
D3 Bacto North Richardson: 4.11.4 Residual Disinfection	100%	92%	100%	100%	100%	100%
Compliance Comments	T3 Bacto: The chlorine dose rate and contact time were not maintained for the required period to achieve compliance					

Puerua WTP	Nov-23	Dec-23	Jan-24	Feb-24	Mar-24	Apr-24
T3 Bacto: 4.10.1.4 UV Treatment	0%	26%	87%	100%	97%	100%
T3 Proto: 4.10.2.13 UV Treatment	0%	39%	81%	97%	97%	100%
D3 Bacto Richardson South: 4.11.4 Residual Disinfection	77%	85%	100%	100%	100%	100%
D3 Bacto Kaka Point: 4.11.4 Residual Disinfection	0%	43%	82%	100%	100%	100%
Compliance Comments	NA					

Owaka WTP	Nov-23	Dec-23	Jan-24	Feb-24	Mar-24	Apr-24
T3 Bacto: 4.10.1.4 UV Treatment	100%	97%	90%	83%	94%	100%
T3 Proto: 4.10.2.13 UV Treatment	100%	97%	100%	86%	87%	100%
D3 Bacto Owaka: 4.11.4 Residual Disinfection	100%	100%	100%	100%	100%	100%
Compliance Comments	Improvements must be made to the Owaka bore head to ensure it complies with the DWQAR Sanitary Requirements.					

Clydevale-Pomahaka WTP	Nov-23	Dec-23	Jan-24	Feb-24	Mar-24	Apr-24
T3 Bacto: 4.10.1.4 UV Treatment	97%	100%	100%	100%	100%	100%
T3 Proto: 4.10.2.13 UV Treatment	97%	100%	100%	93%	97%	93%
D3 Bacto Clydevale: 4.11.4 Residual Disinfection	100%	100%	100%	100%	100%	100%
D3 Bacto Clinton: 4.11.4 Residual Disinfection	100%	100%	100%	100%	100%	100%
Compliance Comments	The Clydevale-Pomahaka WTP experienced a minor UV non-compliance on two days during April 2024.					

Glenkenich WTP	Nov-23	Dec-23	Jan-24	Feb-24	Mar-24	Apr-24
T3 Bacto: 4.10.1.1 FAC Disinfection	57%	48%	65%	100%	97%	100%
T3 Proto: 4.10.2.11 Membranes	80%	68%	42%	83%	71%	70%
D3 Bacto Glenkenich: 4.11.4 Residual Disinfection	80%	71%	82%	84%	100%	100%
Compliance Comments	Minor non-compliances with NTU levels leaving the membrane units. Issue with turbidity meter to be investigated.					

Lawrence WTP	Nov-23	Dec-23	Jan-24	Feb-24	Mar-24	Apr-24
T2 Bacto: FAC Disinfection	100%	91%	96%	64%	86%	3%
T2 Bacto: UV Disinfection	63%	89%	67%	79%	77%	80%
T2 Proto: UV Disinfection	63%	89%	74%	79%	77%	10%
T3 Proto: Filters	57%	71%	77%	69%	81%	63%
D2 Bacto Lawrence	100%	100%	100%	79%	86%	91%
Compliance Comments	The UV dose was not maintained for the required period to achieve compliance.					
	The chlorine dose rate and/or contact time was not maintained for the required period to achieve compliance.					
	The pH level in the final water was outside the required range to achieve compliance.					
	Lawrence is on a long-term BWN due to the inadequate barriers at the treatment plant.					

Tapanui WTP	Nov-23	Dec-23	Jan-24	Feb-24	Mar-24	Apr-24
T3 Bacto: 4.10.1.1 FAC Disinfection	80%	97%	100%	100%	100%	80%
T3 Proto: 4.10.2.5 Filters	50%	87%	90%	66%	52%	70%
D3 Bacto Tapanui: 4.11.4 Residual Disinfection	100%	100%	100%	100%	100%	87%
Compliance Comments	The chlorine dose rate and/or contact time was not maintained for the required period to achieve compliance.					
	The turbidity in the treated water exceeded the maximum allowable NTU.					

Tuapeka West WTP	Nov-23	Dec-23	Jan-24	Feb-24	Mar-24	Apr-24
T2 Bacto: FAC Disinfection	100%	80%	100%	89%	89%	100%
T2 Proto: Filters	0%	0%	0%	0%	0%	0%
D2 Bacto Tuapeka West	100%	0%	100%	100%	88%	89%
Compliance Comments	D2 Bacto non-compliance when FAC levels in the distribution are <0.1mg/L.					
	There is no protozoal treatment at this site.					

North Bruce WTP	Nov-23	Dec-23	Jan-24	Feb-24	Mar-24	Apr-24
T3 Bacto: 4.10.1.1 FAC Disinfection	0%	0%	0%	0%	0%	10%
T3 Bacto: 4.10.1.4 UV Treatment	0%	23%	0%	24%	68%	63%
T3 Proto: 4.10.2.5 Filters T3 Proto: 4.10.2.13 UV Treatment	0%	0%	0%	0%	52%	50%
D3 Bacto North Bruce: 4.11.4 Residual Disinfection	82%	49%	78%	97%	100%	100%
D3 Bacto Waihola: 4.11.4 Residual Disinfection	0%	89%	56%	87%	93%	93%
Compliance Comments	The turbidity in the treated water exceeded the maximum allowable NTU.					
	The chlorine dose rate and contact time was not maintained for the required period to achieve compliance.					
	The UV dose was not sufficient to achieve compliance.					

Moa Flat WTP	Nov-23	Dec-23	Jan-24	Feb-24	Mar-24	Apr-24
T3 Bacto: 4.10.1.1 FAC Disinfection	0%	0%	0%	90%	84%	80%
T3 Bacto: 4.10.1.4 UV Treatment	0%	7%	7%	28%	87%	73%
T3 Proto: 4.10.2.5 Filters T3 Proto: 4.10.2.13 UV Treatment	0%	0%	0%	17%	68%	63%
D3 Bacto Moa Flat: 4.11.4 Residual Disinfection	100%	100%	100%	97%	100%	100%
Compliance Comments	The UV dose and UVT was not sufficient to achieve compliance.					
	The chlorine dose rate and contact time was not maintained for the required period to achieve compliance.					

Waitahuna WTP	Nov-23	Dec-23	Jan-24	Feb-24	Mar-24	Apr-24
T3 Bacto: 4.10.1.1 FAC Disinfection	0%	0%	0%	0%	0%	0%
T3 Proto: 4.10.2.5 Filters	0%	0%	0%	0%	0%	0%
D3 Bacto Balmoral 1: 4.11.4 Residual Disinfection	0%	0%	0%	5%	94%	92%
D3 Bacto Balmoral 2: 4.11.4 Residual Disinfection	0%	0%	0%	5%	0%	78%
D3 Bacto Tuapeka East: 4.11.4 Residual Disinfection	0%	0%	0%	5%	90%	72%
Compliance Comments	D3 Bacto TNC when the FAC in the distribution network is less than 0.1 mg/L.					
	The chlorine dose rate and contact time was not maintained for the required period to achieve compliance.					
	The turbidity in the treated water exceeded the maximum allowable NTU.					

1.2 Boil Water and Conserve Water Notices

Tuapeka West remains on a BWN due to inadequate treatment at the plant and inconsistent chlorine levels in the reticulation. The BWN will not be lifted without considerable upgrades as there is currently no protozoal treatment at this site. This is the only site that has no protozoal treatment. The Greenfield Rural Water Scheme will replace the Tuapeka West WTP at the end of 2024.

1.3 Boil Water and Aluminium Advisory Notices

North Bruce and Waihola will remain on a BWN until the treatment plant demonstrates compliance with Sections 4.10.1.1, 4.10.1.4, and 4.10.2.13 and the distribution networks demonstrate compliance with the D3 Rules. The plant does not demonstrate the consistent compliance required to lift the BWN.

- The treatment plant struggles to achieve the required contact time, turbidity levels, and UV Dose to provide assurance that the bacteria in the water has been adequately disinfected with chlorine and UV Light.

- The treatment plant struggles to achieve the required UV Dose and UVT required to provide assurance that protozoa in the water has been adequately disinfected by the UV treatment process.

- Low levels of residual chlorine detected in the distribution network prevents compliance with the D3 Rules.

E. coli was not detected in the North Bruce distribution zone during the past seven weeks of monitoring, demonstrating compliance with Rule D3.29. All FAC results analysed were above the minimum requirement of 0.2 mg/l during the past seven weeks of monitoring, demonstrating compliance with Rule D3.19.

E. coli was not detected in the Waihola distribution zone during the past seven weeks of monitoring, demonstrating compliance with Rule D3.29. One FAC result analysed was below the required 0.2 mg/l (<0.1 mg/l) during the past seven weeks of monitoring, failing to comply with Rule D3.19.

Four aluminium results analysed from the Waihola distribution network were above the MAV of 1 mg/l during the past seven weeks of monitoring, the most recent non-compliant residual was detected on 26 April 2024.

Two aluminium results analysed from the North Bruce distribution network were above the MAV of 1 mg/l during the past seven weeks of monitoring, the most recent non-compliant residual was detected on 1 May 2024.

All aluminium results analysed at the North Bruce WTP were below the MAV of 1 mg/l during the past seven weeks of monitoring. An elevated sampling programme will remain in place for the distribution while the analysed results are above the MAV.

Waihola Distribution Network	Total Aluminium	*E. coli*	FAC
Samples Collected in the past seven weeks	18	22	34
Compliant Samples collected in the past seven weeks	14	22	33

North Bruce Distribution Network	Total Aluminium	*E. coli*	FAC
Samples Collected in the past seven weeks	7	8	21
Compliant Samples collected in the past seven weeks	5	8	21

Water Treatment - North Bruce WTP

Treated Water Compliance Report for April 2024

		Section 4.10.1.1: Bacterial Rules - Water Disinfected with Chlorine				
	Rule:	T3.2	T3.3	T3.4	T3.5	T3.6
	Requirement: Plant Run Time	% of day C.t value is at least 15 min.mg/L	% of day FACe is ≥ 0.2mg/L	Minimum T^{10} contact time	% of day where the turbidity of water leaving WTP is < 1.0 NTU	>2.0 NTU for 15 consecutive minutes or more (total time)
Date	min/day	95%	95%	5	95%	0
1/04/2024	1440	100.0%	100.0%	46	**0.0%**	**1440**
2/04/2024	1440	100.0%	100.0%	34	**0.0%**	**1440**
3/04/2024	1440	100.0%	100.0%	37	**33.3%**	**621**
4/04/2024	1440	100.0%	100.0%	38	**56.0%**	0
5/04/2024	1440	100.0%	100.0%	39	**74.9%**	0
6/04/2024	1440	100.0%	100.0%	43	**70.4%**	0
7/04/2024	1440	100.0%	100.0%	42	**36.3%**	**336**
8/04/2024	1440	**89.6%**	99.4%	**0**	**43.3%**	**168**
9/04/2024	1440	100.0%	100.0%	45	99.0%	0
10/04/2024	1440	100.0%	100.0%	46	99.9%	0
11/04/2024	1440	100.0%	100.0%	49	97.6%	0
12/04/2024	1425	**58.0%**	**76.8%**	**0**	**79.8%**	0
13/04/2024	1429	99.7%	99.7%	23	**22.5%**	**330**
14/04/2024	1440	100.0%	100.0%	39	**0.0%**	**580**
15/04/2024	1440	100.0%	100.0%	45	**37.5%**	**397**
16/04/2024	1440	100.0%	100.0%	50	**28.8%**	**189**
17/04/2024	1440	100.0%	100.0%	40	**38.4%**	**38**
18/04/2024	1440	100.0%	100.0%	51	**48.0%**	0
19/04/2024	1440	100.0%	100.0%	48	**47.3%**	0
20/04/2024	1440	100.0%	100.0%	43	**24.7%**	**186**
21/04/2024	1440	100.0%	100.0%	41	**14.6%**	**213**
22/04/2024	1440	100.0%	100.0%	52	**54.7%**	0
23/04/2024	1440	100.0%	100.0%	40	**72.8%**	0
24/04/2024	1440	98.6%	98.6%	43	**72.9%**	0
25/04/2024	1440	100.0%	100.0%	51	**90.1%**	0
26/04/2024	1440	100.0%	100.0%	48	**76.1%**	0
27/04/2024	1440	100.0%	100.0%	48	**65.5%**	0
28/04/2024	1440	100.0%	100.0%	40	**55.2%**	0
29/04/2024	1440	100.0%	100.0%	35	**55.8%**	0
30/04/2024	1440	100.0%	100.0%	48	**73.4%**	0
Number of Days that were Compliant:		28	29	28	3	18
Operator / Supplier Comments:						

		Section 4.10.1.4: Bacterial Rules - Water Disinfected with Ultraviolet Light					Section 4.10.2.13: Protozoal Rules - Ultraviolet Light					
Rule:			T3.15	T3.16	T3.17	T3.18	T3.85	T3.86	T3.87	T3.88	T3.89	T3.90
	Requirement: Plant Run Time	UV Reactor 1 Run Time	% of day flow ratewithin validated range	% of the day where a Reduction Equivalent Dose (RED) of at least 40mJ/cm² (or equivalent) was achieved	<40 mJ/cm² for 15 consecutive minutes or more (total time)	>5.0 NTU for 15 consecutive minutes or more (total time)	% of the day flow rate within validated range	% of day UV dose met log credit requirement	< log credit requirement for 15 consecutive minutes or more (total time)	>5.0 NTU for 15 consecutive minutes or more (total time)	% of day where UVT is ≥ 95% of lowest UVT validated	<80% of lowest validated UVT for 15 consecutive minutes or more (total time)
Date	min/day	min/day	95%	95%	0	0	95%	95%	0	0	95%	0
1/04/2024	1440	1374	100.0%	68.0%	419	0	100.0%	38.6%	419	0	96.6%	0
2/04/2024	1440	1376	100.0%	99.5%	0	0	100.0%	49.6%	0	0	98.7%	0
3/04/2024	1440	1371	100.0%	100.0%	0	0	100.0%	71.8%	0	0	97.6%	0
4/04/2024	1440	1323	100.0%	100.0%	0	0	100.0%	97.4%	0	0	100.0%	0
5/04/2024	1440	1377	100.0%	100.0%	0	0	100.0%	100.0%	0	0	100.0%	0
6/04/2024	1440	1365	100.0%	100.0%	0	0	100.0%	100.0%	0	0	100.0%	0
7/04/2024	1440	1398	100.0%	96.0%	42	0	100.0%	65.5%	42	0	100.0%	0
8/04/2024	1440	1271	100.0%	94.6%	47	0	100.0%	86.2%	47	0	96.8%	0
9/04/2024	1440	1357	100.0%	100.0%	0	0	100.0%	100.0%	0	0	100.0%	0
10/04/2024	1440	1325	100.0%	100.0%	0	0	100.0%	100.0%	0	0	100.0%	0
11/04/2024	1440	1338	100.0%	99.9%	0	0	100.0%	99.9%	0	0	100.0%	0
12/04/2024	1425	853	100.0%	88.6%	47	0	100.0%	88.6%	47	0	100.0%	0
13/04/2024	1429	1346	100.0%	71.3%	330	0	100.0%	51.5%	330	0	100.0%	0
14/04/2024	1440	1358	100.0%	62.5%	452	0	100.0%	27.6%	452	0	97.8%	0
15/04/2024	1440	1377	100.0%	92.2%	74	0	100.0%	63.3%	74	0	99.3%	0
16/04/2024	1440	1219	100.0%	97.4%	18	0	100.0%	97.3%	18	0	100.0%	0
17/04/2024	1440	1324	100.0%	100.0%	0	0	100.0%	100.0%	0	0	100.0%	0
18/04/2024	1440	1329	100.0%	100.0%	0	0	100.0%	100.0%	0	0	100.0%	0
19/04/2024	1440	1380	100.0%	100.0%	0	0	100.0%	100.0%	0	0	100.0%	0
20/04/2024	1440	1310	100.0%	100.0%	0	0	100.0%	100.0%	0	0	100.0%	0
21/04/2024	1440	1357	100.0%	100.0%	0	0	100.0%	100.0%	0	0	100.0%	0
22/04/2024	1440	1394	100.0%	97.6%	20	0	100.0%	97.6%	20	0	100.0%	0
23/04/2024	1440	1305	100.0%	100.0%	0	0	100.0%	100.0%	0	0	100.0%	0
24/04/2024	1440	1390	100.0%	100.0%	0	0	100.0%	100.0%	0	0	100.0%	0
25/04/2024	1440	1419	100.0%	100.0%	0	0	100.0%	84.3%	0	0	100.0%	0
26/04/2024	1440	1352	100.0%	96.2%	38	0	100.0%	65.8%	38	0	99.5%	0
27/04/2024	1440	1419	100.0%	92.2%	96	0	100.0%	52.1%	96	0	100.0%	0
28/04/2024	1440	1420	100.0%	100.0%	0	0	100.0%	100.0%	0	0	98.2%	0
29/04/2024	1440	1420	100.0%	99.2%	0	0	100.0%	99.2%	0	0	100.0%	0
30/04/2024	1440	1388	100.0%	100.0%	0	0	100.0%	94.8%	0	0	94.8%	0
Number of Days that were Compliant:			30	23	19	30	30	17	19	30	29	30
		Operator / Supplier Comments:					Operator / Supplier Comments:					

Moa Flat will remain on a BWN until the treatment plant demonstrates compliance with Sections 4.10.1.1, 4.10.1.4, and 4.10.2.13 and the distribution network demonstrates compliance with the D3 Rules. The plant does not demonstrate the consistent compliance required to lift the BWN.

- The treatment plant does not consistently achieve the required C.t. Value, turbidity levels, and UV Dose to provide assurance that the bacteria in the water has been adequately disinfected with chlorine and UV Light.

- The treatment plant struggles to achieve the required UV Dose and UVT required to provide assurance that protozoa in the water has been adequately disinfected by the UV treatment process.

E. coli was not detected in the Moa Flat distribution network during the past seven weeks of monitoring, demonstrating compliance with Rule D3.29. All FAC results analysed were above the minimum requirement of 0.2 mg/l during the past seven weeks of monitoring, demonstrating compliance with Rule D3.19.

One aluminium result analysed from the Moa Flat distribution network was above the MAV of 1 mg/l during the past seven weeks of monitoring, the most recent non-compliant residual was detected on 1 May 2024. An elevated sampling programme will remain in place while the analysed results are above the MAV.

Moa Flat WTP	Total Aluminium	*E. coli*	FAC
Samples Collected in the past seven weeks	12	NA	12
Compliant Samples collected in the past seven weeks	12	NA	12

Moa Flat Distribution Network	Total Aluminium	*E. coli*	FAC
Samples Collected in the past seven weeks	16	8	26
Compliant Samples collected in the past seven weeks	15	8	26

Water Treatment - Moa Flat WTP

Treated Water Compliance Report for April 2024

		Section 4.10.1.1: Bacterial Rules - Water Disinfected with Chlorine				
	Rule:	T3.2	T3.3	T3.4	T3.5	T3.6
	Requirement:	% of day C.t value is at least 15 min.mg/L	% of day FACe is ≥ 0.2mg/L	Minimum T[10] contact time	% of day where the turbidity of water leaving WTP is < 1.0 NTU	>2.0 NTU for 15 consecutive minutes or more (total time)
Date	Plant Run Time min/day	95%	95%	5	95%	0
1/04/2024	1395	99.6%	100.0%	16	99.0%	0
2/04/2024	1382	98.3%	100.0%	14	100.0%	0
3/04/2024	1395	96.3%	100.0%	17	100.0%	0
4/04/2024	1395	98.8%	100.0%	17	100.0%	0
5/04/2024	1367	99.3%	100.0%	16	100.0%	0
6/04/2024	1398	98.9%	100.0%	15	100.0%	0
7/04/2024	1398	100.0%	100.0%	16	99.8%	0
8/04/2024	1392	99.2%	100.0%	15	99.7%	0
9/04/2024	1366	100.0%	100.0%	14	100.0%	0
10/04/2024	1309	96.3%	100.0%	12	98.8%	0
11/04/2024	1367	99.3%	100.0%	15	100.0%	0
12/04/2024	1381	100.0%	100.0%	15	100.0%	0
13/04/2024	1368	98.0%	99.6%	14	**84.2%**	0
14/04/2024	1383	**91.3%**	99.0%	13	100.0%	0
15/04/2024	1410	99.3%	100.0%	14	99.9%	0
16/04/2024	1395	96.9%	100.0%	15	100.0%	0
17/04/2024	1367	97.7%	100.0%	14	100.0%	0
18/04/2024	1381	98.8%	100.0%	12	100.0%	0
19/04/2024	1395	99.3%	100.0%	14	99.8%	0
20/04/2024	1395	96.5%	100.0%	14	99.8%	0
21/04/2024	1380	98.9%	100.0%	12	99.8%	0
22/04/2024	1395	97.0%	100.0%	14	98.8%	0
23/04/2024	1395	98.9%	100.0%	14	100.0%	0
24/04/2024	1425	99.2%	100.0%	13	**86.5%**	0
25/04/2024	1383	100.0%	100.0%	15	95.7%	0
26/04/2024	1410	100.0%	100.0%	10	99.9%	0
27/04/2024	1347	96.5%	100.0%	10	99.5%	0
28/04/2024	1425	99.3%	100.0%	10	**84.9%**	0
29/04/2024	1405	98.9%	100.0%	9	**76.1%**	0
30/04/2024	1425	98.9%	100.0%	9	**53.1%**	0
Number of Days that were Compliant:		29	30	30	25	30
Operator / Supplier Comments:						

		Section 4.10.1.4: Bacterial Rules - Water Disinfected with Ultraviolet Light					Section 4.10.2.13: Protozoal Rules - Ultraviolet Light					
Rule:			T3.15	T3.16	T3.17	T3.18	T3.85	T3.86	T3.87	T3.88	T3.89	T3.90
	Requirement: Plant Run Time	UV Reactor 1 Run Time	% of day flow ratewithin validated range	% of the day where a Reduction Equivalent Dose (RED) of at least 40mJ/cm² (or equivalent) was achieved	<40 mJ/cm² for 15 consecutive minutes or more (total time)	>5.0 NTU for 15 consecutive minutes or more (total time)	% of the day flow rate within validated range	% of day UV dose met log credit requirement	< log credit requirement for 15 consecutive minutes or more (total time)	>5.0 NTU for 15 consecutive minutes or more (total time)	% of day where UVT is ≥ 95% of lowest UVT validated	<80% of lowest validated UVT for 15 consecutive minutes or more (total time)
Date	min/day	min/day	95%	95%	0	0	95%	95%	0	0	95%	0
1/04/2024	1395	1395	98.9%	100.0%	0	0	98.9%	99.1%	0	0	100.0%	0
2/04/2024	1382	1382	98.9%	100.0%	0	0	98.9%	95.7%	0	0	100.0%	0
3/04/2024	1395	1395	98.9%	100.0%	0	0	98.9%	100.0%	0	0	100.0%	0
4/04/2024	1395	1395	100.0%	99.5%	0	0	100.0%	99.5%	0	0	100.0%	0
5/04/2024	1367	1367	96.7%	99.9%	0	0	96.7%	99.6%	0	0	100.0%	0
6/04/2024	1398	1398	100.0%	100.0%	0	0	100.0%	99.9%	0	0	100.0%	0
7/04/2024	1398	1398	100.0%	100.0%	0	0	100.0%	97.6%	0	0	100.0%	0
8/04/2024	1392	1392	100.0%	99.6%	0	0	100.0%	96.0%	0	0	97.8%	0
9/04/2024	1366	1366	98.9%	100.0%	0	0	98.9%	100.0%	0	0	100.0%	0
10/04/2024	1309	1309	97.7%	100.0%	0	0	97.7%	100.0%	0	0	100.0%	0
11/04/2024	1367	1367	100.0%	98.5%	1	0	100.0%	98.5%	1	0	98.9%	0
12/04/2024	1381	1381	100.0%	94.1%	68	0	100.0%	85.2%	68	0	100.0%	0
13/04/2024	1368	1368	100.0%	70.8%	343	0	100.0%	55.0%	343	0	85.5%	0
14/04/2024	1383	1383	100.0%	100.0%	0	0	100.0%	99.2%	0	0	100.0%	0
15/04/2024	1410	1410	100.0%	97.9%	16	0	100.0%	87.2%	16	0	100.0%	0
16/04/2024	1395	1395	100.0%	100.0%	0	0	100.0%	100.0%	0	0	100.0%	0
17/04/2024	1367	1367	98.9%	99.2%	0	0	98.9%	98.4%	0	0	100.0%	0
18/04/2024	1381	1381	97.8%	99.4%	0	0	97.8%	99.3%	0	0	100.0%	0
19/04/2024	1395	1395	100.0%	100.0%	0	0	100.0%	99.3%	0	0	100.0%	0
20/04/2024	1395	1395	96.8%	100.0%	0	0	96.8%	100.0%	0	0	100.0%	0
21/04/2024	1380	1380	100.0%	100.0%	0	0	100.0%	96.7%	0	0	100.0%	0
22/04/2024	1395	1395	97.8%	98.2%	0	0	97.8%	96.3%	0	0	98.1%	0
23/04/2024	1395	1395	97.8%	100.0%	0	0	97.8%	99.7%	0	0	100.0%	0
24/04/2024	1425	1425	100.0%	99.1%	0	0	100.0%	82.9%	0	0	98.8%	0
25/04/2024	1383	1383	100.0%	100.0%	0	0	100.0%	94.8%	0	0	100.0%	0
26/04/2024	1410	1410	95.7%	99.8%	0	0	95.7%	84.8%	0	0	100.0%	0
27/04/2024	1347	1347	94.4%	99.3%	0	0	94.4%	92.4%	0	0	100.0%	0
28/04/2024	1425	1425	98.9%	76.7%	304	0	98.9%	49.6%	304	0	100.0%	0
29/04/2024	1405	1405	96.8%	70.8%	345	0	96.8%	38.4%	345	0	98.7%	0
30/04/2024	1425	1425	95.8%	39.4%	849	0	95.8%	17.5%	849	0	96.0%	0
Number of Days that were Compliant:			29	25	23	30	29	20	23	30	29	30
							Notes					

Waitahuna will remain on a BWN until the treatment plant demonstrates compliance with Sections 4.10.1.1, and 4.10.2.5 and the distribution networks demonstrate compliance with the D3 Rules. The plant does not demonstrate the consistent compliance required to lift the BWN.

- The treatment plant struggles to achieve the required contact time, turbidity levels, and FACe dose to provide assurance that the bacteria in the water has been adequately disinfected with chlorine.

- The treatment plant struggles to achieve the required turbidity levels to provide assurance that protozoa in the water has been adequately removed by the coagulation, flocculation, sedimentation, and filtration process.

- Low levels of residual chlorine detected in the three distribution networks limits compliance with Rule D3.19.

All FAC results analysed at the Waitahuna WTP were above the minimum requirement of 0.2 mg/l during the past seven weeks of monitoring.

E. coli was not detected in any of the distribution networks during the past seven weeks of monitoring, demonstrating compliance with Rule D3.29.

Of the 26 FAC samples analysed from the Balmoral 1 distribution one was below the minimum requirement of 0.2 mg/l (<0.1 mg/l) during the past seven weeks of monitoring, failing to comply with Rule D3.19.

Of the 27 FAC samples analysed from the Balmoral 2 distribution five were below the minimum requirement of 0.2 mg/l during the past seven weeks of monitoring, failing to comply with Rule D3.19.

Of the 29 FAC samples analysed from the Tuapeka East distribution eight were below the minimum requirement of 0.2 mg/l during the past seven weeks of monitoring, failing to comply with Rule D3.19.

Three aluminium results analysed from the Waitahuna WTP were above the MAV of 1 mg/l during the past seven weeks of monitoring, the most recent non-compliant residual was detected on 17 April 2024.

Two aluminium results analysed from the Balmoral 1 distribution network were above the MAV of 1 mg/l during the past seven weeks of monitoring, the most recent non-compliant residual was detected on 15 April 2024.

Three aluminium results analysed from the Balmoral 2 distribution network were above the MAV of 1 mg/l during the past seven weeks of monitoring, the most recent non-compliant residual was detected on 17 April 2024.

One aluminium result analysed from the Tuapeka East distribution network was above the MAV of 1 mg/l during the past seven weeks of monitoring, the most recent non-compliant residual was detected on 4 April 2024. An elevated sampling programme will remain in place while the analysed results are above the MAV.

Waitahuna WTP	Total Aluminium	*E. coli*	FAC
Samples Collected in the past seven weeks	11	NA	9
Compliant Samples collected in the past seven weeks	8	NA	9

Balmoral 1 Distribution Network	Total Aluminium	*E. coli*	FAC
Samples Collected in the past seven weeks	14	9	26
Compliant Samples collected in the past seven weeks	12	9	25

Balmoral 2 Distribution Network	Total Aluminium	*E. coli*	FAC
Samples Collected in the past seven weeks	15	10	27
Compliant Samples collected in the past seven weeks	12	10	22

Tuapeka East Distribution Network	Total Aluminium	*E. coli*	FAC
Samples Collected in the past seven weeks	14	14	29
Compliant Samples collected in the past seven weeks	13	14	21

Water Treatment - Waitahuna WTP

Treated Water Compliance Report for April 2024

		Section 4.10.1.1: Bacterial Rules - Water Disinfected with Chlorine				
	Rule:	T3.2	T3.3	T3.4	T3.5	T3.6
	Requirement: Plant Run Time	% of day C.t value is at least 15 min.mg/L	% of day FACe is ≥ 0.2mg/L	[10] Minimum T contact time	% of day where the turbidity of water leaving WTP is < 1.0 NTU	# consecutive 15 min periods where the turbidity of water leaving WTP is > 2.0 NTU
Date	min/day	95%	95%	5	95%	0
1/04/2024	977	62.8%	100.0%	2	16.7%	185
2/04/2024	1012	34.8%	100.0%	1	0.0%	0
3/04/2024	1143	59.8%	100.0%	2	0.0%	0
4/04/2024	1068	58.8%	99.9%	2	0.0%	0
5/04/2024	1034	72.3%	100.0%	2	11.0%	0
6/04/2024	1055	84.7%	100.0%	3	5.3%	0
7/04/2024	1044	70.3%	100.0%	2	0.1%	0
8/04/2024	1083	81.4%	100.0%	1	28.4%	0
9/04/2024	1066	93.3%	100.0%	1	25.5%	0
10/04/2024	1041	57.9%	100.0%	1	0.2%	0
11/04/2024	722	50.0%	100.0%	1	0.0%	0
12/04/2024	977	19.3%	100.0%	1	3.4%	762
13/04/2024	602	5.0%	100.0%	2	0.0%	602
14/04/2024	300	5.7%	84.7%	2	0.3%	242
15/04/2024	1236	32.2%	71.1%	2	0.0%	1138
16/04/2024	1317	66.4%	100.0%	2	0.0%	1244
17/04/2024	1213	71.1%	100.0%	2	0.0%	1056
18/04/2024	1156	56.2%	100.0%	2	0.0%	971
19/04/2024	1154	47.3%	100.0%	2	0.0%	972
20/04/2024	735	50.5%	100.0%	1	0.0%	466
21/04/2024	436	2.3%	100.0%	1	0.0%	100
22/04/2024	1172	78.2%	100.0%	2	0.0%	976
23/04/2024	1225	58.9%	100.0%	2	0.0%	1085
24/04/2024	1134	66.0%	100.0%	2	0.0%	959
25/04/2024	1066	56.8%	100.0%	2	0.0%	856
26/04/2024	884	54.6%	100.0%	2	0.0%	632
27/04/2024	1047	43.2%	100.0%	2	0.0%	767
28/04/2024	1015	43.8%	100.0%	2	0.0%	833
29/04/2024	1003	47.8%	87.2%	2	0.0%	143
30/04/2024	1009	51.7%	100.0%	1	7.0%	0
Number of Days that were Compliant:		0	27	0	0	11
Operator / Supplier Comments:						

		Section 4.10.2.5: Protozoal Rules - Coagulation, Flocculation, Sedimentation, and Filtration						
Rule:			T3.39	T3.40	T3.43	T3.44	T3.47	T3.48
	Plant Run Time	Filter 1 Run Time	% of day where turbidity was <= 0.3 NTU	# consecutive 15 min periods where turbidity was > 0.5 NTU	% of day where turbidity was <= 0.15 NTU	# consecutive 15 min periods where turbidity was > 0.5 NTU	% of day where turbidity was <= 0.1 NTU	# consecutive 15 min periods where turbidity was > 0.3 NTU
Date	min/day	min/day	95%	0	95%	0	95%	0
1/04/2024	977	977	0.5%	786	0.0%	786	0.0%	849
2/04/2024	1012	1012	0.0%	815	0.0%	815	0.0%	815
3/04/2024	1143	1143	0.0%	1031	0.0%	1031	0.0%	1031
4/04/2024	1068	1068	0.0%	830	0.0%	830	0.0%	830
5/04/2024	1034	1034	4.4%	863	0.0%	863	0.0%	863
6/04/2024	1055	1055	0.0%	901	0.0%	901	0.0%	901
7/04/2024	1044	1044	0.0%	816	0.0%	816	0.0%	816
8/04/2024	1083	1083	0.1%	875	0.1%	875	0.1%	875
9/04/2024	1066	1066	0.7%	797	0.0%	797	0.0%	904
10/04/2024	1041	1041	0.0%	831	0.0%	831	0.0%	831
11/04/2024	722	722	0.0%	441	0.0%	441	0.0%	441
12/04/2024	977	977	0.0%	767	0.0%	767	0.0%	767
13/04/2024	602	602	0.0%	602	0.0%	602	0.0%	602
14/04/2024	300	300	0.3%	242	0.3%	242	0.3%	242
15/04/2024	1236	1236	0.0%	1138	0.0%	1138	0.0%	1138
16/04/2024	1317	1317	0.0%	1244	0.0%	1244	0.0%	1244
17/04/2024	1213	1213	0.0%	1056	0.0%	1056	0.0%	1056
18/04/2024	1156	1156	0.0%	971	0.0%	971	0.0%	971
19/04/2024	1154	1154	0.0%	972	0.0%	972	0.0%	972
20/04/2024	735	735	0.0%	466	0.0%	466	0.0%	466
21/04/2024	436	436	0.0%	100	0.0%	100	0.0%	100
22/04/2024	1172	1172	0.0%	976	0.0%	976	0.0%	976
23/04/2024	1225	1225	0.0%	1085	0.0%	1085	0.0%	1085
24/04/2024	1134	1134	0.0%	959	0.0%	959	0.0%	959
25/04/2024	1066	1066	0.0%	856	0.0%	856	0.0%	856
26/04/2024	884	884	0.0%	632	0.0%	632	0.0%	632
27/04/2024	1047	1047	0.0%	767	0.0%	767	0.0%	767
28/04/2024	1015	1015	0.0%	833	0.0%	833	0.0%	833
29/04/2024	1003	1003	0.0%	706	0.0%	706	0.0%	706
30/04/2024	1009	1009	3.3%	832	2.3%	832	1.7%	836
Number of Days that were Compliant			0	0	0	0	0	0
Operator / Supplier Comments:								

Lawrence will remain on a BWN until the treatment plant demonstrates compliance with the T2 Treatment Rules, and Section 4.10.2.5 and the distribution network demonstrates compliance with the D2 Rules. The plant does not demonstrate the consistent compliance required to lift the BWN.

- The treatment plant struggles to consistently maintain the required FAC residual and pH levels to provide assurance that the bacteria in the water has been adequately disinfected with chlorine.

- The treatment plant struggles to consistently achieve the required UV Dose and UVT to provide assurance that the bacteria and protozoa in the water has been adequately disinfected with UV Light.

- The treatment plant struggles to consistently achieve the required turbidity levels to provide assurance that protozoa in the water has been adequately removed by the coagulation, flocculation, sedimentation, and filtration process.

- Low levels of residual chlorine detected in the distribution network limits compliance with Rule D2.5.

E. coli was not detected at the Lawrence WTP during the past seven weeks of monitoring. Five FAC results analysed were below the minimum requirement of 0.5 mg/l during the past seven weeks of monitoring, failing to comply with Rule T2.19.

E. coli was not detected in the Lawrence distribution network during the past seven weeks of monitoring. Of the 40 FAC samples analysed four were below the minimum requirement of 0.2 mg/l during the past seven weeks of monitoring, failing to comply with Rule D2.5.

One aluminium result analysed from the Lawrence distribution network was above the MAV of 1 mg/l during the past seven weeks of monitoring. Following four weeks of compliant aluminium results, the Al Advisory can now be lifted.

Lawrence WTP	Total Aluminium	*E. coli*	FAC
Samples Collected in the past seven weeks	14	8	21
Compliant Samples collected in the past seven weeks	14	8	16

Lawrence Distribution Network	Total Aluminium	*E. coli*	FAC
Samples Collected in the past seven weeks	28	10	40
Compliant Samples collected in the past seven weeks	27	10	36

Water Treatment - Lawrence WTP
Treated Water Compliance Report for October 2023

			4.7 T2 Treatment Rules							Section 4.10.2.5: Protozoal Rules	
Rule:			**T2.9**		**T2.12**	**T2.13**	**T2.14**	**T2.19**	**T2.21**	**T3.39**	**T3.40**
	Requirement: Plant Run Time	**Filter Run Time**	% of day Turbidity < 5.0 NTU	**UV Run Time**	% of day UVI within Certified Dose (40 mJ/cm3)	% of day UVT > Min (89.6%)	% of day UV Flow Rate < Max (12.5 l/s)	% of day FAC > 0.5 mg/l	% of day pH Between 6.5 - 8.0	Lawrence.Filter NTU.<=0.3.Percent	Lawrence.Filter NTU.>0.5.Minutes
Date	**min/day**		**95%**		**95%**	**95%**	**95%**	**95%**	**95%**	**95%**	**0.00**
1/04/2024	1440	1440	100.0%	1440	99.7%	99.4%	99.7%	**60.1%**	100.0%	**87.3%**	1.1
2/04/2024	1440	1440	100.0%	1440	100.0%	100.0%	100.0%	**63.5%**	100.0%	100.0%	0.0
3/04/2024	1440	1440	100.0%	1440	100.0%	**83.4%**	100.0%	**86.2%**	100.0%	100.0%	0.0
4/04/2024	1440	1440	100.0%	1440	100.0%	95.8%	100.0%	**62.3%**	99.2%	99.9%	0.0
5/04/2024	1440	1440	100.0%	1440	100.0%	**90.3%**	100.0%	**64.9%**	100.0%	100.0%	0.0
6/04/2024	1440	1440	100.0%	1440	100.0%	**21.1%**	100.0%	**88.5%**	100.0%	100.0%	0.0
7/04/2024	1440	1440	100.0%	1440	100.0%	**4.0%**	100.0%	**66.7%**	100.0%	100.0%	0.0
8/04/2024	1440	1440	100.0%	1440	100.0%	**0.0%**	100.0%	**71.8%**	100.0%	99.7%	0.0
9/04/2024	1440	1440	100.0%	1440	100.0%	**0.0%**	100.0%	**89.6%**	**89.0%**	100.0%	0.0
10/04/2024	1440	1440	100.0%	1440	100.0%	**0.0%**	100.0%	**67.4%**	100.0%	99.6%	0.0
11/04/2024	1440	1440	100.0%	1440	**83.2%**	**1.4%**	100.0%	**50.6%**	100.0%	**73.5%**	3.5
12/04/2024	1425	1425	100.0%	1425	**23.2%**	**0.0%**	100.0%	**35.3%**	**90.5%**	**24.7%**	**9.1**
13/04/2024	1440	1440	100.0%	1440	**92.6%**	**0.0%**	97.2%	99.0%	98.8%	**90.3%**	0.5
14/04/2024	1440	1440	100.0%	1440	100.0%	**0.0%**	100.0%	**60.2%**	100.0%	96.8%	0.0
15/04/2024	1440	1440	100.0%	1440	99.9%	**0.0%**	100.0%	**72.1%**	100.0%	98.9%	0.0
16/04/2024	1440	1440	100.0%	1440	100.0%	**0.0%**	100.0%	**52.4%**	100.0%	100.0%	0.0
17/04/2024	1440	1440	100.0%	1440	100.0%	**0.0%**	100.0%	**51.6%**	100.0%	99.9%	0.0
18/04/2024	1426	1426	100.0%	1426	99.8%	**0.0%**	99.8%	**60.9%**	100.0%	100.0%	0.0
19/04/2024	1421	1421	100.0%	1421	100.0%	**0.0%**	100.0%	**53.9%**	99.9%	99.9%	0.0
20/04/2024	1435	1435	100.0%	1435	100.0%	**0.0%**	100.0%	**49.7%**	100.0%	100.0%	**0.0**
21/04/2024	1440	1440	100.0%	1440	100.0%	**0.0%**	100.0%	**54.2%**	100.0%	100.0%	0.0
22/04/2024	1440	1440	100.0%	1440	99.9%	**0.0%**	100.0%	**52.3%**	100.0%	**88.6%**	0.0
23/04/2024	1440	1440	100.0%	1440	**51.2%**	**0.0%**	100.0%	99.4%	**64.3%**	**55.2%**	4.5
24/04/2024	1439	1439	100.0%	1439	100.0%	**0.0%**	100.0%	**57.7%**	**92.8%**	**53.1%**	3.7
25/04/2024	1440	1440	100.0%	1440	**79.3%**	**0.0%**	100.0%	**57.3%**	100.0%	**61.8%**	3.6
26/04/2024	1425	1425	100.0%	1425	**57.8%**	**0.0%**	100.0%	**53.7%**	100.0%	**59.2%**	0.0
27/04/2024	1440	1440	100.0%	1440	100.0%	**0.0%**	100.0%	**58.0%**	100.0%	100.0%	0.0
28/04/2024	1440	1440	100.0%	1440	100.0%	**0.0%**	100.0%	**73.8%**	100.0%	100.0%	0.0
29/04/2024	1440	1440	100.0%	1440	100.0%	**0.0%**	100.0%	**48.5%**	100.0%	**74.3%**	0.0
30/04/2024	1440	1440	100.0%	1440	100.0%	**0.0%**	100.0%	**53.8%**	100.0%	**76.7%**	0.0
Number of Days that were Compliant:			30		24	3	30	2	26	19	22
Operator / Supplier Comments:											

1.4 Water Treatment Abatement Notices and Compliance Orders

The Whitelea Rd WTP was assessed as Significantly Non-compliant due to the ongoing breaches of the weekly backwash discharge volume. In response to this assessment, an application is underway to vary the existing consent to make allowance for the additional volume that continuously discharges from the treatment plant.

Taumata Arowai issued a Compliance Order for the Milton WTP on 24 November 2023. Items identified by Sections 3(b) and 4 of the Compliance Order were addressed before the 29 March 2024 deadline. Evidence of Council's compliance with Sections 3(b) and 4 was submitted to Taumata Arowai on 28 March 2024. The Council requested an extension for Sections 1 and A(i) of the Compliance Order. Taumata Arowai granted the extension on 5 April 2024. The Council updates Taumata Arowai with monthly progress reports.

The Glenkenich WTP was issued Abatement Notice EM.RMA.24.0024 on 16 May 2024 in relation to the non-compliant levels of Dissolved Aluminium in the backwash water discharged to the Pomahaka River. The Council will request to cancel the abatement notice and prepare an application to vary the existing consent RM15.314.01 to make allowance for the new treatment plant processes.

1.5 Taumata Arowai Reviews and Audits

Monthly updates in April and May have been provided to Taumata Arowai for Clutha District Council's progress with requirements of the Compliance Order for the Milton water supply.

A Drinking Water Safety Plan review meeting was held with Taumata Arowai staff on April 16. Taumata Arowai staff provided feedback on the DWSPs for the Moa Flat, North Bruce, Stirling, Lawrence, Waitahuna, Tuapeka West, and Richardson Rural water supplies.

As for previous DWSP reviews, CDC was required to provide an action plan to Taumata Arowai for how these remaining DWSPs will be updated. DWSPs will not be developed for Lawrence, Tuapeka West, or Waitahuna Rural, as these will be replaced with a DWSP for the new Greenfields Scheme. This was provided to Taumata Arowai on May 14, with no feedback received on this action plan at the time of writing.

1.6 Disinfection Byproducts

Disinfection Byproducts (DBP) are formed when disinfectants like chlorine interact with natural organic matter in the source water. The pH of the water, length of time chlorine is in contact with the organic matter, temperature, and cleanliness of the distribution network all contribute to the formation of DBPs. The increased concentration of chlorine in the water causes an increase in DBP formation.

The formation of DBPs is impacted by increased temperatures, so it would be expected that there will be more DBPs formed in spring and summer.

The type of DBP formed depends on the pH. The types found in the Waitahuna and Milton distribution networks are associated with lower water pH (6.5 – 7.5).

Waitahuna Supply				
Date	Location	Dichloroacetic acid (MAV 0.05 mg/l)	Trichloroacetic Acid (MAV 0.2 mg/l)	FAC (mg/l)
5/10/2023	Waitahuna WTP	0.029	<0.05	2.01
	Tuapeka East	0.050	<0.05	0.15
	Balmoral 1	0.039	0.06	0.66
	Balmoral 2	0.039	<0.05	0.08
5/1/2024	Waitahuna WTP	0.033	<0.05	1.37
	Tuapeka East	<0.005	<0.05	<0.05
	Balmoral 1	<0.005	<0.05	<0.05
	Balmoral 2	<0.005	<0.05	<0.05
4/4/2024	Waitahuna WTP	0.024	<0.05	2.55
	Tuapeka East	0.076	0.19	0.24
	Balmoral 1	0.052	0.09	0.98
	Balmoral 2	0.073	0.15	0.17
9/5/2024	Waitahuna WTP	-	-	-
	Tuapeka East	-	-	0.79
	Balmoral 1	-	-	0.94
	Balmoral 2	0.068	0.15	0.94

Milton Supply				
Date	Location	Dichloroacetic acid (MAV 0.05 mg/l)	Trichloroacetic Acid (MAV 0.2 mg/l)	FAC (mg/l)
10/11/2023	Milton Town	0.049	0.06	0.88
	Milton OCF	0.008	<0.05	1.5
	Milton WTP	<0.005	<0.05	1.78
5/1/2024	Milton Town	0.023	<0.05	1.32
	Milton OCF	0.012	<0.05	1.94
	Milton WTP	0.006	<0.05	2.38
4/4/2024	Milton Town	0.034	0.08	1.0
	Milton OCF	0.012	<0.05	1.99
	Milton WTP	0.005	<0.05	-
9/5/2024	Milton Town	0.008	<0.05	1.19
	Milton OCF	<0.005	<0.05	1.42
	Milton WTP	-	-	-

Public health advice regarding DBPs, and water treatment is that the microbiological quality of the water should not be compromised to minimise DBP formation. Reducing the concentration of chlorine in the treated water to prevent DBP formation could result in increased levels of E. Coli. Adverse health effects from DBPs are based upon long-term continuous exposures.

2 Wastewater Treatment Plant Compliance Focus

2.1 ORC Wastewater Treatment Abatement Notices

The Milton WWTP abatement notice was issued in December 2022 in relation to the discharge quality and has now expired. Further optimisation of the maintenance regime and treatment process is underway to achieve full compliance. The UV Reactor was recently serviced. There is significant improvement in discharge quality from this site since August 2023.

- The Milton WWTP is likely to maintain compliance with the limits for pH, cBOD5, TSS, NH3-N (Winter), TN, TP, and *E. coli*.

- The Milton WWTP is likely to achieve compliance with the limits for NH3-N (Summer) by March 2024.

Milton Wastewater Treatment Plant									
Resource Consent Compliance Report									
RC No.:2007.090_V1; Expiry Date: 20/05/2044									
Effluent Sample Results (YTD) CDCWW-16:									
		pH	CBOD	TSS	NH3-N (Summer)	NH3-N (Winter)	TN	TP	E.coli
			g/m3	g/m3	Nov-Mar	Apri-Oct	g/m3	g/m3	cfu/100mL
Summer Limit									
Lower Limit		6.5							
Upper Limit		9	30	40	10	19	22	14	2100
ORC Site Name	Sample Date								
Milton STP Final Effluent	3/04/2024	7	6	13		8.78	21.6	5.1	2000
Milton STP Final Effluent	4/03/2024	7.2	6	19	9.4		21.1	5.3	70
Milton STP Final Effluent	7/02/2024	7.2	6	21	9.0		20.2	5.2	1100
Milton STP Final Effluent	4/01/2024	7.6	8	17	5.2		21.1	4.5	460
Milton STP Final Effluent	7/12/2023	7.6	8	31	7.0		17.8	5.1	150
Milton STP Final Effluent	9/11/2023	6.8	7	8	9.0		20.3	3.8	1300
Milton STP Final Effluent	6/10/2023	7.4	7	22		8.0	17.9	3.6	360
Milton STP Final Effluent	5/09/2023	7.4	10	8		10.6	20.7	3.9	90
Milton STP Final Effluent	2/08/2023	7	6	10		4.6	13.2	1.9	70
Milton STP Final Effluent	5/07/2023	7.2	6	48		6.4	14.5	3.0	140
Milton STP Final Effluent	7/06/2023	7	15	18		13.7	20.5	4.4	2900
Milton STP Final Effluent	5/05/2023	6.5	14	77		9.0	17	7.0	1200
Milton STP Final Effluent	4/04/2023	7.3	14	19		7.5	15.1	6.6	8000
Milton STP Final Effluent	2/03/2023	7.4	12	23	10.4		22.8	6.1	4800
Milton STP Final Effluent	2/02/2023	7	11	16	11.5		16.6	6.9	4100
Milton STP Final Effluent	6/01/2023	6.8	24	25	9.1		20	6.8	8000
Milton STP Final Effluent	2/10/2022	6.8	13	38	7.4		22.7	5.0	900
Milton STP Final Effluent	3/11/2022				5.4				
Milton STP Final Effluent	7/10/2022					7.7			
Milton STP Final Effluent	2/09/2022					12.4			
90th Percentile Limit			30	40	10	19	22	14	2100
90th Percentile (Last 10 Results)		7.6	8.2	32.7	10.5	12.5	21.2	5.2	1370
95th Percentile Limit						25			
95th Percentile (Last 10 Results)						9.5			
Geometric Mean Limit									400
Geometric Mean (Last 10 Results)									291

The Kaitangata WWTP abatement notice was issued in December 2022 in relation to the discharge quality. The Council requested an extension of the abatement notice on 7 November 2023. The Council were able to demonstrate ongoing improvements to the discharge quality, and in response the ORC granted an extension until 30 June 2024.

- The Kaitangata WWTP is likely to maintain compliance with the limits for pH, BOD5, TSS, TN, TP, and *E. coli*.

- The Kaitangata WWTP is unable to achieve compliance with the limits for NH3-N by 30 June 2024.

Kaitangata Wastewater Treatment Plant Resource Consent Compliance Report RC No.: RM14.001.01; Expiry Date: 21/03/2049 Plant Discharge Volume (m^3) Plant Effluent Sample Results (YTD)								
ORC Site Name		pH	BOD	TSS	NH -N	TN	TP	E.coli
			g/m3	g/m3	g/m3	g/m3	g/m3	cfu/100mL
	Lower Limit	6.5						
	Upper Limit	9	20	30	20	35	10	260
Kaitangata Oxidation Pond Final Effluent	5/05/2023	8.0	7	21	25.7	29.9	4.3	10
Kaitangata Oxidation Pond Final Effluent	2/06/2023	7.3	6	5	27.8	30.6	4.5	100
Kaitangata Oxidation Pond Final Effluent	3/07/2023	7.7	14	23	19.6	24.8	3.7	50
Kaitangata Oxidation Pond Final Effluent	9/08/2023	8.4	2	3	16.8	18.9	2.0	10
Kaitangata Oxidation Pond Final Effluent	7/09/2023	7.9	6	3	17.9	20.6	2.3	10
Kaitangata Oxidation Pond Final Effluent	5/10/2023	7.7	10	6	16.6	18.9	1.8	10
Kaitangata Oxidation Pond Final Effluent	2/11/2023	7.9	8	3	29.0	33.6	1.0	5
Kaitangata Oxidation Pond Final Effluent	4/12/2023	7.8	4	3	31.6	35.3	1.1	5
Kaitangata Oxidation Pond Final Effluent	4/01/2024	8.0	6	3	23.5	28.6	0.9	5
Kaitangata Oxidation Pond Final Effluent	7/02/2024	8.6	3	3	14.0	19.1	1.1	5
Kaitangata Oxidation Pond Final Effluent	6/03/2024	7.5	3	3	23.3	29.7	0.4	20
Kaitangata Oxidation Pond Final Effluent	3/04/2024	7.8	4	3	18.5	27.0	0.1	5
Compliance		Yes	Yes	Yes	No	Yes	Yes	Yes
9 out of 10 consecutive samples not to exceed limit								

Improvement: Monthly Compliance achieved / anticipated	No Change (may be a non-compliance if continues)	Consent non-compliance

Balclutha WWTP	Aug-23	Sep-23	Oct-23	Nov-23	Dec-23	Jan-24	Feb-24	Mar-24	Apr-24
Discharge Volume Limit Two Minor Non-compliances									
Discharge Parameters: Non-compliant results.									
Dissolved Oxygen: Non-compliant average									
HSE access: Concerns for samplers and operators – existing workarounds are in place.									

Balclutha Wastewater Treatment Plant Resource Consent Compliance Report RM17.328.01 Final Discharge Results Plant Effluent Sample Results (YTD) Monthly								
ORC Site Name	Parameter	CBOD5	TSS	E. Coli	NH -N	TP	DO	pH
		g/m³	g/m³	cfu/100 mL	g/m³	g/m³	g/m³	
	8 out of 12	40	70	55000	20	7.2	2	9
	2 out of 12	85	150	350000	25	8.9		6.5
Balclutha Wastewater Treatment Plant	5/05/2023	21	32	8000	33.1	3	3.3	7.1
Balclutha Wastewater Treatment Plant	7/06/2023	43	66	8000	35.1	3.82		
Balclutha Wastewater Treatment Plant	5/07/2023	37	48	8000	31.3	3.01	0.2	6.6
Balclutha Wastewater Treatment Plant	2/08/2023	34	48	8000	27.4	2.73	0.4	7.2
Balclutha Wastewater Treatment Plant	5/09/2023	31	40	110000	31.4	2.59	0.4	7.5
Balclutha Wastewater Treatment Plant	6/10/2023	19	37	10000	27.9	2.17	0.0	7.3
Balclutha Wastewater Treatment Plant	2/11/2023	23	29	10000	28.5	1.47	0.8	7.5
Balclutha Wastewater Treatment Plant	4/12/2023	33	26	1600	33.5	2.62	2.6	7.8
Balclutha Wastewater Treatment Plant	4/01/2024	37	49	1000	31.1	2.97	5.5	7.6
Balclutha Wastewater Treatment Plant	8/02/2024	39	66	2200	28.9	2.74	6.2	8.0
Balclutha Wastewater Treatment Plant	6/03/2024	24	53	800	29.2	2.54	11.8	7.6
Balclutha Wastewater Treatment Plant	3/04/2024	24	36	5700	32.7	3.26	0.8	7.6
Number of Samples		12	12	12	12	12		
8 out of 12 consecutive samples	Limit of non-compliant samples	8	8	8	8	8		
	Actual	1	0	1	12	0		
Median Compliant?		Yes	Yes	Yes	No	Yes		
2 out of 12 consecutive samples	Limit of non-compliant samples	2	2	2	2	2		
	Actual	0	0	0	12	0		
95th Compliant?		Yes	Yes	Yes	No	Yes		

Balclutha WWTP Site Upgrades include:

- Segregation of the existing pond into two linked cells. Two aerators will impart both dissolved oxygen and circulation pattern around the cell.
- Installation in the downstream cell of 85 BioShell units, intended to reduce BOD, TSS and NH_3. This includes new building to house blowers and recirculation pumps, along with a curtain wall in the BioShell zone which will contain floating hexagonal plates to eliminate sunlight. The BioShell installation is expected to be commissioned during May 2024 but take time before noticeable improvements to the final effluent quality can be expected.
- Installation of a new inlet screen will help reduce TSS and BOD. Expected to be commissioned by end of end of May 2024.
- Revised programming to control daily discharge volumes will prevent the exceedance of the daily discharge limit.

Clinton WWTP	Aug-23	Sep-23	Oct-23	Nov-23	Dec-23	Jan-24	Feb-24	Mar-24	Apr-24
Discharge Volume Limit: Compliant									
Discharge Parameters: Non-compliant results.									
Dissolved Oxygen: Compliant average									
HSE access: Concerns for samplers and operators – existing workarounds are in place.									

Clinton Wastewater Treatment Plant								
Resource Consent Compliance Report								
RC No.:17.092.01; Expiry Date: 5/5/2027								
Final Discharge Results								
Plant Effluent Sample Results (YTD)								
ORC Site Name		DO	pH	$cBOD_5$	TSS	E. Coli	NH_3-N	TP
		g/m³	6.5	g/m³	g/m³	cfu/100ml	g/m³	g/m³
	Lower Limit	2	9					
	Median Limit			24	26	550	13	4
	95th Percentile Limit			37	46	3400	17.5	11
Clinton STP Final Effluent	5/05/2023	1.0	7.8	19	41	2000	19.3	7.3
Clinton STP Final Effluent	7/06/2023	11.0	8.3	7	37	660	28.4	6.4
Clinton STP Final Effluent	5/07/2023	9.1	7.2	10	34	3100	14.9	3.4
Clinton STP Final Effluent	2/08/2023	13.0	8.2	6	31	110	10.4	1.5
Clinton STP Final Effluent	5/09/2023	9.0	8.3	5	23	140	10.7	2.8
Clinton STP Final Effluent	6/10/2023	9.0	8.2	13	24	180	11.2	3.9
Clinton STP Final Effluent	2/11/2023	5.0	7.3	10	23	2100	12.9	4.7
Clinton STP Final Effluent	7/12/2023	5.0	7.8	12	19	2600	11.4	4.1
Clinton STP Final Effluent	4/01/2024	3.0	7.8	4	13	6000	12.8	5.4
Clinton STP Final Effluent	8/02/2024	9.5	7.8	22	40	2100	6.9	6.2
Clinton STP Final Effluent	4/03/2024	10.3	7.9	20	53	2300	6.8	6.0
Clinton STP Final Effluent	4/04/2024	12.0	7.6	38	40	350	6.5	5.5
Number of Samples				12	12	12	12	12
8 out of 12 consecutive samples	Limit of non-compliant samples			8	8	8	8	8
	Actual			1	7	8	3	8
Median Compliant?				Yes	Yes	Yes	Yes	Yes
2 out of 12 consecutive samples	Limit of non-compliant samples			2	2	2	2	2
	Actual			1	1	1	2	0
95th Compliant?				Yes	Yes	Yes	Yes	Yes

Clinton WWTP Site Upgrades include:

- Segregation of the existing pond into two linked cells by a curtain wall installed across the pond.
- Installation of BioShell units in the downstream portion of the pond, intended to reduce BOD, TSS and NH_3. This includes associated blowers, and floating hexagonal plates in the BioShell zone. The BioShell were commissioned in March 2024.
- Installation of a UV reactor between the pond and the wetland to provide bacterial disinfection; expected to be commissioned in June 2024. The UV Reactor will help reduce E. coli.
- Installation of additional plants in the wetland cells and removal of accumulated sludge.
- Options to reduce TP still require investigation to determine feasibility.

Waihola WWTP	Aug-23	Sep-23	Oct-23	Nov-23	Dec-23	Jan-24	Feb-24	Mar-24	Apr-24
Discharge Volume Limit: Discharged Outside of the Tidal time.									
Discharge Parameters: Non-compliant results.									
Dissolved Oxygen: Compliant average									
HSE access: No new H&S issues have been identified at this site.									

Waihola Wastewater Treatment Plant Resource Consent Compliance Report RM15.364.01 Expire date May 2028 Final Effluent (YTD)								
ORC Site Name	Date	$CBOD_5$	TSS	E. Coli	NH_3-N	TP	DO	pH
		g/m³	g/m³	cfu/100 ml	g/m³	g/m³		
	median	75	100	80000	23	5.7	g/m³	9
	95 percentile	140	175	315000	31	8.2		6.5
Waihola Wastewater Treatment Plant	30/05/2023	11	77	2400	28.8	5.57	6.7	7.2
Waihola Wastewater Treatment Plant	7/06/2023	7	35	4900	28.8	4.92	7.4	7.2
Waihola Wastewater Treatment Plant	24/07/2023	<3	33	1100	0.05	0.117	4.4	7.2
Waihola Wastewater Treatment Plant	10/08/2023	15	39	8000	26.9	3.78	6.3	7.2
Waihola Wastewater Treatment Plant	8/09/2023	10	38	450	28.6	5.87	6.6	7.2
Waihola Wastewater Treatment Plant	11/10/2023	18	35	730	26.2	4.84	6.3	7.1
Waihola Wastewater Treatment Plant	8/11/2023	16	37	5400	27.9	6.64	7.8	7.3
Waihola Wastewater Treatment Plant	6/12/2023	15	122	1600	31.5	9.15	4.2	7.1
Waihola Wastewater Treatment Plant	4/01/2024	12	33	6400	37.5	9.87	10.8	9.3
Waihola Wastewater Treatment Plant	7/02/2024	8	29	780	41.7	11.6	4.6	7.1
Waihola Wastewater Treatment Plant	4/03/2024	14	52	4800	44.3	8.78	0.5	7.5
Waihola Wastewater Treatment Plant	5/04/2024	22	17	10	51.9	8.86	6.6	7.3
Number of Samples		12	12	12	12	12		
8 out of 12 consecutive samples	Limit of non-compliant samples	8	8	8	8	8		
	Actual	0	1	0	11	7		
Median Compliant?		Yes	Yes	Yes	No	Yes		
2 out of 12 consecutive samples	Limit of non-compliant samples	2	2	2	2	2		
	Actual	0	0	0	5	5		
95th Compliant?		Yes	Yes	Yes	No	No		

Waihola WWTP Site Upgrades include:

- Inlet screen installed to help reduce TSS and BOD.
- An identified issue with the tidal discharge controls was identified in January 2024 for the previous month. This issue requires further investigation to prevent future non-compliances.
- Installation of BioShell units in the downstream portion of the pond, intended to reduce BOD, TSS and NH_3. This includes associated blowers, and floating hexagonal plates in the BioShell zone. The BioShell were commissioned in March 2024 but take time before noticeable improvements to the final effluent quality can be expected.
- Additional aerator installed during March 2024, imparting both dissolved oxygen and circulation pattern around the cell.

Milton WWTP	Aug-23	Sep-23	Oct-23	Nov-23	Dec-23	Jan-24	Feb-24	Mar-24	Apr-24
Discharge Volume Limit: Exceeded the discharge limit.									
Discharge Parameters: Compliant									
Treatment Plant Bypass: Partially treated effluent bypassed the treatment plant.									
HSE concerns: Raised by sampling staff, ORC & operators regarding safe access to sample locations and below ground maintenance pits – upgrades are underway.									

Milton WWTP Site Upgrades include:

- Sludge is being removed as expediently as possible from the Imhoff tanks over this summer and dried on the sludge drying beds, then short-term on-site storage before bulk removal to landfill.
- A full set of spare UV lamps have been purchased in January 2024 and are now held on site (along with other UV equipment spares).
- Servicing of the UV system by Xylem (UV equipment manufacturer/supplier) has been completed. This included replacing the UV lamps and replacing the UV light intensity reference sensors.
- Partially treated effluent bypassed the treatment plant on 12 April 2024.

Kaitangata WWTP	Aug-23	Sep-23	Oct-23	Nov-23	Dec-23	Jan-24	Feb-24	Mar-24	Apr-24
Discharge Volume Limit Compliant									
Pond Overflow Compliant									
Discharge Parameters: Compliant									
HSE access: Concerns for samplers and operators – existing workarounds are in place.									

Kaitangata WWTP Site Upgrades include:

- Inlet screen installed and commissioned in mid-2023. The screen will help reduce TSS and BOD.
- Alteration to existing curtain wall segregations.
- Additional BioShells and aerator installed, along with floating hex covers, intended to reduce BOD, TSS and NH_3. All commissioned in January 2024.
- Full manhole inspection completed during March 2024.
- Trade Waste permits are to be revised to ensure appropriate conditions apply to high-risk trade waste discharges.

Heriot WWTP	Aug-23	Sep-23	Oct-23	Nov-23	Dec-23	Jan-24	Feb-24	Mar-24	Apr-24
Discharge Volume Limit: Compliant									
Pond Overflow Compliant									
Discharge Parameters: Non-compliant results.									

Heriot Wastewater Treatment Plant Resource Consent Compliance Report RC No.:RM13.443.01; Expiry Date: 28/02/2049 Final Effluent Sample Results (YTD)								
ORC Site Name		NH -N	BOD	E.coli	pH	TSS	TN	TP
		g/m3	g/m3	cfu/100mL		g/m3	g/m3	g/m3
	Lower Limit				6.5			
	Upper Limit	20	20	260	9	30	35	10
Heriot Oxidation Pond Final Effluent	5/05/2023	22.5	6	100	7.3	11	33.4	5.5
Heriot Oxidation Pond Final Effluent	2/06/2023	23.5	9	100	7.5	4	26.7	3.4
Heriot Oxidation Pond Final Effluent	6/07/2023	22.4	3	10	7.8	3	27.1	3.0
Heriot Oxidation Pond Final Effluent	9/08/2023	18.6	3	5	8.2	3	23.2	2.5
Heriot Oxidation Pond Final Effluent	7/09/2023	23.2	16	10	7.8	6	27.0	3.6
Heriot Oxidation Pond Final Effluent	5/10/2023	20.4	6	10	7.9	6	29.1	3.6
Heriot Oxidation Pond Final Effluent	2/11/2023	22.9	3	10	9.2	6	26.8	3.4
Heriot Oxidation Pond Final Effluent	4/12/2023	19.8	2	10	6.8	3	24.8	4.8
Heriot Oxidation Pond Final Effluent	4/01/2024	19.3	2	5	8.0	3	26.5	5.3
Heriot Oxidation Pond Final Effluent	7/02/2024	7.55	10	5	7.9	3	11.5	4.8
Heriot Oxidation Pond Final Effluent	6/03/2024	11.4	2	10	7.8	3	15.8	5.2
Heriot Oxidation Pond Final Effluent	29/04/2024	34.4	6	50	7.6	3		6.0
Compliance		NO	YES	YES	YES	YES	YES	YES
9 out of 10 consecutive samples not to exceed limit								

Heriot WWTP Site Upgrades include:

- Installed another five BioShells, supplementing the existing units, along with floating hex covers, intended to reduce BOD, TSS and NH_3. All commissioned in January 2024.
- Trade Waste permits are to be revised to ensure appropriate conditions apply to high-risk trade waste discharges.
- Total Nitrogen was not analysed during April 2024.

Kaka Point WWTP	Aug-23	Sep-23	Oct-23	Nov-23	Dec-23	Jan-24	Feb-24	Mar-24	Apr-24
Discharge Volume Limit: Missing discharge data.									
Pond Overflow: Compliant									
Discharge Parameters: Non-compliant results.									
HSE access: Concerns for samplers and operators – existing workarounds are in place.									

Kaka Point Wastewater Treatment Plant Resource Consent Compliance Report RC No.: 2008.690; Expiry Date: 26/01/2046 Final Effluent Sample Results (YTD)								
ORC Site Name	Date	NH -N g/m³	BOD g/m³	Enterecocci cfu/ 100mL	pH	TSS g/m³	TN g/m³	TP g/m³
Kaka Point Oxidation Pond	30/05/2023	11.9	8	10	6.9	14	32.5	5.5
Kaka Point Oxidation Pond	7/06/2023	14.6	5	230	6.6	13	38.0	6.0
Kaka Point Oxidation Pond	5/07/2023	5.2	6	110	6.5	10	34.2	5.2
Kaka Point Oxidation Pond	2/08/2023	4.1	6	80	6.1	34	28.6	4.2
Kaka Point Oxidation Pond	5/09/2023	2.3	13	60	6.6	22	29.1	5.4
Kaka Point Oxidation Pond	6/10/2023	6.2	9	10	7.6	26	28.5	6.1
Kaka Point Oxidation Pond	9/11/2023	5.3	1.5	10	4.3	7	42.8	7.1
Kaka Point Oxidation Pond	7/12/2023	14.2	10	20	6.8	18	42.0	8.4
Kaka Point Oxidation Pond	4/01/2024	7.3	13	5	7.4	19	39.9	10.3
Kaka Point Oxidation Pond	7/02/2023	38.8	14	30	7.5	9	52.0	8.7
Kaka Point Oxidation Pond	6/03/2024	49.9	12	360	7.6	22	49.5	8.9
Kaka Point Oxidation Pond	3/04/2024	7.8	9	20	6.5	7	46.3	8.2
Lower Limit					6.5			
Upper Limit					9			
90th% Limit		20	12	140		30	30	10
12-Month Rolling 90th Percentile		36.4	13.0	218.0	6.7	25.6	49.2	8.8

Kaka Point WWTP Site Upgrades include:

- Inlet screen installed and commissioned in mid-2023. The screen will help reduce TSS and BOD.
- Peripheral drain installed around the Biofiltro bed in early 2024 to capture liquid leaking from walls, directing the captured liquid to the Pond.
- Wood shavings and worms completely replaced during February 2024.
- The proposed wording for new compliance monitoring conditions for the Biofiltro sites was accepted by the Regional Council which is expected to simplify the monitoring requirements at these sites.

Owaka WWTP	Aug-23	Sep-23	Oct-23	Nov-23	Dec-23	Jan-24	Feb-24	Mar-24	Apr-24
Discharge Volume Limit: Compliant									
Pond Overflow: Compliant									
Discharge Parameters: Non-compliant results.									
HSE access: Concerns for samplers and operators – existing workarounds are in place.									

Owaka Wastewater Treatment Plant								
Resource Consent Compliance Report								
RC No.:2003.680; Expiry Date: 25/11/2045								
Final Effluent Sample Results 90th Percentile Compliance								
ORC Site Name	Sample Date	NH_3-N g/m^3	BOD_5 g/m^3	E.coli cfu/100mL	pH	TSS g/m^3	TN g/m^3	TP g/m^3
Owaka STP Final Effluent	5/05/2023	5.4	10	120	6.8	59	22.6	4.3
Owaka STP Final Effluent	8/06/2023	0.6	3	150	7.3	12	2.9	0.1
Owaka STP Final Effluent	5/07/2023	6.7	10	10	7.4	19	13.9	1.8
Owaka STP Final Effluent	2/08/2023	0.1	3	5	7.2	15	2.4	0.1
Owaka STP Final Effluent	5/09/2023	4.7	12	10	7.2	11	9.2	3.2
Owaka STP Final Effluent	1/10/2023	2.7	19	10	7.2	26	11.6	1.6
Owaka STP Final Effluent	2/11/2023	11.2	17	110	7.3	46	16.6	4.5
Owaka STP Final Effluent	7/12/2023	6.8	10	5	7.9	17	16.8	4.8
Owaka STP Final Effluent	4/01/2024	5.6	6	30	7.1	8	9.8	6.2
Owaka STP Final Effluent	7/02/2024	5.1	17	170	7.5	45	18.0	7.1
Owaka STP Final Effluent	6/03/2024	0.5	8	10	7.9	3	18.1	6.5
Owaka STP Final Effluent	3/04/2024	15.2	23	20	7.6	33	31.0	8.1
Lower Limit					6.5			
Upper Limit					9			
90th Percentile Limit		20	12	260		30	30	10
Rolling 90th Percentile Results		10.8	18.8	147.0	7.3	45.9	22.2	7.0

Owaka WWTP Site Upgrades include:

- Inlet screen installed and commissioned in mid-2023. The screen will help reduce TSS and BOD.
- Peripheral drain installed around the Biofiltro bed in early 2024 to capture liquid leaking from walls, directing the captured liquid to Pond 2.
- The tender period for constructing and installing the new Owaka Pump Station and associated rising main to the WWTP has just closed, expected to be commissioned within the next nine months.
- Work to replace the wood shavings and worms is currently underway.
- The proposed wording for new compliance monitoring conditions for the Biofiltro sites was accepted by the Regional Council which is expected to simplify the monitoring requirements at these sites.

Stirling WWTP	Aug-23	Sep-23	Oct-23	Nov-23	Dec-23	Jan-24	Feb-24	Mar-24	Apr-24
Discharge Volume Limit: Missing discharge data.									
Pond Overflow: Compliant									
Discharge Parameters: Compliant									
HSE access: Concerns for samplers and operators – existing workarounds are in place.									

Stirling Wastewater Treatment Plant Resource Consent Compliance Report RC No.: 2005.193; Expiry Date: 25/11/2045 Final Effluent Sample Results 90th Percentile Compliance								
ORC Site Name	Date	NH -N	BOD	E.coli	pH	TSS	TN	TP
		g/m^3	g/m^3	cfu/100mL		g/m^3	g/m^3	g/m^3
Stirling Oxidation Pond Final Effluent	5/05/2023	6.3	8	10	8.8	24	18.3	5.6
Stirling Oxidation Pond Final Effluent	7/06/2023	12.0	6	10	8.9	12	30.7	5.5
Stirling Oxidation Pond Final Effluent	5/07/2023	10.5	10	20	7.1	8	33.0	5.5
Stirling Oxidation Pond Final Effluent	2/08/2023	3.3	1	5	6.5	8	34.9	5.3
Stirling Oxidation Pond Final Effluent	5/09/2023	2.5	9	10	8.3	24	25.4	5.7
Stirling Oxidation Pond Final Effluent	6/10/2023	0.5	6	10	8.5	5	18.6	4.7
Stirling Oxidation Pond Final Effluent	2/11/2023	1.6	3	5	7.5	21	20.4	6.1
Stirling Oxidation Pond Final Effluent	7/12/2023	0.4	7	5	7.6	18	18.0	6.9
Stirling Oxidation Pond Final Effluent	4/01/2024	1.4	7	10	8.6	18	7.8	7.9
Stirling Oxidation Pond Final Effluent	7/02/2024	6.1	8	10	7.4	11	16.0	8.6
Stirling Oxidation Pond Final Effluent	4/03/2024	9.9	6	140	7.4	14	19.8	7.4
Stirling Oxidation Pond Final Effluent	3/04/2024	7.5	7	10	7.2	19	22.8	6.9
Lower Limit					6.5			
Upper Limit					9			
90th Percentile Limit		20	12	260		30	30	10
Rolling 90th Percentile Results		10.4	8.9	19.0	7.8	23.7	32.8	7.9

Stirling WWTP Site Upgrades include:

- Inlet screen installed and commissioned in mid-2023. The screen will help reduce TSS and BOD.
- New PLC and control philosophy was commissioned in March 2024, resulting in missing data for April 2024.
- The proposed wording for new compliance monitoring conditions for the Biofiltro sites was accepted by the Regional Council which is expected to simplify the monitoring requirements at these sites.

Lawrence WWTP	Aug-23	Sep-23	Oct-23	Nov-23	Dec-23	Jan-24	Feb-24	Mar-24	Apr-24
Discharge Volume Limit: Compliant									
Dissolved Oxygen: Compliant average									
Pond Overflow: Compliant									
Discharge Parameters: Non-compliant results.									

Lawrence Wastewater Treatment Plant								
Resource Consent Compliance Report								
RC No.: 2008.308; Expiry Date: 21/01/2046								
Final Effluent Sample Results (YTD)								
ORC Site Name	Sample Date	NH -N g/m^3	BOD g/m^3	E.coli cfu/100mL	pH	TSS g/m^3	TN g/m^3	TP g/m^3
Lawrence Oxidation Pond Final Effluent	5/05/2023	0.9	16	10	6.9	18	23.6	4.0
Lawrence Oxidation Pond Final Effluent	7/06/2023	6.5	19	70	6.6	16	29.9	3.6
Lawrence Oxidation Pond Final Effluent	6/07/2023	3.4	22	230	6.8	39	33.8	4.4
Lawrence Oxidation Pond Final Effluent	3/08/2023	9.3	22	10	7.2	37	27.6	4.0
Lawrence Oxidation Pond Final Effluent	5/09/2023	13.5	39	100	8	76	31.3	6.2
Lawrence Oxidation Pond Final Effluent	6/10/2023	3.4	28	10	6.8	39	35.0	6.4
Lawrence Oxidation Pond Final Effluent	2/11/2023	20.2	38	10	7.2	30	27.3	8.1
Lawrence Oxidation Pond Final Effluent	7/12/2023	18.0	22	10	7.9	14	35.0	8.3
Lawrence Oxidation Pond Final Effluent	4/01/2024	18.1	12	20	7.1	20	36.8	6.9
Lawrence Oxidation Pond Final Effluent	7/02/2024	15.6	19	10	7.4	53	28.1	9.2
Lawrence Oxidation Pond Final Effluent	6/03/2024	1.5	12	10	7.2	16	41.7	7.2
Lawrence Oxidation Pond Final Effluent	4/04/2024	0.9	12	10	7.7	15	32.2	7.2
Lower Limit					6.5			
Upper Limit					9			
90th% Limit		20	12	260		30	30	10
90th% Percentile		18.1	37.0	97.0	7.2	51.6	36.6	8.3

Lawrence WWTP Site Upgrades include:

- Inlet screen installed and commissioned in mid-2023. The screen will help reduce TSS and BOD.
- Wood shavings and worms completely replaced during February 2024.
- New aerator installed during March 2024, imparting both dissolved oxygen and circulation pattern around the cell.
- The proposed wording for new compliance monitoring conditions for the Biofiltro sites was accepted by the Regional Council which is expected to simplify the monitoring requirements at these sites.

Tapanui WWTP	Aug-23	Sep-23	Oct-23	Nov-23	Dec-23	Jan-24	Feb-24	Mar-24	Apr-24
Discharge Volume Limit Exceeded the discharge limit.									
Pond Overflow Compliant									
Discharge Parameters Compliant									

Tapanui Wastewater Treatment Plant Resource Consent Compliance Report RC No.2005.246; Expiry Date: 25/11/2045 Final Effluent Sample Results 90th% Compliance (YTD)								
ORC Site Name	Date	NH -N	BOD	E.coli	pH	TSS	TN	TP
		g/m3	g/m3	cfu/100mL		g/m3	g/m3	g/m3
Tapanui STP Final Effluent	5/05/2023	0.2	6	50	9.1	5	19.6	6.8
Tapanui STP Final Effluent	2/06/2023	3.0	6	10	8.3	5	26.4	4.3
Tapanui STP Final Effluent	6/07/2023	11.7	8	Overflow	7.0	10	21.8	3.2
Tapanui STP Final Effluent	9/08/2023	4.1	5	5	7.6	6	12.0	2.3
Tapanui STP Final Effluent	7/09/2023	0.0	2	230	7.6	20	0.8	0.0
Tapanui STP Final Effluent	6/10/2023	8.2	6	100	6.8	9	18.1	3.8
Tapanui STP Final Effluent	2/11/2023	2.2	9	5	6.7	3	29.1	3.7
Tapanui STP Final Effluent	4/12/2023	4.3	3	5	6.3	3	33.9	3.1
Tapanui STP Final Effluent	4/01/2024	11.1	11	5	6.8	7	25.7	5.3
Tapanui STP Final Effluent	7/02/2024	9.0	10	5	6.9	12	23.4	5.0
Tapanui STP Final Effluent	6/03/2024	12.8	20	90	7.2	15	28.4	4.5
Tapanui STP Final Effluent	5/04/2024	8.0	11	10	6.8	18	20.0	4.5
90th% Limit		20	12	260	6.5-9	30	30	10
90th%		11.6	11.0	100.0	7.3	17.7	29.0	5.3

Tapanui WWTP Site Upgrades include:

- Inlet screen installed and commissioned in mid-2023. The screen will help reduce TSS and BOD.
- This site suffers from significant I&I flows during winter months. One known problem manhole repaired in March 2024 and CDC staff are discussing a relining programme for other problematic manholes in the town's sewer network.
- New aerator installed during March 2024, imparting both dissolved oxygen and circulation pattern around the cell.
- The proposed wording for new compliance monitoring conditions for the Biofiltro sites was accepted by the Regional Council which is expected to simplify the monitoring requirements at these sites.

Appendix A: Drinking Water Quality Assurance Rules Technical Details

Section 4.10.1.1 of the DWQARs details the requirements that must be met to provide assurance that bacteria in the water has been adequately disinfected with chlorine. The following rules make up the requirements set out by Section 4.10.1.1:

- Rule T3.2 requires the treated water to achieve a chlorine C.t. value of at least 15 min.mg/l for 95% of the day. The C.t. value is determined by the residual chlorine (mg/l) in the final water and the T10 contact time (Rule T3.4). A low result in either of these values will results in a non-compliant C.t. value.

- Rule T3.4 requires a T_{10} disinfectant contact time of at least 5 minutes to be demonstrated. The T10 contact time is determined by the water level in the contact tanks (%) and the flow rate (l/s) of water through those tanks. A low reservoir level or high flow rate can result in a non-compliant T_{10} contact time. The continuous monitoring report takes the lowest T10 value from each 24-hour period.

- Rule T3.3 requires the residual chlorine in the final water to remain above 0.2 mg/l for 95% of the day.

- Rule T3.5 requires the turbidity in the final water to remain below 1.0 NTU for 95% of the day.

- Rule T3.6 requires the turbidity in the final water to remain below 2.0 NTU.

Section 4.10.1.4 of the DWQARs details the requirements that must be met to provide assurance that bacteria in the water has been adequately disinfected with Ultraviolet (UV) Light. The following rules make up the requirements set out by Section 4.10.1.4:

- Rule T3.16 requires an applied UV dose of greater than 40 mJ/cm^2 be achieved for 95% of the day.

- Rule T3.17 requires an applied UV dose of not less than 40 mJ/cm^2 be achieved for any consecutive 15-minute period.

- A reduction in UV dose is caused by low lamp intensity, fouling of the lamps, poor quality water, and high flow rate (l/s) through the UV unit.

Section 4.10.2.5 to 4.10.2.7 of the DWQARs details the requirements that must be met to provide assurance that protozoa in the water has been adequately removed by the coagulation, flocculation, sedimentation, and filtration process. The following rules make up the requirements set out by Section 4.10.2.5:

- Rule T3.39 requires the turbidity in the final water to remain below 0.3 NTU for 95% of the day.

- Rule T3.40 requires the turbidity in the final water to not exceed 0.5 NTU for any consecutive 15-minute period.

- The maximum credit achieved through compliance with Section 4.10.2.5 is 3-log.

The following rules make up the requirements set out by Section 4.10.2.6:

- Rule T3.43 requires the turbidity in the final water to remain below 0.15 NTU for 95% of the day.

- Rule T3.44 requires the turbidity in the final water to not exceed 0.5 NTU for any consecutive 15-minute period.

- The maximum credit achieved through compliance with Section 4.10.2.6 is 3.5-log.

The following rules make up the requirements set out by Section 4.10.2.7:

- Rule T3.47 requires the turbidity in the final water to remain below 0.1 NTU for 95% of the day.

- Rule T3.48 requires the turbidity in the final water to not exceed 0.3 NTU for any consecutive 15-minute period.

- The maximum credit achieved through compliance with Section 4.10.2.6 is 4-log.

- Turbidity levels are susceptible to weather events that cause changes to the raw water quality, and over or under dosing of the coagulant.

Section 4.10.2.13 of the DWQARs details the requirements that must be met to provide assurance that protozoa in the water has been adequately removed by the UV disinfection. The following rules make up the requirements set out by Section 4.10.2.13:

- Rule T3.86 requires the applied UV dose to meet or exceed that required to achieve the claimed log credit for 95% of the day.

- Rule T3.87 requires an applied UV dose of not less than that required to achieve the claimed log credit for any consecutive 15-minute period.

- A reduction in UV dose is caused by low lamp intensity, fouling of the UV lamps, poor water quality, and high flow rate through the UV unit.

- Rule T3.89 requires the UV Transmission (UVT) to meet or exceed 95% of the UVT for which the reactor has been certified for at least 95% of the day.

- Rule T3.90 requires the UVT of not less than 80% of the lowest UVT for which the reactor has been certified for any consecutive 15-minute period.

- A reduction in UVT is caused by an increase in organics and dissolved compounds in the water passing through the UV unit.

Rules T3.92 and T3.93 requires the monitoring of identified Treatment Chemical Determinands that are introduced into the drinking water supply during the treatment process. Aluminium is used at most WTPs as a coagulant and must be monitored in accordance with Table 33 and Table 34 of the DWQARs.

Distribution Rule D3.19 requires the chlorine residual in the water distributed to the networks to remain above 0.2 mg/l in 85% of the analysed samples. The FAC must remain above 0.1 mg/l in every analysed sample.

Distribution Rule D3.29 requires the monitoring of *E. coli* and total coliforms in the distribution networks according to the frequency set out in Table 39 of the DWQARs. The Maximum Allowable Value (MAV) for *E. coli* is <1 CFU/100ml.