



# Annual Drinking Water Quality Report 2020-21

## Section A - Summary



## Declaration

I declare that the information provided in this Annual Drinking Water Quality Report for Tasmanian Water and Sewerage Corporation Pty Ltd ABN 47 162 220 653 in its capacity as a water and sewerage corporation licensed under the *Water and Sewerage Industry Act 2008* is complete and accurate.



**Michael Brewster**  
Chief Executive Officer  
Date: 30/09/2021

## Document approval and issue notice

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|                               |  |                  |
|-------------------------------|--|------------------|
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### Build status:

| Version | Date       | Author   | Reason                     | Sections |
|---------|------------|----------|----------------------------|----------|
| 1.0     | 30/09/2021 | F. Smith | Final submission to DoH    | All      |
| 1.1     | 29/10/2021 | F. Smith | Amendments post DoH review | All      |

### Amendments in this release:

| Section title | Section number     | Amendment summary          |
|---------------|--------------------|----------------------------|
| Section A     | 2.1, 6.1, 6.4, 6.5 | Minor correction of errors |
|               |                    |                            |

### Distribution:

| Copy number | Version | Issue date | Issued to            |
|-------------|---------|------------|----------------------|
| 1.0         | 1.0     | 30/09/2021 | Department of Health |
| 2.0         | 1.1     | 29/10/2021 | Public               |
|             |         |            |                      |

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## Introduction

We are pleased to provide our FY2020-21 Annual Drinking Water Quality Report (ADWQR) as required under section 129B of the *Public Health Act 1997* and specified under section 13 of the Tasmanian Drinking Water Quality Guidelines 2015 (TDWQG).

This ADWQR consolidates information on each drinking water supply system against performance targets set out in the Australian Drinking Water Guidelines 2011 (ADWG).

The FY2020-21 ADWQR is comprised of two sections:

- Section A – provides a statewide overview of our drinking water supply systems and performance against the ADWG, as well as detailing our strategies to improve drinking water quality performance
- Section B – contains a detailed summary of each of our drinking water supply systems and a detailed assessment of performance against ADWG.

All supporting data used in this report is available on our website through our [Water Quality Portal](#)

## Executive summary

### Capital investments

During FY2020-21 a total of \$105.2 million in capital expenditure was delivered across a wide range of drinking water projects addressing compliance, growth and renewals of our water assets.

The focus has been the commencement of upgrade works at our largest water treatment plant, Bryn Estyn, which will secure quality drinking water to the greater Hobart area for the next 50 years.

### Drinking water risk reduction

Over the past year a reduction in drinking water risks for our customers has been achieved through:

- improvement in operational compliance and staff awareness relating to water safety through an ongoing focus on Critical Control Points and Operational Control Points
- improvement in compliance with industry practice in our water supply networks through an ongoing focus on network residual disinfection
- the realisation of operational improvements arising from ongoing technical and network assessments and
- improved visibility of operational performance data to the organisation.

### Customer impacts

During the financial year, three incident-based temporary BWAs were issued at Adventure Bay as a precautionary measure due to disinfection issues. Upgrades of the chlorination system and improved maintenance of the UV system have subsequently been implemented.

All breaches of ADWG or CCP were formally investigated and reviewed for the purposes of determining root causes and to facilitate targeted improvements in processes and infrastructure with a view to minimising the risk of repeat incidents. In each case, the incident review included an assessment of the risk that such an incident could occur in other systems across the state. Where the level of risk warranted action, plans have been put in place to minimise such risks.

### Compliance outcomes

The percentage of systems compliant with Tasmanian Drinking Water Quality Guidelines (TDWQG) microbiological guidelines was 100 per cent, which means that 100 per cent of customers received microbiologically compliant water.<sup>1</sup>

Metal concentrations above ADWG health limits were detected at Cornwall. Subsequent testing returned results that were within the guidelines.

Coles Bay had three samples with one disinfection-by-product above ADWG health limits. The maintenance of the activated carbon process at the WTP has significantly improved subsequent results.

There were no detections of fluoride in laboratory samples above the ADWG limit of 1.5 mg/L. Six systems (Bicheno, Burnie, Forth, Longford, Scamander and Leven River/Whitehills) failed to maintain an average dose of fluoride between 0.8-1.1 mg/L. Overall fluoride compliance remained at similar levels to the prior year and below the operational target of 97 per cent. This does not pose a risk to public safety and a Fluoride Improvement Plan (including potential capital projects) has been developed to focus efforts on optimisation and infrastructure upgrades of our fluoride system to meet both the health target and Tasmanian Code of Practice for the Fluoridation of Water Supplies.

Assessment of compliance against the drinking water sampling program (correct sample number and frequency) forms part of the compliance assessment prescribed in the ADWG, TDWQG and our DWQRMP. Sampling programs for all systems were complete.

### Looking Forward

Looking ahead, we are planning to invest in further improvements to drinking water quality during FY2021-22 through measures such as WTP upgrades, system optimisation initiatives and other risk reduction activities. The work is included in our Price and Service Plan submission and will be funded through revenue and increased borrowings. Projects include:

- Upgrade to the Bryn Estyn WTP
- Installation of UV systems across multiple WTPs
- Upgrades to multiple fluoride dosing stations.

## 1. Approach to drinking water quality management

Drinking water is an important product, and as a trusted and respected provider of essential services to homes and businesses across Tasmania we are committed to supplying safe and good quality drinking water.

To ensure consistent management of drinking water from catchment to customer, the 12-element risk management framework detailed in our DWQRMP is adopted, which demonstrates compliance with the ADWG framework. The DWQRMP identifies risks to drinking water systems and the management practices adopted to mitigate these risks.

The ADWG provide definitions for two sets of guideline values:

- **Health-related guideline value** — The concentration or measure of a water quality characteristic that, based on present knowledge, does not result in any significant risk to the health of the consumer over a lifetime of consumption
- **Aesthetic-related guideline value** – The concentration or measure of a water quality characteristic that is associated with the acceptability of water to the consumer e.g. taste and odour.

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<sup>1</sup> This excludes customers outside TasWater serviced land who receive non-potable water.

Samples are collected and tested in each drinking water supply in accordance with the sampling requirements prescribed in the ADWG, the TDWQG and our DWQRMP. Refer to Section 5 for further information on the compliance assessment framework utilised throughout this report.

## 2. Drinking water supply systems

Drinking water is sourced from 72 catchments located around Tasmania across a range of geographic and climatic zones.

As at 30 June 2021, TasWater was responsible for 60 drinking water supply systems (refer Table 1).

### 2.1 List of drinking water supply systems

**Table 1: Potable drinking water supply systems with status as of 30th June 2021**

| System               | Status  | Catchment/<br>water source                    | Connections | Population | Treatment<br>Process | Fluoridated<br>supply |
|----------------------|---------|---|-------------|------------|----------------------|-----------------------|
| Adventure Bay        | Potable | Bore  | 1           | 1          | Disinfection<br>only | No                    |
| Bicheno              | Potable | Aspley River                                  | 1,037       | 1,089      | Full<br>treatment    | Yes                   |
| Bothwell             | Potable | Clyde River                                   | 327         | 585        | Full<br>treatment    | No                    |
| Bracknell            | Potable | Liffey River                                  | 187         | 420        | Full<br>treatment    | No                    |
| Bridport             | Potable | Brid River                                    | 1,096       | 1,271      | Full<br>treatment    | Yes                   |
| Bronte Park          | Potable | Bronte Canal                                  | 65          | 46         | Full<br>treatment    | No                    |
| Bushy Park           | Potable | Lake Fenton                                   | 125         | 248        | Full<br>treatment    | Yes                   |
| Campbell Town        | Potable | Elizabeth River                               | 795         | 1,361      | Full<br>treatment    | Yes                   |
| Coles Bay            | Potable | Saltwater<br>Creek                            | 279         | 153        | Full<br>treatment    | No                    |
| Conara/Epping        | Potable | South Esk                                     | 68          | 158        | Full<br>treatment    | No                    |
| Cornwall             | Potable | Fanshaft<br>Spring/<br>unnamed<br>watercourse | 48          | 81         | Full<br>treatment    | No                    |
| Deep Creek           | Potable | Deep Creek                                    | 2,364       | 4,725      | Full<br>treatment    | Yes                   |
| Deloraine            | Potable | Meander River                                 | 1,366       | 2,799      | Full<br>treatment    | Yes                   |
| Distillery Creek     | Potable | Distillery Creek<br>/ St Patricks<br>River    | 14,099      | 27,974     | Full<br>treatment    | Yes                   |
| Dover                | Potable | Esperance<br>River                            | 750         | 1,234      | Full<br>treatment    | Yes                   |
| Dowlings Creek       | Potable | Dowlings Creek                                | 103         | 216        | Full<br>treatment    | No                    |
| Ellendale            | Potable | Jones River                                   | 77          | 140        | Full<br>treatment    | No                    |
| Fentonbury/Westerway | Potable | Lake Fenton                                   | 133         | 259        | Full<br>treatment    | Yes                   |
| Fingal               | Potable | South Esk River                               | 401         | 715        | Full<br>treatment    | No                    |
| Forth River          | Potable | Forth River                                   | 19,019      | 37,950     | Full<br>treatment    | Yes                   |
| Gawler River         | Potable | Gawler River                                  | 6,092       | 12,382     | Full<br>treatment    | Yes                   |
| Gladstone            | Potable | Ringarooma<br>River                           | 84          | 120        | Full<br>treatment    | No                    |



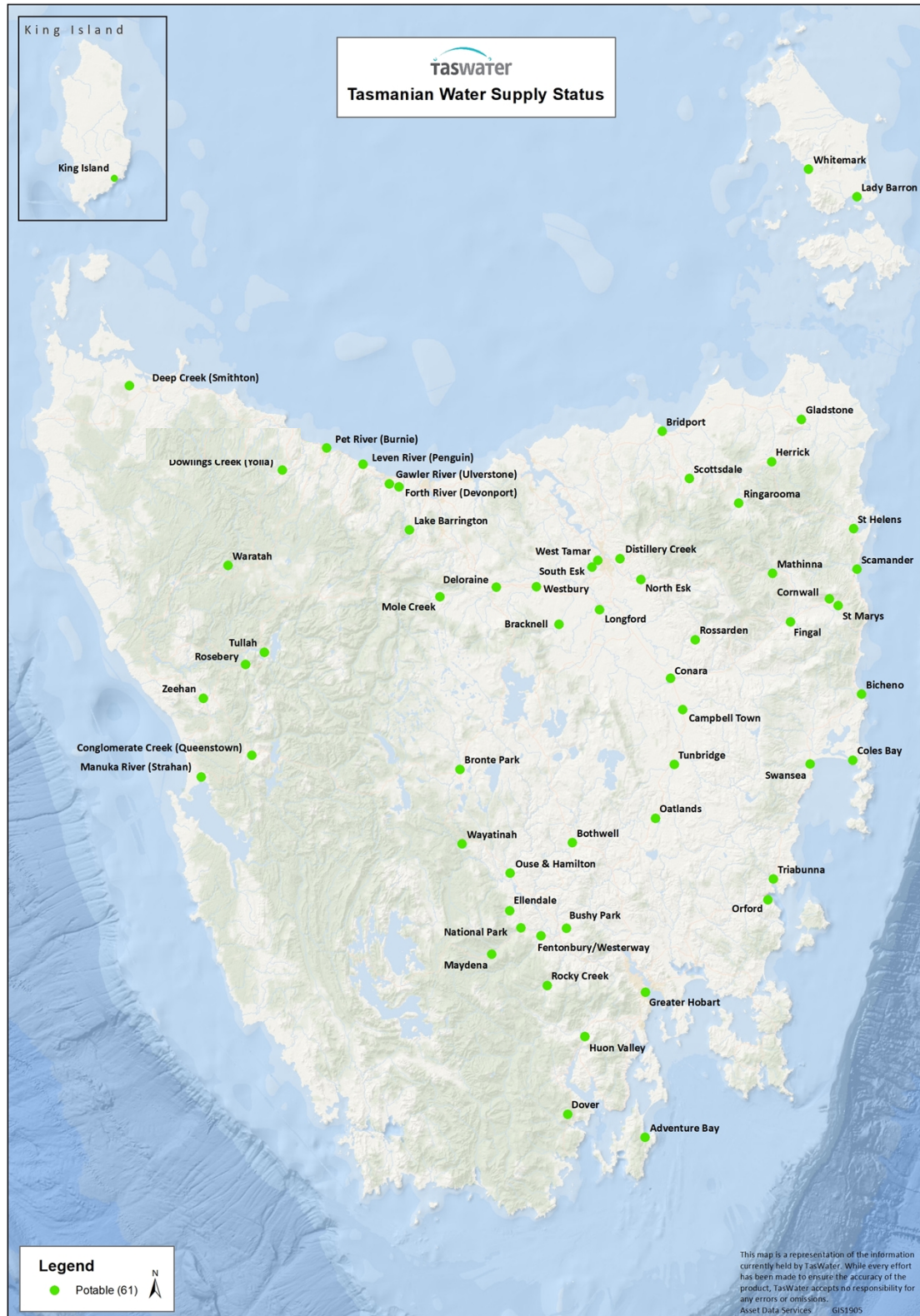
| System            | Status  | Catchment/<br>water source  | Connections | Population | Treatment<br>Process                                     | Fluoridated<br>supply |
|-------------------|---------|---|-------------|------------|--|-----------------------|
| Greater Hobart    | Potable | Lake Fenton<br>Derwent River<br>Mt Wellington<br>(multiple<br>offtakes) | 95,519      | 204,352    | Full<br>treatment<br>(1)<br><br>Disinfection<br>only (9) | Yes                   |
| Herrick           | Potable | Cascade and<br>Frome dams   | 27          | 61         | Full<br>treatment  | No                    |
| Huon Valley       | Potable | Huon River  | 4,339       | 8,724      | Full<br>treatment  | Yes                   |
| King Island       | Potable | Grassy River  | 603         | 1,046      | Full<br>treatment  | Yes                   |
| Lady Barron       | Potable | Bore  | 112         | 157        | Full<br>treatment  | No                    |
| Lake Barrington   | Potable | Lake<br>Barrington  | 1,228       | 2,482      | Full<br>treatment  | Yes                   |
| Leven River       | Potable | Leven River   | 2,248       | 4,609      | Full<br>treatment  | Yes                   |
| Longford          | Potable | Macquarie<br>River  | 4,643       | 9,793      | Full<br>treatment  | Yes                   |
| Manuka River      | Potable | Manuka River  | 593         | 815        | Full<br>treatment  | Yes                   |
| Mathinna          | Potable | South Esk   | 82          | 132        | Full<br>treatment  | No                    |
| Maydena           | Potable | Unnamed<br>tributary  | 141         | 218        | Full<br>treatment  | No                    |
| Mole Creek        | Potable | Weir  | 202         | 391        | Full<br>treatment  | No                    |
| National Park     | Potable | Lake Fenton   | 23          | 32         | Full<br>treatment  | Yes                   |
| North Esk         | Potable | North Esk   | 15,094      | 31,978     | Full<br>treatment  | Yes                   |
| Oatlands          | Potable | Blackman River  | 493         | 873        | Full<br>treatment  | Yes                   |
| Orford            | Potable | Prosser River   | 1,187       | 857        | Full<br>treatment  | Yes                   |
| Ouse and Hamilton | Potable | Derwent River   | 282         | 444        | Full<br>treatment  | No                    |
| Pet River         | Potable | Pet River   | 13,593      | 26,787     | Full<br>treatment  | Yes                   |
| Queenstown        | Potable | Conglomerate<br>Creek   | 1,513       | 2,257      | Full<br>treatment  | Yes                   |
| Ringarooma System | Potable | Dunn's Creek<br>Dam/<br>Ringarooma<br>River                             | 679         | 1,138      | Full<br>treatment  | Yes                   |
| Rocky Creek       | Potable | Rocky Creek   | 226         | 506        | Full<br>treatment  | Yes                   |
| Rosebery          | Potable | Mountain<br>Creek / Stitt<br>River                                      | 677         | 804        | Full<br>treatment  | Yes                   |
| Rossarden         | Potable | Aberfoyle<br>Creek  | 32          | 36         | Full<br>treatment  | No                    |
| Scamander         | Potable | Scamander<br>River  | 530         | 692        | Full<br>treatment  | Yes                   |
| Scottsdale        | Potable | Great Forester<br>River / Brid<br>River                                 | 1,340       | 2,803      | Full<br>treatment  | Yes                   |

| System     | Status  | Catchment/<br>water source            | Connections | Population | Treatment<br>Process | Fluoridated<br>supply |
|------------|---------|---------------------------------------|-------------|------------|----------------------|-----------------------|
| South Esk  | Potable | Lake Trevallyn                        | 5,442       | 11,766     | Full<br>treatment    | Yes                   |
| St Helens  | Potable | Georges River                         | 1,908       | 2,417      | Full<br>treatment    | Yes                   |
| St Marys   | Potable | Bore                                  | 367         | 605        | Full<br>treatment    | Yes                   |
| Swansea    | Potable | Swan River /<br>Meredith River        | 897         | 1,274      | Full<br>treatment    | Yes                   |
| Triabunna  | Potable | Maclaines<br>Creek / Brady's<br>Creek | 548         | 951        | Full<br>treatment    | Yes                   |
| Tullah     | Potable | Lake Rosebery                         | 218         | 236        | Full<br>treatment    | No                    |
| Tunbridge  | Potable | Blackman River                        | 118         | 201        | Full<br>treatment    | No                    |
| Waratah    | Potable | Waratah River                         | 134         | 184        | Full<br>treatment    | Yes                   |
| Wayatinah  | Potable | Lake Liapootah                        | 63          | 39         | Full<br>treatment    | No                    |
| West Tamar | Potable | Lake Trevallyn                        | 9,811       | 20,974     | Full<br>treatment    | Yes                   |
| Westbury   | Potable | Meander River                         | 1,188       | 2,370      | Full<br>treatment    | Yes                   |
| Whitemark  | Potable | Pats River                            | 178         | 261        | Full<br>treatment    | No                    |
| Zeehan     | Potable | Parting Creek                         | 625         | 905        | Full<br>treatment    | Yes                   |
| Total      | 60      |                                       | 215,419     | 438,097    |                      |                       |

## 2.2 Location of drinking water supply systems

The location and system status (as at 30 June 2021) of all drinking water systems is shown in Figure 1.

Figure 1: Locations and status of drinking water systems.



### 2.3 Source water catchments

The drinking water catchments for each drinking water system are identified in Table 1. Each catchment has a comprehensive water quality monitoring program including specific monitoring for microbes, metals, pesticides and herbicides.

### 3. Quality of drinking water for FY2020-21

Routine compliance monitoring of water supply systems was conducted throughout FY2020-21. Water sampling was undertaken based on analysis of the ADWG requirements and was also informed by internal risk assessments to ensure sampling represented the water quality received by customers.

The frequency of monitoring is established in the compliance program, which has been designed in accordance with the recommendations in the ADWG and TDWQG. A risk-based approach was used to specify the chemical parameters included in the monitoring program.

The compliance program includes health parameters including microbiological, metals, chlorine residual and disinfection by-products. Furthermore, the program includes aesthetic parameters such as turbidity, pH and colour (see Appendix A).

All laboratory samples were analysed by NATA accredited laboratories.

#### 3.1 System performance

**Table 2: High level health performance outcome for drinking water supply systems (against ADWG health-regulated parameters) (✓ = compliant, ✗ = non-compliant)**

| System               | Status  | Status changes | Compliance program completeness | Microbiological performance | Fluoride performance | Metals performance | DBP performance |
|----------------------|---------|----------------|---------------------------------|-----------------------------|----------------------|--------------------|-----------------|
| Adventure Bay        | Potable | TBWA lifted    | ✓                               | ✓                           | n/a                  | ✓                  | ✓               |
| Bicheno              | Potable |                | ✓                               | ✓                           | ✗ <sup>3</sup>       | ✓                  | ✓               |
| Bothwell             | Potable |                | ✓                               | ✓                           | n/a                  | ✓                  | ✓               |
| Bracknell            | Potable |                | ✓                               | ✓                           | n/a                  | ✓                  | ✓               |
| Bridport             | Potable |                | ✓                               | ✓                           | ✓                    | ✓                  | ✓               |
| Bronte Park          | Potable |                | ✓                               | ✓                           | n/a                  | ✓                  | ✓               |
| Bushy Park           | Potable |                | ✓                               | ✓                           | n/a                  | ✓                  | ✓               |
| Campbell Town        | Potable |                | ✓                               | ✓                           | ✓                    | ✓                  | ✓               |
| Coles Bay            | Potable |                | ✓                               | ✓                           | n/a                  | ✓                  | ✗ <sup>1</sup>  |
| Conara               | Potable |                | ✓                               | ✓                           | n/a                  | ✓                  | ✓               |
| Cornwall             | Potable |                | ✓                               | ✓                           | n/a                  | ✗ <sup>2</sup>     | ✓               |
| Deep Creek           | Potable |                | ✓                               | ✓                           | ✓                    | ✓                  | ✓               |
| Deloraine            | Potable |                | ✓                               | ✓                           | ✓                    | ✓                  | ✓               |
| Distillery Creek     | Potable |                | ✓                               | ✓                           | ✓                    | ✓                  | ✓               |
| Dover                | Potable |                | ✓                               | ✓                           | ✓                    | ✓                  | ✓               |
| Dowlings Creek       | Potable |                | ✓                               | ✓                           | n/a                  | ✓                  | ✓               |
| Ellendale            | Potable |                | ✓                               | ✓                           | n/a                  | ✓                  | ✓               |
| Fentonbury/Westerway | Potable |                | ✓                               | ✓                           | n/a                  | ✓                  | ✓               |
| Fingal               | Potable |                | ✓                               | ✓                           | n/a                  | ✓                  | ✓               |
| Forth River          | Potable |                | ✓                               | ✓                           | ✗ <sup>3</sup>       | ✓                  | ✓               |
| Gawler River         | Potable |                | ✓                               | ✓                           | ✓                    | ✓                  | ✓               |
| Gladstone            | Potable |                | ✓                               | ✓                           | n/a                  | ✓                  | ✓               |
| Greater Hobart       | Potable |                | ✓                               | ✓                           | ✓                    | ✓                  | ✓               |
| Herrick              | Potable |                | ✓                               | ✓                           | n/a                  | ✓                  | ✓               |
| Huon Valley          | Potable |                | ✓                               | ✓                           | ✓                    | ✓                  | ✓               |



| System            | Status  | Status changes | Compliance program completeness | Microbiological performance | Fluoride performance | Metals performance | DBP performance |
|-------------------|---------|----------------|---------------------------------|-----------------------------|----------------------|--------------------|-----------------|
| King Island       | Potable |                | ☑                               | ☑                           | ☑                    | ☑                  | ☑               |
| Lady Barron       | Potable |                | ☑                               | ☑                           | n/a                  | ☑                  | ☑               |
| Lake Barrington   | Potable |                | ☑                               | ☑                           | ☑                    | ☑                  | ☑               |
| Leven River       | Potable |                | ☑                               | ☑                           | ☒ <sup>3</sup>       | ☑                  | ☑               |
| Longford          | Potable |                | ☑                               | ☑                           | ☒ <sup>3</sup>       | ☑                  | ☑               |
| Manuka River      | Potable |                | ☑                               | ☑                           | ☑                    | ☑                  | ☑               |
| Mathinna          | Potable |                | ☑                               | ☑                           | n/a                  | ☑                  | ☑               |
| Maydena           | Potable |                | ☑                               | ☑                           | n/a                  | ☑                  | ☑               |
| Mole Creek        | Potable |                | ☑                               | ☑                           | n/a                  | ☑                  | ☑               |
| National Park     | Potable |                | ☑                               | ☑                           | n/a                  | ☑                  | ☑               |
| North Esk         | Potable |                | ☑                               | ☑                           | ☑                    | ☑                  | ☑               |
| Oatlands          | Potable |                | ☑                               | ☑                           | ☑                    | ☑                  | ☑               |
| Orford            | Potable |                | ☑                               | ☑                           | ☑                    | ☑                  | ☑               |
| Ouse and Hamilton | Potable |                | ☑                               | ☑                           | n/a                  | ☑                  | ☑               |
| Pet River         | Potable |                | ☑                               | ☑                           | ☒ <sup>3</sup>       | ☑                  | ☑               |
| Queenstown        | Potable |                | ☑                               | ☑                           | ☑                    | ☑                  | ☑               |
| Ringarooma        | Potable |                | ☑                               | ☑                           | ☑                    | ☑                  | ☑               |
| Rocky Creek       | Potable |                | ☑                               | ☑                           | ☑                    | ☑                  | ☑               |
| Rosebery          | Potable |                | ☑                               | ☑                           | ☑                    | ☑                  | ☑               |
| Rossarden         | Potable |                | ☑                               | ☑                           | n/a                  | ☑                  | ☑               |
| Scamander         | Potable |                | ☑                               | ☑                           | ☒ <sup>3</sup>       | ☑                  | ☑               |
| Scottsdale        | Potable |                | ☑                               | ☑                           | ☑                    | ☑                  | ☑               |
| South Esk         | Potable |                | ☑                               | ☑                           | ☑                    | ☑                  | ☑               |
| St Helens         | Potable |                | ☑                               | ☑                           | ☑                    | ☑                  | ☑               |
| St Marys          | Potable |                | ☑                               | ☑                           | ☑                    | ☑                  | ☑               |
| Swansea           | Potable |                | ☑                               | ☑                           | ☑                    | ☑                  | ☑               |
| Triabunna         | Potable |                | ☑                               | ☑                           | ☑                    | ☑                  | ☑               |
| Tullah            | Potable |                | ☑                               | ☑                           | n/a                  | ☑                  | ☑               |
| Tunbridge         | Potable |                | ☑                               | ☑                           | n/a                  | ☑                  | ☑               |
| Waratah           | Potable |                | ☑                               | ☑                           | ☑                    | ☑                  | ☑               |
| Wayatinah         | Potable |                | ☑                               | ☑                           | n/a                  | ☑                  | ☑               |
| West Tamar        | Potable |                | ☑                               | ☑                           | ☑                    | ☑                  | ☑               |
| Westbury          | Potable |                | ☑                               | ☑                           | ☑                    | ☑                  | ☑               |
| Whitemark         | Potable |                | ☑                               | ☑                           | n/a                  | ☑                  | ☑               |
| Zeehan            | Potable |                | ☑                               | ☑                           | ☑                    | ☑                  | ☑               |

1. DBP compliance assessment was deemed non-compliant against ADWG: refer to Table 6.4.
2. Metals compliance assessment was deemed non-compliant against ADWG: refer to Table 6.3.
3. Fluoride dosing station was non-compliant against the Fluoride Code of Practice: refer to Table 3.

### 3.2 Microbiological performance

Each drinking water system is sampled in accordance with the sampling frequency specified in the compliance sampling program.

A drinking water system is to be assessed for microbiological contamination in relation to *E.coli* and a system is deemed to have passed if greater than 98 per cent of samples over 12 months are free of *E.coli* (Section 13, TDWG).

The FY2020-21 microbiological performance is assessed against two indicators with the following results:

- 100.0 per cent (60 of 60) of systems met microbiological compliance (greater than 98 per cent of samples in systems were free of *E.coli*)
- 100 per cent of the serviced population achieved microbiological compliance.

A detailed summary of *E.coli* detections in potable systems is at Appendix B.

### 3.3 Metals performance

Monitoring for the presence of metals is a requirement under the TDWQG and is undertaken in line with the risk-based approach promoted by the ADWG. Sampling programs are designed specifically for each drinking water system based on the site-specific risks.

During FY2020-21 there was one system (Cornwall) affected by a single ADWG metals exceedance. The details of each ADWG metal exceedance are described in Appendix C.

### 3.4 Disinfection-by-product performance

During FY2020-21, detections of DBPs above the ADWG health limit were recorded in the Coles Bay system. The details of each DBP exceedance are described in Appendix D.

### 3.5 Fluoride performance

At the end of FY2020-21 there were 38 fluoride dosing systems across Tasmania. The average fluoride concentration should be maintained between 0.8 milligrams per litre and 1.1 milligrams per litre. Six fluoride dosing stations underperformed against this regulatory metric. (Refer to Table 3).

**Table 3: Non-compliances against fluoride metrics in FY2020-21**

| Fluoridated water supply | Average of all [F] samples within the 0.8-1.1 mg/L range |
|--------------------------|--|
| Bicheno                  | Non-compliant (0.7 mg/L)                                 |
| Pet River (Burnie)       | Non-compliant (0.7 mg/L)                                 |
| Forth                    | Non-compliant (0.7 mg/L)                                 |
| Longford                 | Non-compliant (0.7 mg/L)                                 |
| Scamander                | Non-compliant (0.7 mg/L)                                 |
| Leven River (Whitehills) | Non-compliant (0.5 mg/L)                                 |

An assessment of the three performance metrics for fluoride performance is shown in Table 4.

**Table 4: Regulatory outcome for fluoridation systems in FY2020-21**

| Metric  | Compliant | Non-compliant |
|---|-----------|---------------|
| Average of all [F] samples within the 0.8 -1.1 mg/L range | 32        | 6             |
| 90% of all [F] samples are equal to or less than 1.1 mg/L | 38        | 0             |
| No sample should exceed 1.5 mg/L (ADWG limit)             | 38        | 0             |

### 3.6 Incident-based BWAs

In the FY2020-21 reporting period three incident based BWAs were issued to mitigate risks to customers while investigation and remediation actions took place (refer to Table 5).

**Table 5: List of temporary BWAs issued in the FY2020-21 reporting period**

| Town                 | System        | Dates                   | Nature of event  |
|----------------------|---------------|-------------------------|--|
| Adventure Bay - Shop | Adventure Bay | 05/03/2021 – 06/03/2021 | A BWA was issued on 5 March for the Adventure Bay Shop due to a failure of the UV system.<br>The system was locked to prevent access by water carters.<br>The UV system was repaired and follow up microbiological samples were clear.<br>The BWA was lifted on 6 March 2021.  |
| Adventure Bay - Shop | Adventure Bay | 27/03/2021 – 29/03/2021 | A BWA was issued on 27 March for the Adventure Bay Shop due to a failure of the chlorine system.<br>The system was locked to prevent access by water carters.<br>The chlorine system was repaired and follow up microbiological samples were clear.<br>The BWA was lifted on 29 March 2021.                                    |
| Adventure Bay - Shop | Adventure Bay | 22/06/2021 – 09/07/2021 | A BWA was issued on 22 June for the Adventure Bay Shop due to a failure of the chlorine mixing system.<br>The system was locked to prevent access by water carters.<br>A planned capital upgrade of the chlorine mixing system was brought forward to be completed during this shutdown.<br>The BWA was lifted on 9 July 2021. |

### 3.7 Compliance assessment

As previously noted, samples must be collected and tested in accordance with sampling requirements specified in each drinking water system compliance sample program (refer to section 5.2). The compliance sample program specifies the frequency of sampling as well as the required number of tests. All sample programs were complete for all systems.

### 3.8 Maintaining water quality to customer tap

Chlorine is widely used in the treatment of drinking water throughout the world to control microbiological contaminants such as bacteria and viruses. Chlorine has an important role to play in maintaining the microbiological quality of water from the WTP to the customer tap. It also provides a final barrier against microbiological recontamination. Residual levels 0.2 mg/L are considered the minimum required to provide an effective defence against minor and uncommon recontamination events (e.g. vermin ingress). Maintaining a healthy residual has also been proven to reduce aesthetic complaints from excessive biological growth.

The operational target for chlorine residual levels is a range between 0.2 mg/L to 0.8 mg/L. A review of historic chlorine performance indicated underperformance against the operational target.

A number of activities were initiated to improve performance and included education, review of sampling points, network cleaning programs in high-risk systems, increased monitoring, review of water age and storage levels in tanks and a focus on residuals through setting dose rates.

A focus in FY2020-21 was the implementation of a network maintenance strategy as part of a holistic risk management approach to water distribution networks including network audits, remote operated vehicle inspections, chlorine dosing targets and hygienic work practises.

In the FY2020-21 reporting period, the maximum chlorine residual across sampling locations was below the ADWG health guideline level (5 mg/L) and the chlorine residual averages were maintained within the operational range for most systems while all systems were above the lower limit of 0.2 mg/L.

### 3.9 Aesthetic quality

The aesthetic quality of drinking water is not a health concern. Common aesthetic considerations include discolouration and cloudiness, taste and odour. However, these aspects do have the potential to significantly affect community acceptance of drinking water. Aesthetic quality complaints are further described in relevant individual system performance reports (Section B).

Discolouration and turbidity are commonly caused by small particles of sediment suspended in water. The accumulation of sediment within the mains is often attributed to corrosion of distribution assets (particularly where there is ageing infrastructure) and is often attributed to the accumulation of sediment within the mains.

During disturbances (such as flushing of the mains or change in flow rate or flow direction in the pipes) sediment may become mobilised. These issues are not considered harmful to health, but TasWater appreciates that a supply which is discoloured in this manner can be aesthetically unacceptable.

Taste and odour can vary significantly, impacting consumers differently depending on individual sensitivities. Customers are encouraged to contact TasWater so that assistance can be provided with identifying the cause.

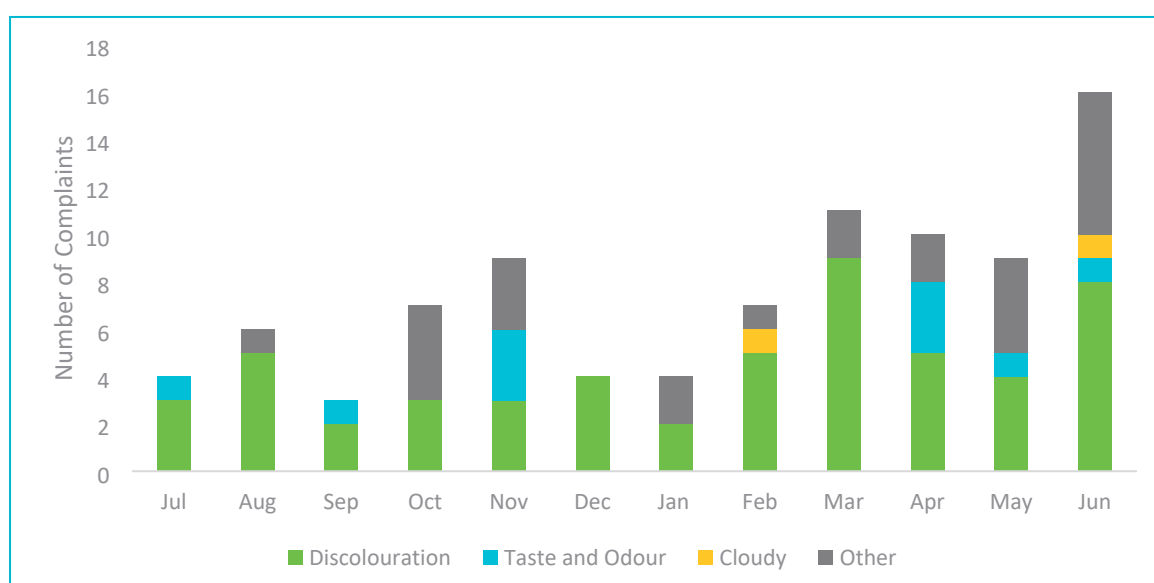
Earthy/musty issues impacting entire towns are typically caused by algae or bacteria metabolites in the source water. At certain periods in their seasonal lifecycle typically in warmer months these can release small amounts of the chemicals MIB and geosmin. These compounds may be noticeable by some consumers at levels as low as five parts per billion. These chemicals are not harmful to human health but can taste unpleasant.

### 3.10 Customer complaints

Throughout the FY2020-21 reporting period we received a total of 90 customer complaints relating to drinking water quality. This figure relates to all complaints which are received via our call centre or in writing, including Ombudsman enquiries.

In this period 53 complaints were received regarding discolouration, 10 regarding taste/odour issues, two related to cloudy water, and 25 were unable to be classified into the previous categories (the majority of which related to health alerts or stained washing). The number of complaints has decreased since the last reporting period. Complaints decreased during the warmer months and increased again as the weather became cooler.

All complaints are investigated and under the provisions of the TasWater customer charter we are required to respond to the customer within 10 working days (or other period as agreed) of receiving a complaint.



During FY2020-21 we improved the complaints recording process, enabling improved reporting and response to deliver a targeted reduction in water quality complaints.

Further details on complaints received are listed in the relevant individual system performance reports (Section B).



## 4. Current and future planning and works

### 4.1 Water supply improvement program

Over the next few years, strategic projects at Bryn Estyn, Forth and Leven WTPs will continue providing safe drinking water into the future. The WTPs are high priority due to the age of the assets and the size of the populations serviced by these plants. The upgrades are designed to increase capacity to deliver required demand and meet all water quality targets, as well as reduce the potential for taste and odour issues. Investment in ultra-violet (UV) disinfection units and in upgrades to fluoride dosing systems will improve the robustness of our WTPs.

### 4.2 Water system optimisation program

During FY2020-21, improvements in the performance and risk management capability of water treatment and distribution assets continued through the delivery of our Water System Optimisation Program.

Key highlights included:

- Improvement in operational compliance and staff awareness relating to water safety through our ongoing focus on CCP and OCP
- Improvement in compliance with industry practice in our water supply networks through an ongoing focus on network residual disinfection
- The realisation of operational improvements arising from ongoing technical and network assessments and
- Improved visibility of operational performance data within the organisation.

### 4.3 Water quality portal

Our drinking water data is available through an interactive map web-based platform (web application). The web application is updated with compliance results on a monthly basis. The public interface is designed to simplify the way water quality information is shared and provide greater transparency for our customers.

## 5. Reporting methodology

This section is intended to assist the reader with interpreting drinking water quality results and system performance statistics detailed throughout this document.

### 5.1 Understanding this report

This report meets the requirements specified under Tasmania's regulatory framework to ensure safe drinking water. The following legislation and other instruments apply to this ADWQR:

- Fluoridation Act 1968
- Public Health Act 1997
- Fluoridation Regulations 2019
- Australian Drinking Water Quality Guidelines 2011
- Tasmanian Drinking Water Quality Guidelines 2015
- Tasmanian Code of Practice for the Fluoridation of Public Water Supplies 2018.

Furthermore, the DWQRMP details risk-based requirements for drinking water supply systems.

For the purpose of this report, all data is assessed in relation to the health and aesthetic guidelines specified in the ADWG. The ADWG provide an authoritative reference to the water industry on what defines safe and good quality water, how it can be achieved and how it can be assured.

Each drinking water system identified in this document is addressed in detail to meet the requirements specified under the relevant legislation. This ensures the management of each drinking water system meets regulatory obligations within the legislation and protects the public's health.

This report focuses on specific requirements outlined within the above legislation:

- Microbiological compliance
- Non-microbiological compliance
- Public Health Alerts (Boil Water Alerts and Do Not Consume notices) and
- Fluoridation.

### 5.2 Compliance sampling program

Compliance monitoring is conducted in the distribution network and is a verification of the water quality customers receive. Samples are collected and tested for all drinking water systems in accordance with sampling requirements prescribed in the ADWG, TDWQG and the DWQRMP.

Drinking water quality monitoring confirms the final quality of water that is supplied to consumers. Therefore, sampling is required to be undertaken throughout the distribution network. This is performed at compliance sample points reflective of the quality of water supplied to customers' properties (e.g. at or close to water meters). The locations and numbers of compliance sampling points within a distribution system are determined by the complexity of the drinking water system. The compliance program considers populations and uses the ADWG methodology.

It should be noted in addition to the compliance sampling program, which samples the water the customer receives, additional operational and event-based monitoring is undertaken, which is outside the scope of this report. However, where an exceedance against ADWG has occurred in operational or event-based monitoring, it is disclosed in Section B.

### 5.3 Assessing microbiological compliance

The TDWQG require drinking water supplies to be sampled and tested at an accredited laboratory for *Escherichia coli* (*E. coli*) in accordance with the specified frequency outlined in the compliance sample program.

The compliance sampling program for microbiological compliance relates to the population serviced and dictates the number of samples required to verify the safety of the water to the consumer. Supplies servicing under 1,000 people require one sample per week, whereas populations greater than 1,000 people require more than one sample as specified in the ADWG.

Microbiological compliance is assessed for microbiological contamination in relation to *E.coli* and a system is deemed to have passed if greater than 98 percent of samples over 12 months are free of *E.coli*.

Where an exceedance has occurred at either a compliance or operational monitoring location, it is included in Appendix B of this report.

### 5.4 Assessing non-microbiological compliance

The TDWQG require our drinking water supplies to be sampled and tested in accordance with the compliance monitoring program set out in our DWQRMP.

In the reporting period monitoring programs are implemented for non-microbiological (physical and chemical) ADWG health-regulated parameters. Sampling programs for non-microbiological parameters including metals and DBPs may differ between systems and is dependent on risk. For historic trends, performance figures, where available, are entered from previous annual reports. It is to be noted that previous programs may differ from those defined in this year's report. To achieve compliance, 100 per cent of the samples tested must comply with the ADWG health targets.

Where an exceedance has occurred at a compliance monitoring location, it will be included in the appendix of Section A. For results above the ADWG limit but when rounded do not exceed the ADWG limit, they will be listed in Appendix 6.4 but not counted as an exceedance. Furthermore, where ADWG non-microbiological exceedances occurred at an operational monitoring point or as part of an investigation they are listed in Section B in the relevant drinking water supply system.

### 5.5 Assessing fluoride compliance

The ADWG health-based guideline value for fluoride has been set at 1.5 mg/L for fluoridated water supplies.

The *Tasmanian Code of Practice for the Fluoridation of Public Water Supplies 2018* (CoP) set minimum requirements for fluoridation operation and service delivery. These minimum requirements are consistent with the requirements of the *Fluoridation Act 1968* and *Fluoridation Regulations 2019*.

As the regulated entity the operating target is 1.00 mg/L fluoride in treated water. The fluoride target is specified as a concentration rather than a dose rate and assessed against the following metrics:

- Meet a compliance exposure target over a reporting year, that the average concentration of all fluoride samples taken within the reticulation network fall within the fluoride concentration operating range of 0.8 mg/L – 1.1 mg/L
- Meet a compliance performance target over a reporting year, that at least 90 per cent of all fluoride samples taken within a reticulation network are equal to or less than 1.1 mg/L

- Never allow the fluoride concentration to exceed 1.5 mg/L in any of the samples taken from within the reticulation network. A system that records a fluoride concentration greater than 1.5 mg/L will be assessed as non-compliant for that reporting period.

The samples taken from the fluoridated water reticulation supply are analysed and tested by a NATA-accredited laboratory at least twice in each calendar month.

### 5.6 System issues

A record of incidents and issues reported throughout the year and how they were addressed is maintained in the Incident Reporting Information System (IRIS). System incidents relate to laboratory test exceedances above the health limits specified in the ADWG (see Appendix A).

## 6. Appendices

### 6.1 Appendix A - Summary of ADWG health, physico-chemical and aesthetic limits

| Parameter                                       | Operational target | ADWG health | ADWG aesthetic | Comment                       |
|---|--------------------|-------------|----------------|-------------------------------|
| <b>Microbiological</b>                          |                    |             |                |                               |
| Escherichia coli ( <i>E. coli</i> ) (MPN/100mL) | <1                 | <1          | –              | ADWG Health                   |
| <b>Metals ADWG health regulated</b>             |                    |             |                |                               |
| Antimony total (mg/L)                           | –                  | 0.003       | –              | ADWG Health                   |
| Arsenic inorganic (mg/L)                        | –                  | 0.01        | –              | ADWG Health                   |
| Barium total (mg/L)                             | –                  | 2           | –              | ADWG Health                   |
| Boron (mg/L)                                    | –                  | 4           | –              | ADWG Health                   |
| Cadmium total (mg/L)                            | –                  | 0.002       | –              | ADWG Health                   |
| Chromium (mg/L)                                 | –                  | 0.05        | –              | ADWG Health                   |
| Copper total (mg/L)                             | –                  | 2           | 1              | ADWG Health                   |
| Lead total (mg/L)                               | –                  | 0.01        | –              | ADWG Health                   |
| Manganese total (mg/L)                          | –                  | 0.5         | 0.1            | ADWG Health                   |
| Mercury total (mg/L)                            | –                  | 0.001       | –              | ADWG Health                   |
| Molybdenum total (mg/L)                         | –                  | 0.05        | –              | ADWG Health                   |
| Nickel total (mg/L)                             | –                  | 0.02        | –              | ADWG Health                   |
| Selenium total (mg/L)                           | –                  | 0.01        | –              | ADWG Health                   |
| <b>Disinfection by-products</b>                 |                    |             |                |                               |
| Chloroacetic acid (mg/L)                        | –                  | 0.15        | –              | ADWG Health                   |
| Dichloroacetic acid (mg/L)                      | –                  | 0.1         | –              | ADWG Health                   |
| Trichloroacetic acid (mg/L)                     | –                  | 0.1         | –              | ADWG Health                   |
| Total trihalomethanes (mg/L)                    | –                  | 0.25        | –              | ADWG Health                   |
| <b>Fluoride</b>                                 |                    |             |                |                               |
| Fluoride (mg/L)                                 | 1.0                | 1.5         | –              | DoH regulations & ADWG Health |
| <b>General physico-chemical parameters</b>      |                    |             |                |                               |
| Chlorine residual (mg/L)                        | > 0.2 to <0.8      | 5           | 0.6            | ADWG Health                   |
| pH (pH Units)                                   | 6.5 to 8.5         | N/A         | 6.5 to 8.5     | ADWG Aesthetic                |
| Turbidity (NTU)                                 | <1                 | N/A         | 5              | ADWG Aesthetic                |

## 6.2 Appendix B - Summary of *E.coli* detections in drinking water systems

| System   | Treatment process | Detection date | Nature of event  | Outcomes  |
|----------|-------------------|----------------|--|---|
| Smithton | Full treatment    | 10/11/2020     | Routine sample (10/11/2020) taken from 024SMSP0501 (Supply) detected 3.1 MPN/100mL <i>E. coli</i> .<br>Department of Health (DoH) was immediately notified.<br>The system was flushed, and subsequent samples were clear of <i>E. coli</i> . | Reported to DoH<br>Subsequent sample clear of <i>E.coli</i> |

### 6.3 Appendix C - Summary of metals exceedances in compliance sample programs

| System   | Treatment process | Detection date | Detection details   | Outcomes   |
|----------|-------------------|----------------|---|--|
| Cornwall | Full Treatment    | 13/11/2020     | Routine quarterly sample (13/11/2020) taken from COW51W08 detected lead above the health limit.<br>Department of Health (DoH) was notified.<br>System was flushed and subsequent samples was clear. | Reported to DoH<br><br>System flushed<br><br>Subsequent sample clear of lead |



#### 6.4 Appendix D - Summary of disinfection-by-product exceedances in compliance sample programs

| System    | Treatment process | Detection date | Detection details  | Outcomes        |
|-----------|-------------------|----------------|--|-----------------|
| Coles Bay | Full Treatment    | 9/03/2021      | Total Trihalomethane exceedance in compliance sample at GCSTE86 (Coles Bay/Park Esplanade) of 305 ug/L | Reported to DoH |

## 6.5 Appendix E – Occurrences of non-reportable exceedances (rounding)

| Parameter            | ADWG Limit (µg/L) | Rounded Limit (µg/L) | Non-reportable exceedance   |
|----------------------|-------------------|----------------------|---|
| Trichloroacetic Acid | 100               | 150                  | ADWG exceedance in compliance sample at WYSTE97 (Wayatinah) on 2/07/2020 of 118 µg/L                |
|                      |                   |                      | ADWG exceedance in compliance sample at EDSTE62 (Ellendale) on 08/10/2020 of 109 µg/L               |
|                      |                   |                      | ADWG exceedance in compliance sample at WYSTE97 (Wayatinah) on 19/10/2020 of 110 µg/L               |
|                      |                   |                      | ADWG exceedance in compliance sample at FBSTE03 (Fentonbury) on 28/10/2020 of 121 µg/L              |
|                      |                   |                      | ADWG exceedance in compliance sample at WYSTE97 (Wayatinah) on 02/11/2020 of 103 µg/L               |
|                      |                   |                      | ADWG exceedance in compliance sample at WNW51W01 (Winnaleah) on 23/02/2021 of 106 µg/L              |
| Trihalomethane       | 250               | 270                  | ADWG exceedance in compliance sample at GCSTE86 (Coles Bay/Park Esplanade) on 9/02/2021 of 270 µg/L |
| Mercury              | 1                 | 1.5                  | ADWG exceedance in compliance sample at DLW51W01 (Deloraine) on 21/01/2021 of 1.16 µg/L             |

## 7. List of acronyms/terms of reference

| Acronym/term     | Definition  |
|------------------|---|
| ADWG             | Australian Drinking Water Guidelines  |
| BWA              | Boil Water Alert (used for microbiological non-compliances): water must be boiled before consumption  |
| CCP              | Critical control points   |
| CoP              | Tasmanian Code of Practice for the Fluoridation of Public Water Supplies 2018   |
| DNC              | Do Not Consume  |
| DBPs             | Disinfection by-products  |
| DoH              | Department of Health  |
| DWQRMP           | Drinking Water Quality Risk Management Plan   |
| <i>E.coli</i>    | <i>Escherichia coli</i>   |
| FY               | Financial year  |
| IRIS             | Incident Reporting Information System   |
| mg/L             | Milligrams per litre  |
| MIB              | 2-Methylisoborneol  |
| MPN/100mL        | Most probable number per 100 millilitres  |
| NATA             | National Association of Testing Authorities   |
| NTU              | Nephelometric turbidity unit (measure of turbidity)   |
| OCP              | Operational control point   |
| PHA              | Public Health Alert (the water cannot be safely consumed) when non-microbiological samples are non-compliant (i.e. any parameter that has a corresponding ADWG health-related guideline value exceeded) |
| Physico-chemical | Physical and chemical properties  |
| Potable          | Water classified fit for consumption by DoH   |
| TBWA             | A temporary Boil Water Alert can be issued by TasWater at the direction of the Director of Public Health in order to protect the public   |
| TDWQG            | Tasmanian Drinking Water Quality Guidelines (the Guidelines issued by the Director of Public Health under the <i>Public Health Act 1997</i> )   |
| µg/L             | Micrograms per litre  |
| UV               | Ultraviolet   |
| Water Supply     | A water supply controlled by the regulated entity that is used for supplying water to the public and intended for human consumption   |
| WTP              | Water treatment plant   |



# Annual Drinking Water Quality Report 2020-21

## Section B - Summary



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## Acronyms and Terms of Reference

|               |   |
|---------------|---|
| ADWG          | Australian Drinking Water Guidelines                |
| Mean          | Average measurement                                 |
| DoH           | Department of Health                                |
| DBPs          | Disinfection By-products                            |
| <i>E.coli</i> | Escherichia coli                                    |
| FSA           | fluorosilicic acid                                  |
| HU            | Hazen unit (measure of colour (true))               |
| kL            | kilolitre   |
| Max           | Maximum measurement                                 |
| ML            | Megalitres  |
| µg/L          | Micrograms per litre                                |
| mg/L          | Milligrams per litre                                |
| Min           | Minimum measurement                                 |
| M             | Monthly   |
| MPN/100mL     | Most probably number per 100 millilitres            |
| NTU           | Nephelometric turbidity unit (measure of turbidity) |
| n/a           | not applicable                                      |
| PHA           | Public Health Alert                                 |
| Q             | Quarterly   |
| Sat.          | Saturated   |
| NaF           | Sodium fluoride                                     |
| TBA           | To be advised                                       |
| 2M            | Twice a month                                       |
| UF Membrane   | Ultrafiltration membrane                            |
| UV            | Ultraviolet light                                   |
| Potable       | Water classified fit for consumption by DoH         |
| W             | Weekly  |



# 1. Adventure Bay drinking water system

## 1.1. System summary (2020–21)

| Adventure Bay drinking water system |         |
|-------------------------------------|---------|
| System status (as at 30 June 2021)  | Potable |
| Total number of connections         | 1       |
| Population serviced                 | 1       |
| Fluoride                            | n/a     |

| Performance overview against health targets (2020–21)      |         |            |        |                 |             |
|--|---------|------------|--------|-----------------|-------------|
| Indicator  | Outcome | Compliance | Target | Sampling Events | Exceedances |
| Microbiological  | 100.0%  | ☑          | 98.0%  | 52              | 0           |
| Fluoride   | n/a     | n/a        | n/a    | n/a             | n/a         |
| Metals   | 100.0%  | ☑          | 100.0% | 4               | 0           |
| DBPs   | 100.0%  | ☑          | 100.0% | 4               | 0           |
| <div><div></div> Compliant <div></div> Non-compliant</div> |         |            |        |                 |             |

| Overall system performance (2020–21) |             |  |
|--------------------------------------|-------------|--|
| Indicator                            | Occurrences | Details  |
| System issues                        | 0           |  |
| Public health warnings issued        | 3           | Temporary BWAs issued (5/3/2021–6/3/2021, 27/3/2021–29/3/2021, 22/6/2021–9/7/2021) |
| Notifications made to DoH            | 3           | UV system failure, chlorine system failure, chlorine mixing system failure.        |
| Customer complaints                  | 0           |  |

| Current and future planned capital investment |                      |           |               |            |
|---|----------------------|-----------|---------------|------------|
| Project                                       | Overview             | Progress  | Est. Delivery | Est. Spend |
| WTP Upgrade                                   | Chlorination Upgrade | Completed | 2020/2021     | \$40,000   |

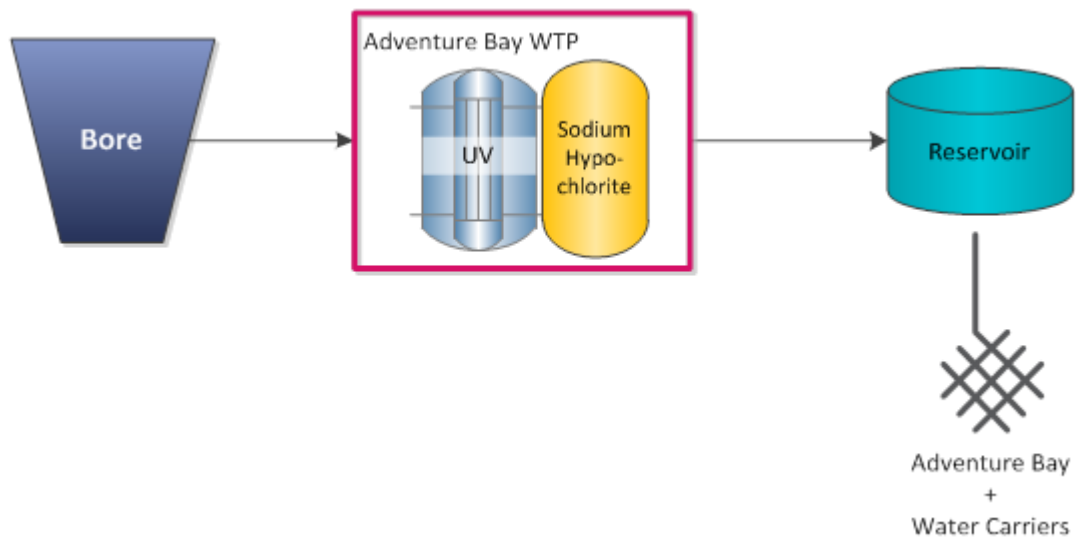


Figure 1.1-a Adventure Bay system schematic

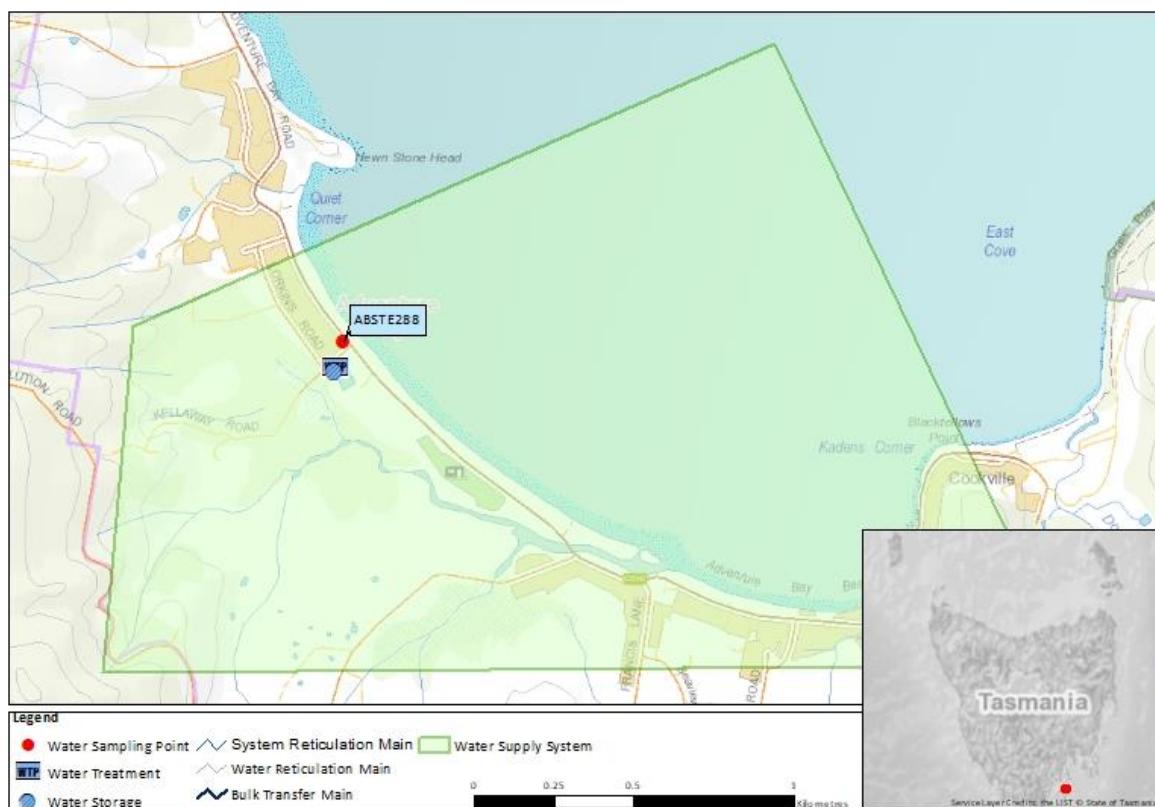


Figure 1.1-b Map of Adventure Bay monitoring system

## 1.2. Summary of annual reticulation compliance (2020–21)

Table 1.2-a Sampling program

| Planned sampling program (2020–21) |           |        |        |     |                |                  |                   |
|------------------------------------|-----------|--------|--------|-----|----------------|------------------|-------------------|
| Site name                          | Site Code | Micros | Metals | DBP | Fluoride (Lab) | Chemical Profile | Process Chemicals |
| Shop Sample Tap                    | ABSTE288  | W      | Q      | Q   | n/a            | Q                | n/a               |
| Number Planned Samples             |           | 52     | 4      | 4   | n/a            | 4                | n/a               |
| Number Samples Tested              |           | 52     | 4      | 4   | n/a            | 4                | n/a               |

## 1.3. Summary of current and historic performance (2016–21)

Table 1.3-a Historical health performance overview (5 year comparison)

| Historical health performance overview (5 year comparison)   |         |         |         |         |         |
|--|---------|---------|---------|---------|---------|
| Indicator  | 2016–17 | 2017–18 | 2018–19 | 2019–20 | 2020–21 |
| Microbiological  | 100.0%  | 98.0%   | 100.0%  | 100.0%  | 100.0%  |
| Fluoride   | n/a     | n/a     | n/a     | n/a     | n/a     |
| Metals   | 100.0%  | 100.0%  | 100.0%  | 100.0%  | 100.0%  |
| Disinfection by products   | n/a     | 100.0%  | 100.0%  | 100.0%  | 100.0%  |
| <div> <span style="color: green;">■</span> Compliant           <span style="color: red;">■</span> Non-compliant         </div> |         |         |         |         |         |

## 1.4. Analysis of current health performance (2020–21)

Table 1.4-a Summary of health guideline exceedances

| Summary of health guideline exceedances |      |         |           |
|---|------|---------|-----------|
| Parameter Exceeding                     | Date | Details | Resampled |
| No ADWG exceedances                     |      |         |           |

**Table 1.4-b Metals performance**

| Metals – health regulated parameters |       |      |         |             |               |         |          |         |
|--------------------------------------|-------|------|---------|-------------|---------------|---------|----------|---------|
| Parameter                            | Limit | Unit | Samples | Exceedances | Performance % | Mean    | Min.     | Max.    |
| Antimony                             | 0.003 | mg/L | 4       | 0           | 100           | <0.0005 | <0.0005  | <0.0005 |
| Arsenic                              | 0.01  | mg/L | 4       | 0           | 100           | 0.0003  | <0.0003  | 0.0004  |
| Barium                               | 2     | mg/L | 4       | 0           | 100           | 0.0009  | 0.0007   | 0.0011  |
| Cadmium                              | 0.002 | mg/L | 4       | 0           | 100           | <0.0001 | <0.0001  | <0.0001 |
| Chromium                             | 0.05  | mg/L | 4       | 0           | 100           | 0.0011  | 0.0010   | 0.0012  |
| Copper                               | 2     | mg/L | 4       | 0           | 100           | 0.0399  | 0.0203   | 0.0928  |
| Lead                                 | 0.01  | mg/L | 4       | 0           | 100           | 0.0007  | 0.0003   | 0.0015  |
| Manganese                            | 0.5   | mg/L | 4       | 0           | 100           | 0.0121  | 0.0068   | 0.0185  |
| Mercury                              | 0.001 | mg/L | 4       | 0           | 100           | 0.00005 | <0.00003 | 0.00007 |
| Molybdenum                           | 0.05  | mg/L | 4       | 0           | 100           | 0.0010  | 0.0008   | 0.0011  |
| Nickel                               | 0.02  | mg/L | 4       | 0           | 100           | 0.0012  | 0.0006   | 0.0020  |
| Selenium                             | 0.01  | mg/L | 4       | 0           | 100           | 0.0001  | 0.0001   | 0.0001  |

**Table 1.4-c Disinfection by product performance**

| Disinfection by products – health regulated parameters |       |      |         |             |               |      |      |      |
|--|-------|------|---------|-------------|---------------|------|------|------|
| Parameter  | Limit | Unit | Samples | Exceedances | Performance % | Mean | Min. | Max. |
| Dichloroacetic acid                                    | 100   | µg/L | 4       | 0           | 100           | 33   | 20   | 42   |
| Monochloroacetic acid                                  | 150   | µg/L | 4       | 0           | 100           | 4    | <3   | 5    |
| Trichloroacetic acid                                   | 100   | µg/L | 4       | 0           | 100           | 55   | 32   | 79   |
| Total trihalomethanes                                  | 250   | µg/L | 4       | 0           | 100           | 66   | 49   | 80   |

**Table 1.4-d General physical performance**

| General physical parameters |       |                 |      |      |      |
|-----------------------------|-------|-----------------|------|------|------|
| Parameter                   | Unit  | Guideline Value | Mean | Min  | Max  |
| Chlorine residual           | mg/L  | 0.1 – <0.8      | 0.34 | 0.06 | 0.67 |
| Colour True                 | HU    | 15              | 4    | 3    | 5    |
| pH                          | Units | 6.5 – 8.5       | 7.22 | 6.57 | 7.91 |
| Turbidity                   | NTU   | 1               | 0.43 | 0.22 | 0.81 |

## 1.5. Analysis of overall system performance (2020–21)

Table 1.5-a Summary of system issues/public health warnings

| Summary of system issues |   |                           |                           |
|--------------------------|---|---------------------------|---------------------------|
| Date                     | Description   | DoH notification required | DoH notification complete |
| 5/3/2021–6/3/2021        | <p>A BWA was issued on 5 March for the Adventure Bay Shop due to a failure of the UV system.</p> <p>The system was locked to prevent access by water carters.</p> <p>The UV system was repaired and follow up microbiological samples were clear.</p> <p>The BWA was lifted on 6 March 2021.</p>  | ✓                         | ✓                         |
| 27/3/2021–9/3/2021       | <p>A BWA was issued on 27 March for the Adventure Bay Shop due to a failure of the chlorine system.</p> <p>The system was locked to prevent access by water carters.</p> <p>The chlorine system was repaired and follow up microbiological samples were clear.</p> <p>The BWA was lifted on 29 March 2021.</p>                                    | ✓                         | ✓                         |
| 22/6/2021–9/7/2021       | <p>A BWA was issued on 22 June for the Adventure Bay Shop due to a failure of the chlorine mixing system.</p> <p>The system was locked to prevent access by water carters.</p> <p>A planned capital upgrade of the chlorine mixing system was brought forward to be completed during this shutdown.</p> <p>The BWA was lifted on 6 March 2021</p> | ✓                         | ✓                         |

## 2. Bicheno drinking water system

### 2.1. System summary (2020–21)

| Bicheno drinking water system      |                 |
|------------------------------------|-----------------|
| System status (as at 30 June 2021) | Potable         |
| Total number of connections        | 1,037           |
| Population serviced                | 1,089           |
| Fluoride                           | Sodium Fluoride |

| Performance overview against health targets (2020–21)      |         |            |        |                 |             |
|--|---------|------------|--------|-----------------|-------------|
| Indicator  | Outcome | Compliance | Target | Sampling Events | Exceedances |
| Microbiological  | 100.0%  | ☑          | 98.0%  | 52              | 0           |
| Fluoride   | 100.0%  | ☑          | 100.0% | 48              | 0           |
| Metals   | 100.0%  | ☑          | 100.0% | 4               | 0           |
| DBPs   | 100.0%  | ☑          | 100.0% | 4               | 0           |
| <div><div></div> Compliant <div></div> Non-compliant</div> |         |            |        |                 |             |

| Overall system performance (2020–21) |             |                              |
|--------------------------------------|-------------|------------------------------|
| Indicator                            | Occurrences | Details                      |
| System issues                        | 0           |                              |
| Public health warnings issued        | 0           |                              |
| Notifications made to DoH            | 1           | Low fluoride levels detected |
| Customer complaints                  | 0           |                              |

| Current and future planned capital investment |          |          |               |            |
|---|----------|----------|---------------|------------|
| Project                                       | Overview | Progress | Est. Delivery | Est. Spend |
| No projected capital investment               |          |          |               |            |

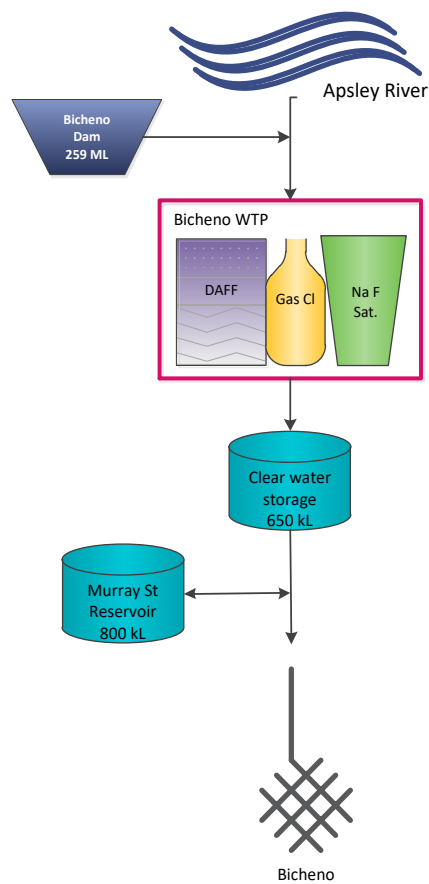


Figure 2.1-a Bicheno system schematic

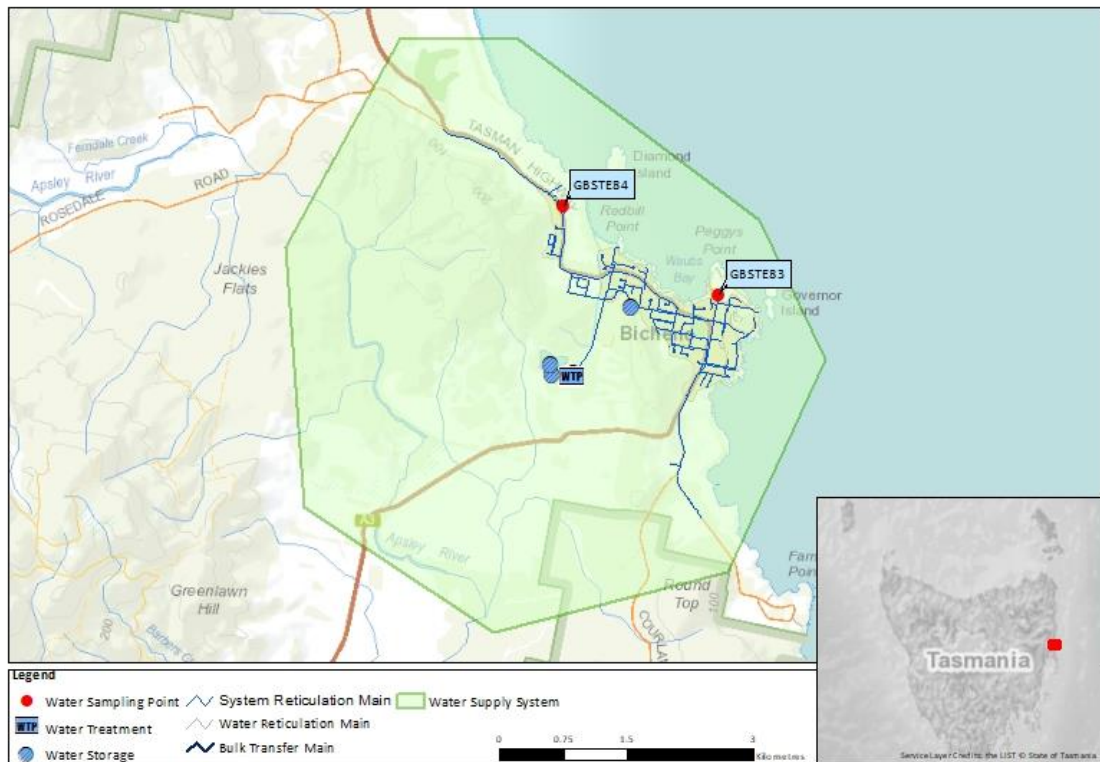


Figure 2.1-b Map of Bicheno monitoring system



## 2.2. Summary of annual reticulation compliance (2020–21)

Table 2.2-a Sampling program

| Planned sampling program (2020–21) |           |        |        |     |                |                  |                   |
|------------------------------------|-----------|--------|--------|-----|----------------|------------------|-------------------|
| Site name                          | Site Code | Micros | Metals | DBP | Fluoride (Lab) | Chemical Profile | Process Chemicals |
| Bicheno Primary School/Garden Tap  | GBSTE83   | W      | Q      | Q   | 2M             | Q                | n/a               |
| Bicheno/47 Tasman Hwy next to SPS  | GBSTE84   | n/a    | n/a    | n/a | 2M             | n/a              | M                 |
| Number Planned Samples             |           | 52     | 4      | 4   | 48             | 4                | 12                |
| Number Samples Tested              |           | 52     | 4      | 4   | 48             | 4                | 12                |

## 2.3. Summary of current and historic performance (2016–21)

Table 2.3-a Historical health performance overview (5 year comparison)

| Historical health performance overview (5 year comparison)   |         |         |         |         |         |
|--|---------|---------|---------|---------|---------|
| Indicator  | 2016–17 | 2017–18 | 2018–19 | 2019–20 | 2020–21 |
| Microbiological  | 100.0%  | 100.0%  | 100.0%  | 100.0%  | 100.0%  |
| Fluoride   | 100.0%  | 100.0%  | 100.0%  | 100.0%  | 100.0%  |
| Metals   | 100.0%  | 100.0%  | 100.0%  | 100.0%  | 100.0%  |
| Disinfection by products   | 100.0%  | 100.0%  | 100.0%  | 100.0%  | 100.0%  |
| <div> <span style="color: green;">■</span> Compliant           <span style="color: red;">■</span> Non-compliant         </div> |         |         |         |         |         |

## 2.4. Analysis of current health performance (2020–21)

Table 2.4-a Summary of health guideline exceedances

| Summary of health guideline exceedances |      |         |           |
|---|------|---------|-----------|
| Parameter Exceeding                     | Date | Details | Resampled |
| No ADWG exceedances                     |      |         |           |

**Table 2.4-b Fluoride distribution performance**

| Distribution fluoride performance  |         |
|--|---------|
| Indicator  | 2020–21 |
| F exceeding 1.5 mg/L   | 0       |
| Average F concentration range (0.8 mg/L – 1.1 mg/L)  | 0.7     |
| 90% of F results are equal to or less than 1.1 mg/L  | 100%    |
| <div> <span style="color: green;">■</span> Compliant           <span style="color: red;">■</span> Non-compliant         </div> |         |

**Table 2.4-c Metals performance**

| Metals – health regulated parameters |       |      |         |             |               |         |          |         |
|--------------------------------------|-------|------|---------|-------------|---------------|---------|----------|---------|
| Parameter                            | Limit | Unit | Samples | Exceedances | Performance % | Mean    | Min.     | Max.    |
| Antimony                             | 0.003 | mg/L | 4       | 0           | 100           | <0.0005 | <0.0005  | <0.0005 |
| Arsenic                              | 0.01  | mg/L | 4       | 0           | 100           | <0.0003 | <0.0003  | <0.0003 |
| Barium                               | 2     | mg/L | 4       | 0           | 100           | 0.0028  | 0.0026   | 0.0030  |
| Cadmium                              | 0.002 | mg/L | 4       | 0           | 100           | <0.0001 | <0.0001  | <0.0001 |
| Chromium                             | 0.05  | mg/L | 4       | 0           | 100           | 0.0001  | <0.0001  | 0.0002  |
| Copper                               | 2     | mg/L | 4       | 0           | 100           | 0.0044  | 0.0020   | 0.0097  |
| Lead                                 | 0.01  | mg/L | 4       | 0           | 100           | <0.0001 | <0.0001  | <0.0001 |
| Manganese                            | 0.5   | mg/L | 4       | 0           | 100           | 0.0013  | 0.0005   | 0.0022  |
| Mercury                              | 0.001 | mg/L | 4       | 0           | 100           | 0.00011 | <0.00003 | 0.00019 |
| Molybdenum                           | 0.05  | mg/L | 4       | 0           | 100           | <0.0001 | <0.0001  | <0.0001 |
| Nickel                               | 0.02  | mg/L | 4       | 0           | 100           | <0.0001 | <0.0001  | 0.0001  |
| Selenium                             | 0.01  | mg/L | 4       | 0           | 100           | 0.0002  | <0.0001  | 0.0004  |

**Table 2.4-d Disinfection by product performance**

| Disinfection by products – health regulated parameters |       |      |         |             |               |      |      |      |
|--|-------|------|---------|-------------|---------------|------|------|------|
| Parameter  | Limit | Unit | Samples | Exceedances | Performance % | Mean | Min. | Max. |
| Dichloroacetic acid                                    | 100   | µg/L | 4       | 0           | 100           | 4    | 3    | 6    |
| Monochloroacetic acid                                  | 150   | µg/L | 4       | 0           | 100           | <3   | <3   | <3   |
| Trichloroacetic acid                                   | 100   | µg/L | 4       | 0           | 100           | 13   | 2    | 4    |
| Total trihalomethanes                                  | 250   | µg/L | 4       | 0           | 100           | 36   | 31   | 44   |

**Table 2.4-e General physical performance**

| General physical parameters |       |                 |      |      |      |
|-----------------------------|-------|-----------------|------|------|------|
| Parameter                   | Unit  | Guideline Value | Mean | Min  | Max  |
| Chlorine residual           | mg/L  | 0.1 – <0.8      | 0.69 | 0.10 | 1.08 |
| Colour True                 | HU    | 15              | <1   | <1   | <1   |
| pH                          | Units | 6.5 – 8.5       | 7.26 | 6.66 | 7.59 |
| Turbidity                   | NTU   | 1               | 0.20 | 0.08 | 1.67 |

## 2.5. Analysis of overall system performance (2020–21)

**Table 2.5-a Summary of system issues/public health warnings**

| Summary of system issues                                |                              |                           |                           |
|---|------------------------------|---------------------------|---------------------------|
| Date  | Description                  | DoH notification required | DoH notification complete |
| September 2020 – November 2020<br>April 2021 – May 2021 | Low fluoride levels detected | ✓                         | ✓                         |

### 3. Bothwell drinking water system

#### 3.1. System summary (2020–21)

| Bothwell drinking water system     |         |
|------------------------------------|---------|
| System status (as at 30 June 2021) | Potable |
| Total number of connections        | 327     |
| Population serviced                | 585     |
| Fluoride                           | n/a     |

| Performance overview against health targets (2020–21)      |         |            |        |                 |             |
|--|---------|------------|--------|-----------------|-------------|
| Indicator  | Outcome | Compliance | Target | Sampling Events | Exceedances |
| Microbiological  | 100.0%  | ☑          | 98.0%  | 52              | 0           |
| Fluoride   | n/a     | n/a        | n/a    | n/a             | n/a         |
| Metals   | 100.0%  | ☑          | 100.0% | 4               | 0           |
| DBPs   | 100.0%  | ☑          | 100.0% | 4               | 0           |
| <div><div></div> Compliant <div></div> Non-compliant</div> |         |            |        |                 |             |

| Overall system performance (2020–21) |             |                         |
|--------------------------------------|-------------|-------------------------|
| Indicator                            | Occurrences | Details                 |
| System issues                        | 0           |                         |
| Public health warnings issued        | 0           |                         |
| Notifications made to DoH            | 0           |                         |
| Customer complaints                  | 1           | Other (stained washing) |

| Current and future planned capital investment |             |          |               |            |
|---|-------------|----------|---------------|------------|
| Project                                       | Overview    | Progress | Est. Delivery | Est. Spend |
| WTP Upgrade                                   | WTP Upgrade | Planning | 2024/2025     | TBD        |

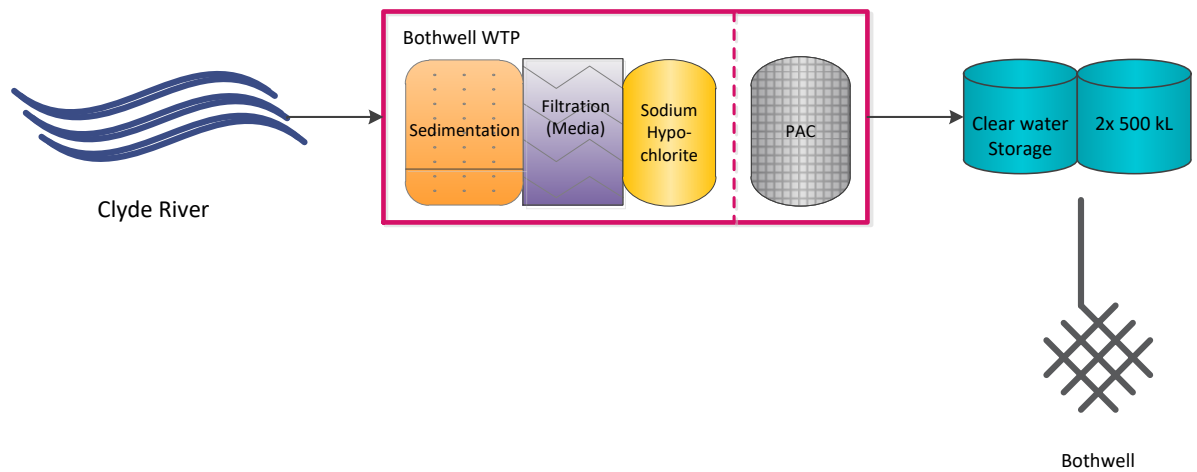


Figure 3.1-a Bothwell system schematic

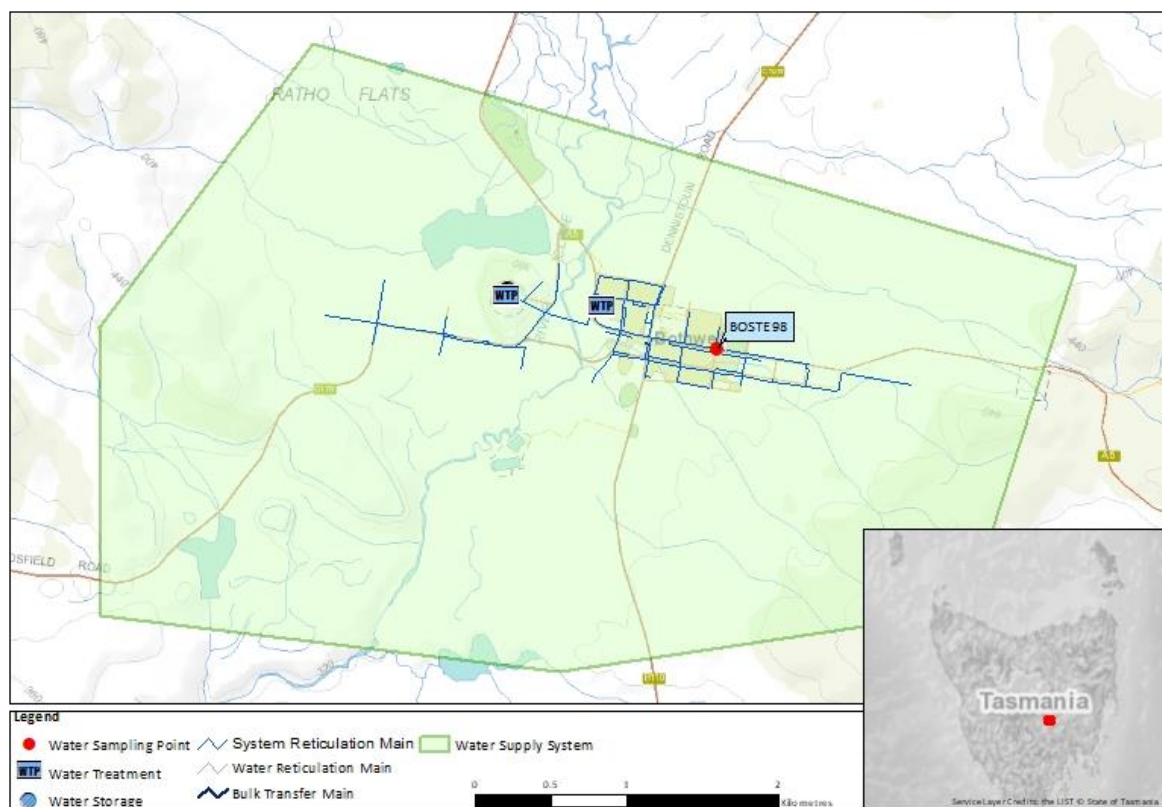


Figure 3.1-b Map of Bothwell monitoring system

### 3.2. Summary of annual reticulation compliance (2020–21)

Table 3.2-a Sampling program

| Planned sampling program (2020–21) |           |        |        |     |                |                  |                   |
|------------------------------------|-----------|--------|--------|-----|----------------|------------------|-------------------|
| Site name                          | Site Code | Micros | Metals | DBP | Fluoride (Lab) | Chemical Profile | Process Chemicals |
| Bothwell/Michael St, Sample Tap    | BOSTE98   | W      | Q      | Q   | n/a            | Q                | n/a               |
| Number Planned Samples             |           | 52     | 4      | 4   | n/a            | 4                | n/a               |
| Number Samples Tested              |           | 52     | 4      | 4   | n/a            | 4                | n/a               |

### 3.3. Summary of current and historic performance (2016–21)

Table 3.3-a Historical health performance overview (5 year comparison)

| Historical health performance overview (5 year comparison)   |         |         |         |         |         |
|--|---------|---------|---------|---------|---------|
| Indicator  | 2016–17 | 2017–18 | 2018–19 | 2019–20 | 2020–21 |
| Microbiological  | 100.0%  | 100.0%  | 100.0%  | 100.0%  | 100.0%  |
| Fluoride   | n/a     | n/a     | n/a     | n/a     | n/a     |
| Metals   | 100.0%  | 100.0%  | 100.0%  | 100.0%  | 100.0%  |
| Disinfection by products   | 100.0%  | 100.0%  | 100.0%  | 100.0%  | 100.0%  |
| <div> <span style="color: green;">■</span> Compliant           <span style="color: red;">■</span> Non-compliant         </div> |         |         |         |         |         |

### 3.4. Analysis of current health performance (2020–21)

Table 3.4-a Summary of health guideline exceedances

| Summary of health guideline exceedances |      |         |           |
|---|------|---------|-----------|
| Parameter Exceeding                     | Date | Details | Resampled |
| No ADWG exceedances                     |      |         |           |

**Table 3.4-b Metals performance**

| Metals – health regulated parameters |       |      |         |             |               |         |          |         |
|--------------------------------------|-------|------|---------|-------------|---------------|---------|----------|---------|
| Parameter                            | Limit | Unit | Samples | Exceedances | Performance % | Mean    | Min.     | Max.    |
| Antimony                             | 0.003 | mg/L | 4       | 0           | 100           | <0.0005 | <0.0005  | <0.0005 |
| Arsenic                              | 0.01  | mg/L | 4       | 0           | 100           | <0.0003 | <0.0003  | <0.0003 |
| Barium                               | 2     | mg/L | 4       | 0           | 100           | 0.0137  | 0.0110   | 0.0162  |
| Cadmium                              | 0.002 | mg/L | 4       | 0           | 100           | <0.0001 | <0.0001  | <0.0001 |
| Chromium                             | 0.05  | mg/L | 4       | 0           | 100           | 0.0002  | <0.0001  | 0.0003  |
| Copper                               | 2     | mg/L | 4       | 0           | 100           | 0.0029  | 0.0021   | 0.0039  |
| Lead                                 | 0.01  | mg/L | 4       | 0           | 100           | 0.0001  | 0.0001   | 0.0002  |
| Manganese                            | 0.5   | mg/L | 4       | 0           | 100           | 0.0048  | 0.0027   | 0.0082  |
| Mercury                              | 0.001 | mg/L | 4       | 0           | 100           | 0.00008 | <0.00003 | 0.00016 |
| Molybdenum                           | 0.05  | mg/L | 4       | 0           | 100           | 0.0001  | <0.0001  | 0.0002  |
| Nickel                               | 0.02  | mg/L | 4       | 0           | 100           | 0.0003  | 0.0003   | 0.0004  |
| Selenium                             | 0.01  | mg/L | 4       | 0           | 100           | <0.0001 | <0.0001  | <0.0001 |

**Table 3.4-c Disinfection by product performance**

| Disinfection by products – health regulated parameters |       |      |         |             |               |      |      |      |
|--|-------|------|---------|-------------|---------------|------|------|------|
| Parameter  | Limit | Unit | Samples | Exceedances | Performance % | Mean | Min. | Max. |
| Dichloroacetic acid                                    | 100   | µg/L | 4       | 0           | 100           | 15   | 7    | 19   |
| Monochloroacetic acid                                  | 150   | µg/L | 4       | 0           | 100           | <3   | <3   | <3   |
| Trichloroacetic acid                                   | 100   | µg/L | 4       | 0           | 100           | 14   | 6    | 20   |
| Total trihalomethanes                                  | 250   | µg/L | 4       | 0           | 100           | 73   | 53   | 118  |

**Table 3.4-d General physical performance**

| General physical parameters |       |                 |      |      |      |
|-----------------------------|-------|-----------------|------|------|------|
| Parameter                   | Unit  | Guideline Value | Mean | Min  | Max  |
| Chlorine residual           | mg/L  | 0.1 – <0.8      | 0.60 | 0.35 | 1.18 |
| Colour True                 | HU    | 15              | 1    | <1   | 2    |
| pH                          | Units | 6.5 – 8.5       | 7.27 | 7.00 | 7.55 |
| Turbidity                   | NTU   | 1               | 0.32 | 0.07 | 1.75 |



### 3.5. Analysis of overall system performance (2020–21)

Table 3.5-a Summary of system issues/public health warnings

| Summary of system issues                          |             |                           |                           |
|---|-------------|---------------------------|---------------------------|
| Date  | Description | DoH notification required | DoH notification complete |
| No system issues or public health warnings issued |             |                           |                           |

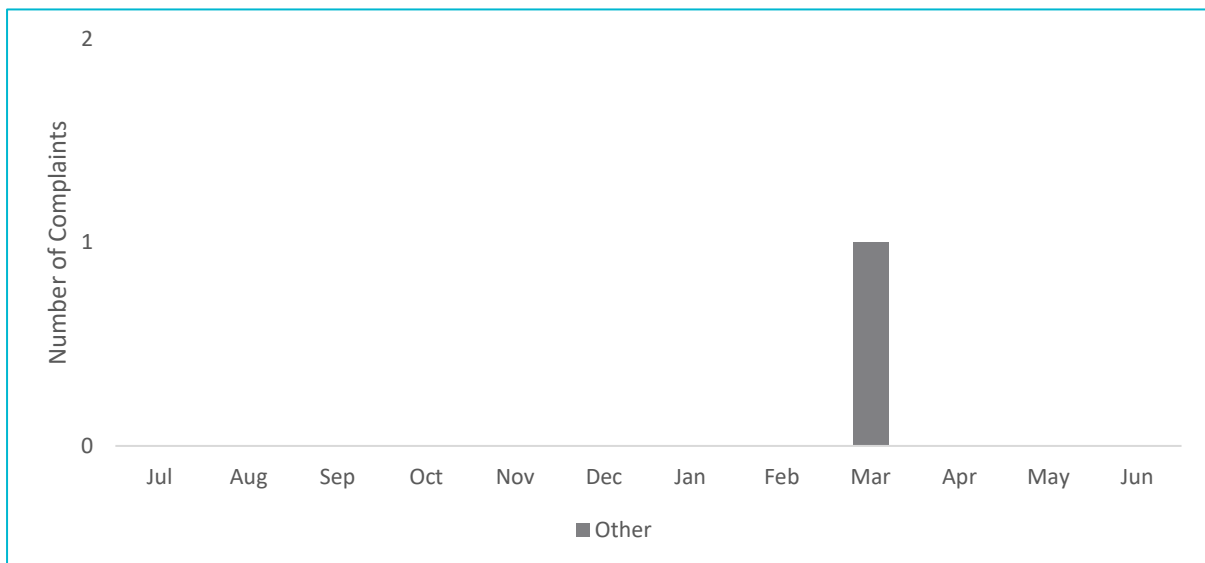


Figure 3.5-b Water quality customer complaints by month and type

## 4. Bracknell drinking water system

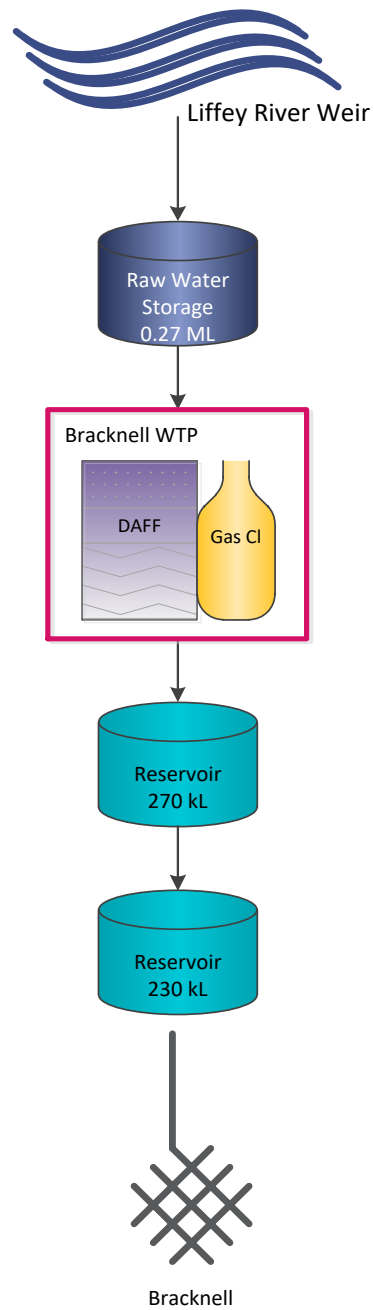
### 4.1. System summary (2020–21)

| Bracknell drinking water system    |         |
|------------------------------------|---------|
| System status (as at 30 June 2021) | Potable |
| Total number of connections        | 187     |
| Population serviced                | 420     |
| Fluoride                           | n/a     |

| Performance overview against health targets (2020–21)      |         |            |        |                 |             |
|--|---------|------------|--------|-----------------|-------------|
| Indicator  | Outcome | Compliance | Target | Sampling Events | Exceedances |
| Microbiological  | 100.0%  | ☑          | 98.0%  | 52              | 0           |
| Fluoride   | n/a     | n/a        | n/a    | n/a             | n/a         |
| Metals   | 100.0%  | ☑          | 100.0% | 4               | 0           |
| DBPs   | 100.0%  | ☑          | 100.0% | 4               | 0           |
| <div><div></div> Compliant <div></div> Non-compliant</div> |         |            |        |                 |             |

| Overall system performance (2020–21) |             |                            |
|--------------------------------------|-------------|----------------------------|
| Indicator                            | Occurrences | Details                    |
| System issues                        | 0           |                            |
| Public health warnings issued        | 0           |                            |
| Notifications made to DoH            | 0           |                            |
| Customer complaints                  | 1           | Other (illness from water) |

| Current and future planned capital investment |                 |          |               |            |
|---|-----------------|----------|---------------|------------|
| Project                                       | Overview        | Progress | Est. Delivery | Est. Spend |
| WTP Upgrade                                   | UV Installation | Planning | 2022/2023     | \$600,000  |



**Figure 4.1-a Bracknell system schematic**

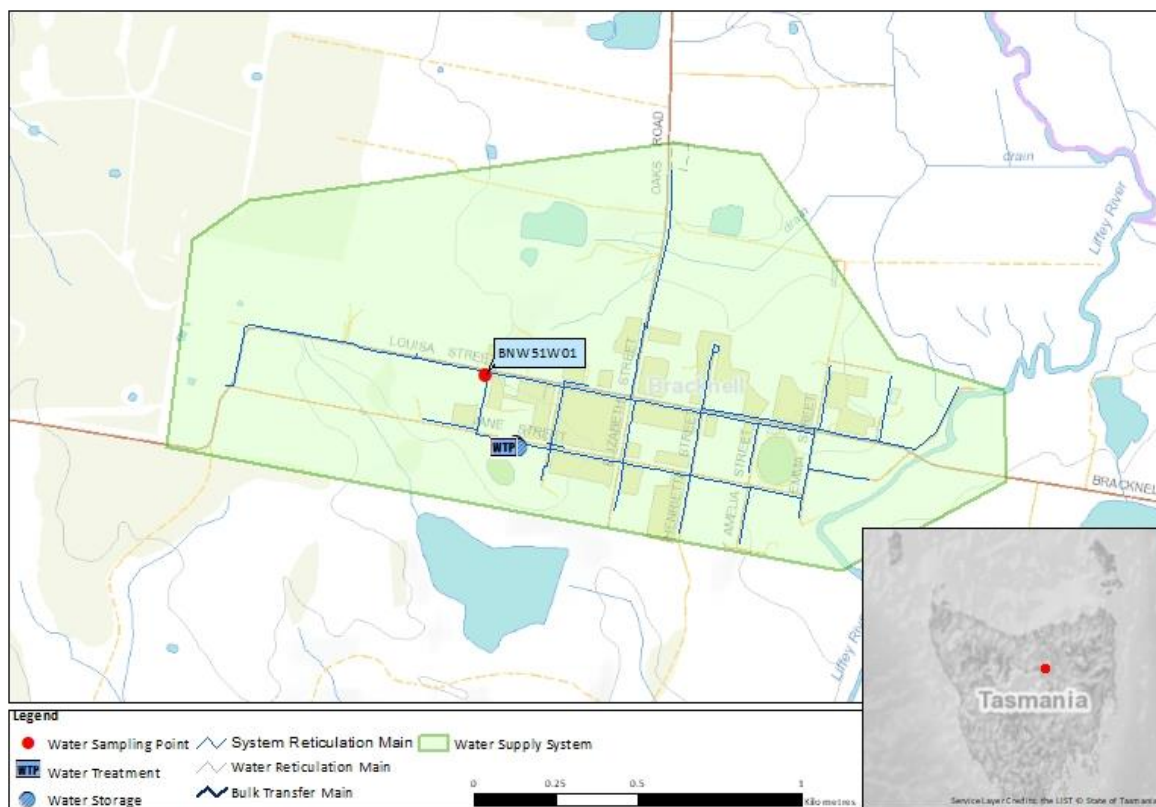


Figure 4.1-b Map of Bracknell monitoring system

## 4.2. Summary of annual reticulation compliance (2020–21)

Table 4.2-a Sampling program

| Planned sampling program (2020–21)    |                       |           |          |          |                |                  |                   |
|---------------------------------------|-----------------------|-----------|----------|----------|----------------|------------------|-------------------|
| Site name                             | Site Code             | Micros    | Metals   | DBP      | Fluoride (Lab) | Chemical Profile | Process Chemicals |
| Bracknell/Louisa Street               | BNW51W01 <sup>1</sup> | W         | Q        | Q        | n/a            | Q                | n/a               |
| Bracknell/Emma St - Opposite Field St | BRACKST01             | W         | Q        | Q        | n/a            | Q                | n/a               |
| <b>Number Planned Samples</b>         |                       | <b>52</b> | <b>4</b> | <b>4</b> | <b>n/a</b>     | <b>4</b>         | <b>n/a</b>        |
| <b>Number Samples Tested</b>          |                       | <b>52</b> | <b>4</b> | <b>4</b> | <b>n/a</b>     | <b>4</b>         | <b>n/a</b>        |

<sup>1</sup> Replaced by BRACKST01 11<sup>th</sup> February 2021

### 4.3. Summary of current and historic performance (2016–21)

Table 4.3-a Historical health performance overview (5 year comparison)

| Historical health performance overview (5 year comparison)   |         |         |         |         |         |
|--|---------|---------|---------|---------|---------|
| Indicator  | 2016–17 | 2017–18 | 2018–19 | 2019–20 | 2020–21 |
| Microbiological  | 100.0%  | 100.0%  | 100.0%  | 100.0%  | 100.0%  |
| Fluoride   | n/a     | n/a     | n/a     | n/a     | n/a     |
| Metals   | 100.0%  | 100.0%  | 100.0%  | 100.0%  | 100.0%  |
| Disinfection by products   | 100.0%  | 100.0%  | 100.0%  | 100.0%  | 100.0%  |
| <div> <span style="color: green;">■</span> Compliant           <span style="color: red;">■</span> Non-compliant         </div> |         |         |         |         |         |

### 4.4. Analysis of current health performance (2020–21)

Table 4.4-a Summary of health guideline exceedances

| Summary of health guideline exceedances |      |         |           |
|---|------|---------|-----------|
| Parameter Exceeding                     | Date | Details | Resampled |
| No ADWG exceedances                     |      |         |           |

Table 4.4-b Metals performance

| Metals – health regulated parameters |       |      |         |             |               |         |          |         |
|--------------------------------------|-------|------|---------|-------------|---------------|---------|----------|---------|
| Parameter                            | Limit | Unit | Samples | Exceedances | Performance % | Mean    | Min.     | Max.    |
| Antimony                             | 0.003 | mg/L | 4       | 0           | 100           | <0.0005 | <0.0005  | <0.0005 |
| Arsenic                              | 0.01  | mg/L | 4       | 0           | 100           | <0.0003 | <0.0003  | <0.0003 |
| Barium                               | 2     | mg/L | 4       | 0           | 100           | 0.0075  | 0.0057   | 0.0090  |
| Cadmium                              | 0.002 | mg/L | 4       | 0           | 100           | <0.0001 | <0.0001  | <0.0001 |
| Chromium                             | 0.05  | mg/L | 4       | 0           | 100           | <0.0001 | <0.0001  | <0.0001 |
| Copper                               | 2     | mg/L | 4       | 0           | 100           | 0.0041  | 0.0025   | 0.0053  |
| Lead                                 | 0.01  | mg/L | 4       | 0           | 100           | 0.0006  | 0.0002   | 0.0013  |
| Manganese                            | 0.5   | mg/L | 4       | 0           | 100           | 0.0019  | 0.0011   | 0.0039  |
| Mercury                              | 0.001 | mg/L | 4       | 0           | 100           | 0.00014 | <0.00003 | 0.00038 |
| Molybdenum                           | 0.05  | mg/L | 4       | 0           | 100           | <0.0001 | <0.0001  | <0.0001 |
| Nickel                               | 0.02  | mg/L | 4       | 0           | 100           | 0.0003  | 0.0002   | 0.0004  |
| Selenium                             | 0.01  | mg/L | 4       | 0           | 100           | 0.0001  | <0.0001  | 0.0002  |

**Table 4.4-c Disinfection by product performance**

| Disinfection by products – health regulated parameters |       |      |         |             |               |      |      |      |
|--|-------|------|---------|-------------|---------------|------|------|------|
| Parameter  | Limit | Unit | Samples | Exceedances | Performance % | Mean | Min. | Max. |
| Dichloroacetic acid                                    | 100   | µg/L | 4       | 0           | 100           | 11   | 8    | 14   |
| Monochloroacetic acid                                  | 150   | µg/L | 4       | 0           | 100           | <3   | <3   | <3   |
| Trichloroacetic acid                                   | 100   | µg/L | 4       | 0           | 100           | 14   | 9    | 17   |
| Total trihalomethanes                                  | 250   | µg/L | 4       | 0           | 100           | 27   | 19   | 33   |

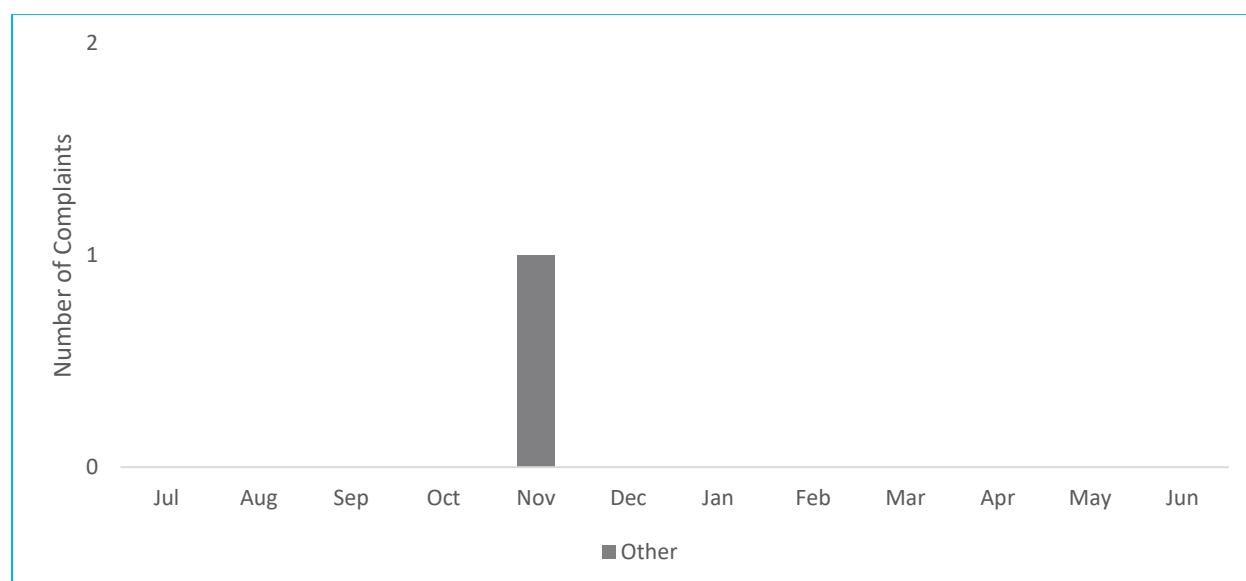
**Table 4.4-d General physical performance**

| General physical parameters |       |                 |      |      |      |
|-----------------------------|-------|-----------------|------|------|------|
| Parameter                   | Unit  | Guideline Value | Mean | Min  | Max  |
| Chlorine residual           | mg/L  | 0.1 – <0.8      | 0.99 | 0.60 | 1.25 |
| Colour True                 | HU    | 15              | <1   | <1   | 1    |
| pH                          | Units | 6.5 – 8.5       | 7.49 | 6.76 | 8.14 |
| Turbidity                   | NTU   | 1               | 0.24 | 0.06 | 0.98 |

## 4.5. Analysis of overall system performance (2020–21)

**Table 4.5-a Summary of system issues/public health warnings**

| Summary of system issues                          |             |                           |                           |
|---|-------------|---------------------------|---------------------------|
| Date  | Description | DoH notification required | DoH notification complete |
| No system issues or public health warnings issued |             |                           |                           |



**Figure 4.5-b Water quality customer complaints by month and type**

## 5. Bridport drinking water system

### 5.1. System summary (2020–21)

| Bridport drinking water system     |                    |
|------------------------------------|--------------------|
| System status (as at 30 June 2021) | Potable            |
| Total number of connections        | 1,096              |
| Population serviced                | 1,271              |
| Fluoride                           | Fluorosilicic acid |

| Performance overview against health targets (2020–21)      |         |            |        |                 |             |
|--|---------|------------|--------|-----------------|-------------|
| Indicator  | Outcome | Compliance | Target | Sampling Events | Exceedances |
| Microbiological  | 100.0%  | ☑          | 98.0%  | 106             | 0           |
| Fluoride   | 100.0%  | ☑          | 100.0% | 48              | 0           |
| Metals   | 100.0%  | ☑          | 100.0% | 4               | 0           |
| DBPs   | 100.0%  | ☑          | 100.0% | 4               | 0           |
| <div><div></div> Compliant <div></div> Non-compliant</div> |         |            |        |                 |             |

| Overall system performance (2020–21) |             |                |
|--------------------------------------|-------------|----------------|
| Indicator                            | Occurrences | Details        |
| System issues                        | 0           |                |
| Public health warnings issued        | 0           |                |
| Notifications made to DoH            | 0           |                |
| Customer complaints                  | 2           | Discolouration |

| Current and future planned capital investment |                 |  |          |               |            |
|---|-----------------|--|----------|---------------|------------|
| Project                                       | Overview        |  | Progress | Est. Delivery | Est. Spend |
| WTP Upgrade                                   | UV Installation |  | Planning | 2022/2023     | \$600,000  |

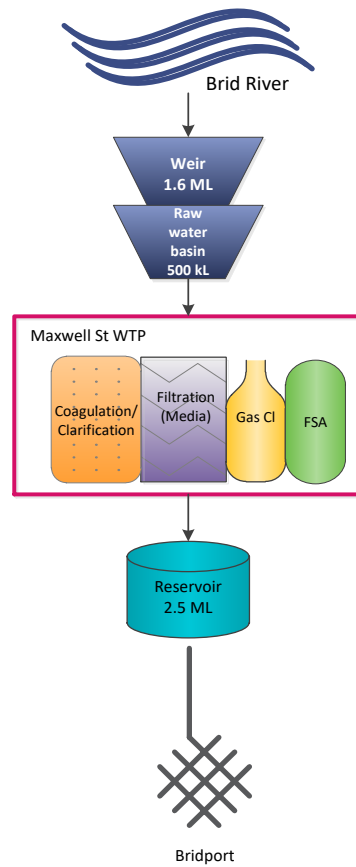


Figure 5.1-a Bridport system schematic

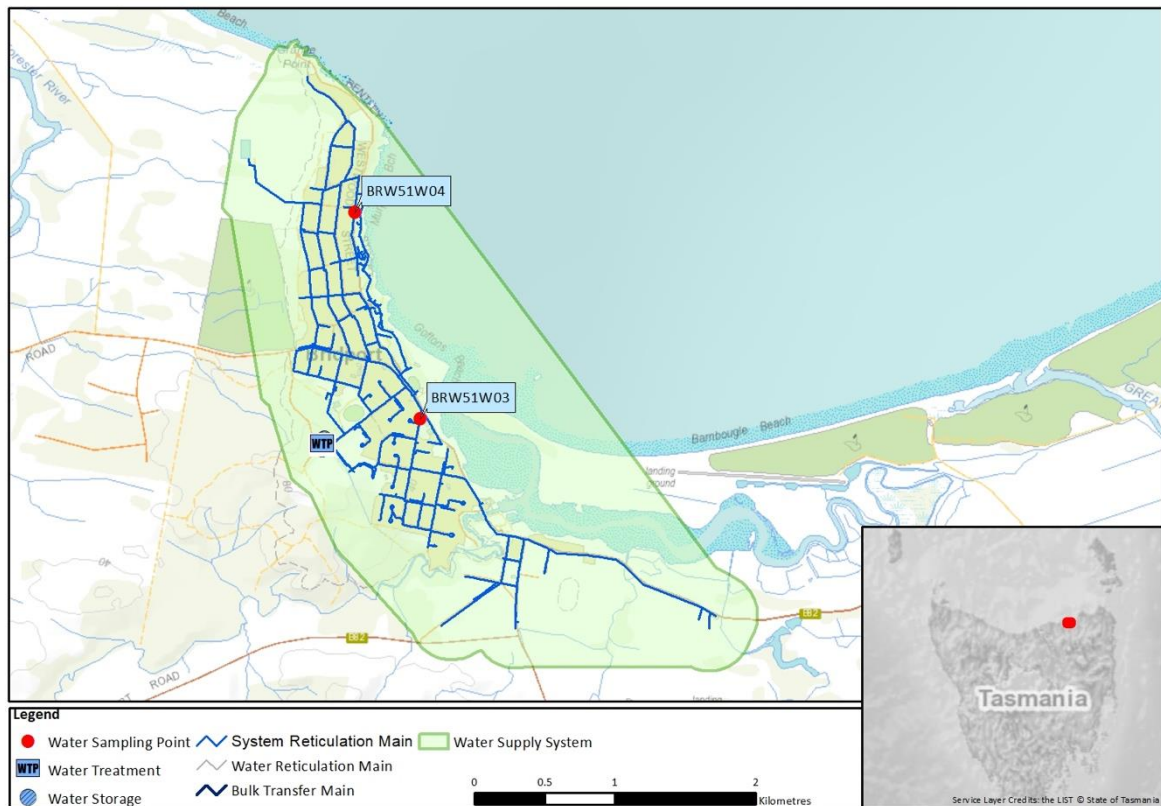


Figure 5.1-b Map of Bridport monitoring system



## 5.2. Summary of annual reticulation compliance (2020–21)

Table 5.2-a Sampling program

| Planned sampling program (2020–21) |           |        |        |     |                |                  |                   |
|------------------------------------|-----------|--------|--------|-----|----------------|------------------|-------------------|
| Site name                          | Site Code | Micros | Metals | DBP | Fluoride (Lab) | Chemical Profile | Process Chemicals |
| Bridport/Emma Street               | BRWS1W03  | W      | Q      | Q   | 2M             | Q                | n/a               |
| Bridport/Bently St down from Pier  | BRWS1W04  | W      | n/a    | n/a | 2M             | n/a              | n/a               |
| Number Planned Samples             |           | 106    | 4      | 4   | 48             | 4                | n/a               |
| Number Samples Tested              |           | 106    | 4      | 4   | 48             | 4                | n/a               |

## 5.3. Summary of current and historic performance (2016–21)

Table 5.3-a Historical health performance overview (5 year comparison)

| Historical health performance overview (5 year comparison)   |         |         |         |         |         |
|--|---------|---------|---------|---------|---------|
| Indicator  | 2016–17 | 2017–18 | 2018–19 | 2019–20 | 2020–21 |
| Microbiological  | 100.0%  | 100.0%  | 100.0%  | 100.0%  | 100.0%  |
| Fluoride   | 100.0%  | 100.0%  | 100.0%  | 100.0%  | 100.0%  |
| Metals   | 100.0%  | 100.0%  | 100.0%  | 100.0%  | 100.0%  |
| Disinfection by products   | 100.0%  | 100.0%  | 100.0%  | 100.0%  | 100.0%  |
| <div> <span style="color: green;">■</span> Compliant           <span style="color: red;">■</span> Non-compliant         </div> |         |         |         |         |         |

## 5.4. Analysis of current health performance (2020–21)

Table 5.4-a Summary of health guideline exceedances

| Summary of health guideline exceedances |      |         |           |
|---|------|---------|-----------|
| Parameter Exceeding                     | Date | Details | Resampled |
| No ADWG exceedances                     |      |         |           |

**Table 5.4-b Fluoride distribution performance**

| Distribution fluoride performance   |         |
|---|---------|
| Indicator   | 2020–21 |
| F exceeding 1.5 mg/L  | 0       |
| Average F concentration range (0.8 mg/L – 1.1 mg/L)   | 1.0     |
| 90% of F results are equal to or less than 1.1 mg/L   | 100%    |
| <span style="color: green;">■</span> Compliant <span style="color: red;">■</span> Non-compliant |         |

**Table 5.4-c Metals performance**

| Metals – health regulated parameters |       |      |         |             |               |         |          |         |
|--------------------------------------|-------|------|---------|-------------|---------------|---------|----------|---------|
| Parameter                            | Limit | Unit | Samples | Exceedances | Performance % | Mean    | Min.     | Max.    |
| Antimony                             | 0.003 | mg/L | 4       | 0           | 100           | <0.0005 | <0.0005  | <0.0005 |
| Arsenic                              | 0.01  | mg/L | 4       | 0           | 100           | <0.0003 | <0.0003  | <0.0003 |
| Barium                               | 2     | mg/L | 4       | 0           | 100           | 0.0172  | 0.0138   | 0.0187  |
| Cadmium                              | 0.002 | mg/L | 4       | 0           | 100           | <0.0001 | <0.0001  | <0.0001 |
| Chromium                             | 0.05  | mg/L | 4       | 0           | 100           | 0.0001  | <0.0001  | 0.0002  |
| Copper                               | 2     | mg/L | 4       | 0           | 100           | 0.0089  | 0.0069   | 0.0127  |
| Lead                                 | 0.01  | mg/L | 4       | 0           | 100           | 0.0007  | 0.0003   | 0.0013  |
| Manganese                            | 0.5   | mg/L | 4       | 0           | 100           | 0.0111  | 0.0047   | 0.0200  |
| Mercury                              | 0.001 | mg/L | 4       | 0           | 100           | 0.00003 | <0.00003 | 0.00004 |
| Molybdenum                           | 0.05  | mg/L | 4       | 0           | 100           | <0.0001 | <0.0001  | 0.0001  |
| Nickel                               | 0.02  | mg/L | 4       | 0           | 100           | 0.0004  | 0.0003   | 0.0005  |
| Selenium                             | 0.01  | mg/L | 4       | 0           | 100           | <0.0001 | <0.0001  | 0.0001  |

**Table 5.4-d Disinfection by product performance**

| Disinfection by products – health regulated parameters |       |      |         |             |               |      |      |      |
|--|-------|------|---------|-------------|---------------|------|------|------|
| Parameter  | Limit | Unit | Samples | Exceedances | Performance % | Mean | Min. | Max. |
| Dichloroacetic acid                                    | 100   | µg/L | 4       | 0           | 100           | 5    | 3    | 7    |
| Monochloroacetic acid                                  | 150   | µg/L | 4       | 0           | 100           | <3   | <3   | <3   |
| Trichloroacetic acid                                   | 100   | µg/L | 4       | 0           | 100           | 4    | 2    | 6    |
| Total trihalomethanes                                  | 250   | µg/L | 4       | 0           | 100           | 44   | 30   | 58   |

Table 5.4-e General physical performance

| General physical parameters |       |                 |      |      |      |
|-----------------------------|-------|-----------------|------|------|------|
| Parameter                   | Unit  | Guideline Value | Mean | Min  | Max  |
| Chlorine residual           | mg/L  | 0.1 – <0.8      | 0.72 | 0.21 | 1.16 |
| Colour True                 | HU    | 15              | <1   | <1   | <1   |
| pH                          | Units | 6.5 – 8.5       | 7.20 | 6.35 | 7.63 |
| Turbidity                   | NTU   | 1               | 0.33 | 0.10 | 0.67 |

## 5.5. Analysis of overall system performance (2020–21)

Table 5.5-a Summary of system issues/public health warnings

| Summary of system issues                          |             |                           |                           |
|---|-------------|---------------------------|---------------------------|
| Date  | Description | DoH notification required | DoH notification complete |
| No system issues or public health warnings issued |             |                           |                           |

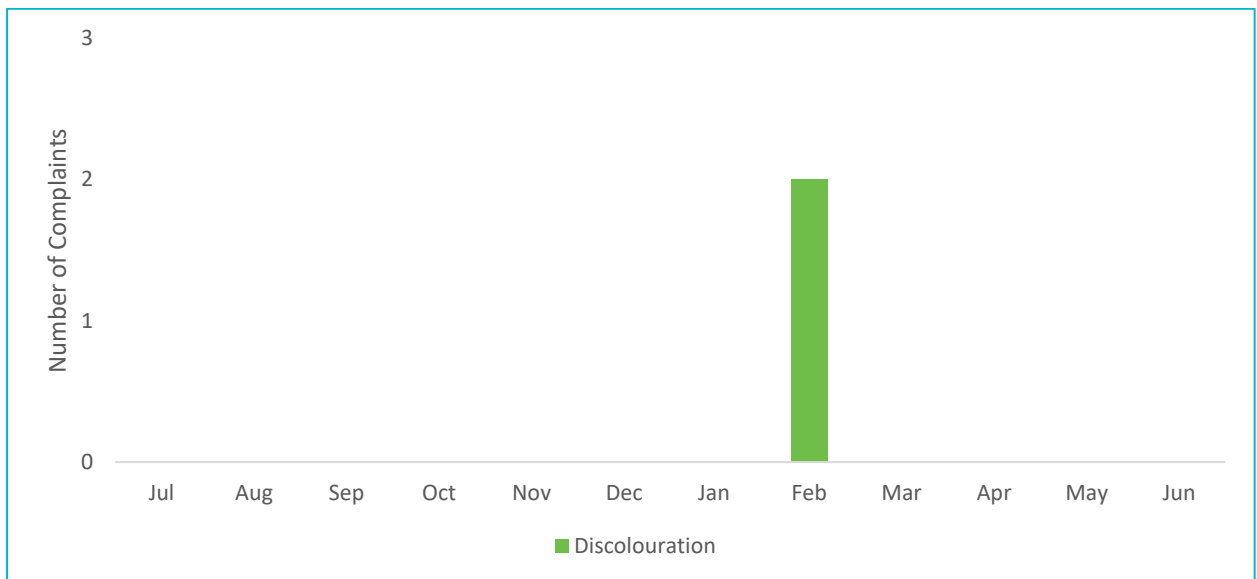


Figure 5.5-b Water quality customer complaints by month and type

## 6. Bronte Park drinking water system

### 6.1. System summary (2020–21)

| Bronte Park drinking water system  |         |
|------------------------------------|---------|
| System status (as at 30 June 2021) | Potable |
| Total number of connections        | 65      |
| Population serviced                | 46      |
| Fluoride                           | n/a     |

| Performance overview against health targets (2020–21)      |         |            |        |                 |             |
|--|---------|------------|--------|-----------------|-------------|
| Indicator  | Outcome | Compliance | Target | Sampling Events | Exceedances |
| Microbiological  | 100.0%  | ☑          | 98.0%  | 52              | 0           |
| Fluoride   | n/a     | n/a        | n/a    | n/a             | n/a         |
| Metals   | 100.0%  | ☑          | 100.0% | 4               | 0           |
| DBPs   | 100.0%  | ☑          | 100.0% | 4               | 0           |
| <div><div></div> Compliant <div></div> Non-compliant</div> |         |            |        |                 |             |

| Overall system performance (2020–21) |             |         |
|--------------------------------------|-------------|---------|
| Indicator                            | Occurrences | Details |
| System issues                        | 0           |         |
| Public health warnings issued        | 0           |         |
| Notifications made to DoH            | 0           |         |
| Customer complaints                  | 0           |         |

| Current and future planned capital investment |          |          |               |            |
|---|----------|----------|---------------|------------|
| Project                                       | Overview | Progress | Est. Delivery | Est. Spend |
| No projected capital investment               |          |          |               |            |

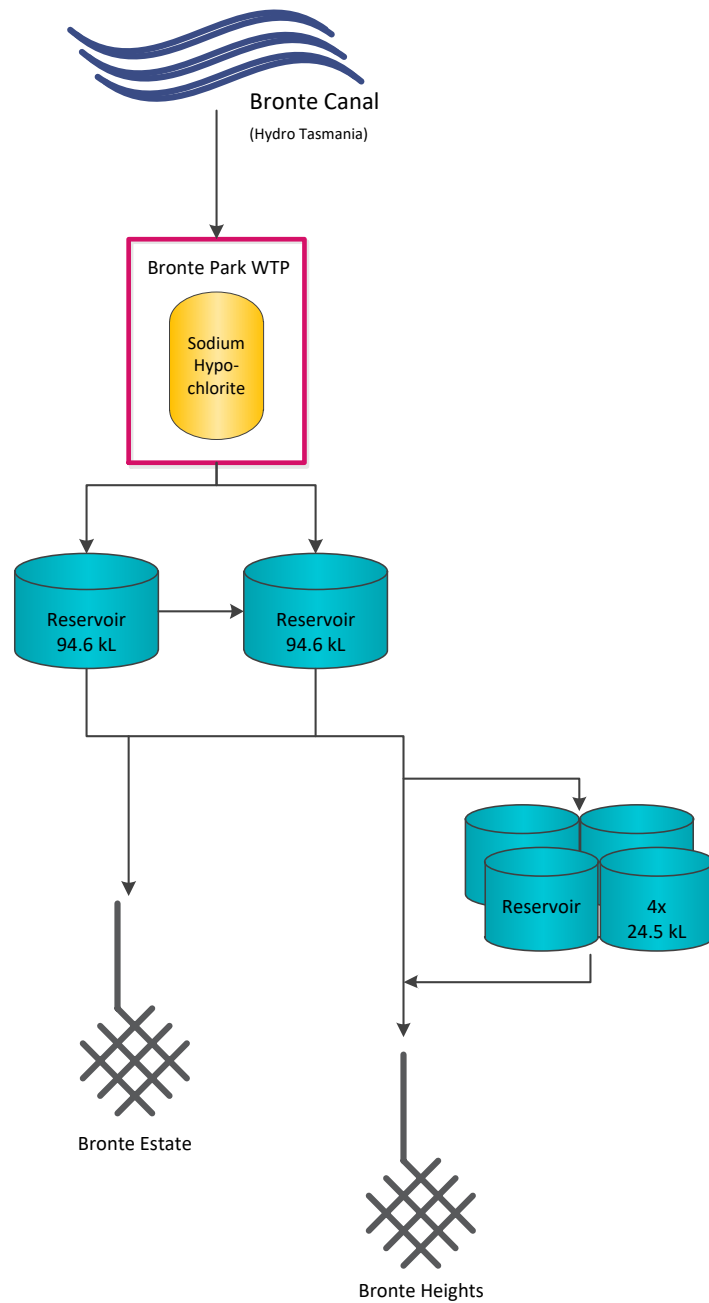


Figure 6.1-a Bronte Park system schematic

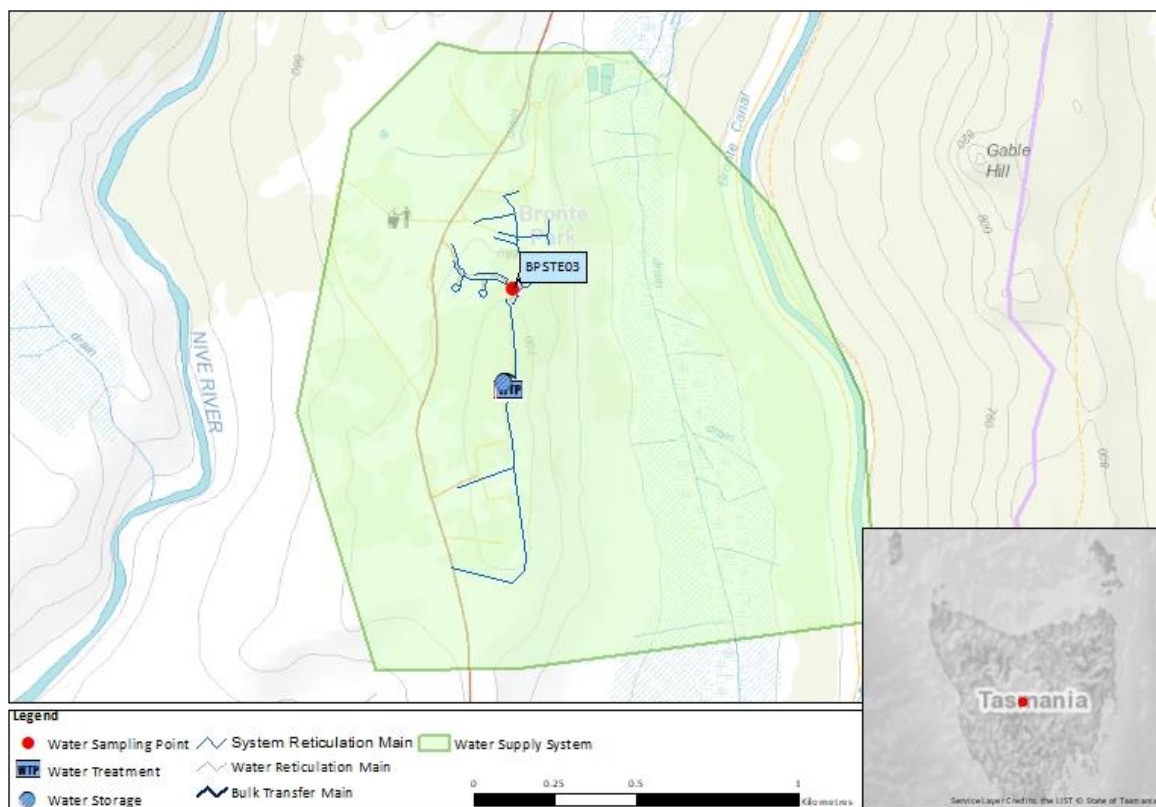


Figure 6.1-b Map of Bronte Park monitoring system

## 6.2. Summary of annual reticulation compliance (2020–21)

Table 6.2-a Sampling program

| Planned compliance sampling program (2020–21) |           |        |        |     |                |                  |                   |
|---|-----------|--------|--------|-----|----------------|------------------|-------------------|
| Site name                                     | Site Code | Micros | Metals | DBP | Fluoride (Lab) | Chemical Profile | Process Chemicals |
| Bronte Park/50 Bronte Estate Rd               | BPSTE03   | W      | Q      | Q   | n/a            | Q                | n/a               |
| Number Planned Samples                        |           | 52     | 4      | 4   | n/a            | 4                | n/a               |
| Number Samples Tested                         |           | 52     | 4      | 4   | n/a            | 4                | n/a               |

### 6.3. Summary of current and historic performance (2016–21)

Table 6.3-a Historical health performance overview (5 year comparison)

| Historical health performance overview (5 year comparison)                     |         |         |         |         |         |
|--|---------|---------|---------|---------|---------|
| Indicator  | 2016–17 | 2017–18 | 2018–19 | 2019–20 | 2020–21 |
| Microbiological  | 80.8%   | 87.3%   | 100.0%  | 100.0%  | 100.0%  |
| Fluoride   | n/a     | n/a     | n/a     | n/a     | n/a     |
| Metals   | 100.0%  | 100.0%  | 100.0%  | 100.0%  | 100.0%  |
| Disinfection by products   | 91.7%   | 100.0%  | 100.0%  | 100.0%  | 100.0%  |
| <div> <div></div> Compliant           <div></div> Non-compliant         </div> |         |         |         |         |         |

### 6.4. Analysis of current health performance (2020–21)

Table 6.4-a Summary of health guideline exceedances

| Summary of health guideline exceedances |      |         |           |
|---|------|---------|-----------|
| Parameter Exceeding                     | Date | Details | Resampled |
| No ADWG exceedances                     |      |         |           |

Table 6.4-b Metals performance

| Metals – health regulated parameters |       |      |         |             |               |         |          |         |
|--------------------------------------|-------|------|---------|-------------|---------------|---------|----------|---------|
| Parameter                            | Limit | Unit | Samples | Exceedances | Performance % | Mean    | Min.     | Max.    |
| Antimony                             | 0.003 | mg/L | 4       | 0           | 100           | <0.0005 | <0.0005  | <0.0005 |
| Arsenic                              | 0.01  | mg/L | 4       | 0           | 100           | <0.0003 | <0.0003  | <0.0003 |
| Barium                               | 2     | mg/L | 4       | 0           | 100           | 0.0021  | 0.0017   | 0.0026  |
| Cadmium                              | 0.002 | mg/L | 4       | 0           | 100           | <0.0001 | <0.0001  | <0.0001 |
| Chromium                             | 0.05  | mg/L | 4       | 0           | 100           | <0.0001 | <0.0001  | <0.0001 |
| Copper                               | 2     | mg/L | 4       | 0           | 100           | 0.0083  | 0.0073   | 0.0099  |
| Lead                                 | 0.01  | mg/L | 4       | 0           | 100           | 0.0004  | 0.0004   | 0.0005  |
| Manganese                            | 0.5   | mg/L | 4       | 0           | 100           | 0.0036  | 0.0033   | 0.0040  |
| Mercury                              | 0.001 | mg/L | 4       | 0           | 100           | 0.00014 | <0.00003 | 0.00035 |
| Molybdenum                           | 0.05  | mg/L | 4       | 0           | 100           | <0.0001 | <0.0001  | <0.0001 |
| Nickel                               | 0.02  | mg/L | 4       | 0           | 100           | 0.0002  | 0.0001   | 0.0004  |
| Selenium                             | 0.01  | mg/L | 4       | 0           | 100           | <0.0001 | <0.0001  | <0.0001 |

**Table 6.4-c Disinfection by product performance**

| Disinfection by products – health regulated parameters |       |      |         |             |               |      |      |      |
|--|-------|------|---------|-------------|---------------|------|------|------|
| Parameter  | Limit | Unit | Samples | Exceedances | Performance % | Mean | Min. | Max. |
| Dichloroacetic acid                                    | 100   | µg/L | 4       | 0           | 100           | 21   | 9    | 32   |
| Monochloroacetic acid                                  | 150   | µg/L | 4       | 0           | 100           | <3   | <3   | <3   |
| Trichloroacetic acid                                   | 100   | µg/L | 4       | 0           | 100           | 36   | 17   | 59   |
| Total trihalomethanes                                  | 250   | µg/L | 4       | 0           | 100           | 38   | 30   | 47   |

**Table 6.4-d General physical performance**

| General physical parameters |       |                 |      |      |      |
|-----------------------------|-------|-----------------|------|------|------|
| Parameter                   | Unit  | Guideline Value | Mean | Min  | Max  |
| Chlorine residual           | mg/L  | 0.1 – <0.8      | 0.67 | 0.45 | 0.97 |
| Colour True                 | HU    | 15              | 1.5  | 1    | 2    |
| pH                          | Units | 6.5 – 8.5       | 7.61 | 7.11 | 8.13 |
| Turbidity                   | NTU   | 1               | 0.22 | 0.11 | 0.43 |

## 6.5. Analysis of overall system performance (2020–21)

**Table 6.5-a Summary of system issues/public health warnings**

| Summary of system issues                          |             |                           |                           |
|---|-------------|---------------------------|---------------------------|
| Date  | Description | DoH notification required | DoH notification complete |
| No system issues or public health warnings issued |             |                           |                           |



## 7. Bushy Park drinking water system

### 7.1. System summary (2020–21)

| Bushy Park drinking water system   |         |
|------------------------------------|---------|
| System status (as at 30 June 2021) | Potable |
| Total number of connections        | 125     |
| Population serviced                | 248     |
| Fluoride                           | n/a     |

| Performance overview against health targets (2020–21)  |         |                                     |        |                 |             |
|--|---------|-------------------------------------|--------|-----------------|-------------|
| Indicator  | Outcome | Compliance                          | Target | Sampling Events | Exceedances |
| Microbiological  | 100.0%  | <input checked="" type="checkbox"/> | 98.0%  | 104             | 0           |
| Fluoride   | n/a     | n/a                                 | n/a    | n/a             | n/a         |
| Metals   | 100.0%  | <input checked="" type="checkbox"/> | 100.0% | 8               | 0           |
| DBPs   | 100.0%  | <input checked="" type="checkbox"/> | 100.0% | 8               | 0           |
| <div> <span style="color: green;">■</span> Compliant           <span style="color: red;">■</span> Non-compliant         </div> |         |                                     |        |                 |             |

| Overall system performance (2020–21) |             |         |
|--------------------------------------|-------------|---------|
| Indicator                            | Occurrences | Details |
| System issues                        | 0           |         |
| Public health warnings issued        | 0           |         |
| Notifications made to DoH            | 0           |         |
| Customer complaints                  | 0           |         |

| Current and future planned capital investment |          |          |               |            |
|---|----------|----------|---------------|------------|
| Project                                       | Overview | Progress | Est. Delivery | Est. Spend |
| No projected capital investment               |          |          |               |            |

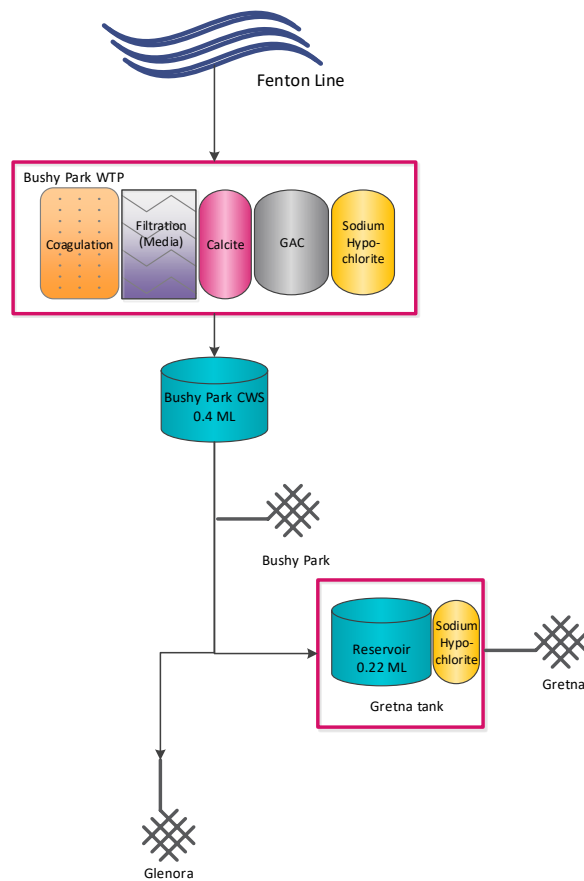


Figure 7.1-a Bushy Park system schematic

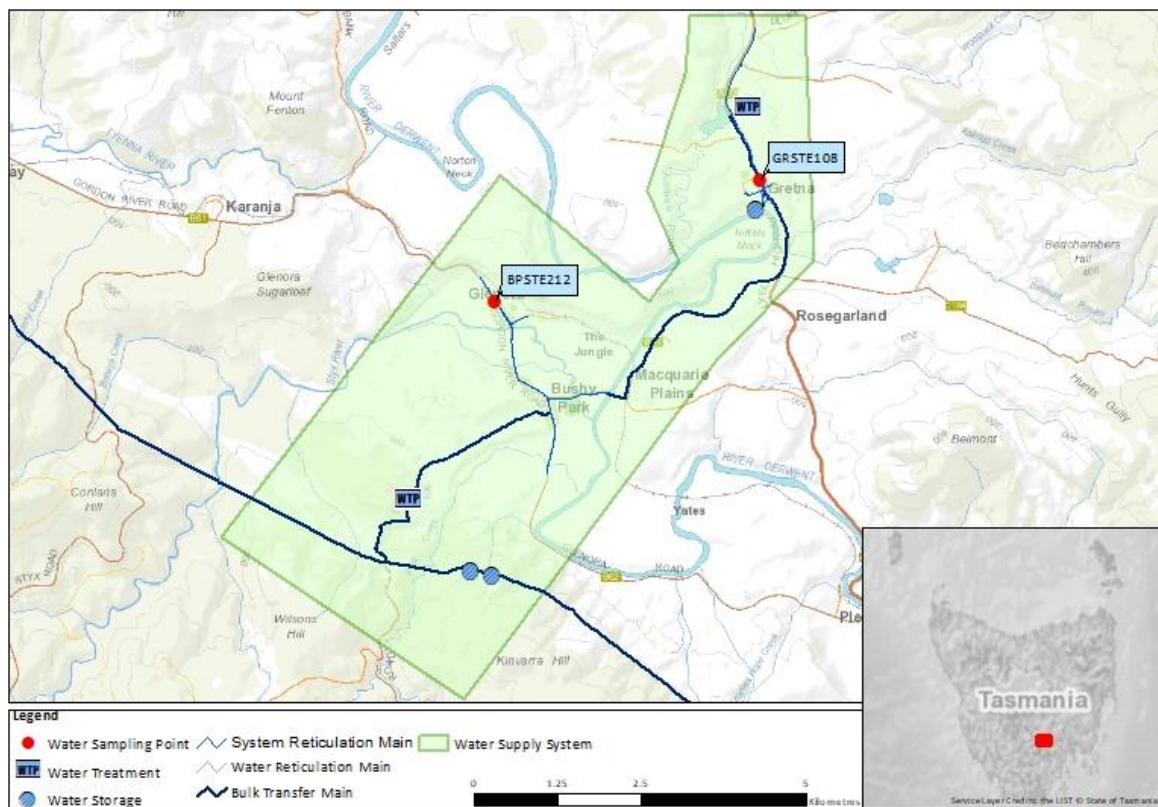


Figure 7.1-b Map of Bushy Park monitoring system

## 7.2. Summary of annual reticulation compliance (2020–21)

Table 7.2-a Sampling program

| Planned compliance sampling program (2020–21) |           |        |        |     |                |                  |                   |
|---|-----------|--------|--------|-----|----------------|------------------|-------------------|
| Site name                                     | Site Code | Micros | Metals | DBP | Fluoride (Lab) | Chemical Profile | Process Chemicals |
| Glenora/Glenora Fire Station                  | BPSTE212  | W      | Q      | Q   | n/a            | Q                | n/a               |
| Gretna/Opp. 3449 Lyell Hwy                    | GRSTE108  | W      | Q      | Q   | n/a            | Q                | n/a               |
| Number Planned Samples                        |           | 104    | 8      | 8   | n/a            | 8                | n/a               |
| Number Samples Tested                         |           | 104    | 8      | 8   | n/a            | 8                | n/a               |

## 7.3. Summary of current and historic performance (2016–21)

Table 7.3-a Historical health performance overview (5 year comparison)

| Historical health performance overview (5 year comparison)   |         |         |         |         |         |
|--|---------|---------|---------|---------|---------|
| Indicator  | 2016–17 | 2017–18 | 2018–19 | 2019–20 | 2020–21 |
| Microbiological  | n/a     | n/a     | 100.0%  | 100.0%  | 100.0%  |
| Fluoride   | n/a     | n/a     | n/a     | n/a     | n/a     |
| Metals   | n/a     | n/a     | 100.0%  | 100.0%  | 100.0%  |
| Disinfection by products   | n/a     | n/a     | 100.0%  | 100.0%  | 100.0%  |
| <div> <span style="color: green;">■</span> Compliant           <span style="color: red;">■</span> Non-compliant         </div> |         |         |         |         |         |

## 7.4. Analysis of current health performance (2020–21)

Table 7.4-a Summary of health guideline exceedances

| Summary of health guideline exceedances |      |         |           |
|---|------|---------|-----------|
| Parameter Exceeding                     | Date | Details | Resampled |
| No ADWG exceedances                     |      |         |           |

**Table 7.4-b Metals performance**

| Metals – health regulated parameters |       |      |         |             |               |         |          |         |
|--------------------------------------|-------|------|---------|-------------|---------------|---------|----------|---------|
| Parameter                            | Limit | Unit | Samples | Exceedances | Performance % | Mean    | Min.     | Max.    |
| Antimony                             | 0.003 | mg/L | 8       | 0           | 100           | <0.0005 | <0.0005  | <0.0005 |
| Arsenic                              | 0.01  | mg/L | 8       | 0           | 100           | <0.0003 | <0.0003  | <0.0003 |
| Barium                               | 2     | mg/L | 8       | 0           | 100           | 0.0025  | 0.0017   | 0.0031  |
| Cadmium                              | 0.002 | mg/L | 8       | 0           | 100           | <0.0001 | <0.0001  | <0.0001 |
| Chromium                             | 0.05  | mg/L | 8       | 0           | 100           | 0.0001  | <0.0001  | 0.0002  |
| Copper                               | 2     | mg/L | 8       | 0           | 100           | 0.0035  | 0.0027   | 0.0046  |
| Lead                                 | 0.01  | mg/L | 8       | 0           | 100           | 0.0003  | 0.0002   | 0.0004  |
| Manganese                            | 0.5   | mg/L | 8       | 0           | 100           | 0.0002  | <0.0001  | 0.0005  |
| Mercury                              | 0.001 | mg/L | 8       | 0           | 100           | 0.00010 | <0.00003 | 0.00022 |
| Molybdenum                           | 0.05  | mg/L | 8       | 0           | 100           | <0.0001 | <0.0001  | <0.0001 |
| Nickel                               | 0.02  | mg/L | 8       | 0           | 100           | 0.0002  | <0.0001  | 0.0007  |
| Selenium                             | 0.01  | mg/L | 8       | 0           | 100           | <0.0001 | <0.0001  | <0.0001 |

**Table 7.4-c Disinfection by product performance**

| Disinfection by products – health regulated parameters |       |      |         |             |               |      |      |      |
|--|-------|------|---------|-------------|---------------|------|------|------|
| Parameter  | Limit | Unit | Samples | Exceedances | Performance % | Mean | Min. | Max. |
| Dichloroacetic acid                                    | 100   | µg/L | 8       | 0           | 100           | 11   | 4    | 18   |
| Monochloroacetic acid                                  | 150   | µg/L | 8       | 0           | 100           | <3   | <3   | <3   |
| Trichloroacetic acid                                   | 100   | µg/L | 8       | 0           | 100           | 26   | 17   | 37   |
| Total trihalomethanes                                  | 250   | µg/L | 8       | 0           | 100           | 55   | 43   | 64   |

**Table 7.4-d General physical performance**

| General physical parameters |       |                 |      |      |      |
|-----------------------------|-------|-----------------|------|------|------|
| Parameter                   | Unit  | Guideline Value | Mean | Min  | Max  |
| Chlorine residual           | mg/L  | 0.1 – <0.8      | 0.68 | 0.35 | 1.23 |
| Colour True                 | HU    | 15              | <1   | <1   | <1   |
| pH                          | Units | 6.5 – 8.5       | 7.33 | 6.92 | 7.69 |
| Turbidity                   | NTU   | 1               | 0.22 | 0.06 | 0.76 |

## 7.5. Analysis of overall system performance (2020–21)

Table 7.5-a Summary of system issues/public health warnings

| Summary of system issues                          |             |                           |                           |
|---|-------------|---------------------------|---------------------------|
| Date  | Description | DoH notification required | DoH notification complete |
| No system issues or public health warnings issued |             |                           |                           |

## 8. Campbell Town drinking water system

### 8.1. System summary (2020–21)

| Campbell Town drinking water system |                 |
|-------------------------------------|-----------------|
| System status (as at 30 June 2021)  | Potable         |
| Total number of connections         | 795             |
| Population serviced                 | 1,361           |
| Fluoride                            | Sodium Fluoride |

| Performance overview against health targets (2020–21)      |         |            |        |                 |             |
|--|---------|------------|--------|-----------------|-------------|
| Indicator  | Outcome | Compliance | Target | Sampling Events | Exceedances |
| Microbiological  | 100.0%  | ☑          | 98.0%  | 104             | 0           |
| Fluoride   | 100.0%  | ☑          | 100.0% | 48              | 0           |
| Metals   | 100.0%  | ☑          | 100.0% | 4               | 0           |
| DBPs   | 100.0%  | ☑          | 100.0% | 4               | 0           |
| <div><div></div> Compliant <div></div> Non-compliant</div> |         |            |        |                 |             |

| Overall system performance (2020–21) |             |                |
|--------------------------------------|-------------|----------------|
| Indicator                            | Occurrences | Details        |
| System issues                        | 0           |                |
| Public health warnings issued        | 0           |                |
| Notifications made to DoH            | 0           |                |
| Customer complaints                  | 1           | Discolouration |

| Current and future planned capital investment |                 |          |               |             |
|---|-----------------|----------|---------------|-------------|
| Project                                       | Overview        | Progress | Est. Delivery | Est. Spend  |
| WTP Upgrade                                   | UV Installation | Planning | 2022/2023     | \$1,000,000 |

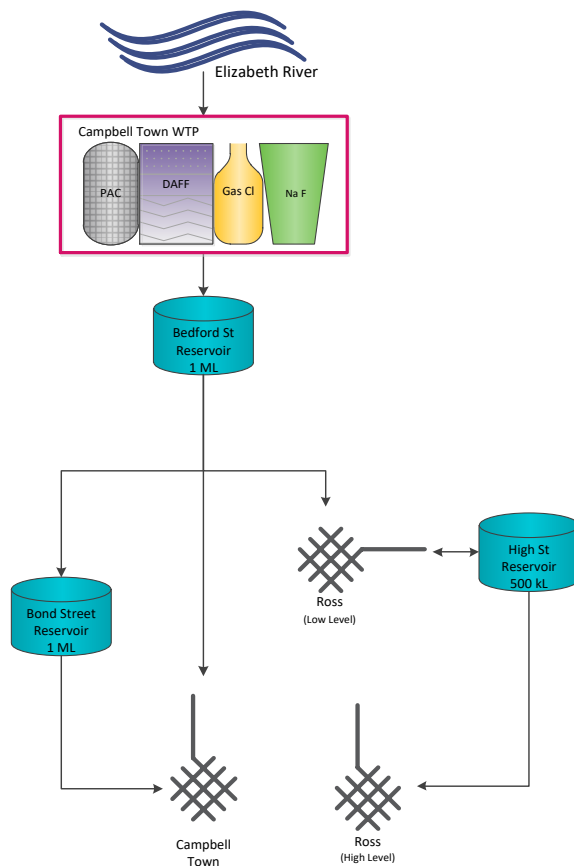


Figure 8.1-a Campbell Town system schematic

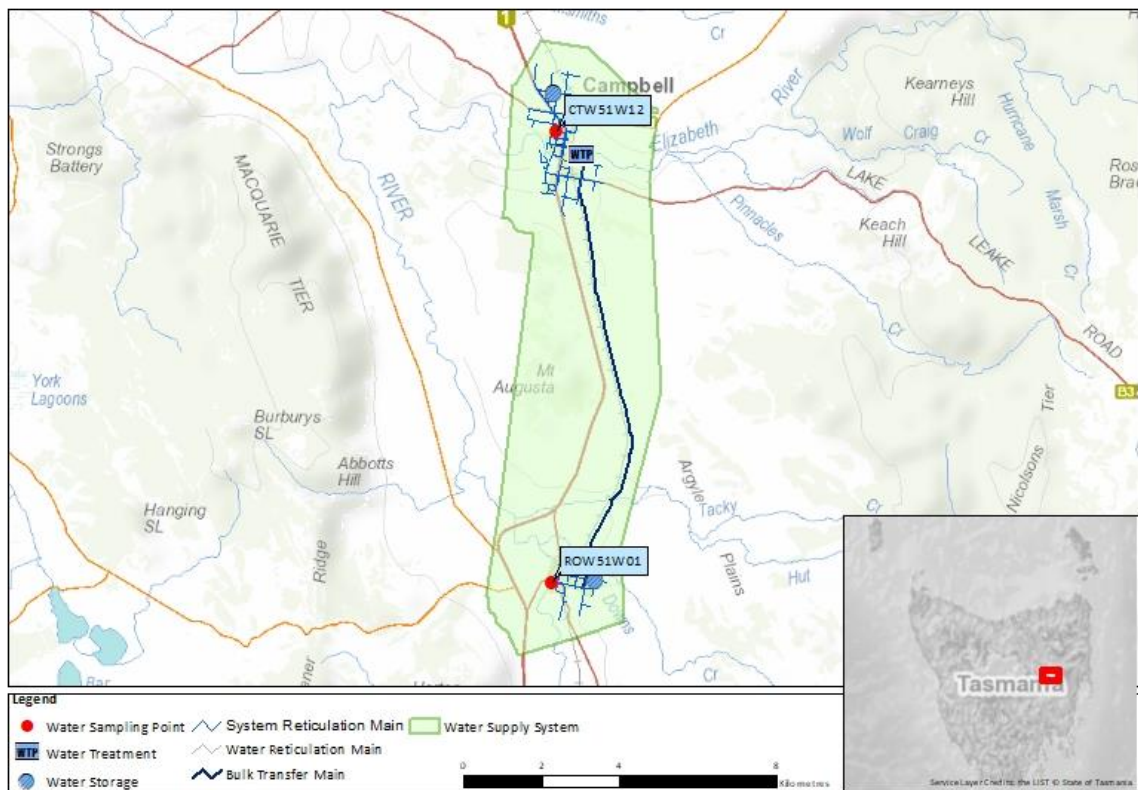


Figure 8.1-b Map of Campbell Town monitoring system

## 8.2. Summary of annual reticulation compliance (2020–21)

Table 8.2-a Sampling program

| Planned sampling program (2020–21)             |           |        |        |     |                |                  |                   |
|--|-----------|--------|--------|-----|----------------|------------------|-------------------|
| Site name                                      | Site Code | Micros | Metals | DBP | Fluoride (Lab) | Chemical Profile | Process Chemicals |
| Campbell Town/Cnr Bridge St & Hamilton St (#2) | CTW51W12  | W      | n/a    | n/a | 2M             | n/a              | n/a               |
| Ross/ Bridge St SPS                            | ROW51W01  | W      | Q      | Q   | 2M             | Q                | n/a               |
| Number Planned Samples                         |           | 104    | 4      | 4   | 48             | 4                | n/a               |
| Number Samples Tested                          |           | 104    | 4      | 4   | 48             | 4                | n/a               |

## 8.3. Summary of current and historic performance (2016–21)

Table 8.3-a Historical health performance overview (5 year comparison)

| Historical health performance overview (5 year comparison)   |         |         |         |         |         |
|--|---------|---------|---------|---------|---------|
| Indicator  | 2016–17 | 2017–18 | 2018–19 | 2019–20 | 2020–21 |
| Microbiological  | 100.0%  | 100.0%  | 100.0%  | 100.0%  | 100.0%  |
| Fluoride   | 100.0%  | 100.0%  | 100.0%  | 100.0%  | 100.0%  |
| Metals   | 100.0%  | 100.0%  | 100.0%  | 100.0%  | 100.0%  |
| Disinfection by products   | 100.0%  | 100.0%  | 100.0%  | 100.0%  | 100.0%  |
| <div> <span style="color: green;">■</span> Compliant           <span style="color: red;">■</span> Non-compliant         </div> |         |         |         |         |         |

## 8.4. Analysis of current health performance (2020–21)

Table 8.4-a Summary of health guideline exceedances

| Summary of health guideline exceedances |      |         |           |
|---|------|---------|-----------|
| Parameter Exceeding                     | Date | Details | Resampled |
| No ADWG exceedances                     |      |         |           |



**Table 8.4-b Fluoride distribution performance**

| Distribution fluoride performance   |         |
|---|---------|
| Indicator   | 2020–21 |
| F exceeding 1.5 mg/L  | 0       |
| Average F concentration range (0.8 mg/L – 1.1 mg/L)   | 0.8     |
| 90% of F results are equal to or less than 1.1 mg/L   | 100%    |
| <span style="color: green;">■</span> Compliant <span style="color: red;">■</span> Non-compliant |         |

**Table 8.4-c Metals performance**

| Metals – health regulated parameters |       |      |         |             |               |         |          |         |
|--------------------------------------|-------|------|---------|-------------|---------------|---------|----------|---------|
| Parameter                            | Limit | Unit | Samples | Exceedances | Performance % | Mean    | Min.     | Max.    |
| Antimony                             | 0.003 | mg/L | 4       | 0           | 100           | <0.0005 | <0.0005  | <0.0005 |
| Arsenic                              | 0.01  | mg/L | 4       | 0           | 100           | <0.0003 | <0.0003  | <0.0003 |
| Barium                               | 2     | mg/L | 4       | 0           | 100           | 0.0101  | 0.0073   | 0.0157  |
| Cadmium                              | 0.002 | mg/L | 4       | 0           | 100           | <0.0001 | <0.0001  | <0.0001 |
| Chromium                             | 0.05  | mg/L | 4       | 0           | 100           | 0.0001  | <0.0001  | 0.0002  |
| Copper                               | 2     | mg/L | 4       | 0           | 100           | 0.0144  | 0.0107   | 0.0181  |
| Lead                                 | 0.01  | mg/L | 4       | 0           | 100           | 0.0015  | 0.0010   | 0.0020  |
| Manganese                            | 0.5   | mg/L | 4       | 0           | 100           | 0.0020  | 0.0011   | 0.0038  |
| Mercury                              | 0.001 | mg/L | 4       | 0           | 100           | 0.00005 | <0.00003 | 0.00009 |
| Molybdenum                           | 0.05  | mg/L | 4       | 0           | 100           | <0.0001 | <0.0001  | <0.0001 |
| Nickel                               | 0.02  | mg/L | 4       | 0           | 100           | 0.0002  | 0.0002   | 0.0003  |
| Selenium                             | 0.01  | mg/L | 4       | 0           | 100           | 0.0001  | <0.0001  | 0.0003  |

**Table 8.4-d Disinfection by product performance**

| Disinfection by products – health regulated parameters |       |      |         |             |               |      |      |      |
|--|-------|------|---------|-------------|---------------|------|------|------|
| Parameter  | Limit | Unit | Samples | Exceedances | Performance % | Mean | Min. | Max. |
| Dichloroacetic acid                                    | 100   | µg/L | 4       | 0           | 100           | 16   | 13   | 19   |
| Monochloroacetic acid                                  | 150   | µg/L | 4       | 0           | 100           | <3   | <3   | <3   |
| Trichloroacetic acid                                   | 100   | µg/L | 4       | 0           | 100           | 27   | 23   | 31   |
| Total trihalomethanes                                  | 250   | µg/L | 4       | 0           | 100           | 80   | 70   | 93   |

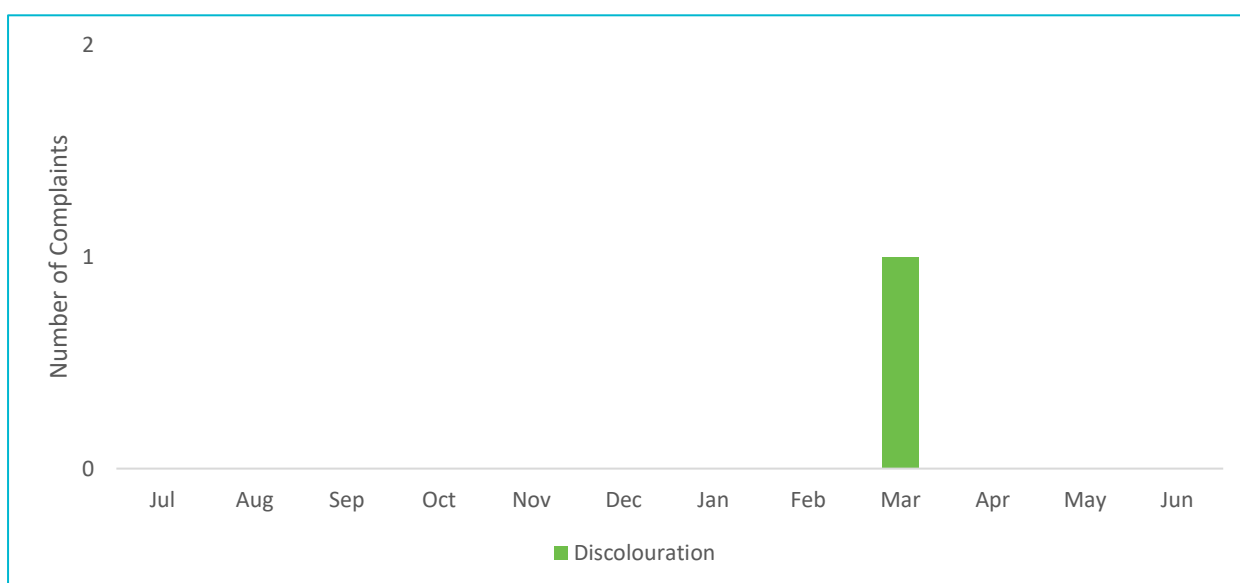
**Table 8.4-e General physical performance**

| General physical parameters |       |                 |      |      |      |
|-----------------------------|-------|-----------------|------|------|------|
| Parameter                   | Unit  | Guideline Value | Mean | Min  | Max  |
| Chlorine residual           | mg/L  | 0.1 – <0.8      | 0.49 | 0.02 | 0.94 |
| Colour True                 | HU    | 15              | 1    | 1    | 1    |
| pH                          | Units | 6.5 – 8.5       | 7.22 | 6.55 | 7.60 |
| Turbidity                   | NTU   | 1               | 0.36 | 0.07 | 3.48 |

## 8.5. Analysis of overall system performance (2020–21)

**Table 8.5-a Summary of system issues/public health warnings**

| Summary of system issues                          |             |                           |                           |
|---|-------------|---------------------------|---------------------------|
| Date  | Description | DoH notification required | DoH notification complete |
| No system issues or public health warnings issued |             |                           |                           |








**Figure 8.5-b Water quality customer complaints by month and type**

## 9. Coles Bay drinking water system

### 9.1. System summary (2020–21)

| Coles Bay drinking water system    |         |
|------------------------------------|---------|
| System status (as at 30 June 2021) | Potable |
| Total number of connections        | 279     |
| Population serviced                | 153     |
| Fluoride                           | n/a     |

| Performance overview against health targets (2020–21)   |         |   |        |                 |             |
|---|---------|---|--------|-----------------|-------------|
| Indicator   | Outcome | Compliance  | Target | Sampling Events | Exceedances |
| Microbiological   | 100.0%  |  | 98.0%  | 52              | 0           |
| Fluoride  | n/a     | n/a   | n/a    | n/a             | n/a         |
| Metals  | 100.0%  |  | 100.0% | 4               | 0           |
| DBPs  | 83.3%   |  | 100.0% | 12              | 2           |
|  Compliant  Non-compliant |         |   |        |                 |             |

| Overall system performance (2020–21) |             |                                    |
|--------------------------------------|-------------|------------------------------------|
| Indicator                            | Occurrences | Details                            |
| System issues                        | 1           | Elevated DBPs                      |
| Public health warnings issued        | 0           |                                    |
| Notifications made to DoH            | 2           | DBP exceedance in sampling program |
| Customer complaints                  | 0           |                                    |

| Current and future planned capital investment |                   |             |               |             |
|---|-------------------|-------------|---------------|-------------|
| Project                                       | Overview          | Progress    | Est. Delivery | Est. Spend  |
| WTP Upgrade                                   | Reservoir Upgrade | In Progress | 2021/2022     | \$3,000,000 |

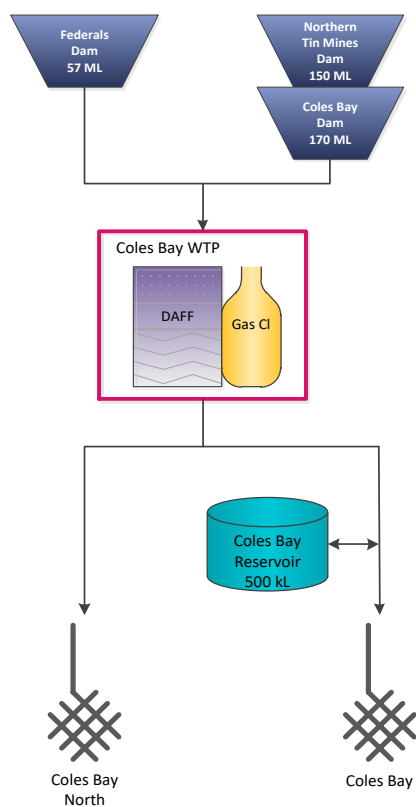


Figure 9.1-a Coles Bay system schematic

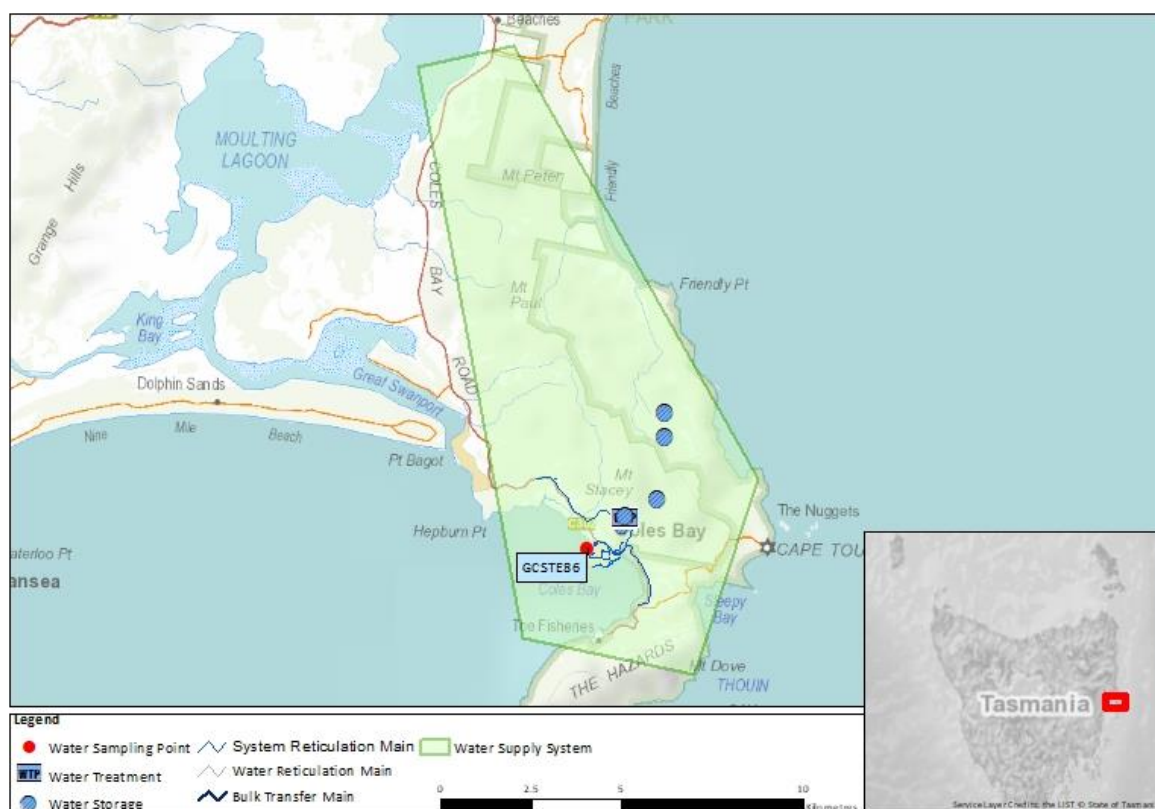


Figure 9.1-b Map of Coles Bay monitoring system

## 9.2. Summary of annual reticulation compliance (2020–21)

Table 9.2-a Sampling program

| Planned sampling program (2020–21) |           |        |        |     |                |                  |                   |
|------------------------------------|-----------|--------|--------|-----|----------------|------------------|-------------------|
| Site name                          | Site Code | Micros | Metals | DBP | Fluoride (Lab) | Chemical Profile | Process Chemicals |
| Coles Bay/Park Esp. NEW Sample Tap | GCSTE86   | W      | Q      | M   | n/a            | Q                | n/a               |
| Number Planned Samples             |           | 52     | 4      | 12  | n/a            | 4                | n/a               |
| Number Samples Tested              |           | 52     | 4      | 12  | n/a            | 4                | n/a               |

## 9.3. Summary of current and historic performance (2016–21)

Table 9.3-a Historical health performance overview (5 year comparison)

| Historical health performance overview (5 year comparison) |         |                    |         |         |         |
|--|---------|--------------------|---------|---------|---------|
| Indicator  | 2016–17 | 2017–18            | 2018–19 | 2019–20 | 2020–21 |
| Microbiological  | 100.0%  | 100.0%             | 100.0%  | 100.0%  | 100.0%  |
| Fluoride   | n/a     | n/a                | n/a     | n/a     | n/a     |
| Metals   | 100.0%  | 100.0%             | 100.0%  | 100.0%  | 100.0%  |
| Disinfection by products                                   | 90.0%   | 87.5% <sup>2</sup> | 91.7%   | 97.9%   | 83.3%   |

■ Compliant
 ■ Non-compliant

## 9.4. Analysis of current health performance (2020–21)

Table 9.4-a Summary of health guideline exceedances

| Summary of health guideline exceedances |          |  |           |
|---|----------|--|-----------|
| Parameter Exceeding                     | Date     | Details  | Resampled |
| Total Trihalomethanes                   | 9/2/2021 | 270 µg/L in regular compliance sampling ( <i>not relevant to compliance assessment due to rounding</i> ) | ✓         |
| Total Trihalomethanes                   | 9/3/2021 | 305 µg/L in regular compliance sampling ( <i>relevant to compliance assessment</i> )                     | ✓         |

<sup>2</sup> Capital improvements identified to improve ongoing disinfection-by-product compliance

**Table 9.4-b Metals performance**

| Metals – health regulated parameters |       |      |         |             |               |         |          |         |
|--------------------------------------|-------|------|---------|-------------|---------------|---------|----------|---------|
| Parameter                            | Limit | Unit | Samples | Exceedances | Performance % | Mean    | Min.     | Max.    |
| Antimony                             | 0.003 | mg/L | 4       | 0           | 100           | <0.0005 | <0.0005  | <0.0005 |
| Arsenic                              | 0.01  | mg/L | 4       | 0           | 100           | <0.0003 | <0.0003  | <0.0003 |
| Barium                               | 2     | mg/L | 4       | 0           | 100           | 0.0261  | 0.0033   | 0.0904  |
| Cadmium                              | 0.002 | mg/L | 4       | 0           | 100           | <0.0001 | <0.0001  | <0.0001 |
| Chromium                             | 0.05  | mg/L | 4       | 0           | 100           | 0.0001  | <0.0001  | 0.0002  |
| Copper                               | 2     | mg/L | 4       | 0           | 100           | 0.0019  | 0.0009   | 0.0037  |
| Lead                                 | 0.01  | mg/L | 4       | 0           | 100           | <0.0001 | <0.0001  | 0.0001  |
| Manganese                            | 0.5   | mg/L | 4       | 0           | 100           | 0.0010  | 0.0003   | 0.0141  |
| Mercury                              | 0.001 | mg/L | 4       | 0           | 100           | 0.00007 | <0.00003 | 0.00012 |
| Molybdenum                           | 0.05  | mg/L | 4       | 0           | 100           | <0.0001 | <0.0001  | <0.0001 |
| Nickel                               | 0.02  | mg/L | 4       | 0           | 100           | 0.0002  | 0.0001   | 0.0003  |
| Selenium                             | 0.01  | mg/L | 4       | 0           | 100           | <0.0001 | <0.0001  | <0.0001 |

**Table 9.4-c Disinfection by product performance**

| Disinfection by products – health regulated parameters |       |      |         |             |               |      |      |      |
|--|-------|------|---------|-------------|---------------|------|------|------|
| Parameter  | Limit | Unit | Samples | Exceedances | Performance % | Mean | Min. | Max. |
| Dichloroacetic acid                                    | 100   | µg/L | 12      | 0           | 100           | 9    | 1    | 27   |
| Monochloroacetic acid                                  | 150   | µg/L | 12      | 0           | 100           | <3   | <3   | 6    |
| Trichloroacetic acid                                   | 100   | µg/L | 12      | 0           | 100           | 10   | <1   | 38   |
| Total trihalomethanes                                  | 250   | µg/L | 12      | 0           | 67            | 144  | 29   | 305  |

**Table 9.4-d General physical performance**

| General physical parameters |       |                 |      |      |      |
|-----------------------------|-------|-----------------|------|------|------|
| Parameter                   | Unit  | Guideline Value | Mean | Min  | Max  |
| Chlorine residual           | mg/L  | 0.1 – <0.8      | 0.38 | 0.03 | 1.14 |
| Colour True                 | HU    | 15              | <1   | <1   | <1   |
| pH                          | Units | 6.5 – 8.5       | 7.27 | 6.95 | 7.80 |
| Turbidity                   | NTU   | 1               | 0.51 | 0.18 | 2.72 |

## 9.5. Analysis of overall system performance (2020–21)

Table 9.5-a Summary of system issues/public health warnings

| Summary of system issues |  |                           |                           |
|--------------------------|--|---------------------------|---------------------------|
| Date                     | Description  | DoH notification required | DoH notification complete |
| 9/2/2021                 | Total trihalomethane exceedance of 270 µg/L in compliance sample.    | ✓                         | ✓                         |
| 2/3/2021                 | Total trihalomethane exceedance of 289 µg/L in investigation sample. | ✓                         | ✓                         |
| 9/3/2021                 | Total trihalomethane exceedance of 305 µg/L in compliance sample.    | ✓                         | ✓                         |
| 16/3/2021                | Total trihalomethane exceedance of 324 µg/L in investigation sample. | ✓                         | ✓                         |
| 24/3/2021                | Total trihalomethane exceedance of 318 µg/L in investigation sample. | ✓                         | ✓                         |

## 10. Conara drinking water system

### 10.1. System summary (2020–21)

| Conara drinking water system       |         |
|------------------------------------|---------|
| System status (as at 30 June 2021) | Potable |
| Total number of connections        | 68      |
| Population serviced                | 158     |
| Fluoride                           | n/a     |

| Performance overview against health targets (2020–21)   |         |            |        |                 |             |
|---|---------|------------|--------|-----------------|-------------|
| Indicator   | Outcome | Compliance | Target | Sampling Events | Exceedances |
| Microbiological   | 100.0%  | ☑          | 98.0%  | 104             | 0           |
| Fluoride  | n/a     | n/a        | n/a    | n/a             | n/a         |
| Metals  | 100.0%  | ☑          | 100.0% | 8               | 0           |
| DBPs  | 100.0%  | ☑          | 100.0% | 8               | 0           |
| <span style="color: green;">■</span> Compliant <span style="color: red;">■</span> Non-compliant |         |            |        |                 |             |

| Overall system performance (2020–21) |             |         |
|--------------------------------------|-------------|---------|
| Indicator                            | Occurrences | Details |
| System issues                        | 0           |         |
| Public health warnings issued        | 0           |         |
| Notifications made to DoH            | 0           |         |
| Customer complaints                  | 0           |         |

| Current and future planned capital investment |          |          |               |                     |
|---|----------|----------|---------------|---------------------|
| Project                                       | Overview | Progress | Est. Delivery | Est. Spend (\$'000) |
| No projected capital investment               |          |          |               |                     |



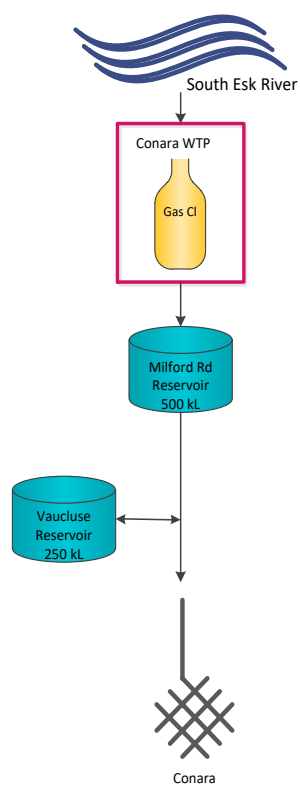


Figure 10.1-a Conara system schematic

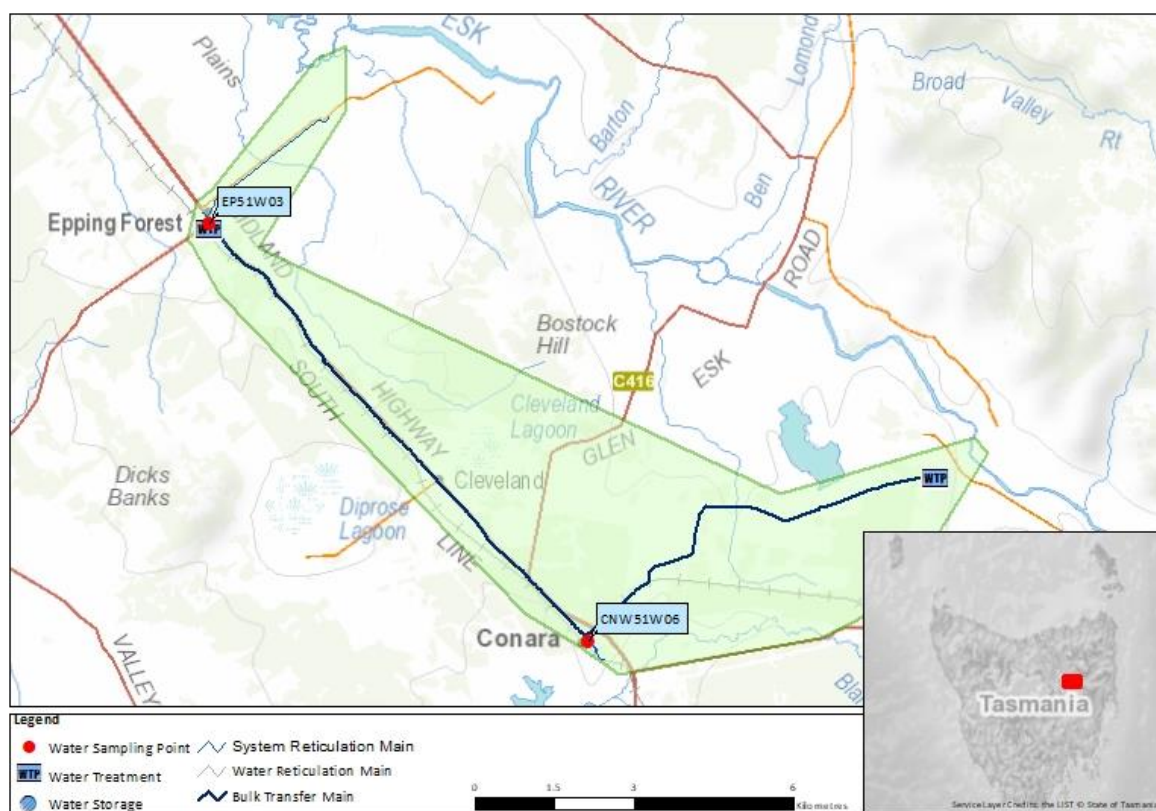


Figure 10.1-b Map of Conara monitoring system

## 10.2. Summary of annual reticulation compliance (2020–21)

Table 10.2-a Sampling program

| Planned compliance sampling program (2020–21) |           |        |        |     |                |                  |                   |
|---|-----------|--------|--------|-----|----------------|------------------|-------------------|
| Site name                                     | Site Code | Micros | Metals | DBP | Fluoride (Lab) | Chemical Profile | Process Chemicals |
| Conara/Cnr Conara Rd and Panec St             | CNW51W06  | W      | Q      | Q   | n/a            | Q                | n/a               |
| Epping/4 Barton Rd                            | EP51W03   | W      | Q      | Q   | n/a            | Q                | n/a               |
| Number Planned Samples                        |           | 104    | 8      | 8   | n/a            | 8                | n/a               |
| Number Samples Tested                         |           | 104    | 8      | 8   | n/a            | 8                | n/a               |

## 10.3. Summary of current and historic performance (2016–21)

Table 10.3-a Historical health performance overview (5 year comparison)

| Historical health performance overview (5 year comparison)   |         |                    |         |         |         |
|--|---------|--------------------|---------|---------|---------|
| Indicator  | 2016–17 | 2017–18            | 2018–19 | 2019–20 | 2020–21 |
| Microbiological  | 100%    | 98.1%              | 100.0%  | 100.0%  | 100.0%  |
| Fluoride   | n/a     | n/a                | n/a     | n/a     | n/a     |
| Metals   | 97.9%   | 100.0%             | 100.0%  | 100.0%  | 100.0%  |
| Disinfection by products   | 75.0%   | 87.5% <sup>3</sup> | 100.0%  | 100.0%  | 100.0%  |
| <div> <span style="color: green;">■</span> Compliant           <span style="color: red;">■</span> Non-compliant         </div> |         |                    |         |         |         |

## 10.4. Analysis of current health performance (2020–21)

Table 10.4-a Summary of health guideline exceedances

| Summary of health guideline exceedances |      |         |           |
|---|------|---------|-----------|
| Parameter Exceeding                     | Date | Details | Resampled |
| No ADWG exceedances                     |      |         |           |

<sup>3</sup> Planned improvements to WTP to improve disinfection of raw water when turbidity increases during flood events and improve disinfection-by-product compliance

**Table 10.4-b Metals performance**

| Metals – health regulated parameters |       |      |         |             |               |         |          |         |
|--------------------------------------|-------|------|---------|-------------|---------------|---------|----------|---------|
| Parameter                            | Limit | Unit | Samples | Exceedances | Performance % | Mean    | Min.     | Max.    |
| Antimony                             | 0.003 | mg/L | 8       | 0           | 100           | <0.0005 | <0.0005  | <0.0005 |
| Arsenic                              | 0.01  | mg/L | 8       | 0           | 100           | 0.0003  | <0.0003  | 0.0004  |
| Barium                               | 2     | mg/L | 8       | 0           | 100           | 0.0089  | 0.0041   | 0.0200  |
| Cadmium                              | 0.002 | mg/L | 8       | 0           | 100           | <0.0001 | <0.0001  | <0.0001 |
| Chromium                             | 0.05  | mg/L | 8       | 0           | 100           | 0.0001  | <0.0001  | 0.0002  |
| Copper                               | 2     | mg/L | 8       | 0           | 100           | 0.0089  | 0.0025   | 0.0418  |
| Lead                                 | 0.01  | mg/L | 8       | 0           | 100           | 0.0045  | 0.0001   | 0.0010  |
| Manganese                            | 0.5   | mg/L | 8       | 0           | 100           | 0.0012  | 0.0001   | 0.0026  |
| Mercury                              | 0.001 | mg/L | 8       | 0           | 100           | 0.00006 | <0.00003 | 0.00014 |
| Molybdenum                           | 0.05  | mg/L | 8       | 0           | 100           | <0.0001 | <0.0001  | 0.0001  |
| Nickel                               | 0.02  | mg/L | 8       | 0           | 100           | 0.0006  | 0.0004   | 0.0008  |
| Selenium                             | 0.01  | mg/L | 8       | 0           | 100           | <0.0001 | <0.0001  | 0.0002  |

**Table 10.4-c Disinfection by product performance**

| Disinfection by products – health regulated parameters |       |      |         |             |               |      |      |      |
|--|-------|------|---------|-------------|---------------|------|------|------|
| Parameter  | Limit | Unit | Samples | Exceedances | Performance % | Mean | Min. | Max. |
| Dichloroacetic acid                                    | 100   | µg/L | 8       | 0           | 100           | 7    | 1    | 21   |
| Monochloroacetic acid                                  | 150   | µg/L | 8       | 0           | 100           | <3   | <3   | <3   |
| Trichloroacetic acid                                   | 100   | µg/L | 8       | 0           | 100           | 8    | <1   | 30   |
| Total trihalomethanes                                  | 250   | µg/L | 8       | 0           | 100           | 22   | 11   | 42   |

**Table 10.4-d General physical performance**

| General physical parameters |       |                 |      |      |      |
|-----------------------------|-------|-----------------|------|------|------|
| Parameter                   | Unit  | Guideline Value | Mean | Min  | Max  |
| Chlorine residual           | mg/L  | 0.1 – <0.8      | 0.60 | 0.22 | 0.88 |
| Colour True                 | HU    | 15              | <1   | <1   | <1   |
| pH                          | Units | 6.5 – 8.5       | 7.58 | 6.55 | 8.30 |
| Turbidity                   | NTU   | 1               | 0.27 | 0.07 | 0.99 |

## 10.5. Analysis of overall system performance (2020–21)

Table 10.5-a Summary of system issues/public health warnings

| Summary of system issues                          |             |                           |                           |
|---|-------------|---------------------------|---------------------------|
| Date  | Description | DoH notification required | DoH notification complete |
| No system issues or public health warnings issued |             |                           |                           |

## 11. Cornwall drinking water system

### 11.1. System summary (2020–21)

| Cornwall drinking water system     |         |
|------------------------------------|---------|
| System status (as at 30 June 2021) | Potable |
| Total number of connections        | 48      |
| Population serviced                | 81      |
| Fluoride                           | n/a     |

| Performance overview against health targets (2020–21) |         |            |        |                 |             |
|---|---------|------------|--------|-----------------|-------------|
| Indicator   | Outcome | Compliance | Target | Sampling Events | Exceedances |
| Microbiological                                       | 100.0%  | ☑          | 98.0%  | 52              | 0           |
| Fluoride  | n/a     | n/a        | n/a    | n/a             | n/a         |
| Metals  | 98.0%   | ☒          | 100.0% | 4               | 1           |
| DBPs  | 100.0%  | ☑          | 100.0% | 4               | 0           |
| ☑ Compliant    ☒ Non-compliant                        |         |            |        |                 |             |

| Overall system performance (2020–21) |             |                 |
|--------------------------------------|-------------|-----------------|
| Indicator                            | Occurrences | Details         |
| System issues                        | 1           | Lead exceedance |
| Public health warnings issued        | 0           |                 |
| Notifications made to DoH            | 1           | Lead exceedance |
| Customer complaints                  | 0           |                 |

| Current and future planned capital investment |          |          |               |                     |
|---|----------|----------|---------------|---------------------|
| Project                                       | Overview | Progress | Est. Delivery | Est. Spend (\$'000) |
| No projected capital investment               |          |          |               |                     |

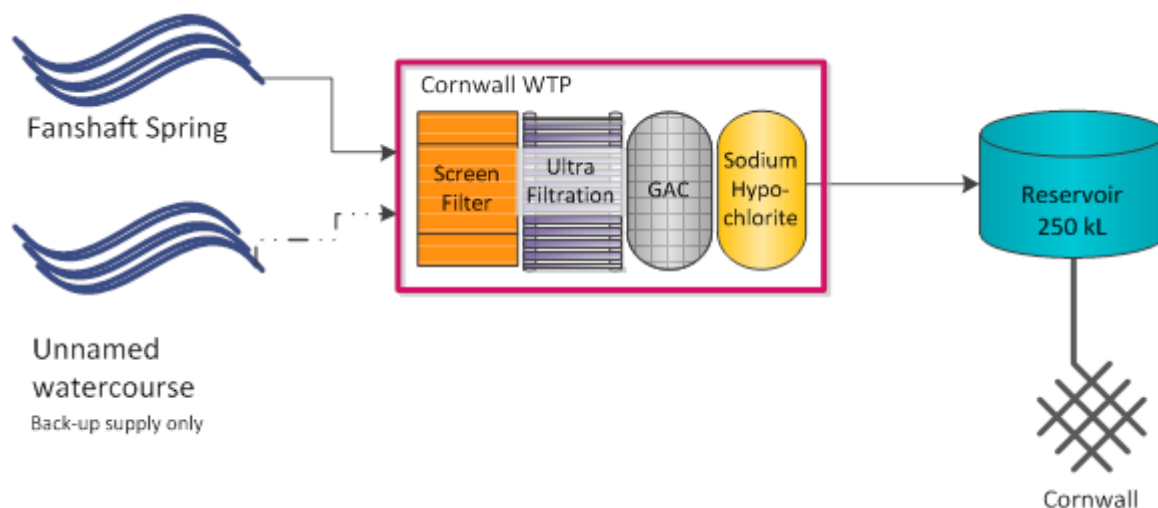


Figure 11.1-a Cornwall system schematic

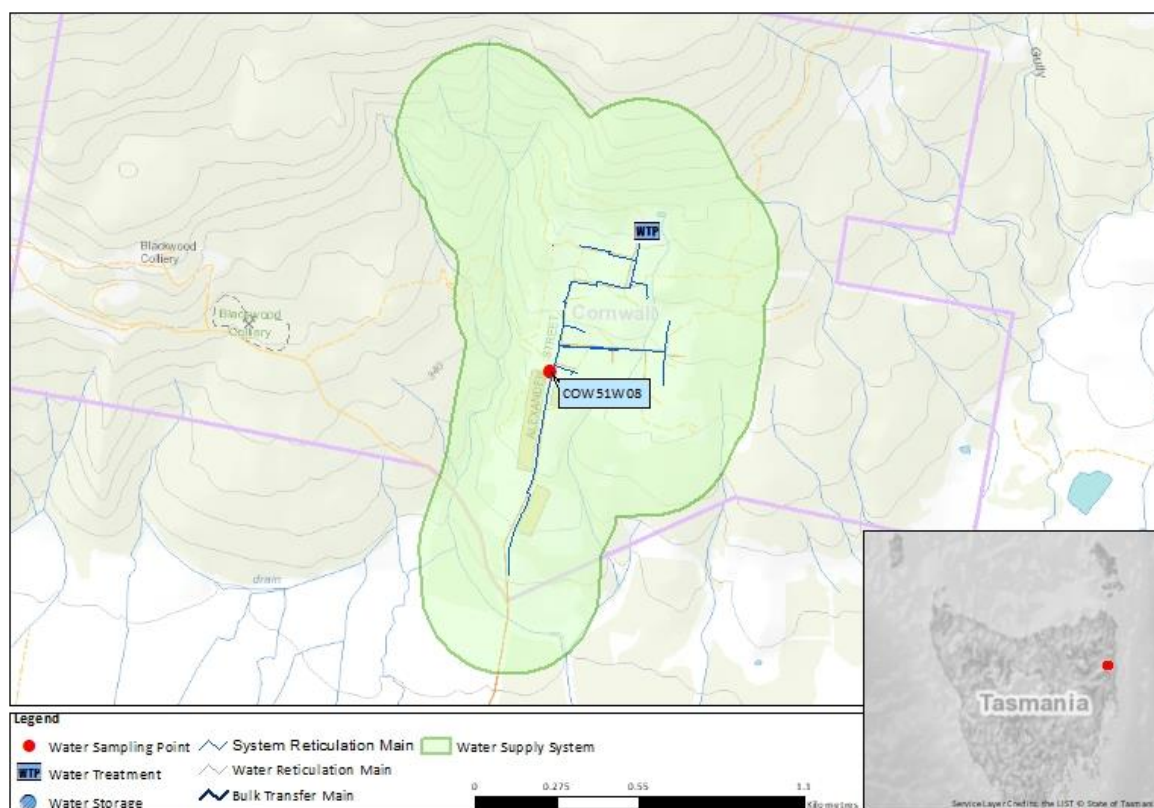


Figure 11.1-b Map of Cornwall monitoring system

## 11.2. Summary of annual reticulation compliance (2020–21)

Table 11.2-a Sampling program

| Planned compliance sampling program (2020–21) |           |        |        |     |                |                  |                   |
|---|-----------|--------|--------|-----|----------------|------------------|-------------------|
| Site name                                     | Site Code | Micros | Metals | DBP | Fluoride (Lab) | Chemical Profile | Process Chemicals |
| Cornwall/37-41 Alexander St                   | COW51W08  | W      | Q      | Q   | n/a            | Q                | n/a               |
| Number Planned Samples                        |           | 52     | 4      | 4   | n/a            | 4                | n/a               |
| Number Samples Tested                         |           | 52     | 4      | 4   | n/a            | 4                | n/a               |

## 11.3. Summary of current and historic performance (2016–21)

Table 11.3-a Historical health performance overview (5 year comparison)

| Historical health performance overview (5 year comparison)   |         |                    |         |         |         |
|--|---------|--------------------|---------|---------|---------|
| Indicator  | 2016–17 | 2017–18            | 2018–19 | 2019–20 | 2020–21 |
| Microbiological  | 91.7%   | 91.7% <sup>4</sup> | 100.0%  | 100.0%  | 100.0%  |
| Fluoride   | n/a     | n/a                | n/a     | n/a     | n/a     |
| Metals   | 100.0%  | 100.0%             | 100.0%  | 100.0%  | 98.0%   |
| Disinfection by products   | n/a     | n/a                | 100.0%  | 100.0%  | 100.0%  |
| <div> <span style="color: green;">■</span> Compliant           <span style="color: red;">■</span> Non-compliant         </div> |         |                    |         |         |         |

## 11.4. Analysis of current health performance (2020–21)

Table 11.4-a Summary of health guideline exceedances

| Summary of health guideline exceedances |            |  |           |
|---|------------|--|-----------|
| Parameter Exceeding                     | Date       | Details  | Resampled |
| Lead                                    | 13/11/2020 | Lead of 0.0737 mg/L in monthly compliance sample | ✓         |

<sup>4</sup> System was subject to PHA when *E. coli* exceeded ADWG

**Table 11.4-b Metals performance**

| Metals – health regulated parameters |       |      |         |             |               |         |          |         |
|--------------------------------------|-------|------|---------|-------------|---------------|---------|----------|---------|
| Parameter                            | Limit | Unit | Samples | Exceedances | Performance % | Mean    | Min.     | Max.    |
| Antimony                             | 0.003 | mg/L | 14      | 0           | 100           | <0.0005 | <0.0005  | 0.0005  |
| Arsenic                              | 0.01  | mg/L | 14      | 0           | 100           | 0.0004  | <0.0003  | 0.0007  |
| Barium                               | 2     | mg/L | 14      | 0           | 100           | 0.1290  | 0.1210   | 0.1363  |
| Cadmium                              | 0.002 | mg/L | 14      | 0           | 100           | <0.0001 | <0.0001  | <0.0001 |
| Chromium                             | 0.05  | mg/L | 14      | 0           | 100           | <0.0001 | <0.0001  | <0.0001 |
| Copper                               | 2     | mg/L | 14      | 0           | 100           | 0.1673  | 0.0091   | 0.6287  |
| Lead                                 | 0.01  | mg/L | 14      | 1           | 100           | 0.0187  | 0.0002   | 0.0737  |
| Manganese                            | 0.5   | mg/L | 14      | 0           | 100           | <0.0001 | <0.0001  | <0.0001 |
| Mercury                              | 0.001 | mg/L | 14      | 0           | 100           | 0.00005 | <0.00003 | 0.00007 |
| Molybdenum                           | 0.05  | mg/L | 14      | 0           | 100           | 0.0005  | 0.0003   | 0.0007  |
| Nickel                               | 0.02  | mg/L | 14      | 0           | 100           | 0.0007  | 0.0001   | 0.0025  |
| Selenium                             | 0.01  | mg/L | 14      | 0           | 100           | <0.0001 | <0.0001  | 0.0001  |

**Table 11.4-c Disinfection by product performance**

| Disinfection by products – health regulated parameters |       |      |         |             |               |      |      |      |
|--|-------|------|---------|-------------|---------------|------|------|------|
| Parameter  | Limit | Unit | Samples | Exceedances | Performance % | Mean | Min. | Max. |
| Dichloroacetic acid                                    | 100   | µg/L | 4       | 0           | 100           | 4    | 2    | 6    |
| Monochloroacetic acid                                  | 150   | µg/L | 4       | 0           | 100           | <3   | <3   | <3   |
| Trichloroacetic acid                                   | 100   | µg/L | 4       | 0           | 100           | 2    | <1   | 3    |
| Total trihalomethanes                                  | 250   | µg/L | 4       | 0           | 100           | 22   | 16   | 31   |

**Table 11.4-d General physical performance**

| General physical parameters |       |                 |      |      |      |
|-----------------------------|-------|-----------------|------|------|------|
| Parameter                   | Unit  | Guideline Value | Mean | Min  | Max  |
| Chlorine residual           | mg/L  | 0.1 – <0.8      | 0.68 | 0.46 | 0.91 |
| Colour True                 | HU    | 15              | <1   | <1   | <1   |
| pH                          | Units | 6.5 – 8.5       | 7.62 | 6.71 | 8.22 |
| Turbidity                   | NTU   | 1               | 0.23 | 0.06 | 0.56 |



## 11.5. Analysis of overall system performance (2020–21)

Table 11.5-a Summary of system issues/public health warnings

| Summary of system issues |   |                           |                           |
|--------------------------|---|---------------------------|---------------------------|
| Date                     | Description   | DoH notification required | DoH notification complete |
| 13/11/2020               | Routine quarterly sample taken from COW51W08 detected lead above the health limit.<br>System was flushed and subsequent sample was clear. | ✓                         | ✓                         |

## 12. Deep Creek drinking water system

### 12.1. System summary (2020–21)

| Deep Creek drinking water system   |                    |
|------------------------------------|--------------------|
| System status (as at 30 June 2021) | Potable            |
| Total number of connections        | 2,364              |
| Population serviced                | 4,725              |
| Fluoride                           | Fluorosilicic acid |

| Performance overview against health targets (2020–21)      |         |            |        |                 |             |
|--|---------|------------|--------|-----------------|-------------|
| Indicator  | Outcome | Compliance | Target | Sampling Events | Exceedances |
| Microbiological  | 99.5%   | ☑          | 98.0%  | 208             | 1           |
| Fluoride   | 100.0%  | ☑          | 100.0% | 48              | 0           |
| Metals   | 100.0%  | ☑          | 100.0% | 12              | 0           |
| DBPs   | 100.0%  | ☑          | 100.0% | 12              | 0           |
| <div><div></div> Compliant <div></div> Non-compliant</div> |         |            |        |                 |             |

| Overall system performance (2020–21) |             |                           |
|--------------------------------------|-------------|---------------------------|
| Indicator                            | Occurrences | Details                   |
| System issues                        | 1           | <i>E. coli</i> exceedance |
| Public health warnings issued        | 0           |                           |
| Notifications made to DoH            | 1           | <i>E. coli</i> exceedance |
| Customer complaints                  | 0           |                           |

| Current and future planned capital investment |                         |             |               |             |
|---|-------------------------|-------------|---------------|-------------|
| Project                                       | Overview                | Progress    | Est. Delivery | Est. Spend  |
| WTP Upgrade                                   | UV Installation         | Planning    | 2022/2023     | \$1,000,000 |
| Fluoride Upgrade                              | Fluoride System Renewal | In Progress | 2021/2022     | TBD         |

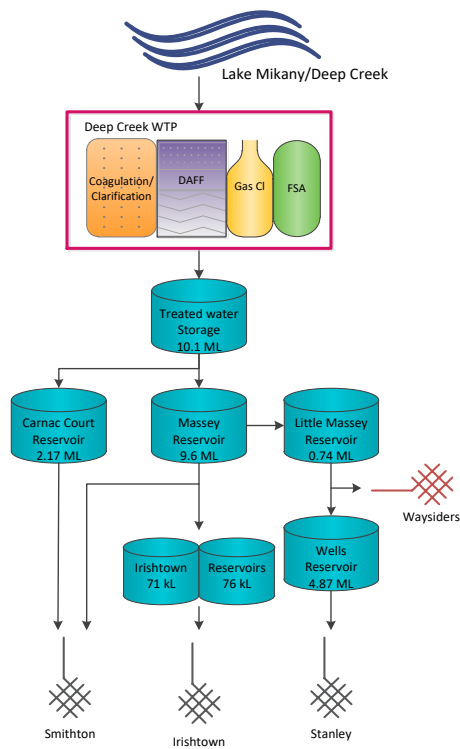


Figure 12.1-a Deep Creek system schematic



Figure 12.1-b Map of Deep Creek monitoring system

## 12.2. Summary of annual reticulation compliance (2020–21)

Table 12.2-a Sampling program

| Planned sampling program (2020–21)          |             |            |           |           |                |                  |                   |
|---|-------------|------------|-----------|-----------|----------------|------------------|-------------------|
| Site name                                   | Site Code   | Micros     | Metals    | DBP       | Fluoride (Lab) | Chemical Profile | Process Chemicals |
| Smithton/Irishtown Fire Station#            | 023SMSP0106 | W          | Q         | Q         | 2M             | n/a              | n/a               |
| Smithton/Marine Park Sample Point (Stanley) | 024SMSP0401 | W          | Q         | Q         | 2M             | Q                | n/a               |
| Smithton/Nelson St Sample Point             | 024SMSP0501 | W          | n/a       | n/a       | n/a            | n/a              | n/a               |
| Smithton/Scotchtown Rd Sample Point         | 024SMSP0601 | W          | Q         | Q         | n/a            | Q                | n/a               |
| <b>Number Planned Samples</b>               |             | <b>208</b> | <b>12</b> | <b>12</b> | <b>48</b>      | <b>8</b>         | <b>n/a</b>        |
| <b>Number Samples Tested</b>                |             | <b>208</b> | <b>12</b> | <b>12</b> | <b>48</b>      | <b>8</b>         | <b>n/a</b>        |

## 12.3. Summary of current and historic performance (2016–21)

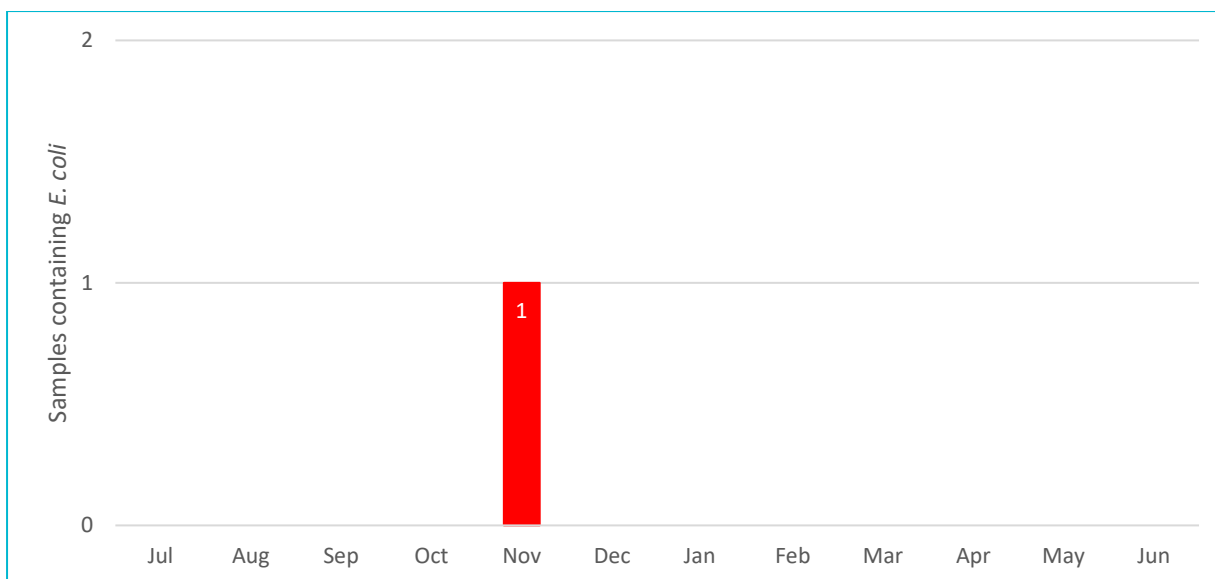
Table 12.3-a Historical health performance overview (5 year comparison)

| Historical health performance overview (5 year comparison)   |         |         |         |         |         |
|--|---------|---------|---------|---------|---------|
| Indicator  | 2016–17 | 2017–18 | 2018–19 | 2019–20 | 2020–21 |
| Microbiological  | 100.0%  | 100.0%  | 100.0%  | 99.5%   | 99.5%   |
| Fluoride   | 100.0%  | 100.0%  | 100.0%  | 100.0%  | 100.0%  |
| Metals   | 100.0%  | 100.0%  | 100.0%  | 99.0%   | 100.0%  |
| Disinfection by products   | 100.0%  | 100.0%  | 100.0%  | 100.0%  | 100.0%  |
| <div> <span style="color: green;">■</span> Compliant           <span style="color: red;">■</span> Non-compliant         </div> |         |         |         |         |         |

## 12.4. Analysis of current health performance (2020–21)

Table 12.4-a Summary of health guideline exceedances

| Summary of health guideline exceedances |            |   |           |
|---|------------|---|-----------|
| Parameter Exceeding                     | Date       | Details   | Resampled |
| <i>E. coli</i>                          | 10/11/2020 | <i>E.coli</i> of 3.1 MPN/100mL in monthly compliance sample | ✓         |



**Figure 12.4-b Microbiological non-compliances by month**

**Table 12.4-c Fluoride distribution performance**

| Distribution fluoride performance  |         |
|--|---------|
| Indicator  | 2020–21 |
| F exceeding 1.5 mg/L   | 0       |
| Average F concentration range (0.8 mg/L – 1.1 mg/L)                            | 0.9     |
| 90% of F results are equal to or less than 1.1 mg/L                            | 100%    |
| <div> <div></div> Compliant           <div></div> Non-compliant         </div> |         |

**Table 12.4-d Metals performance**

| Metals – health regulated parameters |       |      |         |             |               |         |          |         |
|--------------------------------------|-------|------|---------|-------------|---------------|---------|----------|---------|
| Parameter                            | Limit | Unit | Samples | Exceedances | Performance % | Mean    | Min.     | Max.    |
| Antimony                             | 0.003 | mg/L | 12      | 0           | 100           | <0.0005 | <0.0005  | <0.0005 |
| Arsenic                              | 0.01  | mg/L | 12      | 0           | 100           | <0.0003 | <0.0003  | <0.0003 |
| Barium                               | 2     | mg/L | 12      | 0           | 100           | 0.0086  | 0.0053   | 0.0109  |
| Cadmium                              | 0.002 | mg/L | 12      | 0           | 100           | <0.0001 | <0.0001  | <0.0001 |
| Chromium                             | 0.05  | mg/L | 12      | 0           | 100           | 0.0003  | 0.0001   | 0.0005  |
| Copper                               | 2     | mg/L | 12      | 0           | 100           | 0.0012  | 0.0006   | 0.0018  |
| Lead                                 | 0.01  | mg/L | 12      | 0           | 100           | 0.0002  | 0.0001   | 0.0005  |
| Manganese                            | 0.5   | mg/L | 12      | 0           | 100           | 0.0049  | 0.0016   | 0.0092  |
| Mercury                              | 0.001 | mg/L | 12      | 0           | 100           | 0.00005 | <0.00003 | 0.00011 |
| Molybdenum                           | 0.05  | mg/L | 12      | 0           | 100           | <0.0001 | <0.0001  | 0.0001  |
| Nickel                               | 0.02  | mg/L | 12      | 0           | 100           | 0.0005  | 0.0003   | 0.0010  |
| Selenium                             | 0.01  | mg/L | 12      | 0           | 100           | <0.0001 | <0.0001  | <0.0001 |

**Table 12.4-e Disinfection by product performance**

| Disinfection by products – health regulated parameters |       |      |         |             |               |      |      |      |
|--|-------|------|---------|-------------|---------------|------|------|------|
| Parameter  | Limit | Unit | Samples | Exceedances | Performance % | Mean | Min. | Max. |
| Dichloroacetic acid                                    | 100   | µg/L | 12      | 0           | 100           | 9    | 3    | 16   |
| Monochloroacetic acid                                  | 150   | µg/L | 12      | 0           | 100           | <3   | <3   | <3   |
| Trichloroacetic acid                                   | 100   | µg/L | 12      | 0           | 100           | 7    | 3    | 14   |
| Total trihalomethanes                                  | 250   | µg/L | 12      | 0           | 100           | 81   | 56   | 102  |

**Table 12.4-f General physical performance**

| General physical parameters |       |                 |      |      |      |
|-----------------------------|-------|-----------------|------|------|------|
| Parameter                   | Unit  | Guideline Value | Mean | Min  | Max  |
| Chlorine residual           | mg/L  | 0.1 – <0.8      | 0.61 | 0.15 | 3.30 |
| Colour True                 | HU    | 15              | <1   | <1   | <1   |
| pH                          | Units | 6.5 – 8.5       | 7.51 | 6.78 | 8.18 |
| Turbidity                   | NTU   | 1               | 0.25 | 0.07 | 1.51 |

## 12.5. Analysis of overall system performance (2020–21)

Table 12.5-a Summary of system issues/public health warnings

| Summary of system issues |                           |                           |                           |
|--------------------------|---------------------------|---------------------------|---------------------------|
| Date                     | Description               | DoH notification required | DoH notification complete |
| 10/11/2020               | <i>E. coli</i> exceedance | ✓                         | ✓                         |

## 13. Deloraine drinking water system

### 13.1. System summary (2020–21)

| Deloraine drinking water system    |                    |
|------------------------------------|--------------------|
| System status (as at 30 June 2021) | Potable            |
| Total number of connections        | 1,366              |
| Population serviced                | 2,799              |
| Fluoride                           | Fluorosilicic acid |

| Performance overview against health targets (2020–21)        |         |            |        |                 |             |
|--|---------|------------|--------|-----------------|-------------|
| Indicator  | Outcome | Compliance | Target | Sampling Events | Exceedances |
| Microbiological  | 100.0%  | ☑          | 98.0%  | 106             | 0           |
| Fluoride   | 100.0%  | ☑          | 100.0% | 48              | 0           |
| Metals   | 100.0%  | ☑          | 100.0% | 8               | 0           |
| DBPs   | 100.0%  | ☑          | 100.0% | 8               | 0           |
| <div><span>Compliant</span> <span>Non-compliant</span></div> |         |            |        |                 |             |

| Overall system performance (2020–21) |             |   |
|--------------------------------------|-------------|---|
| Indicator                            | Occurrences | Details   |
| System issues                        | 0           |   |
| Public health warnings issued        | 0           |   |
| Notifications made to DoH            | 1           | Mercury exceedance in sampling program (under rounding limit) |
| Customer complaints                  | 2           | Discolouration  |

| Current and future planned capital investment |                 |          |               |            |
|---|-----------------|----------|---------------|------------|
| Project                                       | Overview        | Progress | Est. Delivery | Est. Spend |
| WTP Upgrade                                   | UV Installation | Planning | 2022/2023     | \$600,000  |



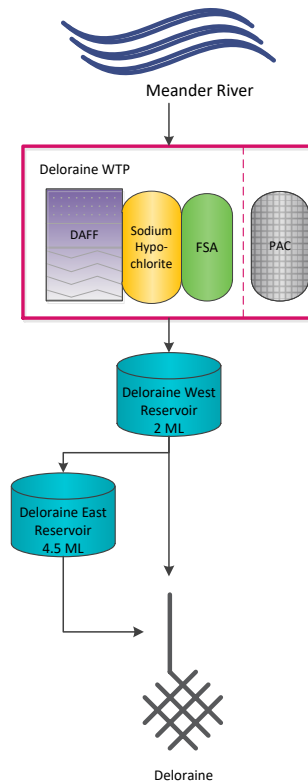


Figure 13.1-a Deloraine system schematic

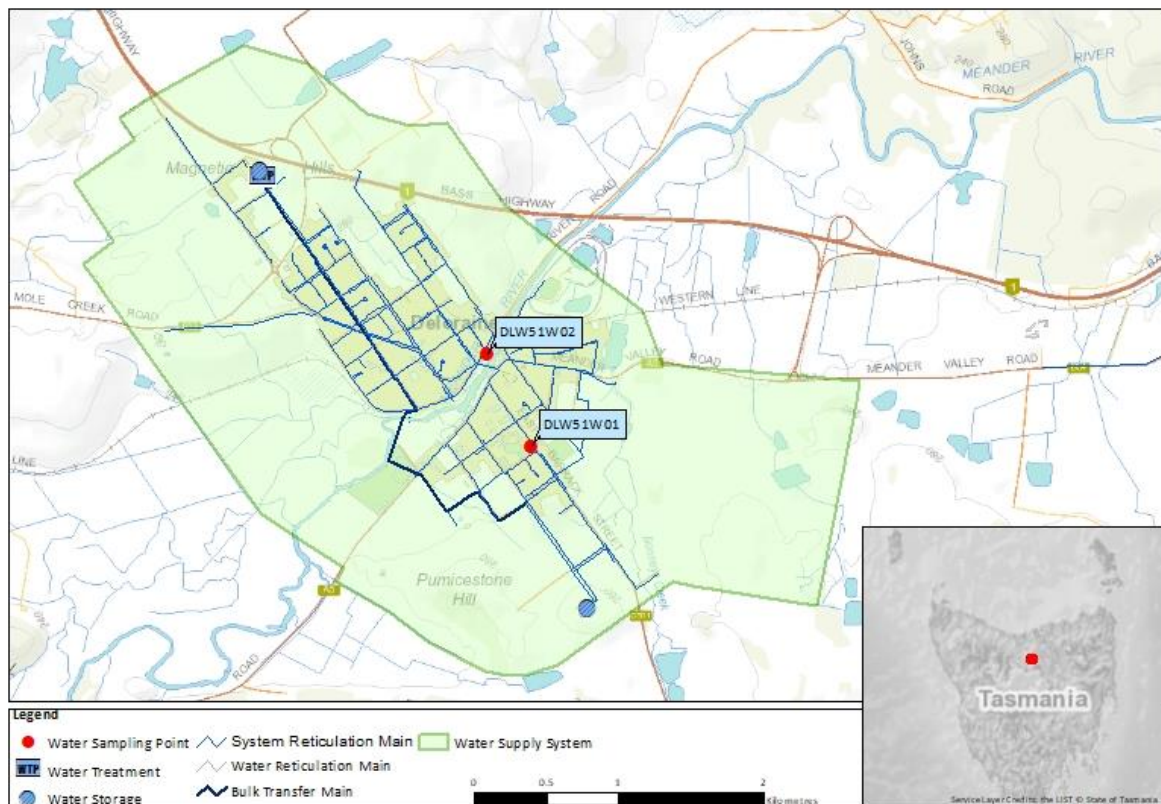


Figure 13.1-b Map of Deloraine monitoring system

## 13.2. Summary of annual reticulation compliance (2020–21)

Table 13.2-a Sampling program

| Planned sampling program (2020–21) |                       |        |        |     |                |                  |                   |
|------------------------------------|-----------------------|--------|--------|-----|----------------|------------------|-------------------|
| Site name                          | Site Code             | Micros | Metals | DBP | Fluoride (Lab) | Chemical Profile | Process Chemicals |
| Deloraine/Deloraine, Barrack St    | DLW51W01              | W      | Q      | Q   | 2M             | Q                | n/a               |
| Deloraine/Deloraine, Train Park    | DLW51W02 <sup>5</sup> | W      | Q      | Q   | 2M             | Q                | n/a               |
| Deloraine/51 West Parade           | DELST02               | W      | Q      | Q   | 2M             | Q                | n/a               |
| Number Planned Samples             |                       | 106    | 8      | 8   | 48             | 8                | n/a               |
| Number Samples Tested              |                       | 106    | 8      | 8   | 48             | 8                | n/a               |

## 13.3. Summary of current and historic performance (2016–21)

Table 13.3-a Historical health performance overview (5 year comparison)

| Historical health performance overview (5 year comparison)   |         |         |         |         |         |
|--|---------|---------|---------|---------|---------|
| Indicator  | 2016–17 | 2017–18 | 2018–19 | 2019–20 | 2020–21 |
| Microbiological  | 100.0%  | 100.0%  | 100.0%  | 100.0%  | 100.0%  |
| Fluoride   | 100.0%  | 100.0%  | 100.0%  | 100.0%  | 100.0%  |
| Metals   | 100.0%  | 100.0%  | 100.0%  | 100.0%  | 100.0%  |
| Disinfection by products   | 100.0%  | 100.0%  | 100.0%  | 100.0%  | 100.0%  |
| <div> <span style="color: green;">■</span> Compliant           <span style="color: red;">■</span> Non-compliant         </div> |         |         |         |         |         |

## 13.4. Analysis of current health performance (2020–21)

Table 13.4-a Summary of health guideline exceedances

| Summary of health guideline exceedances |            |  |           |
|---|------------|--|-----------|
| Parameter Exceeding                     | Date       | Details  | Resampled |
| Mercury                                 | 21/01/2021 | 0.00116 mg/L in regular compliance sampling<br>(relevant to compliance assessment) | Y         |

<sup>5</sup> Replaced by DELST02, 1<sup>st</sup> March 2021

**Table 13.4-b Fluoride distribution performance**

| Distribution fluoride performance  |         |
|--|---------|
| Indicator  | 2020–21 |
| F exceeding 1.5 mg/L   | 0       |
| Average F concentration range (0.8 mg/L – 1.1 mg/L)  | 0.8     |
| 90% of F results are equal to or less than 1.1 mg/L  | 100%    |
| <div> <span style="color: green;">■</span> Compliant           <span style="color: red;">■</span> Non-compliant         </div> |         |

**Table 13.4-c Metals performance**

| Metals – health regulated parameters |       |      |         |             |               |         |          |                      |
|--------------------------------------|-------|------|---------|-------------|---------------|---------|----------|----------------------|
| Parameter                            | Limit | Unit | Samples | Exceedances | Performance % | Mean    | Min.     | Max.                 |
| Antimony                             | 0.003 | mg/L | 8       | 0           | 100           | <0.0005 | <0.0005  | 0.0006               |
| Arsenic                              | 0.01  | mg/L | 8       | 0           | 100           | <0.0003 | <0.0003  | <0.0003              |
| Barium                               | 2     | mg/L | 8       | 0           | 100           | 0.0062  | 0.0053   | 0.0067               |
| Cadmium                              | 0.002 | mg/L | 8       | 0           | 100           | <0.0001 | <0.0001  | <0.0001              |
| Chromium                             | 0.05  | mg/L | 8       | 0           | 100           | 0.0001  | <0.0001  | 0.0003               |
| Copper                               | 2     | mg/L | 8       | 0           | 100           | 0.0031  | 0.0019   | 0.0051               |
| Lead                                 | 0.01  | mg/L | 8       | 0           | 100           | 0.0002  | <0.0001  | 0.0004               |
| Manganese                            | 0.5   | mg/L | 8       | 0           | 100           | 0.0015  | 0.0003   | 0.0034               |
| Mercury                              | 0.001 | mg/L | 8       | 0           | 100           | 0.00021 | <0.00003 | 0.00116 <sup>6</sup> |
| Molybdenum                           | 0.05  | mg/L | 8       | 0           | 100           | <0.0001 | <0.0001  | <0.0001              |
| Nickel                               | 0.02  | mg/L | 8       | 0           | 100           | 0.0002  | <0.0001  | 0.0003               |
| Selenium                             | 0.01  | mg/L | 8       | 0           | 100           | 0.0001  | <0.0001  | 0.0003               |

**Table 13.4-d Disinfection by product performance**

| Disinfection by products – health regulated parameters |       |      |         |             |               |      |      |      |
|--|-------|------|---------|-------------|---------------|------|------|------|
| Parameter  | Limit | Unit | Samples | Exceedances | Performance % | Mean | Min. | Max. |
| Dichloroacetic acid                                    | 100   | µg/L | 8       | 0           | 100           | 6    | 2    | 12   |
| Monochloroacetic acid                                  | 150   | µg/L | 8       | 0           | 100           | <3   | <3   | <3   |
| Trichloroacetic acid                                   | 100   | µg/L | 8       | 0           | 100           | 7    | 3    | 17   |
| Total trihalomethanes                                  | 250   | µg/L | 8       | 0           | 100           | 19   | 11   | 31   |

<sup>6</sup> Maximum result, when rounded, does not exceed limit.

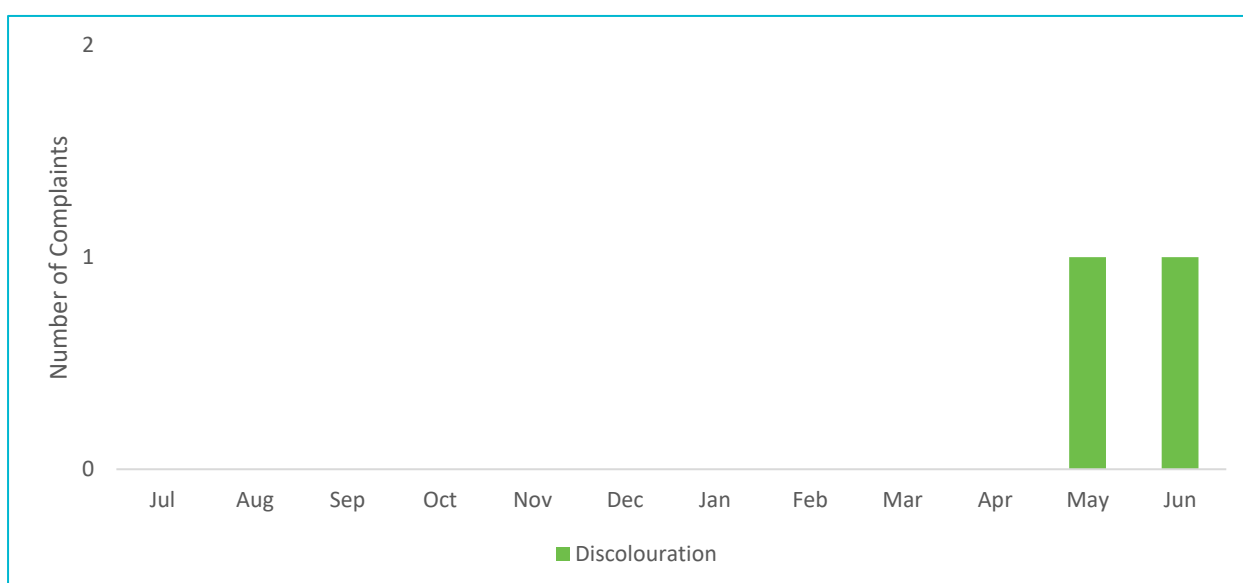
**Table 13.4-e General physical performance**

| General physical parameters |       |                 |      |      |      |
|-----------------------------|-------|-----------------|------|------|------|
| Parameter                   | Unit  | Guideline Value | Mean | Min  | Max  |
| Chlorine residual           | mg/L  | 0.1 – <0.8      | 0.66 | 0.32 | 0.98 |
| Colour True                 | HU    | 15              | <1   | <1   | 1    |
| pH                          | Units | 6.5 – 8.5       | 7.51 | 6.95 | 7.81 |
| Turbidity                   | NTU   | 1               | 0.17 | 0.06 | 1.07 |

### 13.5. Analysis of overall system performance (2020–21)

**Table 13.5-a Summary of system issues/public health warnings**

| Summary of system issues |  |                           |                           |
|--------------------------|--|---------------------------|---------------------------|
| Date                     | Description  | DoH notification required | DoH notification complete |
| 21/1/2021                | Mercury exceedance of 0.00116 mg/L.<br>Does not exceed rounding limit. | ✓                         | ✓                         |



**Figure 13.5-b Water quality customer complaints by month and type**

## 14. Distillery Creek drinking water system

### 14.1. System summary (2020–21)

| Distillery Creek drinking water system |                    |
|--|--------------------|
| System status (as at 30 June 2021)     | Potable            |
| Total number of connections            | 14,099             |
| Population serviced                    | 27,974             |
| Fluoride                               | Fluorosilicic acid |

| Performance overview against health targets (2020–21)   |         |            |        |                 |             |
|---|---------|------------|--------|-----------------|-------------|
| Indicator   | Outcome | Compliance | Target | Sampling Events | Exceedances |
| Microbiological   | 100.0%  | ☑          | 98.0%  | 517             | 0           |
| Fluoride  | 100.0%  | ☑          | 100.0% | 48              | 0           |
| Metals  | 100.0%  | ☑          | 100.0% | 4               | 0           |
| DBPs  | 100.0%  | ☑          | 100.0% | 4               | 0           |
| <span style="color: green;">■</span> Compliant <span style="color: red;">■</span> Non-compliant |         |            |        |                 |             |

| Overall system performance (2020–21) |             |  |
|--------------------------------------|-------------|--|
| Indicator                            | Occurrences | Details  |
| System issues                        | 0           |  |
| Public health warnings issued        | 0           |  |
| Notifications made to DoH            | 0           |  |
| Customer complaints                  | 10          | Discolouration, taste and odour, cloudy, other (stained washing) |

| Current and future planned capital investment |                 |             |               |            |
|---|-----------------|-------------|---------------|------------|
| Project                                       | Overview        | Progress    | Est. Delivery | Est. Spend |
| WTP Upgrade                                   | UV Installation | In Progress | 2022/2023     | TBD        |

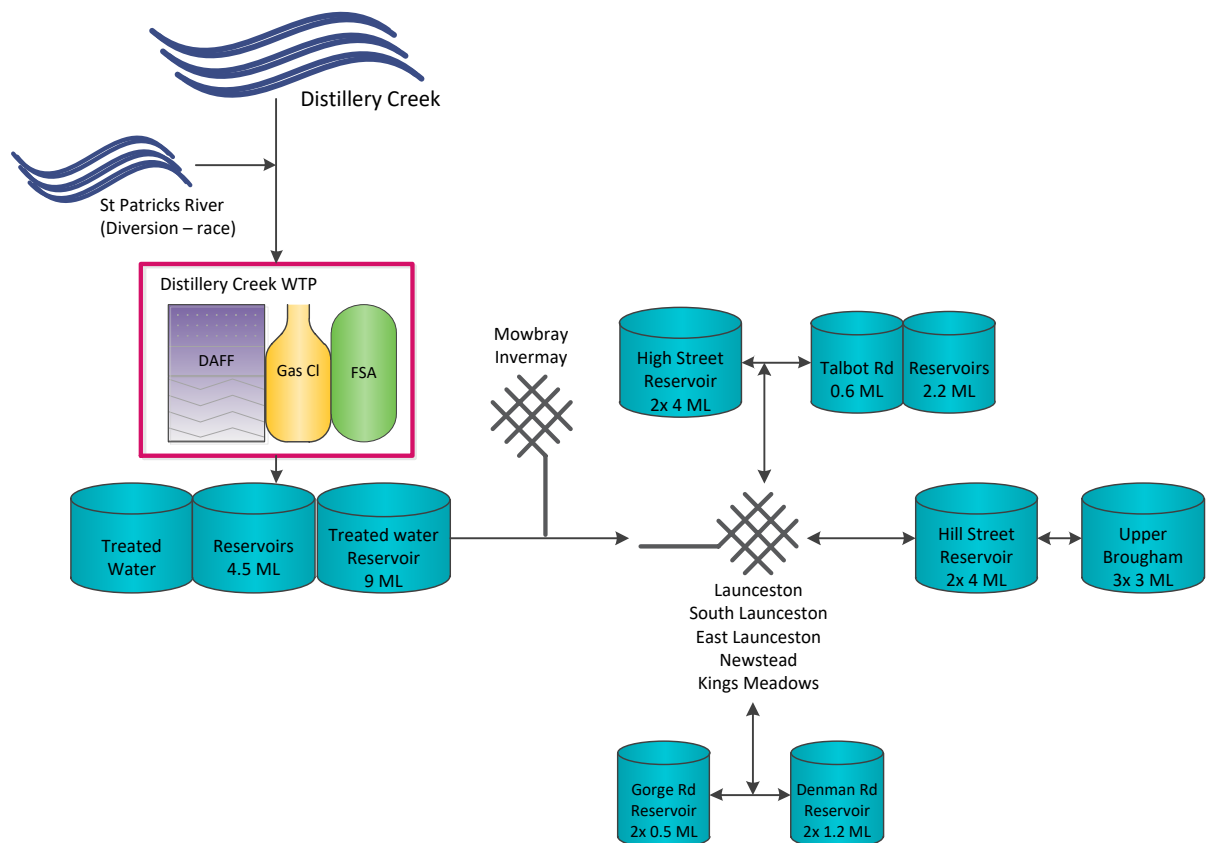


Figure 14.1-a Distillery Creek system schematic

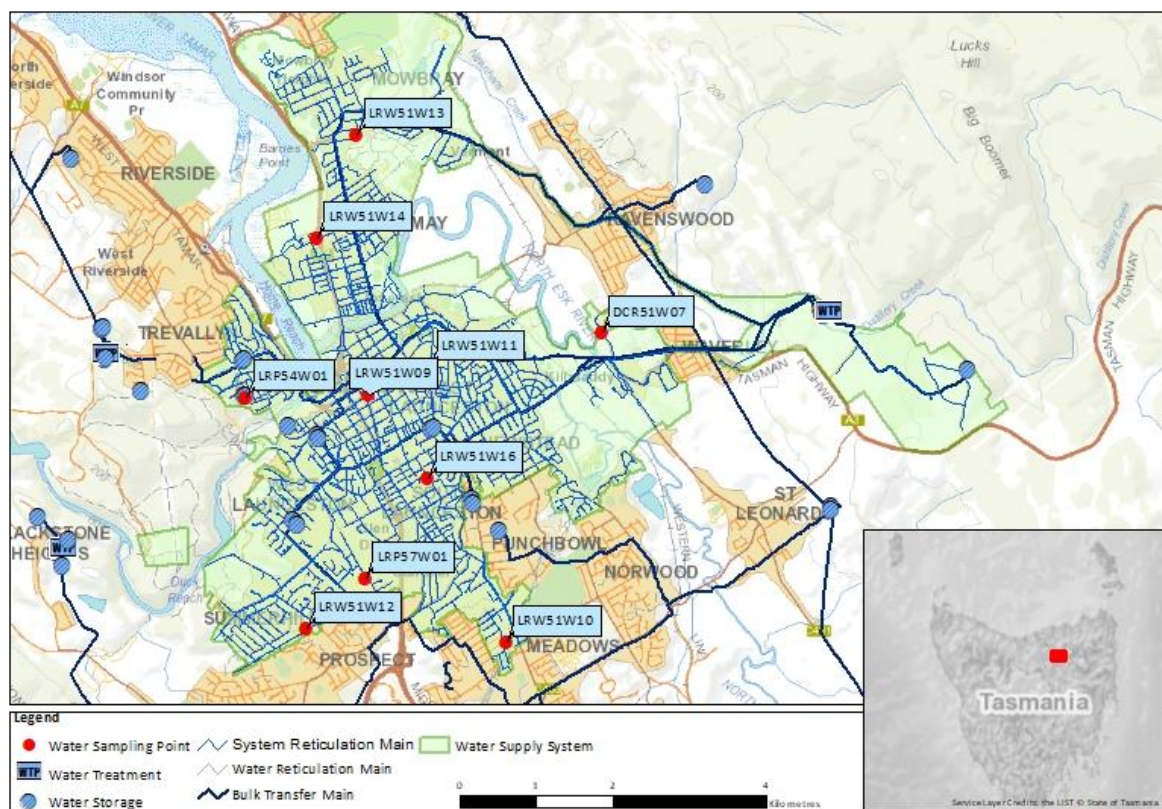


Figure 14.1-b Map of Distillery Creek monitoring system

## 14.2. Summary of annual reticulation compliance (2020–21)

Table 14.2.a Sampling program

| Planned sampling program (2020–21)      |                       |            |          |          |                |                  |                   |
|---|-----------------------|------------|----------|----------|----------------|------------------|-------------------|
| Site name                               | Site Code             | Micros     | Metals   | DBP      | Fluoride (Lab) | Chemical Profile | Process Chemicals |
| Denman Rd PS                            | LRP54W01              | W          | n/a      | n/a      | n/a            | n/a              | n/a               |
| Kings Meadows, 9/1.11 Blaydon St        | LRW51W10 <sup>7</sup> | W          | n/a      | n/a      | n/a            | n/a              | n/a               |
| 6 Norwich Street - Sth Launceston       | DCST05                | W          | n/a      | n/a      | n/a            | n/a              | n/a               |
| East Launceston, Crn High & Adelaide St | LRW51W11 <sup>8</sup> | W          | n/a      | n/a      | n/a            | n/a              | n/a               |
| 69 High Street - East Launceston        | DCST02                | W          | n/a      | n/a      | n/a            | n/a              | n/a               |
| Invermay, Mayne St                      | LRW51W14              | W          | n/a      | n/a      | n/a            | n/a              | n/a               |
| Launceston, York Street Public Toilets  | LRW51W09              | W          | n/a      | n/a      | n/a            | n/a              | n/a               |
| Mowbray, 7 Derby St                     | LRW51W13              | W          | n/a      | n/a      | 2M             | n/a              | n/a               |
| South Launceston, Mulgrave St Park      | LRW51W16              | W          | Q        | Q        | 2M             | Q                | n/a               |
| Summerhill, 194 Peel St                 | LRW51W12              | W          | n/a      | n/a      | n/a            | n/a              | n/a               |
| West Launceston, Granville St           | LRP57W01 <sup>9</sup> | W          | n/a      | n/a      | n/a            | n/a              | n/a               |
| Drivers Run Booster                     | DCR51W07              | W          | n/a      | n/a      | n/a            | n/a              | n/a               |
| 6 Floreat Crescent                      | DCST06 <sup>10</sup>  | W          | n/a      | n/a      | n/a            | n/a              | n/a               |
| <b>Number Planned Samples</b>           |                       | <b>517</b> | <b>4</b> | <b>4</b> | <b>48</b>      | <b>4</b>         | <b>n/a</b>        |
| <b>Number Samples Tested</b>            |                       | <b>517</b> | <b>4</b> | <b>4</b> | <b>48</b>      | <b>4</b>         | <b>n/a</b>        |

<sup>7</sup> Replaced by DCST05 31<sup>st</sup> May 2021

<sup>8</sup> Replaced by DCST02 31<sup>st</sup> May 2021

<sup>9</sup> Replaced by DCST01 4<sup>th</sup> March 2021

<sup>10</sup> New installation 31<sup>st</sup> May 2021

### 14.3. Summary of current and historic performance (2016–21)

Table 14.3-a Historical health performance overview (5 year comparison)



| Historical health performance overview (5 year comparison)  |         |         |         |         |         |
|---|---------|---------|---------|---------|---------|
| Indicator   | 2016–17 | 2017–18 | 2018–19 | 2019–20 | 2020–21 |
| Microbiological   | 100.0%  | 100.0%  | 100.0%  | 100.0%  | 100.0%  |
| Fluoride  | 100.0%  | 100.0%  | 100.0%  | 100.0%  | 100.0%  |
| Metals  | 100.0%  | 100.0%  | 100.0%  | 100.0%  | 100.0%  |
| Disinfection by products  | 100.0%  | 100.0%  | 100.0%  | 100.0%  | 100.0%  |
|  Compliant  Non-compliant |         |         |         |         |         |

### 14.4. Analysis of current health performance (2020–21)

Table 14.4-a Summary of health guideline exceedances

| Summary of health guideline exceedances |      |         |           |
|---|------|---------|-----------|
| Parameter Exceeding                     | Date | Details | Resampled |
| No ADWG exceedances                     |      |         |           |

Table 14.4-b Fluoride distribution performance

| Distribution fluoride performance   |         |
|---|---------|
| Indicator   | 2020–21 |
| F exceeding 1.5 mg/L  | 0       |
| Average F concentration range (0.8 mg/L – 1.1 mg/L)   | 0.9     |
| 90% of F results are equal to or less than 1.1 mg/L   | 100%    |
|  Compliant  Non-compliant |         |



**Table 14.4-c Metals performance**

| Metals – health regulated parameters |       |      |         |             |               |          |          |          |
|--------------------------------------|-------|------|---------|-------------|---------------|----------|----------|----------|
| Parameter                            | Limit | Unit | Samples | Exceedances | Performance % | Mean     | Min.     | Max.     |
| Antimony                             | 0.003 | mg/L | 4       | 0           | 100           | <0.0005  | <0.0005  | <0.0005  |
| Arsenic                              | 0.01  | mg/L | 4       | 0           | 100           | <0.0003  | <0.0003  | <0.0003  |
| Barium                               | 2     | mg/L | 4       | 0           | 100           | 0.0091   | 0.0078   | 0.0100   |
| Cadmium                              | 0.002 | mg/L | 4       | 0           | 100           | <0.0001  | <0.0001  | <0.0001  |
| Chromium                             | 0.05  | mg/L | 4       | 0           | 100           | 0.0002   | 0.0001   | 0.0003   |
| Copper                               | 2     | mg/L | 4       | 0           | 100           | 0.0140   | 0.0089   | 0.0213   |
| Lead                                 | 0.01  | mg/L | 4       | 0           | 100           | 0.0003   | 0.0001   | 0.0004   |
| Manganese                            | 0.5   | mg/L | 4       | 0           | 100           | 0.0064   | 0.0020   | 0.0140   |
| Mercury                              | 0.001 | mg/L | 4       | 0           | 100           | <0.00003 | <0.00003 | <0.00003 |
| Molybdenum                           | 0.05  | mg/L | 4       | 0           | 100           | <0.0001  | <0.0001  | <0.0001  |
| Nickel                               | 0.02  | mg/L | 4       | 0           | 100           | 0.0004   | 0.0002   | 0.0005   |
| Selenium                             | 0.01  | mg/L | 4       | 0           | 100           | <0.0001  | <0.0001  | <0.0001  |

**Table 14.4-d Disinfection by product performance**

| Disinfection by products – health regulated parameters |       |      |         |             |               |      |      |      |
|--|-------|------|---------|-------------|---------------|------|------|------|
| Parameter  | Limit | Unit | Samples | Exceedances | Performance % | Mean | Min. | Max. |
| Dichloroacetic acid                                    | 100   | µg/L | 4       | 0           | 100           | 7    | 4    | 12   |
| Monochloroacetic acid                                  | 150   | µg/L | 4       | 0           | 100           | <3   | <3   | <3   |
| Trichloroacetic acid                                   | 100   | µg/L | 4       | 0           | 100           | 7    | 3    | 12   |
| Total trihalomethanes                                  | 250   | µg/L | 4       | 0           | 100           | 29   | 21   | 36   |

**Table 14.4-e General physical performance**

| General physical parameters |       |                 |      |      |      |
|-----------------------------|-------|-----------------|------|------|------|
| Parameter                   | Unit  | Guideline Value | Mean | Min  | Max  |
| Chlorine residual           | mg/L  | 0.1 – <0.8      | 0.59 | 0.02 | 1.21 |
| Colour True                 | HU    | 15              | <1   | <1   | 1    |
| pH                          | Units | 6.5 – 8.5       | 7.22 | 6.35 | 8.56 |
| Turbidity                   | NTU   | 1               | 0.41 | 0.00 | 6.48 |

## 14.5. Analysis of overall system performance (2020–21)

Table 14.5-a Summary of system issues/public health warnings

| Summary of system issues                          |             |                           |                           |
|---|-------------|---------------------------|---------------------------|
| Date  | Description | DoH notification required | DoH notification complete |
| No system issues or public health warnings issued |             |                           |                           |

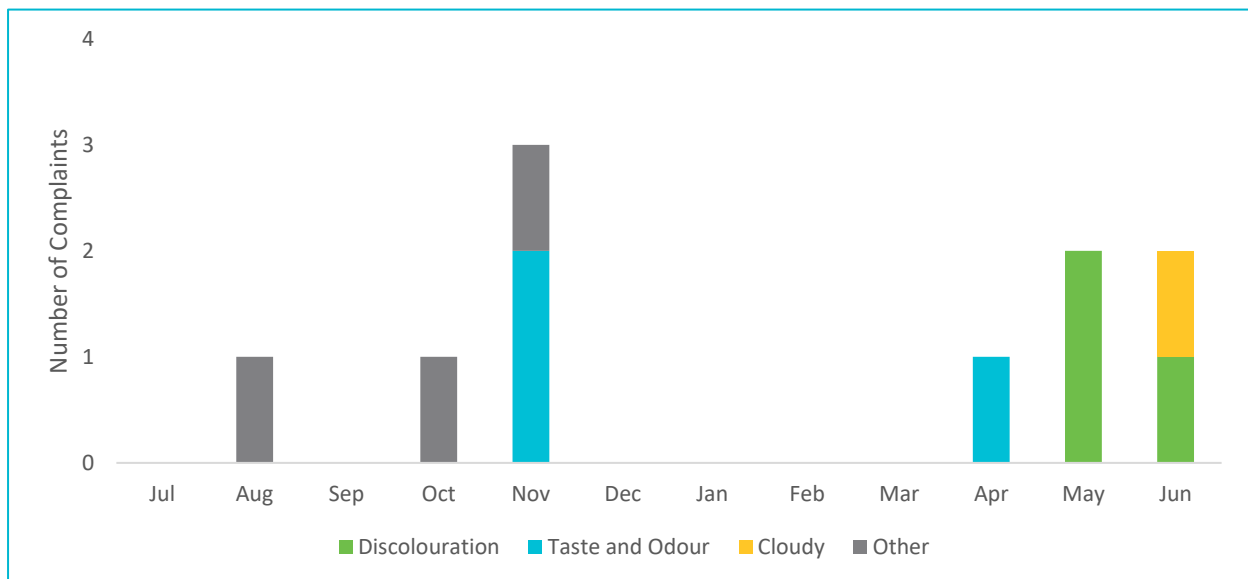


Figure 14.5-b Water quality customer complaints by month and type

## 15. Dover drinking water system

### 15.1. System summary (2020–21)

| Dover drinking water system        |                    |
|------------------------------------|--------------------|
| System status (as at 30 June 2021) | Potable            |
| Total number of connections        | 750                |
| Population serviced                | 1,234              |
| Fluoride                           | Fluorosilicic acid |

| Performance overview against health targets (2020–21)  |         |            |        |                 |             |
|--|---------|------------|--------|-----------------|-------------|
| Indicator  | Outcome | Compliance | Target | Sampling Events | Exceedances |
| Microbiological  | 100.0%  | ☑          | 98.0%  | 53              | 0           |
| Fluoride   | 100.0%  | ☑          | 100.0% | 48              | 0           |
| Metals   | 100.0%  | ☑          | 100.0% | 4               | 0           |
| DBPs   | 100.0%  | ☑          | 100.0% | 4               | 0           |
| <div><span style="color: green;">■</span> Compliant <span style="color: red;">■</span> Non-compliant</div> |         |            |        |                 |             |

| Overall system performance (2020–21) |             |         |
|--------------------------------------|-------------|---------|
| Indicator                            | Occurrences | Details |
| System issues                        | 0           |         |
| Public health warnings issued        | 0           |         |
| Notifications made to DoH            | 0           |         |
| Customer complaints                  | 0           |         |

| Current and future planned capital investment |             |          |               |            |
|---|-------------|----------|---------------|------------|
| Project                                       | Overview    | Progress | Est. Delivery | Est. Spend |
| WTP Upgrade                                   | WTP Upgrade | Planning | 2024/2025     | TBD        |

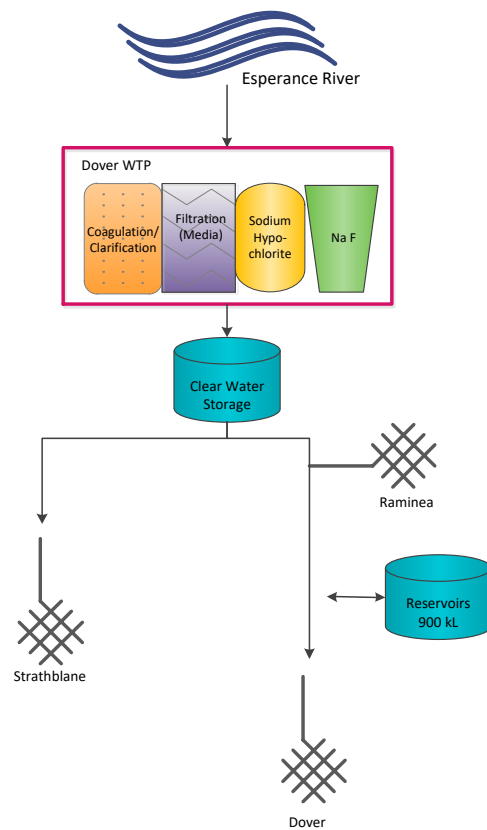


Figure 15.1-a Dover system schematic

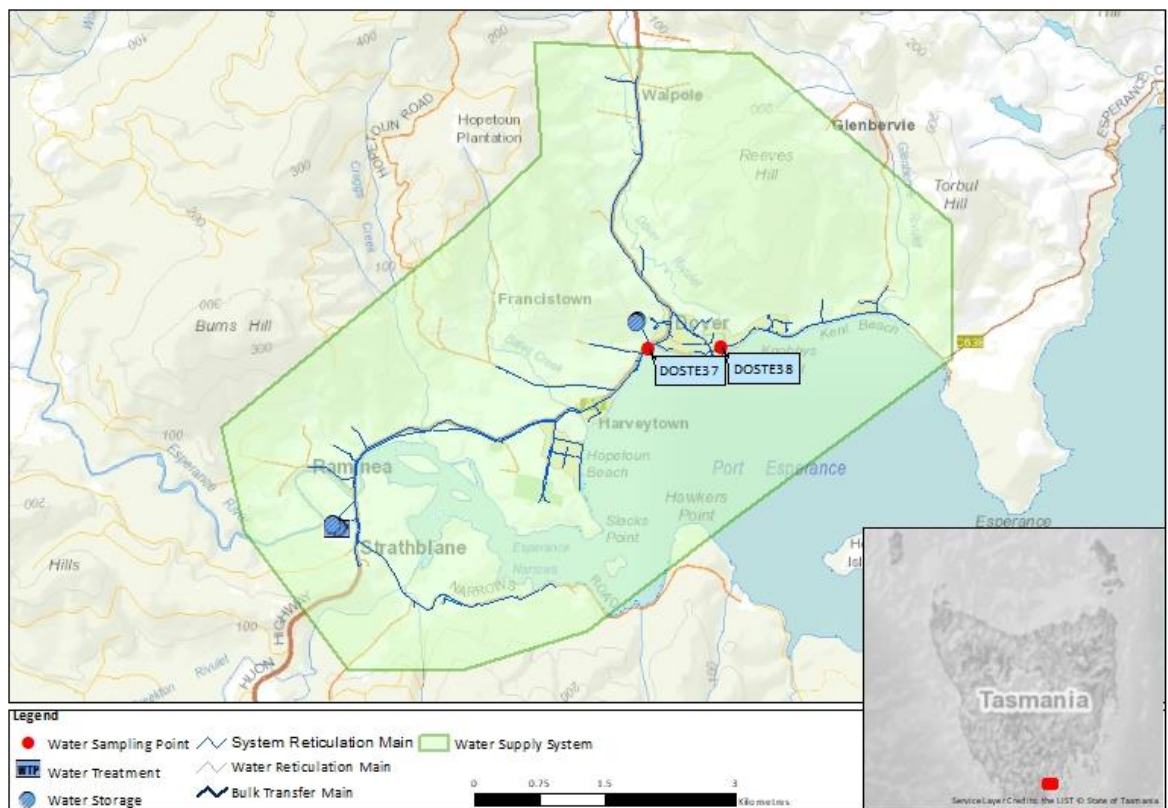


Figure 15.1-b Map of Dover monitoring system

## 15.2. Summary of annual reticulation compliance (2020–21)

Table 15.2-a Sampling program

| Planned sampling program (2020–21) |           |        |        |     |                |                  |                   |
|------------------------------------|-----------|--------|--------|-----|----------------|------------------|-------------------|
| Site name                          | Site Code | Micros | Metals | DBP | Fluoride (Lab) | Chemical Profile | Process Chemicals |
| Dover/Sample Tap                   | DOSTE37   | W      | Q      | Q   | 2M             | Q                | n/a               |
| Dover/No.4 P/S Kent Beach Rd       | DOSTE38   | n/a    | n/a    | n/a | 2M             | n/a              | n/a               |
| Number Planned Samples             |           | 53     | 4      | 4   | 48             | 4                | n/a               |
| Number Samples Tested              |           | 53     | 4      | 4   | 48             | 4                | n/a               |

## 15.3. Summary of current and historic performance (2016–21)

Table 15.3-a Historical health performance overview (5 year comparison)

| Historical health performance overview (5 year comparison)   |         |         |         |         |         |
|--|---------|---------|---------|---------|---------|
| Indicator  | 2016–17 | 2017–18 | 2018–19 | 2019–20 | 2020–21 |
| Microbiological  | 100.0%  | 100.0%  | 100.0%  | 100.0%  | 100.0%  |
| Fluoride   | 100.0%  | 100.0%  | 100.0%  | 100.0%  | 100.0%  |
| Metals   | 100.0%  | 100.0%  | 100.0%  | 100.0%  | 100.0%  |
| Disinfection by products   | 100.0%  | 100.0%  | 100.0%  | 100.0%  | 100.0%  |
| <div> <span style="color: green;">■</span> Compliant           <span style="color: red;">■</span> Non-compliant         </div> |         |         |         |         |         |

## 15.4. Analysis of current health performance (2020–21)

Table 15.4-a Summary of health guideline exceedances

| Summary of health guideline exceedances |      |         |           |
|---|------|---------|-----------|
| Parameter Exceeding                     | Date | Details | Resampled |
| No ADWG exceedances                     |      |         |           |

**Table 15.4-b Fluoride distribution performance**

| Distribution fluoride performance  |         |
|--|---------|
| Indicator  | 2020–21 |
| F exceeding 1.5 mg/L   | 0       |
| Average F concentration range (0.8 mg/L – 1.1 mg/L)  | 0.9     |
| 90% of F results are equal to or less than 1.1 mg/L  | 100%    |
| <div> <span style="color: green;">■</span> Compliant           <span style="color: red;">■</span> Non-compliant         </div> |         |

**Table 15.4-c Metals performance**

| Metals – health regulated parameters |       |      |         |             |               |          |          |         |
|--------------------------------------|-------|------|---------|-------------|---------------|----------|----------|---------|
| Parameter                            | Limit | Unit | Samples | Exceedances | Performance % | Mean     | Min.     | Max.    |
| Antimony                             | 0.003 | mg/L | 4       | 0           | 100           | <0.0005  | <0.0005  | <0.0005 |
| Arsenic                              | 0.01  | mg/L | 4       | 0           | 100           | <0.0003  | <0.0003  | <0.0003 |
| Barium                               | 2     | mg/L | 4       | 0           | 100           | 0.0060   | 0.0054   | 0.0067  |
| Cadmium                              | 0.002 | mg/L | 4       | 0           | 100           | <0.0001  | <0.0001  | <0.0001 |
| Chromium                             | 0.05  | mg/L | 4       | 0           | 100           | 0.0001   | 0.0001   | 0.0002  |
| Copper                               | 2     | mg/L | 4       | 0           | 100           | 0.0168   | 0.0123   | 0.0223  |
| Lead                                 | 0.01  | mg/L | 4       | 0           | 100           | <0.0001  | <0.0001  | 0.0001  |
| Manganese                            | 0.5   | mg/L | 4       | 0           | 100           | 0.0006   | 0.0004   | 0.0010  |
| Mercury                              | 0.001 | mg/L | 4       | 0           | 100           | <0.00006 | <0.00003 | 0.00010 |
| Molybdenum                           | 0.05  | mg/L | 4       | 0           | 100           | <0.0001  | <0.0001  | <0.0001 |
| Nickel                               | 0.02  | mg/L | 4       | 0           | 100           | 0.0003   | 0.0002   | 0.0005  |
| Selenium                             | 0.01  | mg/L | 4       | 0           | 100           | <0.0001  | <0.0001  | 0.0001  |

**Table 15.4-d Disinfection by product performance**

| Disinfection by products – health regulated parameters |       |      |         |             |               |      |      |      |
|--|-------|------|---------|-------------|---------------|------|------|------|
| Parameter  | Limit | Unit | Samples | Exceedances | Performance % | Mean | Min. | Max. |
| Dichloroacetic acid                                    | 100   | µg/L | 4       | 0           | 100           | 19   | 13   | 26   |
| Monochloroacetic acid                                  | 150   | µg/L | 4       | 0           | 100           | <3   | <3   | <3   |
| Trichloroacetic acid                                   | 100   | µg/L | 4       | 0           | 100           | 24   | 11   | 38   |
| Total trihalomethanes                                  | 250   | µg/L | 4       | 0           | 100           | 51   | 33   | 65   |

**Table 15.4-e General physical performance**

| General physical parameters |       |                 |      |      |      |
|-----------------------------|-------|-----------------|------|------|------|
| Parameter                   | Unit  | Guideline Value | Mean | Min  | Max  |
| Chlorine residual           | mg/L  | 0.1 – <0.8      | 0.78 | 0.23 | 1.08 |
| Colour True                 | HU    | 15              | <1   | <1   | <1   |
| pH                          | Units | 6.5 – 8.5       | 6.98 | 6.13 | 7.63 |
| Turbidity                   | NTU   | 1               | 0.20 | 0.05 | 0.60 |

## 15.5. Analysis of overall system performance (2020–21)

**Table 15.5-a Summary of system issues/public health warnings**

| Summary of system issues                          |             |                           |                           |
|---|-------------|---------------------------|---------------------------|
| Date  | Description | DoH notification required | DoH notification complete |
| No system issues or public health warnings issued |             |                           |                           |

## 16. Dowlings Creek drinking water system

### 16.1. System summary (2020–21)

| Dowlings Creek drinking water system |         |
|--------------------------------------|---------|
| System status (as at 30 June 2021)   | Potable |
| Total number of connections          | 103     |
| Population serviced                  | 216     |
| Fluoride                             | n/a     |

| Performance overview against health targets (2020–21)      |         |            |        |                 |             |
|--|---------|------------|--------|-----------------|-------------|
| Indicator  | Outcome | Compliance | Target | Sampling Events | Exceedances |
| Microbiological  | 100.0%  | ☑          | 98.0%  | 51              | 0           |
| Fluoride   | n/a     | n/a        | n/a    | n/a             | n/a         |
| Metals   | 100.0%  | ☑          | 100.0% | 4               | 0           |
| DBPs   | 100.0%  | ☑          | 100.0% | 4               | 0           |
| <div><div></div> Compliant <div></div> Non-compliant</div> |         |            |        |                 |             |

| Overall system performance (2020–21) |             |                |
|--------------------------------------|-------------|----------------|
| Indicator                            | Occurrences | Details        |
| System issues                        | 0           |                |
| Public health warnings issued        | 0           |                |
| Notifications made to DoH            | 0           |                |
| Customer complaints                  | 6           | Discolouration |

| Current and future planned capital investment |             |          |               |            |
|---|-------------|----------|---------------|------------|
| Project                                       | Overview    | Progress | Est. Delivery | Est. Spend |
| WTP Upgrade                                   | WTP Upgrade | Planning | 2024/2025     | TBD        |



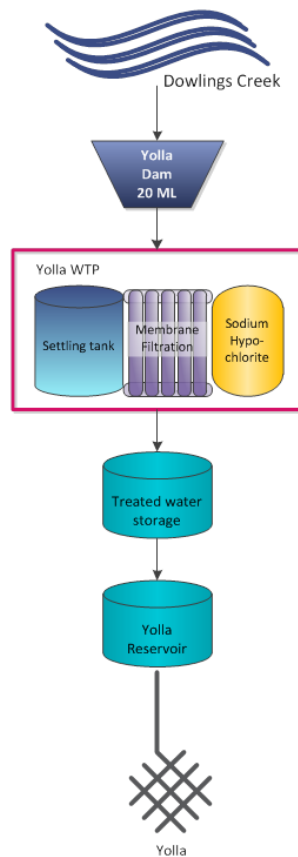


Figure 16.1-a Dowlings Creek system schematic

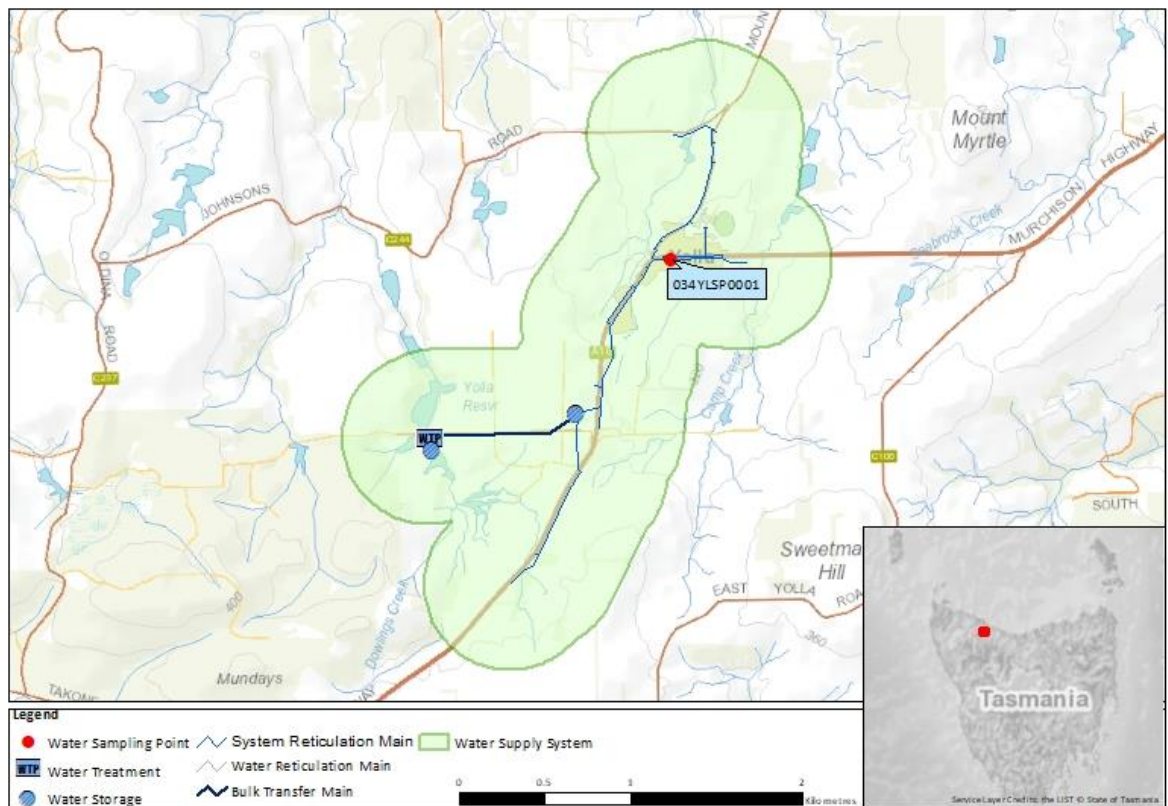


Figure 16.1-b Map of Dowlings Creek monitoring system

## 16.2. Summary of annual reticulation compliance (2020–21)

Table 16.2-a Sampling program

| Planned sampling program (2020–21) |             |        |        |     |                |                  |                   |
|------------------------------------|-------------|--------|--------|-----|----------------|------------------|-------------------|
| Site name                          | Site Code   | Micros | Metals | DBP | Fluoride (Lab) | Chemical Profile | Process Chemicals |
| Yolla/Church                       | 034YLSP0001 | W      | Q      | Q   | n/a            | Q                | n/a               |
| Number Planned Samples             |             | 51     | 4      | 4   | n/a            | 4                | n/a               |
| Number Samples Tested              |             | 51     | 4      | 4   | n/a            | 4                | n/a               |

## 16.3. Summary of current and historic performance (2016–21)

Table 16.3-a Historical health performance overview (5 year comparison)

| Historical health performance overview (5 year comparison)   |         |         |         |         |         |
|--|---------|---------|---------|---------|---------|
| Indicator  | 2016–17 | 2017–18 | 2018–19 | 2019–20 | 2020–21 |
| Microbiological  | 100.0%  | 100.0%  | 100.0%  | 98.2%   | 100.0%  |
| Fluoride   | n/a     | n/a     | n/a     | n/a     | n/a     |
| Metals   | 100.0%  | 100.0%  | 100.0%  | 100.0%  | 100.0%  |
| Disinfection by products   | 100.0%  | 100.0%  | 100.0%  | 100.0%  | 100.0%  |
| <div> <span style="color: green;">■</span> Compliant           <span style="color: red;">■</span> Non-compliant         </div> |         |         |         |         |         |

## 16.4. Analysis of current health performance (2020–21)

Table 16.4-a Summary of health guideline exceedances

| Summary of health guideline exceedances |      |         |           |
|---|------|---------|-----------|
| Parameter Exceeding                     | Date | Details | Resampled |
| No ADWG exceedances                     |      |         |           |

**Table 16.4-b Metals performance**

| Metals – health regulated parameters |       |      |         |             |               |         |          |         |
|--------------------------------------|-------|------|---------|-------------|---------------|---------|----------|---------|
| Parameter                            | Limit | Unit | Samples | Exceedances | Performance % | Mean    | Min.     | Max.    |
| Antimony                             | 0.003 | mg/L | 4       | 0           | 100           | <0.0005 | <0.0005  | <0.0005 |
| Arsenic                              | 0.01  | mg/L | 4       | 0           | 100           | <0.0003 | <0.0003  | <0.0003 |
| Barium                               | 2     | mg/L | 4       | 0           | 100           | 0.0036  | 0.0031   | 0.0040  |
| Cadmium                              | 0.002 | mg/L | 4       | 0           | 100           | <0.0001 | <0.0001  | <0.0001 |
| Chromium                             | 0.05  | mg/L | 4       | 0           | 100           | 0.0001  | <0.0001  | 0.0002  |
| Copper                               | 2     | mg/L | 4       | 0           | 100           | 0.0087  | 0.0077   | 0.0105  |
| Lead                                 | 0.01  | mg/L | 4       | 0           | 100           | 0.0007  | 0.0005   | 0.0009  |
| Manganese                            | 0.5   | mg/L | 4       | 0           | 100           | 0.0141  | 0.0090   | 0.0192  |
| Mercury                              | 0.001 | mg/L | 4       | 0           | 100           | 0.00010 | <0.00003 | 0.00029 |
| Molybdenum                           | 0.05  | mg/L | 4       | 0           | 100           | <0.0001 | <0.0001  | <0.0001 |
| Nickel                               | 0.02  | mg/L | 4       | 0           | 100           | 0.0003  | 0.0003   | 0.0004  |
| Selenium                             | 0.01  | mg/L | 4       | 0           | 100           | <0.0001 | <0.0001  | <0.0001 |

**Table 16.4-c Disinfection by product performance**

| Disinfection by products – health regulated parameters |       |      |         |             |               |      |      |      |
|--|-------|------|---------|-------------|---------------|------|------|------|
| Parameter  | Limit | Unit | Samples | Exceedances | Performance % | Mean | Min. | Max. |
| Dichloroacetic acid                                    | 100   | µg/L | 4       | 0           | 100           | 51   | 33   | 86   |
| Monochloroacetic acid                                  | 150   | µg/L | 4       | 0           | 100           | 5    | <3   | 10   |
| Trichloroacetic acid                                   | 100   | µg/L | 4       | 0           | 100           | 44   | 37   | 49   |
| Total trihalomethanes                                  | 250   | µg/L | 4       | 0           | 100           | 87   | 62   | 125  |

**Table 16.4-d General physical performance**

| General physical parameters |       |                 |      |      |      |
|-----------------------------|-------|-----------------|------|------|------|
| Parameter                   | Unit  | Guideline Value | Mean | Min  | Max  |
| Chlorine residual           | mg/L  | 0.1 – <0.8      | 0.55 | 0.11 | 1.07 |
| Colour True                 | HU    | 15              | 4    | 2    | 6    |
| pH                          | Units | 6.5 – 8.5       | 7.51 | 7.19 | 8.00 |
| Turbidity                   | NTU   | 1               | 0.22 | 0.07 | 2.71 |

16.5. Analysis of overall system performance (2020–21)

Table 16.5-a Summary of system issues/public health warnings

| Summary of system issues                          |             |                           |                           |
|---|-------------|---------------------------|---------------------------|
| Date  | Description | DoH notification required | DoH notification complete |
| No system issues or public health warnings issued |             |                           |                           |

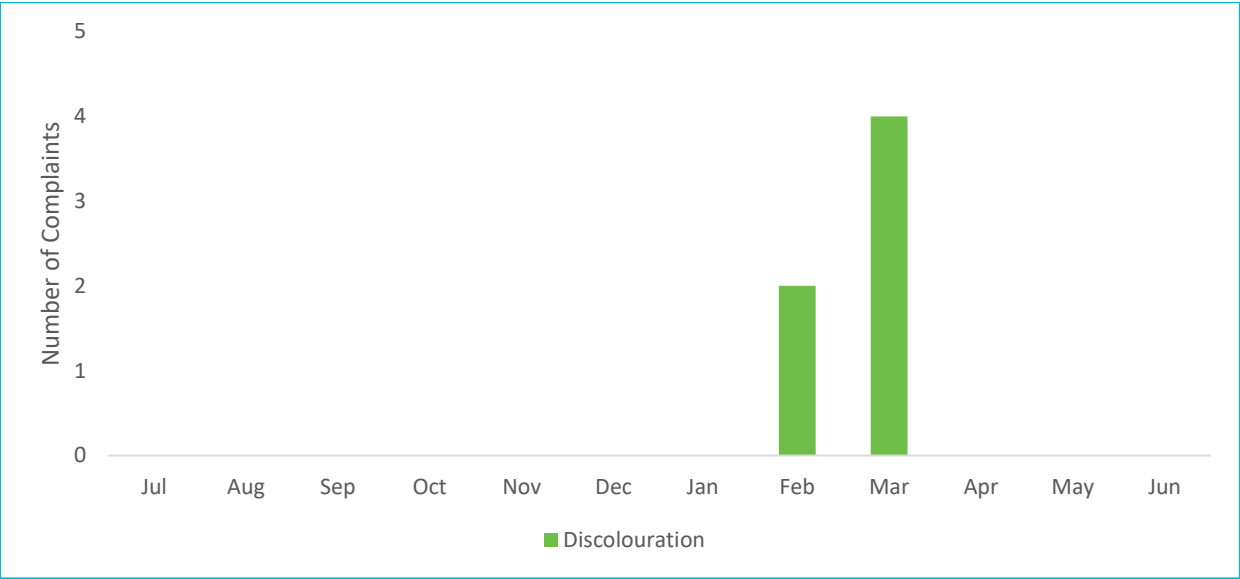


Figure 16.5-b Water quality customer complaints by month and type

## 17. Ellendale drinking water system

### 17.1. System summary (2020–21)

| Ellendale drinking water system    |         |
|------------------------------------|---------|
| System status (as at 30 June 2021) | Potable |
| Total number of connections        | 77      |
| Population serviced                | 140     |
| Fluoride                           | n/a     |

| Performance overview against health targets (2020–21)      |         |            |        |                 |             |
|--|---------|------------|--------|-----------------|-------------|
| Indicator  | Outcome | Compliance | Target | Sampling Events | Exceedances |
| Microbiological  | 100.0%  | ☑          | 98.0%  | 52              | 0           |
| Fluoride   | n/a     | n/a        | n/a    | n/a             | n/a         |
| Metals   | 100.0%  | ☑          | 100.0% | 4               | 0           |
| DBPs   | 100.0%  | ☑          | 100.0% | 12              | 0           |
| <div><div></div> Compliant <div></div> Non-compliant</div> |         |            |        |                 |             |

| Overall system performance (2020–21) |             |  |
|--------------------------------------|-------------|--|
| Indicator                            | Occurrences | Details  |
| System issues                        | 0           |  |
| Public health warnings issued        | 0           |  |
| Notifications made to DoH            | 1           | DBP exceedances in sampling program (under rounding limit) |
| Customer complaints                  | 0           |  |

| Current and future planned capital investment |             |          |               |            |
|---|-------------|----------|---------------|------------|
| Project                                       | Overview    | Progress | Est. Delivery | Est. Spend |
| WTP Upgrade                                   | WTP Upgrade | Planning | 2024/2025     | TBD        |

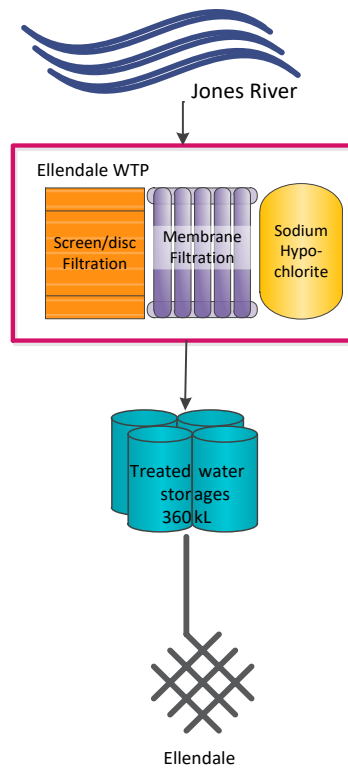


Figure 17.1-a Ellendale system schematic

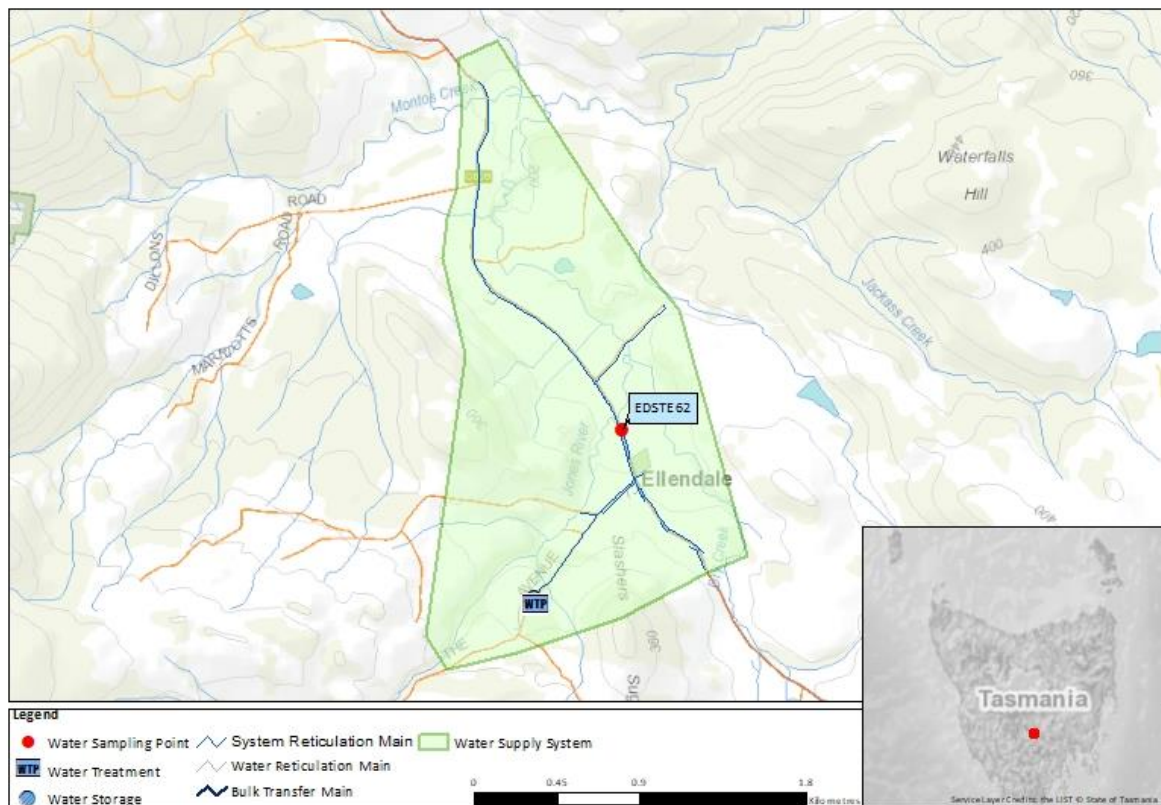


Figure 17.1-b Map of Ellendale monitoring system

## 17.2. Summary of annual reticulation compliance (2020–21)

Table 17.2-a Sampling program

| Planned sampling program (2020–21) |           |        |        |     |                |                  |                   |
|------------------------------------|-----------|--------|--------|-----|----------------|------------------|-------------------|
| Site name                          | Site Code | Micros | Metals | DBP | Fluoride (Lab) | Chemical Profile | Process Chemicals |
| Ellendale/Sample Tap               | EDSTE62   | W      | Q      | M   | n/a            | Q                | n/a               |
| Number Planned Samples             |           | 52     | 4      | 12  | n/a            | 4                | n/a               |
| Number Samples Tested              |           | 52     | 4      | 12  | n/a            | 4                | n/a               |

## 17.3. Summary of current and historic performance (2016–21)

Table 17.3-a Historical health performance overview (5 year comparison)

| Historical health performance overview (5 year comparison)   |         |         |         |         |         |
|--|---------|---------|---------|---------|---------|
| Indicator  | 2016–17 | 2017–18 | 2018–19 | 2019–20 | 2020–21 |
| Microbiological  | 100.0%  | 100.0%  | 100.0%  | 100.0%  | 100.0%  |
| Fluoride   | n/a     | n/a     | n/a     | n/a     | n/a     |
| Metals   | 100.0%  | 100.0%  | 100.0%  | 100.0%  | 100.0%  |
| Disinfection by products   | 95.8%   | 97.9%   | 100.0%  | 100.0%  | 100.0%  |
| <div> <span style="color: green;">■</span> Compliant           <span style="color: red;">■</span> Non-compliant         </div> |         |         |         |         |         |

## 17.4. Analysis of current health performance (2020–21)

Table 17.4-a Summary of health guideline exceedances

| Summary of health guideline exceedances |           |  |           |
|---|-----------|--|-----------|
| Parameter Exceeding                     | Date      | Details  | Resampled |
| Trichloroacetic acid                    | 8/10/2020 | 109 µg/L in regular compliance sampling<br>(relevant to compliance assessment) | Y         |

Table 17.4-b Metals performance

| Metals – health regulated parameters |       |      |         |             |               |         |         |         |
|--------------------------------------|-------|------|---------|-------------|---------------|---------|---------|---------|
| Parameter                            | Limit | Unit | Samples | Exceedances | Performance % | Mean    | Min.    | Max.    |
| Antimony                             | 0.003 | mg/L | 4       | 0           | 100           | <0.0005 | <0.0005 | <0.0005 |
| Arsenic                              | 0.01  | mg/L | 4       | 0           | 100           | <0.0003 | <0.0003 | <0.0003 |
| Barium                               | 2     | mg/L | 4       | 0           | 100           | 0.0040  | 0.0033  | 0.0046  |
| Cadmium                              | 0.002 | mg/L | 4       | 0           | 100           | <0.0001 | <0.0001 | <0.0001 |
| Chromium                             | 0.05  | mg/L | 4       | 0           | 100           | 0.0004  | 0.0004  | 0.0004  |
| Copper                               | 2     | mg/L | 4       | 0           | 100           | 0.0029  | 0.0014  | 0.0065  |
| Lead                                 | 0.01  | mg/L | 4       | 0           | 100           | 0.0002  | <0.0001 | 0.0004  |
| Manganese                            | 0.5   | mg/L | 4       | 0           | 100           | 0.0005  | <0.0001 | 0.0008  |
| Mercury                              | 0.001 | mg/L | 4       | 0           | 100           | 0.00009 | 0.00006 | 0.00012 |
| Molybdenum                           | 0.05  | mg/L | 4       | 0           | 100           | <0.0001 | <0.0001 | <0.0001 |
| Nickel                               | 0.02  | mg/L | 4       | 0           | 100           | 0.0001  | <0.0001 | 0.0002  |
| Selenium                             | 0.01  | mg/L | 4       | 0           | 100           | <0.0001 | <0.0001 | <0.0001 |

Table 17.4-c Disinfection by product performance

| Disinfection by products – health regulated parameters |       |      |         |             |               |      |      |                   |
|--|-------|------|---------|-------------|---------------|------|------|-------------------|
| Parameter  | Limit | Unit | Samples | Exceedances | Performance % | Mean | Min. | Max.              |
| Dichloroacetic acid                                    | 100   | µg/L | 12      | 0           | 100           | 32   | 12   | 71                |
| Monochloroacetic acid                                  | 150   | µg/L | 12      | 0           | 100           | 3    | <3   | 4                 |
| Trichloroacetic acid                                   | 100   | µg/L | 12      | 0           | 100           | 75   | 50   | 109 <sup>11</sup> |
| Total trihalomethanes                                  | 250   | µg/L | 12      | 0           | 100           | 88   | 70   | 112               |

Table 17.4-d General physical performance

| General physical parameters |       |                 |      |      |      |
|-----------------------------|-------|-----------------|------|------|------|
| Parameter                   | Unit  | Guideline Value | Mean | Min  | Max  |
| Chlorine residual           | mg/L  | 0.1 – <0.8      | 0.55 | 0.30 | 1.05 |
| Colour True                 | HU    | 15              | 2.5  | 2    | 4    |
| pH                          | Units | 6.5 – 8.5       | 7.56 | 7.07 | 7.97 |
| Turbidity                   | NTU   | 1               | 0.21 | 0.06 | 0.70 |

<sup>11</sup> Maximum result, when rounded, does not exceed limit.



## 17.5. Analysis of overall system performance (2020–21)

Table 17.5-a Summary of system issues/public health warnings

| Summary of system issues |   |                           |                           |
|--------------------------|---|---------------------------|---------------------------|
| Date                     | Description   | DoH notification required | DoH notification complete |
| 8/10/2020                | Trichloroacetic acid exceedance of 109 µg/L.<br>Does not exceed rounding limit. | ✓                         | ✓                         |

## 18. Fentonbury/Westerway drinking water system

### 18.1. System summary (2020–21)

| Fentonbury/Westerway drinking water system |         |
|--|---------|
| System status (as at 30 June 2021)         | Potable |
| Total number of connections                | 133     |
| Population serviced                        | 259     |
| Fluoride                                   | n/a     |

| Performance overview against health targets (2020–21)      |         |            |        |                 |             |
|--|---------|------------|--------|-----------------|-------------|
| Indicator  | Outcome | Compliance | Target | Sampling Events | Exceedances |
| Microbiological  | 100.0%  | ☑          | 98.0%  | 104             | 0           |
| Fluoride   | n/a     | n/a        | n/a    | n/a             | n/a         |
| Metals   | 100.0%  | ☑          | 100.0% | 8               | 0           |
| DBPs   | 100.0%  | ☑          | 100.0% | 8               | 0           |
| <div><div></div> Compliant <div></div> Non-compliant</div> |         |            |        |                 |             |

| Overall system performance (2020–21) |             |   |
|--------------------------------------|-------------|---|
| Indicator                            | Occurrences | Details   |
| System issues                        | 0           |   |
| Public health warnings issued        | 0           |   |
| Notifications made to DoH            | 1           | DBP exceedance in sampling program (under rounding limit) |
| Customer complaints                  | 0           |   |

| Current and future planned capital investment |          |          |               |                     |
|---|----------|----------|---------------|---------------------|
| Project                                       | Overview | Progress | Est. Delivery | Est. Spend (\$'000) |
| No projected capital investment               |          |          |               |                     |

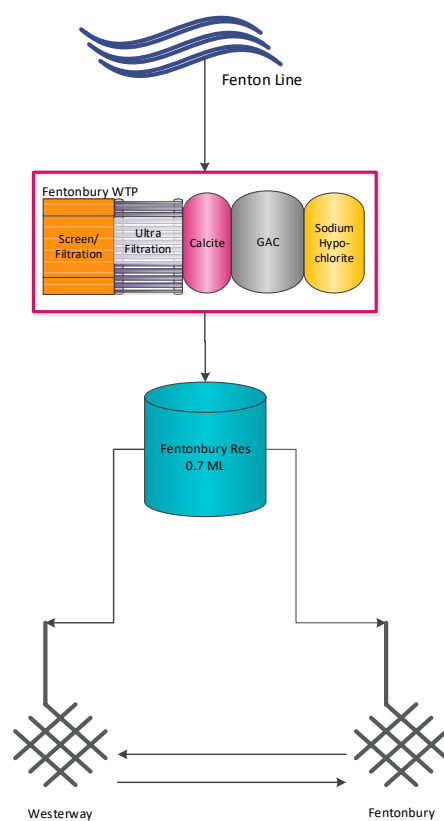


Figure 18.1-a Fentonbury/Westerway system schematic

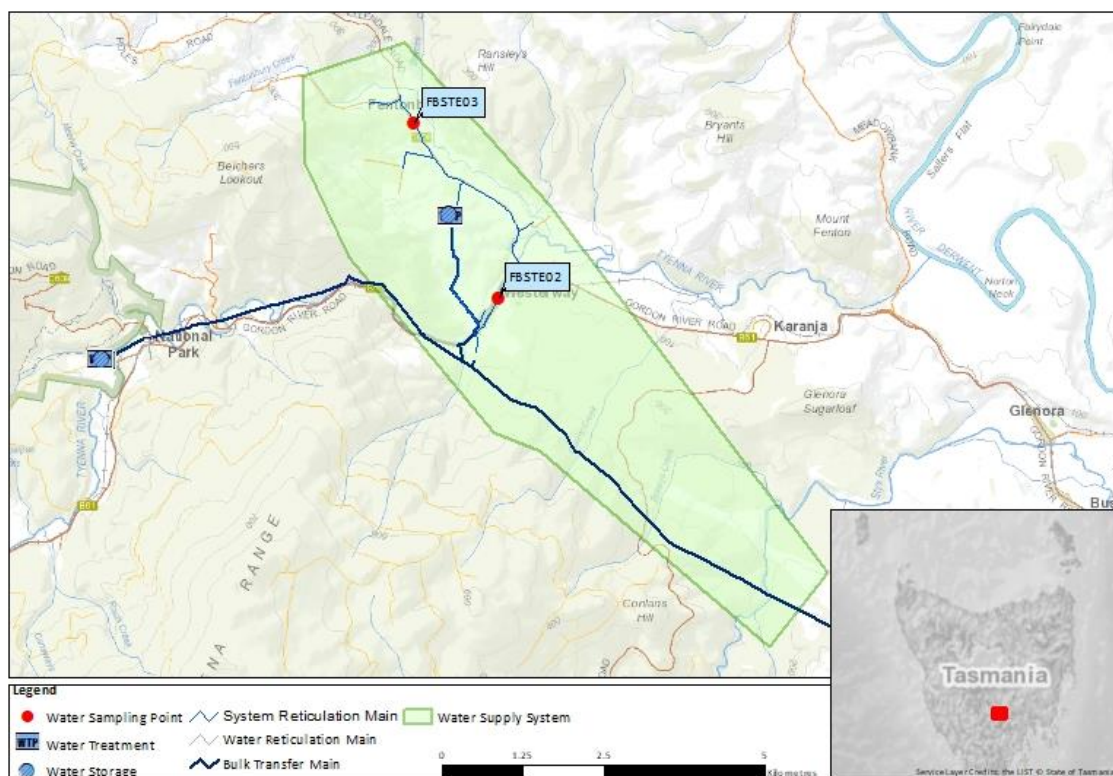


Figure 18.1-b Map of Fentonbury/Westerway monitoring system

## 18.2. Summary of annual reticulation compliance (2020–21)

Table 18.2-a Sampling program

| Planned compliance sampling program (2020–21) |           |        |        |     |                |                  |                   |
|---|-----------|--------|--------|-----|----------------|------------------|-------------------|
| Site name                                     | Site Code | Micros | Metals | DBP | Fluoride (Lab) | Chemical Profile | Process Chemicals |
| Fentonbury/1654 Gordon River Road             | FBSTE02   | W      | Q      | Q   | n/a            | Q                | n/a               |
| Fentonbury/304 Ellendale Rd                   | FBSTE03   | W      | Q      | Q   | n/a            | Q                | n/a               |
| Number Planned Samples                        |           | 104    | 8      | 8   | n/a            | 8                | n/a               |
| Number Samples Tested                         |           | 104    | 8      | 8   | n/a            | 8                | n/a               |

## 18.3. Summary of current and historic performance (2016–21)

Table 18.3-a Historical health performance overview (5 year comparison)

| Historical health performance overview (5 year comparison)   |         |         |         |         |         |
|--|---------|---------|---------|---------|---------|
| Indicator  | 2016–17 | 2017–18 | 2018–19 | 2019–20 | 2020–21 |
| Microbiological  | n/a     | n/a     | 100.0%  | 100.0%  | 100.0%  |
| Fluoride   | n/a     | n/a     | n/a     | n/a     | n/a     |
| Metals   | n/a     | n/a     | 100.0%  | 100.0%  | 100.0%  |
| Disinfection by products   | n/a     | n/a     | 100.0%  | 100.0%  | 100.0%  |
| <div> <span style="color: green;">■</span> Compliant           <span style="color: red;">■</span> Non-compliant         </div> |         |         |         |         |         |

## 18.4. Analysis of current health performance (2020–21)

Table 18.4-a Summary of health guideline exceedances

| Summary of health guideline exceedances |            |  |           |
|---|------------|--|-----------|
| Parameter Exceeding                     | Date       | Details  | Resampled |
| Trichloroacetic acid                    | 28/10/2020 | 121 µg/L in regular compliance sampling<br>(relevant to compliance assessment) | Y         |

**Table 18.4-b Metals performance**

| Metals – health regulated parameters |       |      |         |             |               |         |          |         |
|--------------------------------------|-------|------|---------|-------------|---------------|---------|----------|---------|
| Parameter                            | Limit | Unit | Samples | Exceedances | Performance % | Mean    | Min.     | Max.    |
| Antimony                             | 0.003 | mg/L | 8       | 0           | 100           | <0.0005 | <0.0005  | <0.0005 |
| Arsenic                              | 0.01  | mg/L | 8       | 0           | 100           | <0.0003 | <0.0003  | <0.0003 |
| Barium                               | 2     | mg/L | 8       | 0           | 100           | 0.0022  | 0.0015   | 0.0029  |
| Cadmium                              | 0.002 | mg/L | 8       | 0           | 100           | <0.0001 | <0.0001  | <0.0001 |
| Chromium                             | 0.05  | mg/L | 8       | 0           | 100           | <0.0001 | <0.0001  | 0.0001  |
| Copper                               | 2     | mg/L | 8       | 0           | 100           | 0.0080  | 0.0067   | 0.0096  |
| Lead                                 | 0.01  | mg/L | 8       | 0           | 100           | 0.0005  | 0.0003   | 0.0006  |
| Manganese                            | 0.5   | mg/L | 8       | 0           | 100           | 0.0016  | 0.0007   | 0.0040  |
| Mercury                              | 0.001 | mg/L | 8       | 0           | 100           | 0.00005 | <0.00003 | 0.00009 |
| Molybdenum                           | 0.05  | mg/L | 8       | 0           | 100           | <0.0001 | <0.0001  | <0.0001 |
| Nickel                               | 0.02  | mg/L | 8       | 0           | 100           | <0.0001 | <0.0001  | <0.0001 |
| Selenium                             | 0.01  | mg/L | 8       | 0           | 100           | <0.0001 | <0.0001  | <0.0001 |

**Table 18.4-c Disinfection by product performance**

| Disinfection by products – health regulated parameters |       |      |         |             |               |      |      |                   |
|--|-------|------|---------|-------------|---------------|------|------|-------------------|
| Parameter  | Limit | Unit | Samples | Exceedances | Performance % | Mean | Min. | Max.              |
| Dichloroacetic acid                                    | 100   | µg/L | 8       | 0           | 100.0%        | 30   | 20   | 51                |
| Monochloroacetic acid                                  | 150   | µg/L | 8       | 0           | 100.0%        | <3   | <3   | 4                 |
| Trichloroacetic acid                                   | 100   | µg/L | 8       | 0           | 100.0%        | 62   | 41   | 121 <sup>12</sup> |
| Total trihalomethanes                                  | 250   | µg/L | 8       | 0           | 100.0%        | 85   | 69   | 115               |

**Table 18.4-d General physical performance**

| General physical parameters |       |                 |      |      |      |
|-----------------------------|-------|-----------------|------|------|------|
| Parameter                   | Unit  | Guideline Value | Mean | Min  | Max  |
| Chlorine residual           | mg/L  | 0.1 – <0.8      | 0.66 | 0.04 | 1.19 |
| Colour True                 | HU    | 15              | 1.5  | <1   | 2    |
| pH                          | Units | 6.5 – 8.5       | 7.16 | 6.67 | 7.46 |
| Turbidity                   | NTU   | 1               | 0.56 | 0.11 | 1.34 |

<sup>12</sup> Maximum result, when rounded, does not exceed limit.

## 18.5. Analysis of overall system performance (2020–21)

Table 18.5-a Summary of system issues/public health warnings

| Summary of system issues |   |                           |                           |
|--------------------------|---|---------------------------|---------------------------|
| Date                     | Description   | DoH notification required | DoH notification complete |
| 28/10/2020               | Trichloroacetic acid exceedance of 121 µg/L.<br>Does not exceed rounding limit. | ✓                         | ✓                         |

## 19. Fingal drinking water system

### 19.1. System summary (2020–21)

| Fingal drinking water system       |         |
|------------------------------------|---------|
| System status (as at 30 June 2021) | Potable |
| Total number of connections        | 401     |
| Population serviced                | 715     |
| Fluoride                           | n/a     |

| Performance overview against health targets (2020–21)  |         |            |        |                 |             |
|--|---------|------------|--------|-----------------|-------------|
| Indicator  | Outcome | Compliance | Target | Sampling Events | Exceedances |
| Microbiological  | 100.0%  | ☑          | 98.0%  | 104             | 0           |
| Fluoride   | n/a     | n/a        | n/a    | n/a             | n/a         |
| Metals   | 100.0%  | ☑          | 100.0% | 4               | 0           |
| DBPs   | 100.0%  | ☑          | 100.0% | 4               | 0           |
| <div><span style="color: green;">■</span> Compliant <span style="color: red;">■</span> Non-compliant</div> |         |            |        |                 |             |

| Overall system performance (2020–21) |             |         |
|--------------------------------------|-------------|---------|
| Indicator                            | Occurrences | Details |
| System issues                        | 0           |         |
| Public health warnings issued        | 0           |         |
| Notifications made to DoH            | 0           |         |
| Customer complaints                  | 0           |         |

| Current and future planned capital investment |                           |          |               |            |
|---|---------------------------|----------|---------------|------------|
| Project                                       | Overview                  | Progress | Est. Delivery | Est. Spend |
| Fluoride Upgrade                              | New Fluoride Installation | Planning | 2021/2022     | TBD        |

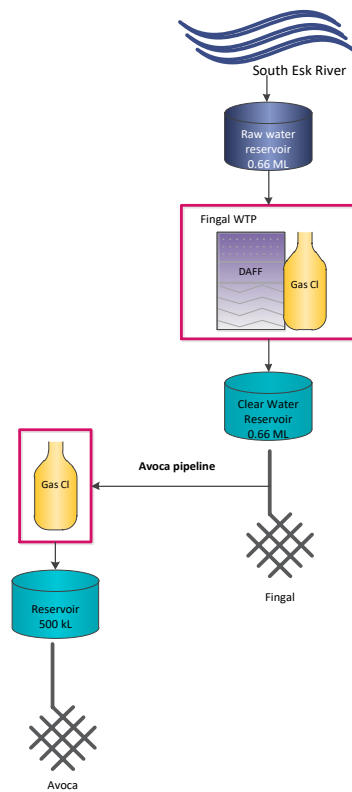


Figure 19.1-a Fingal system schematic

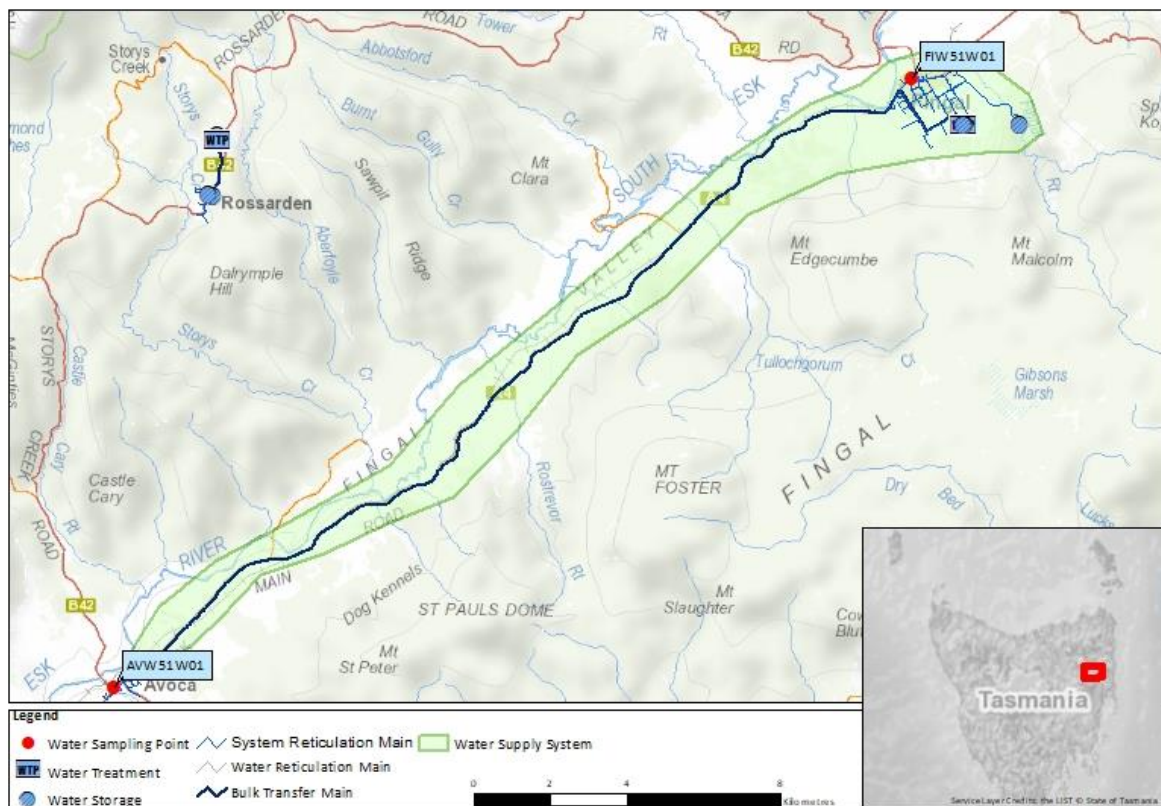


Figure 19.1-b Map of Fingal monitoring system



## 19.2. Summary of annual reticulation compliance (2020–21)

Table 19.2-a Sampling program

| Planned sampling program (2020–21) |           |        |        |     |                |                  |                   |
|------------------------------------|-----------|--------|--------|-----|----------------|------------------|-------------------|
| Site name                          | Site Code | Micros | Metals | DBP | Fluoride (Lab) | Chemical Profile | Process Chemicals |
| Avoca/crn Falmouth & Arthur St     | AVW51W01  | W      | Q      | Q   | n/a            | Q                | n/a               |
| Fingal/5-7 Gleadow St              | FIW51W09  | W      | n/a    | n/a | n/a            | n/a              | n/a               |
| Number Planned Samples             |           | 104    | 4      | 4   | n/a            | 4                | n/a               |
| Number Samples Tested              |           | 104    | 4      | 4   | n/a            | 4                | n/a               |

## 19.3. Summary of current and historic performance (2016–21)

Table 19.3-a Historical health performance overview (5 year comparison)

| Historical health performance overview (5 year comparison)   |         |         |         |         |         |
|--|---------|---------|---------|---------|---------|
| Indicator  | 2016–17 | 2017–18 | 2018–19 | 2019–20 | 2020–21 |
| Microbiological  | 100.0%  | 100.0%  | 100.0%  | 100.0%  | 100.0%  |
| Fluoride   | n/a     | n/a     | n/a     | n/a     | n/a     |
| Metals   | 100.0%  | 100.0%  | 100.0%  | 100.0%  | 100.0%  |
| Disinfection by products   | 100.0%  | 100.0%  | 100.0%  | 100.0%  | 100.0%  |
| <div> <span style="color: green;">■</span> Compliant           <span style="color: red;">■</span> Non-compliant         </div> |         |         |         |         |         |

## 19.4. Analysis of current health performance (2020–21)

Table 19.4-a Summary of health guideline exceedances

| Summary of health guideline exceedances |      |         |           |
|---|------|---------|-----------|
| Parameter Exceeding                     | Date | Details | Resampled |
| No ADWG exceedances                     |      |         |           |

**Table 19.4-b Metals performance**

| Metals – health regulated parameters |       |      |         |             |               |         |          |         |
|--------------------------------------|-------|------|---------|-------------|---------------|---------|----------|---------|
| Parameter                            | Limit | Unit | Samples | Exceedances | Performance % | Mean    | Min.     | Max.    |
| Antimony                             | 0.003 | mg/L | 28      | 0           | 100           | <0.0005 | <0.0005  | <0.0005 |
| Arsenic                              | 0.01  | mg/L | 28      | 0           | 100           | <0.0003 | <0.0003  | 0.0004  |
| Barium                               | 2     | mg/L | 28      | 0           | 100           | 0.0106  | 0.0093   | 0.0128  |
| Cadmium                              | 0.002 | mg/L | 28      | 0           | 100           | <0.0001 | <0.0001  | 0.0001  |
| Chromium                             | 0.05  | mg/L | 28      | 0           | 100           | <0.0001 | <0.0001  | <0.0001 |
| Copper                               | 2     | mg/L | 28      | 0           | 100           | 0.0067  | 0.0014   | 0.0123  |
| Lead                                 | 0.01  | mg/L | 28      | 0           | 100           | 0.0006  | 0.0001   | 0.0012  |
| Manganese                            | 0.5   | mg/L | 28      | 0           | 100           | 0.0064  | 0.0008   | 0.0197  |
| Mercury                              | 0.001 | mg/L | 28      | 0           | 100           | 0.00005 | <0.00003 | 0.00008 |
| Molybdenum                           | 0.05  | mg/L | 28      | 0           | 100           | 0.0002  | 0.0002   | 0.0002  |
| Nickel                               | 0.02  | mg/L | 28      | 0           | 100           | 0.0002  | <0.0001  | 0.0005  |
| Selenium                             | 0.01  | mg/L | 28      | 0           | 100           | <0.0001 | <0.0001  | <0.0001 |

**Table 19.4-c Disinfection by product performance**

| Disinfection by products – health regulated parameters |       |      |         |             |               |      |      |      |
|--|-------|------|---------|-------------|---------------|------|------|------|
| Parameter  | Limit | Unit | Samples | Exceedances | Performance % | Mean | Min. | Max. |
| Dichloroacetic acid                                    | 100   | µg/L | 17      | 0           | 100           | 20   | 11   | 35   |
| Monochloroacetic acid                                  | 150   | µg/L | 17      | 0           | 100           | <3   | <3   | 4    |
| Trichloroacetic acid                                   | 100   | µg/L | 17      | 0           | 100           | 22   | 9    | 44   |
| Total trihalomethanes                                  | 250   | µg/L | 17      | 0           | 100           | 59   | 39   | 83   |

**Table 19.4-d General physical performance**

| General physical parameters |       |                 |      |      |      |
|-----------------------------|-------|-----------------|------|------|------|
| Parameter                   | Unit  | Guideline Value | Mean | Min  | Max  |
| Chlorine residual           | mg/L  | 0.1 – <0.8      | 0.74 | 0.23 | 1.27 |
| Colour True                 | HU    | 15              | <1   | <1   | 1    |
| pH                          | Units | 6.5 – 8.5       | 7.36 | 6.58 | 7.94 |
| Turbidity                   | NTU   | 1               | 0.30 | 0.12 | 0.84 |

## 19.5. Analysis of overall system performance (2020–21)

Table 19.5-a Summary of system issues/public health warnings

| Summary of system issues                          |             |                           |                           |
|---|-------------|---------------------------|---------------------------|
| Date  | Description | DoH notification required | DoH notification complete |
| No system issues or public health warnings issued |             |                           |                           |

## 20. Forth River drinking water system

### 20.1. System summary (2020–21)

| Forth River drinking water system  |                    |
|------------------------------------|--------------------|
| System status (as at 30 June 2021) | Potable            |
| Total number of connections        | 19,019             |
| Population serviced                | 37,950             |
| Fluoride                           | Fluorosilicic acid |

| Performance overview against health targets (2020–21)      |         |            |        |                 |             |
|--|---------|------------|--------|-----------------|-------------|
| Indicator  | Outcome | Compliance | Target | Sampling Events | Exceedances |
| Microbiological  | 100.0%  | ☑          | 98.0%  | 779             | 0           |
| Fluoride   | 100.0%  | ☑          | 100.0% | 48              | 0           |
| Metals   | 100.0%  | ☑          | 100.0% | 16              | 0           |
| DBPs   | 100.0%  | ☑          | 100.0% | 12              | 0           |
| <div><div></div> Compliant <div></div> Non-compliant</div> |         |            |        |                 |             |

| Overall system performance (2020–21) |             |   |
|--------------------------------------|-------------|---|
| Indicator                            | Occurrences | Details   |
| System issues                        | 0           |   |
| Public health warnings issued        | 0           |   |
| Notifications made to DoH            | 1           | Low fluoride levels detected                              |
| Customer complaints                  | 5           | Discolouration, taste and odour, other (fluoride general) |

| Current and future planned capital investment |                   |          |               |               |
|---|-------------------|----------|---------------|---------------|
| Project                                       | Overview          | Progress | Est. Delivery | Est. Spend    |
| WTP Upgrade                                   | Forth WTP Upgrade | Planning | 2025/2026     | \$140,000,000 |

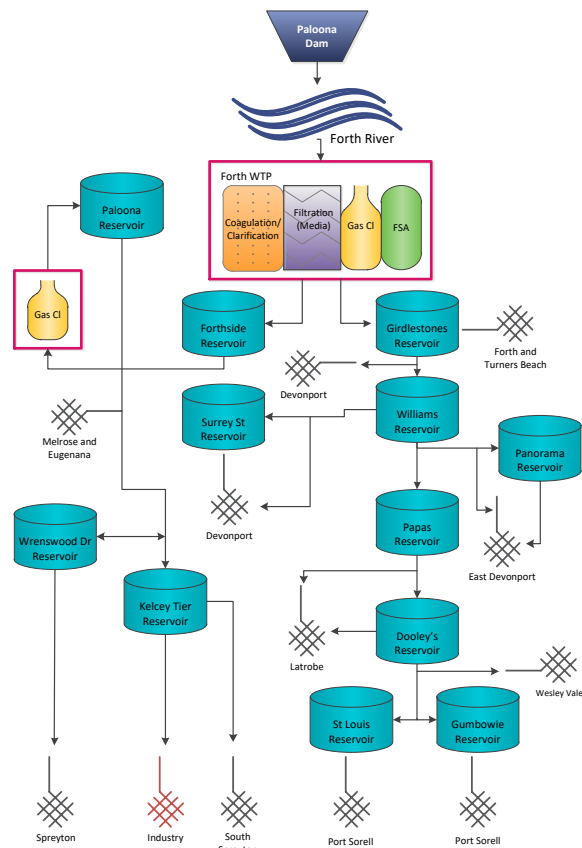


Figure 20.1-a Forth River system schematic

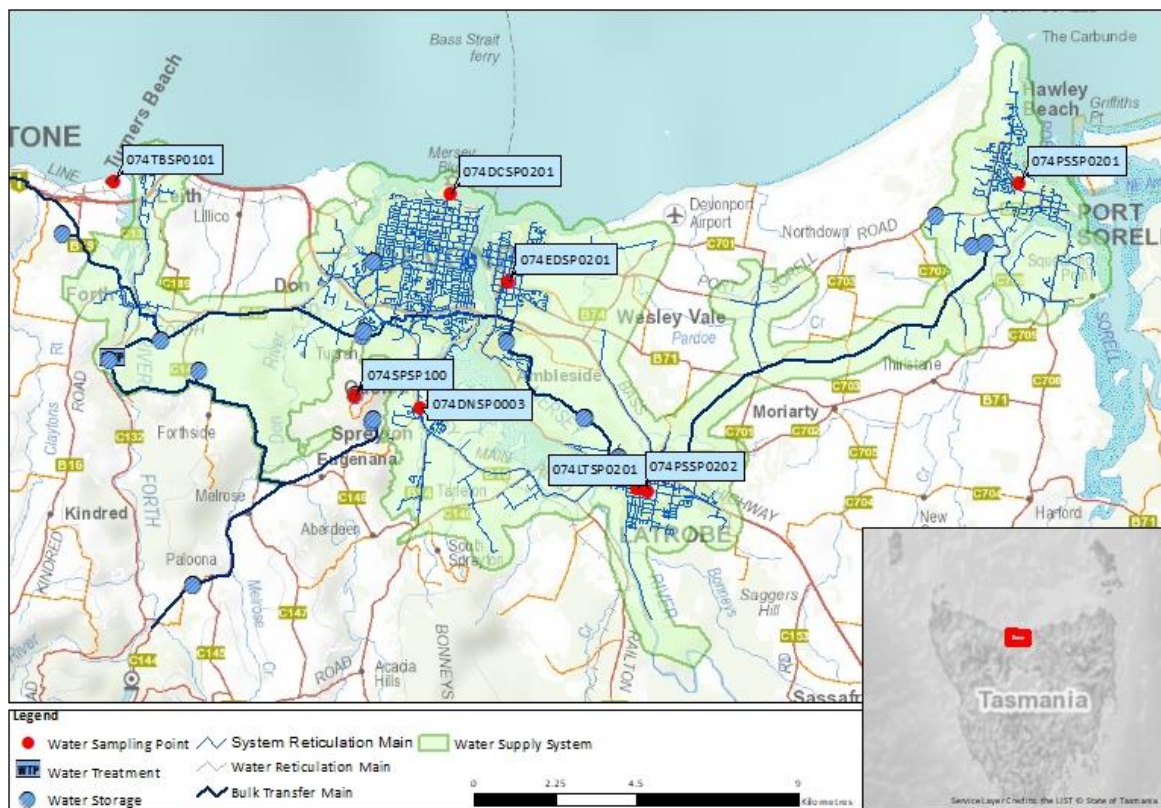


Figure 20.1-b Map of Forth River monitoring system

## 20.2. Summary of annual reticulation compliance (2020–21)

Table 20.2-a Sampling program

| Planned sampling program (2020–21) |             |            |           |           |                |                  |                   |
|------------------------------------|-------------|------------|-----------|-----------|----------------|------------------|-------------------|
| Site name                          | Site Code   | Micros     | Metals    | DBP       | Fluoride (Lab) | Chemical Profile | Process Chemicals |
| Woodrising Avenue – SPS Spreyton   | FORST01     | W          | n/a       | n/a       | n/a            | n/a              | n/a               |
| 24 Allport St – West Leith         | FORST02     | W          | n/a       | n/a       | n/a            | Q                | n/a               |
| Gilbert Street SPS Latrobe         | FORST03     | W          | n/a       | n/a       | 2M             | n/a              | n/a               |
| Opposite 151 Gunn Street           | FORST04     | W          | Q         | Q         | n/a            | Q                | n/a               |
| Opposite 12 Brook Street           | FORST05     | W          | Q         | n/a       | n/a            | n/a              | n/a               |
| Hawley Esplanade SPS Hawley Beach  | FORST06     | W          | Q         | Q         | 2M             | Q                | n/a               |
| Gawler/Turners Beach Esplanade     | 074TBSP0101 | W          | n/a       | n/a       | n/a            | n/a              | n/a               |
| 180 Wrenswood Drive                | FORST07     | W          | Q         | Q         | n/a            | Q                | n/a               |
| Paloona Road (Near PRV)            | FORST08     | W          | n/a       | n/a       | n/a            | n/a              | n/a               |
| 5 Browns Road – Port Sorell        | FORST09     | W          | n/a       | n/a       | n/a            | n/a              | n/a               |
| 16 Rubicon Rise                    | FORST10     | W          | n/a       | n/a       | n/a            | n/a              | n/a               |
| 24 McCall Terrace – Stony Rise     | FORST11     | W          | n/a       | n/a       | n/a            | n/a              | n/a               |
| 22 Tatiana Close                   | FORST12     | W          | n/a       | n/a       | n/a            | n/a              | n/a               |
| Kelcey Tier Road WPS Inlet         | FORST13     | W          | n/a       | n/a       | n/a            | n/a              | n/a               |
| 26 North Caroline Street           | FORST14     | W          | n/a       | n/a       | n/a            | n/a              | n/a               |
| <b>Number Planned Samples</b>      |             | <b>779</b> | <b>16</b> | <b>12</b> | <b>48</b>      | <b>12</b>        | <b>n/a</b>        |
| <b>Number Samples Tested</b>       |             | <b>779</b> | <b>16</b> | <b>12</b> | <b>48</b>      | <b>12</b>        | <b>n/a</b>        |

## 20.3. Summary of current and historic performance (2016–21)

Table 20.3-a Historical health performance overview (5 year comparison)

| Historical health performance overview (5 year comparison)   |         |         |         |         |         |
|--|---------|---------|---------|---------|---------|
| Indicator  | 2016–17 | 2017–18 | 2018–19 | 2019–20 | 2020–21 |
| Microbiological  | 100.0%  | 99.7%   | 100.0%  | 99.8%   | 100.0%  |
| Fluoride   | 100.0%  | 100.0%  | 100.0%  | 100.0%  | 100.0%  |
| Metals   | 100.0%  | 100.0%  | 100.0%  | 100.0%  | 100.0%  |
| Disinfection by products   | 100.0%  | 100.0%  | 100.0%  | 100.0%  | 100.0%  |
| <div> <span style="color: green;">■</span> Compliant           <span style="color: red;">■</span> Non-compliant         </div> |         |         |         |         |         |

## 20.4. Analysis of current health performance (2020–21)

Table 20.4-a Summary of health guideline exceedances

| Summary of health guideline exceedances |      |         |           |
|---|------|---------|-----------|
| Parameter Exceeding                     | Date | Details | Resampled |
| No ADWG exceedances                     |      |         |           |

Table 20.4-b Fluoride distribution performance

| Distribution fluoride performance   |         |
|---|---------|
| Indicator   | 2020–21 |
| F exceeding 1.5 mg/L  | 0       |
| Average F concentration range (0.8 mg/L – 1.1 mg/L)   | 0.6     |
| 90% of F results are equal to or less than 1.1 mg/L   | 100%    |
| <span style="color: green;">■</span> Compliant <span style="color: red;">■</span> Non-compliant |         |

Table 20.4-c Metals performance

| Metals – health regulated parameters |       |      |         |             |               |         |          |         |
|--------------------------------------|-------|------|---------|-------------|---------------|---------|----------|---------|
| Parameter                            | Limit | Unit | Samples | Exceedances | Performance % | Mean    | Min.     | Max.    |
| Antimony                             | 0.003 | mg/L | 16      | 0           | 100           | <0.0005 | <0.0005  | <0.0005 |
| Arsenic                              | 0.01  | mg/L | 16      | 0           | 100           | <0.0003 | <0.0003  | <0.0003 |
| Barium                               | 2     | mg/L | 16      | 0           | 100           | 0.0072  | 0.0050   | 0.0101  |
| Cadmium                              | 0.002 | mg/L | 16      | 0           | 100           | <0.0001 | <0.0001  | <0.0001 |
| Chromium                             | 0.05  | mg/L | 16      | 0           | 100           | 0.0003  | <0.0001  | 0.0006  |
| Copper                               | 2     | mg/L | 16      | 0           | 100           | 0.0043  | 0.0004   | 0.0140  |
| Lead                                 | 0.01  | mg/L | 16      | 0           | 100           | 0.0005  | <0.0001  | 0.0018  |
| Manganese                            | 0.5   | mg/L | 16      | 0           | 100           | 0.0018  | 0.0004   | 0.0068  |
| Mercury                              | 0.001 | mg/L | 16      | 0           | 100           | 0.00006 | <0.00003 | 0.00016 |
| Molybdenum                           | 0.05  | mg/L | 16      | 0           | 100           | <0.0001 | <0.0001  | <0.0001 |
| Nickel                               | 0.02  | mg/L | 16      | 0           | 100           | 0.0001  | <0.0001  | 0.0003  |
| Selenium                             | 0.01  | mg/L | 16      | 0           | 100           | <0.0001 | <0.0001  | <0.0001 |

**Table 20.4-d Disinfection by product performance**

| Disinfection by products – health regulated parameters |       |      |         |             |               |      |      |      |
|--|-------|------|---------|-------------|---------------|------|------|------|
| Parameter  | Limit | Unit | Samples | Exceedances | Performance % | Mean | Min. | Max. |
| Dichloroacetic acid                                    | 100   | µg/L | 12      | 0           | 100           | 14   | 4    | 20   |
| Monochloroacetic acid                                  | 150   | µg/L | 12      | 0           | 100           | <3   | <3   | <3   |
| Trichloroacetic acid                                   | 100   | µg/L | 12      | 0           | 100           | 26   | 17   | 36   |
| Total trihalomethanes                                  | 250   | µg/L | 12      | 0           | 100           | 53   | 32   | 74   |

**Table 20.4-e General physical performance**

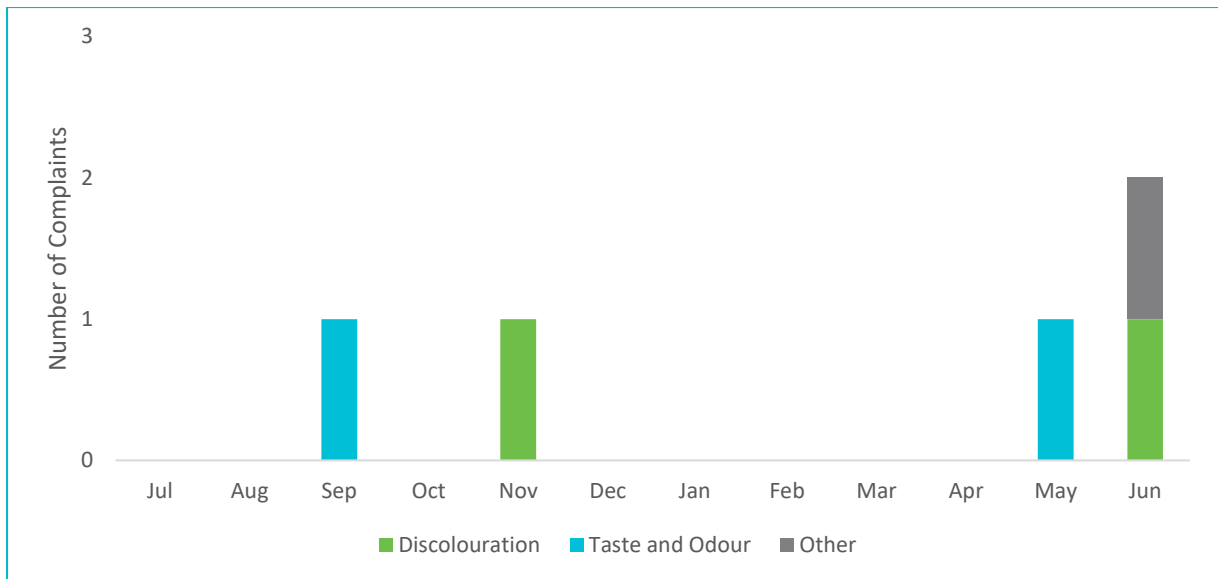
| General physical parameters |       |                 |      |      |       |
|-----------------------------|-------|-----------------|------|------|-------|
| Parameter                   | Unit  | Guideline Value | Mean | Min  | Max   |
| Chlorine residual           | mg/L  | 0.1 – <0.8      | 0.73 | 0.00 | 1.87  |
| Colour True                 | HU    | 15              | <1   | <1   | 3     |
| pH                          | Units | 6.5 – 8.5       | 7.53 | 6.53 | 9.60  |
| Turbidity                   | NTU   | 1               | 0.27 | 0.08 | 12.10 |

## 20.5. Analysis of overall system performance (2020–21)

**Table 20.5-a Summary of system issues/public health warnings**

| Summary of system issues                               |                              |                           |                           |
|--|------------------------------|---------------------------|---------------------------|
| Date   | Description                  | DoH notification required | DoH notification complete |
| July 2020 – December 2020<br>February 2021 – June 2021 | Low fluoride levels detected | ✓                         | ✓                         |





**Figure 20.5-b Water quality customer complaints by month and type**

## 21. Gawler River drinking water system

### 21.1. System summary (2020–21)

| Gawler River drinking water system |                    |
|------------------------------------|--------------------|
| System status (as at 30 June 2021) | Potable            |
| Total number of connections        | 6,092              |
| Population serviced                | 12,382             |
| Fluoride                           | Fluorosilicic acid |

| Performance overview against health targets (2020–21)  |         |            |        |                 |             |
|--|---------|------------|--------|-----------------|-------------|
| Indicator  | Outcome | Compliance | Target | Sampling Events | Exceedances |
| Microbiological  | 100.0%  | ☑          | 98.0%  | 153             | 0           |
| Fluoride   | 100.0%  | ☑          | 100.0% | 48              | 0           |
| Metals   | 100.0%  | ☑          | 100.0% | 8               | 0           |
| DBPs   | 100.0%  | ☑          | 100.0% | 4               | 0           |
| <div><span style="color: green;">■</span> Compliant <span style="color: red;">■</span> Non-compliant</div> |         |            |        |                 |             |

| Overall system performance (2020–21) |             |   |
|--------------------------------------|-------------|---|
| Indicator                            | Occurrences | Details                                 |
| System issues                        | 0           |   |
| Public health warnings issued        | 0           |   |
| Notifications made to DoH            | 0           |   |
| Customer complaints                  | 6           | Discolouration, other (stained washing) |

| Current and future planned capital investment |          |          |               |            |
|---|----------|----------|---------------|------------|
| Project                                       | Overview | Progress | Est. Delivery | Est. Spend |
| No projected capital investment               |          |          |               |            |

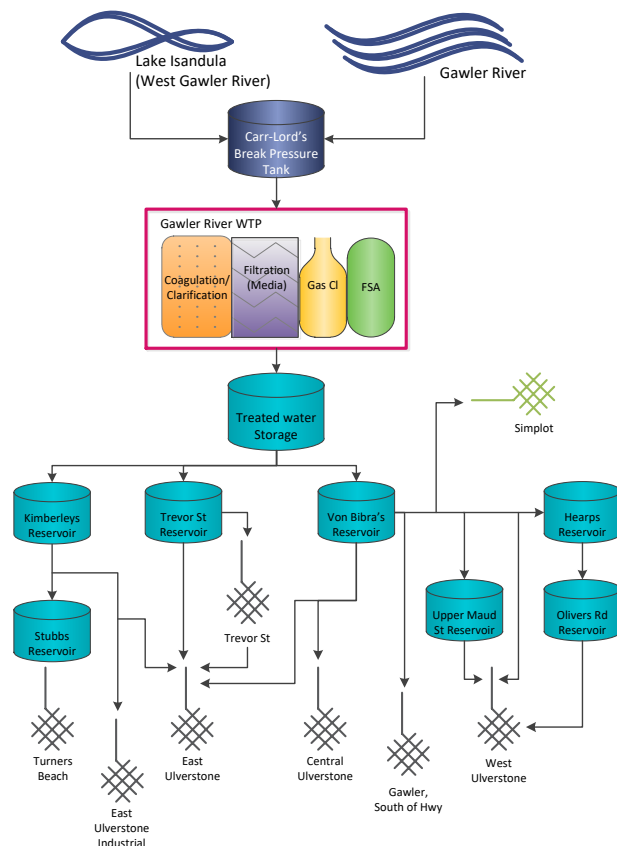


Figure 21.1-a Gawler River system schematic

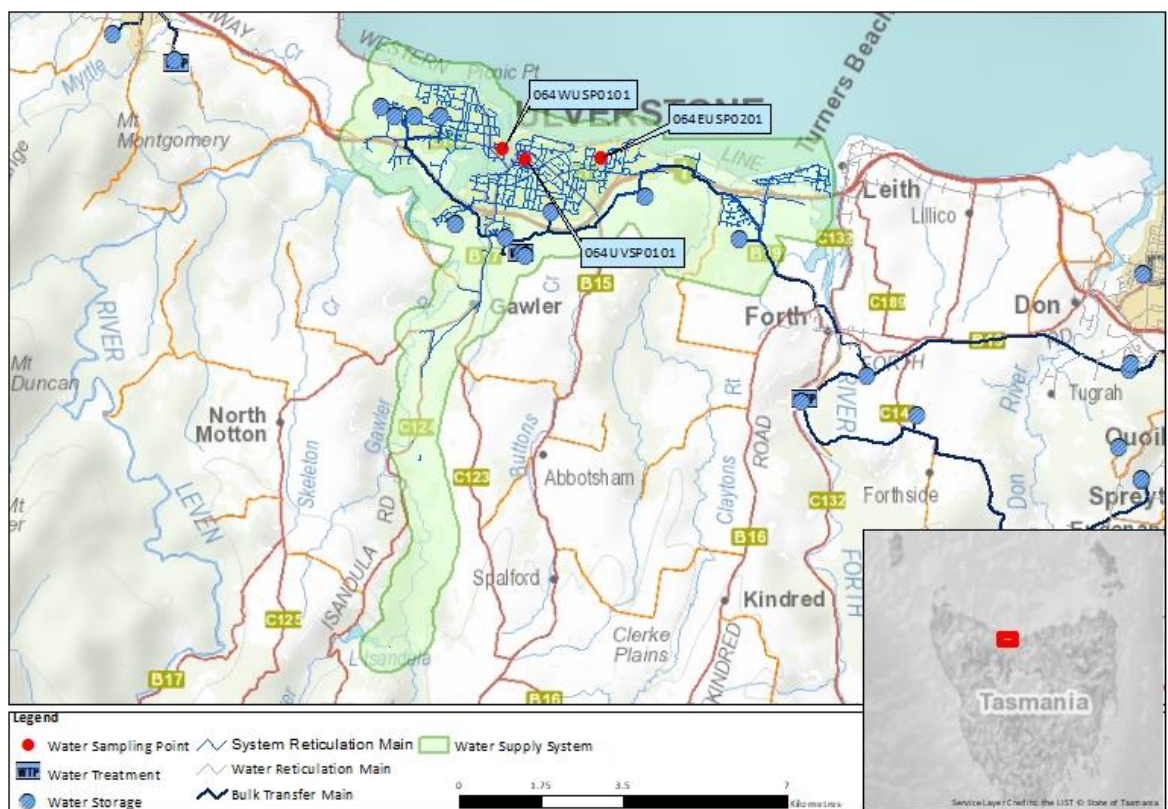


Figure 21.1-b Map of Gawler River monitoring system

## 21.2. Summary of annual reticulation compliance (2020–21)

Table 21.2-a Sampling program

| Planned sampling program (2020–21) |             |        |        |     |                |                  |                   |
|------------------------------------|-------------|--------|--------|-----|----------------|------------------|-------------------|
| Site name                          | Site Code   | Micros | Metals | DBP | Fluoride (Lab) | Chemical Profile | Process Chemicals |
| Gawler/Ulverstone Swimming Pool    | 064EUSP0201 | W      | Q      | Q   | 2M             | Q                | n/a               |
| Gawler/Ulverstone Council Chambers | 064UVSP0101 | W      | n/a    | n/a | n/a            | n/a              | n/a               |
| Gawler/Flora St Wst Ulverstone     | 064WUSP0101 | W      | Q      | n/a | 2M             | Q                | n/a               |
| Number Planned Samples             |             | 153    | 8      | 4   | 48             | 8                | n/a               |
| Number Samples Tested              |             | 153    | 8      | 4   | 48             | 8                | n/a               |

## 21.3. Summary of current and historic performance (2016–21)

Table 21.3-a Historical health performance overview (5 year comparison)

| Historical health performance overview (5 year comparison)   |         |         |         |         |         |
|--|---------|---------|---------|---------|---------|
| Indicator  | 2016–17 | 2017–18 | 2018–19 | 2019–20 | 2020–21 |
| Microbiological  | 99.8%   | 100.0%  | 100.0%  | 100.0%  | 100.0%  |
| Fluoride   | 100.0%  | 100.0%  | 100.0%  | 100.0%  | 100.0%  |
| Metals   | 100.0%  | 100.0%  | 100.0%  | 100.0%  | 100.0%  |
| Disinfection by products   | 100.0%  | 100.0%  | 100.0%  | 100.0%  | 100.0%  |
| <div> <span style="color: green;">■</span> Compliant           <span style="color: red;">■</span> Non-compliant         </div> |         |         |         |         |         |

## 21.4. Analysis of current health performance (2020–21)

Table 21.4-a Summary of health guideline exceedances

| Summary of health guideline exceedances |      |         |           |
|---|------|---------|-----------|
| Parameter Exceeding                     | Date | Details | Resampled |
| No ADWG exceedances                     |      |         |           |

**Table 21.4-b Fluoride distribution performance**

| Distribution fluoride performance  |         |
|--|---------|
| Indicator  | 2020–21 |
| F exceeding 1.5 mg/L   | 0       |
| Average F concentration range (0.8 mg/L – 1.1 mg/L)  | 0.8     |
| 90% of F results are equal to or less than 1.1 mg/L  | 100%    |
| <div> <span style="color: green;">■</span> Compliant           <span style="color: red;">■</span> Non-compliant         </div> |         |

**Table 21.4-c Metals performance**

| Metals – health regulated parameters |       |      |         |             |               |         |          |         |
|--------------------------------------|-------|------|---------|-------------|---------------|---------|----------|---------|
| Parameter                            | Limit | Unit | Samples | Exceedances | Performance % | Mean    | Min.     | Max.    |
| Antimony                             | 0.003 | mg/L | 8       | 0           | 100           | <0.0005 | <0.0005  | <0.0005 |
| Arsenic                              | 0.01  | mg/L | 8       | 0           | 100           | <0.0003 | <0.0003  | <0.0003 |
| Barium                               | 2     | mg/L | 8       | 0           | 100           | 0.0136  | 0.0113   | 0.0198  |
| Cadmium                              | 0.002 | mg/L | 8       | 0           | 100           | <0.0001 | <0.0001  | <0.0001 |
| Chromium                             | 0.05  | mg/L | 8       | 0           | 100           | 0.0002  | <0.0001  | 0.0003  |
| Copper                               | 2     | mg/L | 8       | 0           | 100           | 0.0060  | 0.0026   | 0.0132  |
| Lead                                 | 0.01  | mg/L | 8       | 0           | 100           | 0.0004  | 0.0001   | 0.0008  |
| Manganese                            | 0.5   | mg/L | 8       | 0           | 100           | 0.0067  | 0.0016   | 0.0187  |
| Mercury                              | 0.001 | mg/L | 8       | 0           | 100           | 0.00010 | <0.00003 | 0.00039 |
| Molybdenum                           | 0.05  | mg/L | 8       | 0           | 100           | <0.0001 | <0.0001  | <0.0001 |
| Nickel                               | 0.02  | mg/L | 8       | 0           | 100           | 0.0017  | 0.0007   | 0.0046  |
| Selenium                             | 0.01  | mg/L | 8       | 0           | 100           | <0.0001 | <0.0001  | <0.0001 |

**Table 21.4-d Disinfection by product performance**

| Disinfection by products – health regulated parameters |       |      |         |             |               |      |      |      |
|--|-------|------|---------|-------------|---------------|------|------|------|
| Parameter  | Limit | Unit | Samples | Exceedances | Performance % | Mean | Min. | Max. |
| Dichloroacetic acid                                    | 100   | µg/L | 4       | 0           | 100           | 6    | 1    | 19   |
| Monochloroacetic acid                                  | 150   | µg/L | 4       | 0           | 100           | <3   | <3   | <3   |
| Trichloroacetic acid                                   | 100   | µg/L | 4       | 0           | 100           | 24   | 15   | 30   |
| Total trihalomethanes                                  | 250   | µg/L | 4       | 0           | 100           | 71   | 46   | 96   |

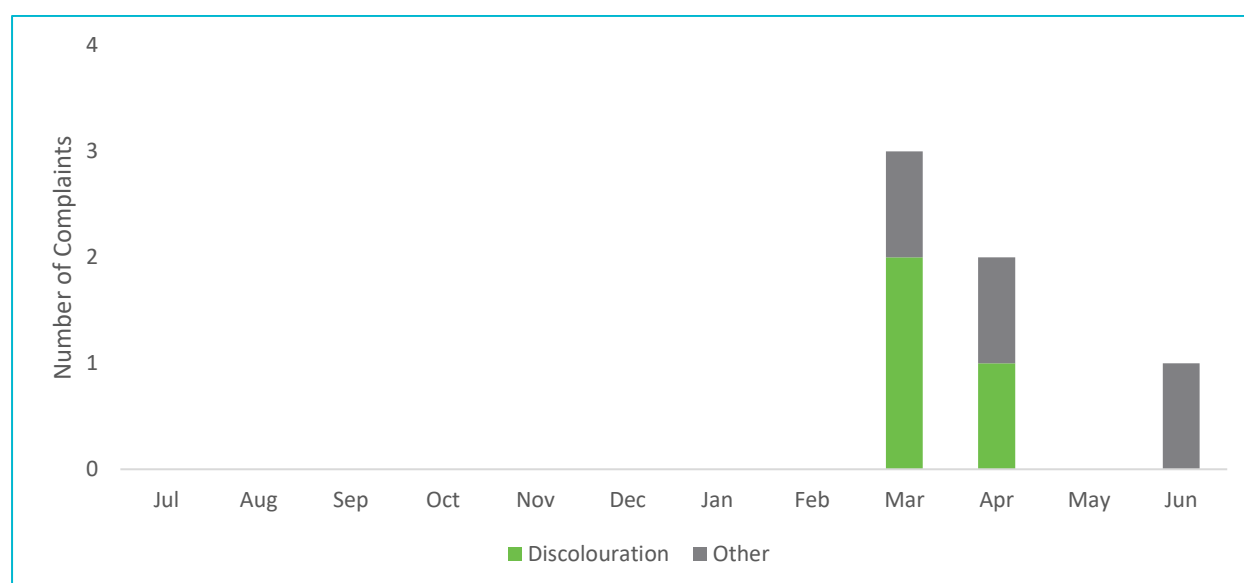
**Table 21.4-e General physical performance**

| General physical parameters |       |                 |      |      |      |
|-----------------------------|-------|-----------------|------|------|------|
| Parameter                   | Unit  | Guideline Value | Mean | Min  | Max  |
| Chlorine residual           | mg/L  | 0.1 – <0.8      | 0.43 | 0.00 | 1.07 |
| Colour True                 | HU    | 15              | <1   | <1   | 2    |
| pH                          | Units | 6.5 – 8.5       | 7.59 | 6.86 | 8.20 |
| Turbidity                   | NTU   | 1               | 0.38 | 0.00 | 7.36 |

## 21.5. Analysis of overall system performance (2020–21)

**Table 21.5-a Summary of system issues/public health warnings**

| Summary of system issues                          |             |                           |                           |
|---|-------------|---------------------------|---------------------------|
| Date  | Description | DoH notification required | DoH notification complete |
| No system issues or public health warnings issued |             |                           |                           |



**Figure 21.5-b Water quality customer complaints by month and type**

## 22. Gladstone drinking water system

### 22.1. System summary (2020–21)

| Gladstone drinking water system    |         |
|------------------------------------|---------|
| System status (as at 30 June 2021) | Potable |
| Total number of connections        | 84      |
| Population serviced                | 120     |
| Fluoride                           | n/a     |

| Performance overview against health targets (2020–21)      |         |            |        |                 |             |
|--|---------|------------|--------|-----------------|-------------|
| Indicator  | Outcome | Compliance | Target | Sampling Events | Exceedances |
| Microbiological  | 100.0%  | ☑          | 98.0%  | 52              | 0           |
| Fluoride   | n/a     | n/a        | n/a    | n/a             | n/a         |
| Metals   | 100.0%  | ☑          | 100.0% | 4               | 0           |
| DBPs   | 100.0%  | ☑          | 100.0% | 4               | 0           |
| <div><div></div> Compliant <div></div> Non-compliant</div> |         |            |        |                 |             |

| Overall system performance (2020–21) |             |         |
|--------------------------------------|-------------|---------|
| Indicator                            | Occurrences | Details |
| System issues                        | 0           |         |
| Public health warnings issued        | 0           |         |
| Notifications made to DoH            | 0           |         |
| Customer complaints                  | 0           |         |

| Current and future planned capital investment |          |          |               |                     |
|---|----------|----------|---------------|---------------------|
| Project                                       | Overview | Progress | Est. Delivery | Est. Spend (\$'000) |
| No projected capital investment               |          |          |               |                     |

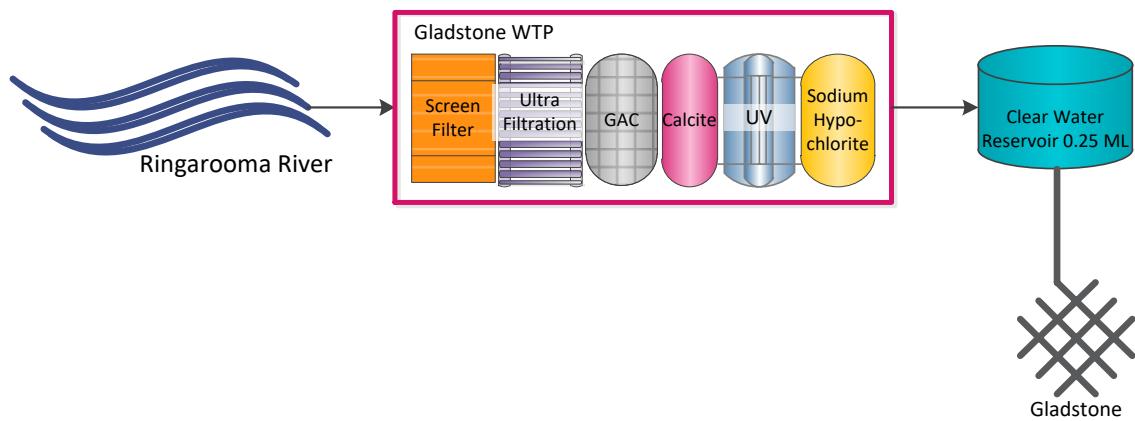


Figure 22.1-a Gladstone system schematic

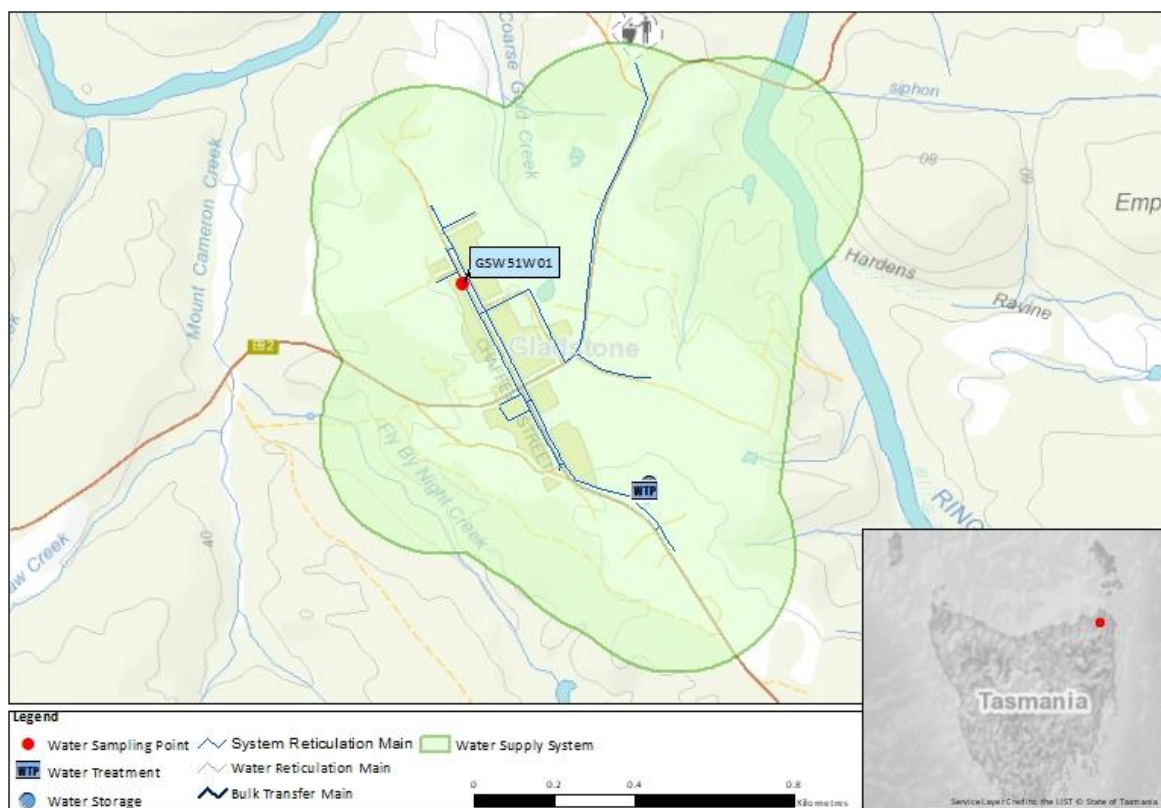


Figure 22.1-b Map of Gladstone monitoring system



## 22.2. Summary of annual reticulation compliance (2020–21)

Table 22.2-a Sampling program

| Planned compliance sampling program (2020–21) |           |        |        |     |                |                  |                   |
|---|-----------|--------|--------|-----|----------------|------------------|-------------------|
| Site name                                     | Site Code | Micros | Metals | DBP | Fluoride (Lab) | Chemical Profile | Process Chemicals |
| Gladstone/Fire Station                        | GSW51W01  | W      | Q      | Q   | n/a            | Q                | n/a               |
| Number Planned Samples                        |           | 52     | 4      | 4   | n/a            | 4                | n/a               |
| Number Samples Tested                         |           | 52     | 4      | 4   | n/a            | 4                | n/a               |

## 22.3. Summary of current and historic performance (2016–21)

Table 22.3-a Historical health performance overview (5 year comparison)

| Historical health performance overview (5 year comparison)   |         |         |         |         |         |
|--|---------|---------|---------|---------|---------|
| Indicator  | 2016–17 | 2017–18 | 2018–19 | 2019–20 | 2020–21 |
| Microbiological  | 16.7%   | 50.0%   | 100.0%  | 100.0%  | 100.0%  |
| Fluoride   | n/a     | n/a     | n/a     | n/a     | n/a     |
| Metals   | 100.0%  | 100.0%  | 100.0%  | 100.0%  | 100.0%  |
| Disinfection by products   | n/a     | n/a     | 100.0%  | 100.0%  | 100.0%  |
| <div> <span style="color: green;">■</span> Compliant           <span style="color: red;">■</span> Non-compliant         </div> |         |         |         |         |         |

## 22.4. Analysis of current health performance (2020–21)

Table 22.4-a Summary of health guideline exceedances

| Summary of health guideline exceedances |      |         |           |
|---|------|---------|-----------|
| Parameter Exceeding                     | Date | Details | Resampled |
| No ADWG exceedances                     |      |         |           |

**Table 22.4-b Metals performance**

| Metals – health regulated parameters |       |      |         |             |               |          |          |          |
|--------------------------------------|-------|------|---------|-------------|---------------|----------|----------|----------|
| Parameter                            | Limit | Unit | Samples | Exceedances | Performance % | Mean     | Min.     | Max.     |
| Antimony                             | 0.003 | mg/L | 4       | 0           | 100           | <0.0005  | <0.0005  | <0.0005  |
| Arsenic                              | 0.01  | mg/L | 4       | 0           | 100           | <0.0003  | <0.0003  | <0.0003  |
| Barium                               | 2     | mg/L | 4       | 0           | 100           | 0.0094   | 0.0040   | 0.0215   |
| Cadmium                              | 0.002 | mg/L | 4       | 0           | 100           | <0.0001  | <0.0001  | <0.0001  |
| Chromium                             | 0.05  | mg/L | 4       | 0           | 100           | 0.0001   | <0.0001  | 0.0002   |
| Copper                               | 2     | mg/L | 4       | 0           | 100           | 0.0066   | 0.0047   | 0.0081   |
| Lead                                 | 0.01  | mg/L | 4       | 0           | 100           | 0.0005   | 0.0004   | 0.0007   |
| Manganese                            | 0.5   | mg/L | 4       | 0           | 100           | 0.0006   | 0.0004   | 0.0008   |
| Mercury                              | 0.001 | mg/L | 4       | 0           | 100           | <0.00003 | <0.00003 | <0.00003 |
| Molybdenum                           | 0.05  | mg/L | 4       | 0           | 100           | <0.0001  | <0.0001  | <0.0001  |
| Nickel                               | 0.02  | mg/L | 4       | 0           | 100           | 0.0003   | 0.0003   | 0.0004   |
| Selenium                             | 0.01  | mg/L | 4       | 0           | 100           | <0.0001  | <0.0001  | 0.0002   |

**Table 22.4-c Disinfection by product performance**

| Disinfection by products – health regulated parameters |       |      |         |             |               |      |      |      |
|--|-------|------|---------|-------------|---------------|------|------|------|
| Parameter  | Limit | Unit | Samples | Exceedances | Performance % | Mean | Min. | Max. |
| Dichloroacetic acid                                    | 100   | µg/L | 4       | 0           | 100           | 21   | 10   | 37   |
| Monochloroacetic acid                                  | 150   | µg/L | 4       | 0           | 100           | <3   | <3   | 4    |
| Trichloroacetic acid                                   | 100   | µg/L | 4       | 0           | 100           | 30   | 14   | 51   |
| Total trihalomethanes                                  | 250   | µg/L | 4       | 0           | 100           | 70   | 41   | 109  |

**Table 22.4-d General physical performance**

| General physical parameters |       |                 |      |      |      |
|-----------------------------|-------|-----------------|------|------|------|
| Parameter                   | Unit  | Guideline Value | Mean | Min  | Max  |
| Chlorine residual           | mg/L  | 0.1 – <0.8      | 0.65 | 0.41 | 1.06 |
| Colour True                 | HU    | 15              | 1.25 | <1   | 3    |
| pH                          | Units | 6.5 – 8.5       | 7.35 | 6.62 | 7.87 |
| Turbidity                   | NTU   | 1               | 0.26 | 0.12 | 0.46 |

## 22.5. Analysis of overall system performance (2020–21)

Table 22.5-a Summary of system issues/public health warnings

| Summary of system issues                          |             |                           |                           |
|---|-------------|---------------------------|---------------------------|
| Date  | Description | DoH notification required | DoH notification complete |
| No system issues or public health warnings issued |             |                           |                           |

## 23. Greater Hobart drinking water system

### 23.1. System summary (2020–21)

| Greater Hobart drinking water system |  |
|--------------------------------------|--|
| System status (as at 30 June 2021)   | Potable  |
| Total number of connections          | 95,519   |
| Population serviced                  | 204,352  |
| Fluoride                             | Lake Fenton: Sodium fluoride<br>All others: Fluorosilicic acid |

| Performance overview against health targets (2020–21)         |         |            |        |                 |             |
|---|---------|------------|--------|-----------------|-------------|
| Indicator   | Outcome | Compliance | Target | Sampling Events | Exceedances |
| Microbiological   | 100.0%  | ☑          | 98.0%  | 5682            | 0           |
| Fluoride  | 100.0%  | ☑          | 100.0% | 144             | 0           |
| Metals  | 99.88%  | ☒          | 100.0% | 72              | 1           |
| DBPs  | 100.0%  | ☑          | 100.0% | 72              | 0           |
| <div><div></div> Compliant    <div></div> Non-compliant</div> |         |            |        |                 |             |

| Overall system performance (2020–21) |             |   |
|--------------------------------------|-------------|---|
| Indicator                            | Occurrences | Details   |
| System issues                        | 1           | Antimony exceedance   |
| Public health warnings issued        | 0           |   |
| Notifications made to DoH            | 1           | Antimony exceedance   |
| Customer complaints                  | 26          | Discolouration, taste and odour, cloudy, other (stained washing, illness) |

| Current and future planned capital investment |                    |             |               |               |
|---|--------------------|-------------|---------------|---------------|
| Project                                       | Overview           | Progress    | Est. Delivery | Est. Spend    |
| WTP Upgrade                                   | Bryn Estyn Upgrade | In progress | 2022/2023     | \$239,000,000 |
| Fluoride Upgrade                              | New Fluoride Tank  | Planning    | 2021/2022     | TBD           |

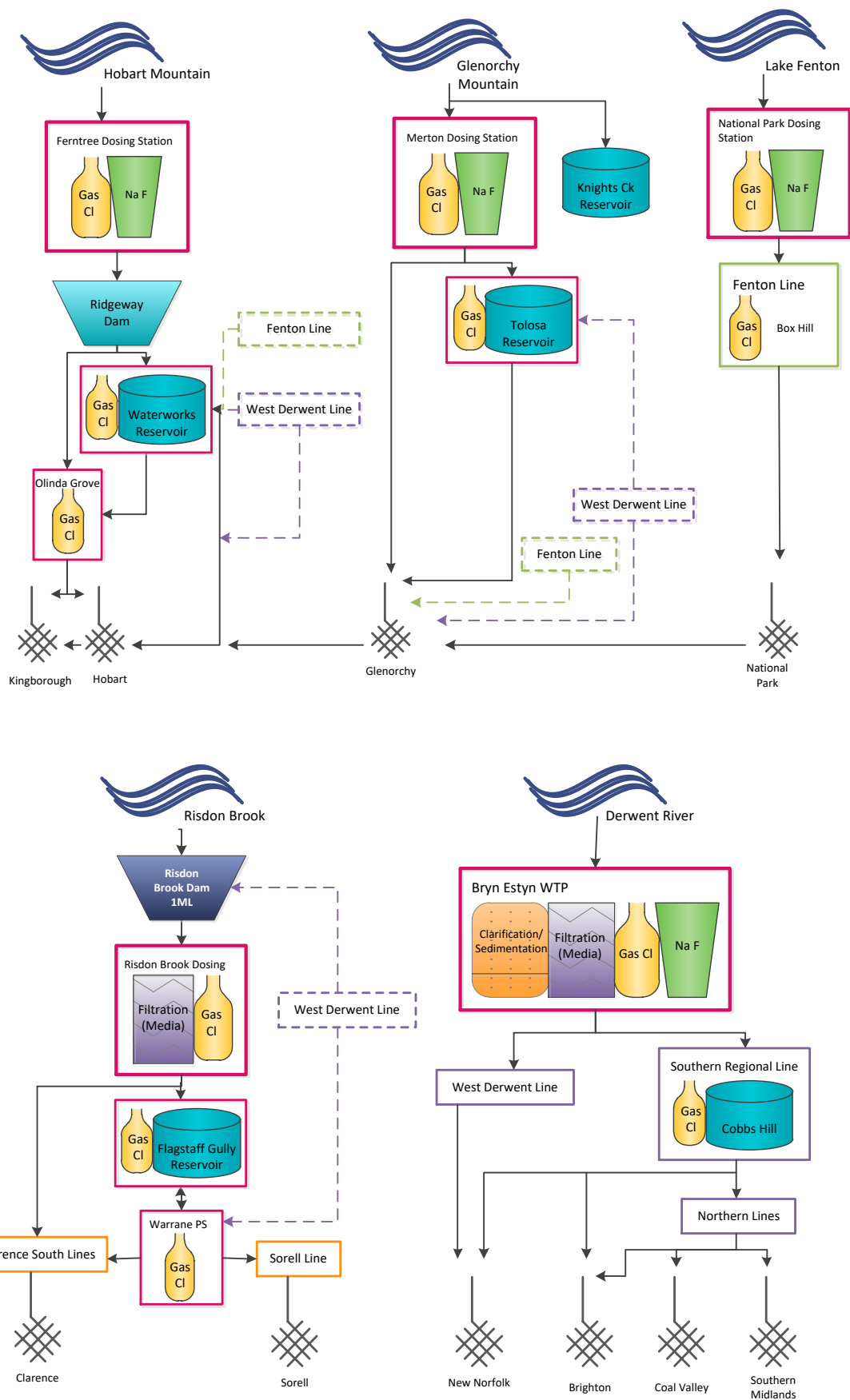


Figure 23.1-a Greater Hobart system schematic

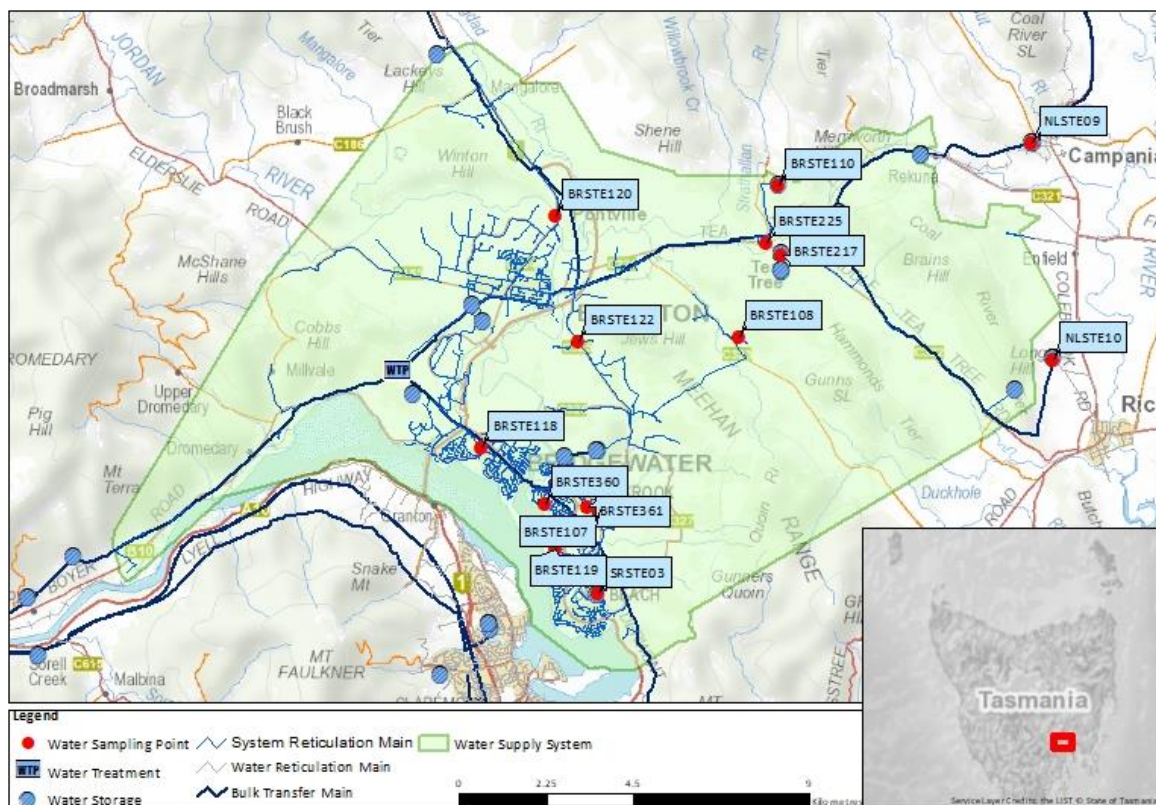


Figure 23.1-b Map of Greater Hobart – Brighton monitoring system

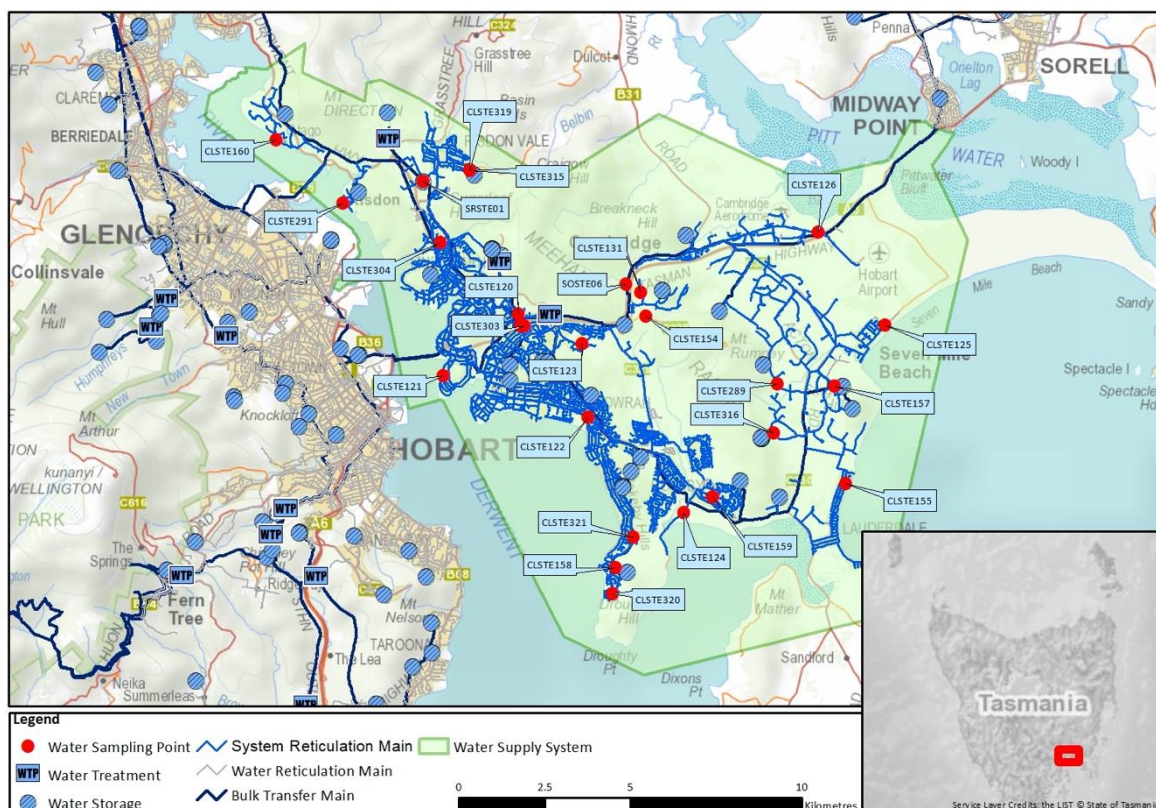
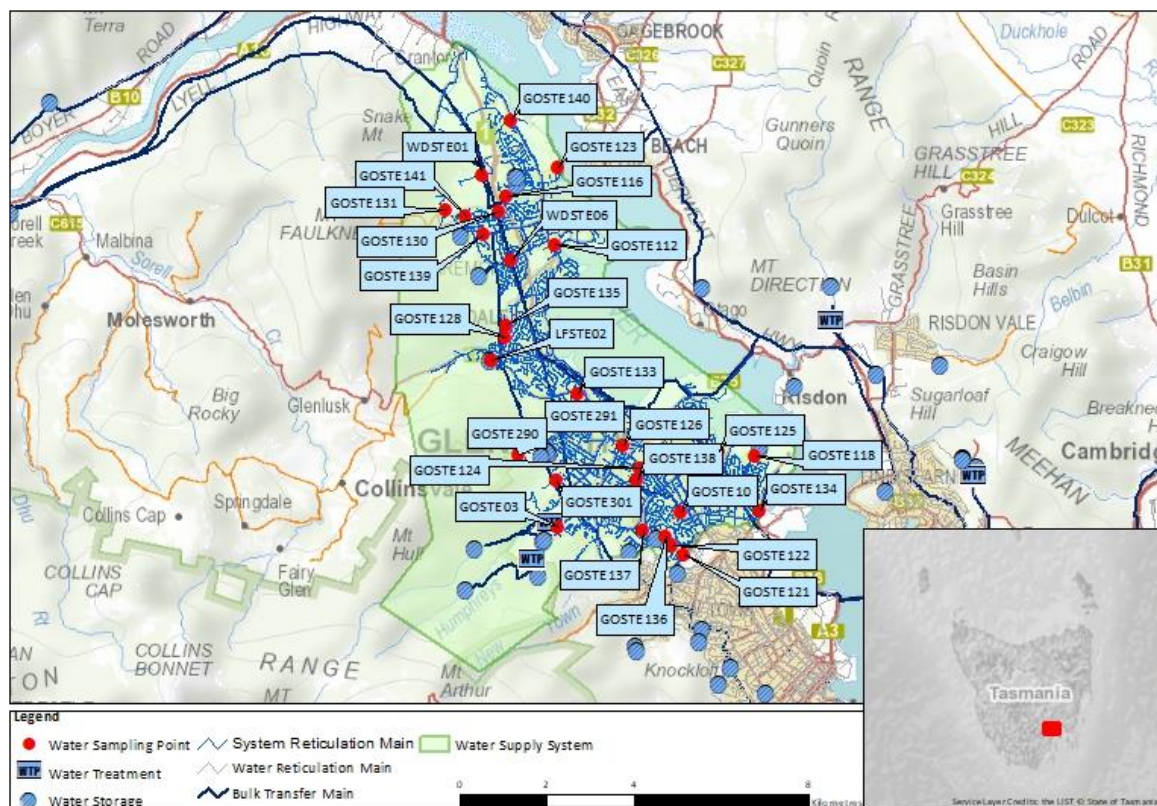
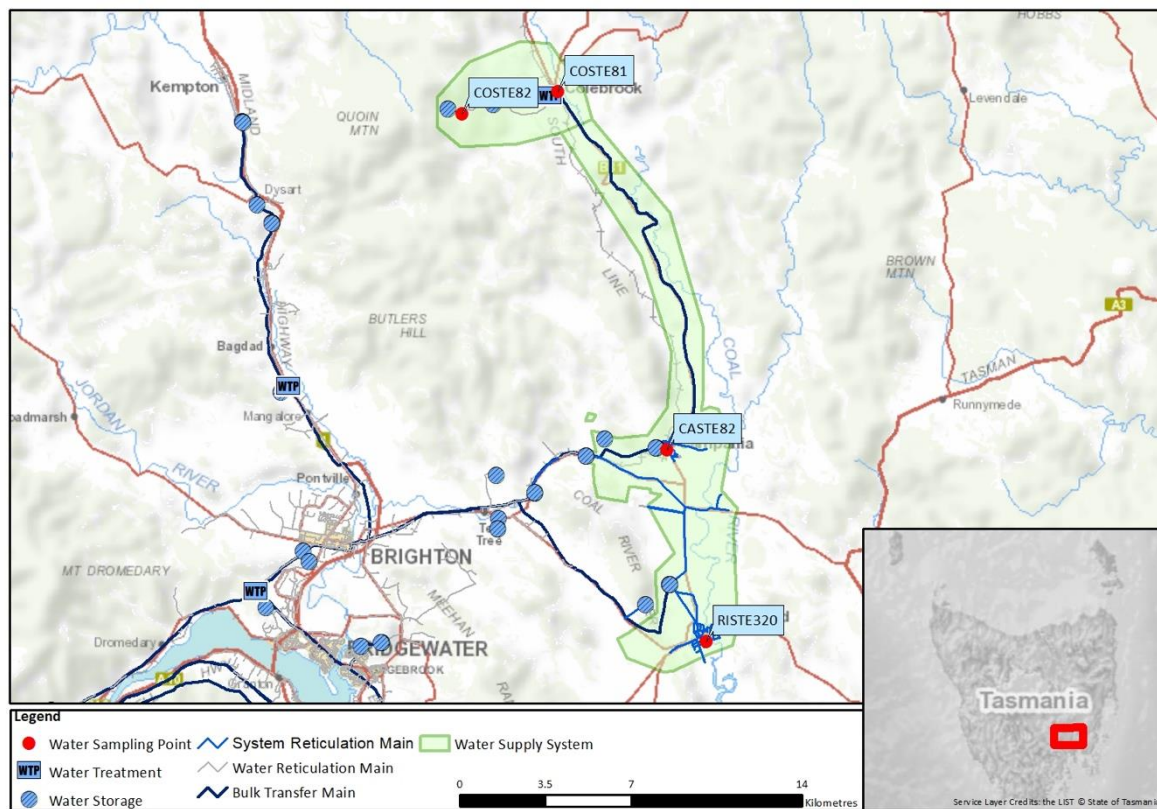


Figure 23.1-c Map of Greater Hobart – Clarence monitoring system







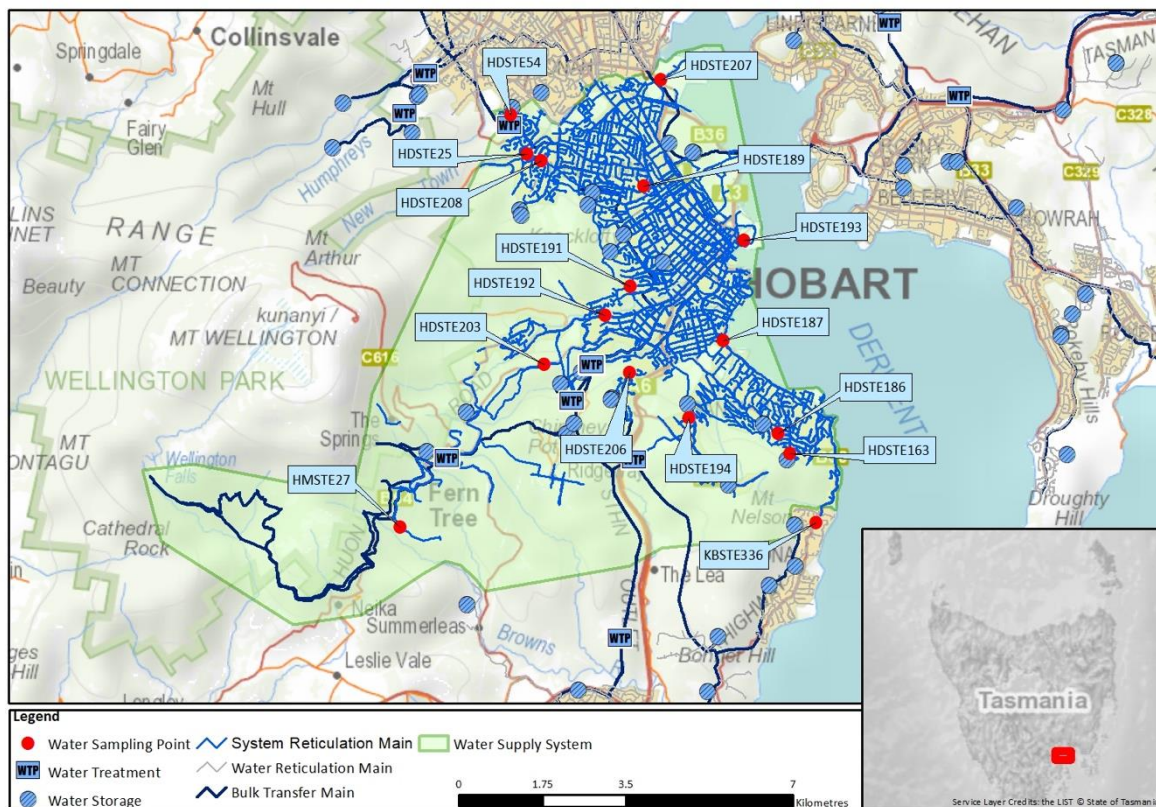


Figure 23.1-f Map of Greater Hobart – Hobart monitoring system

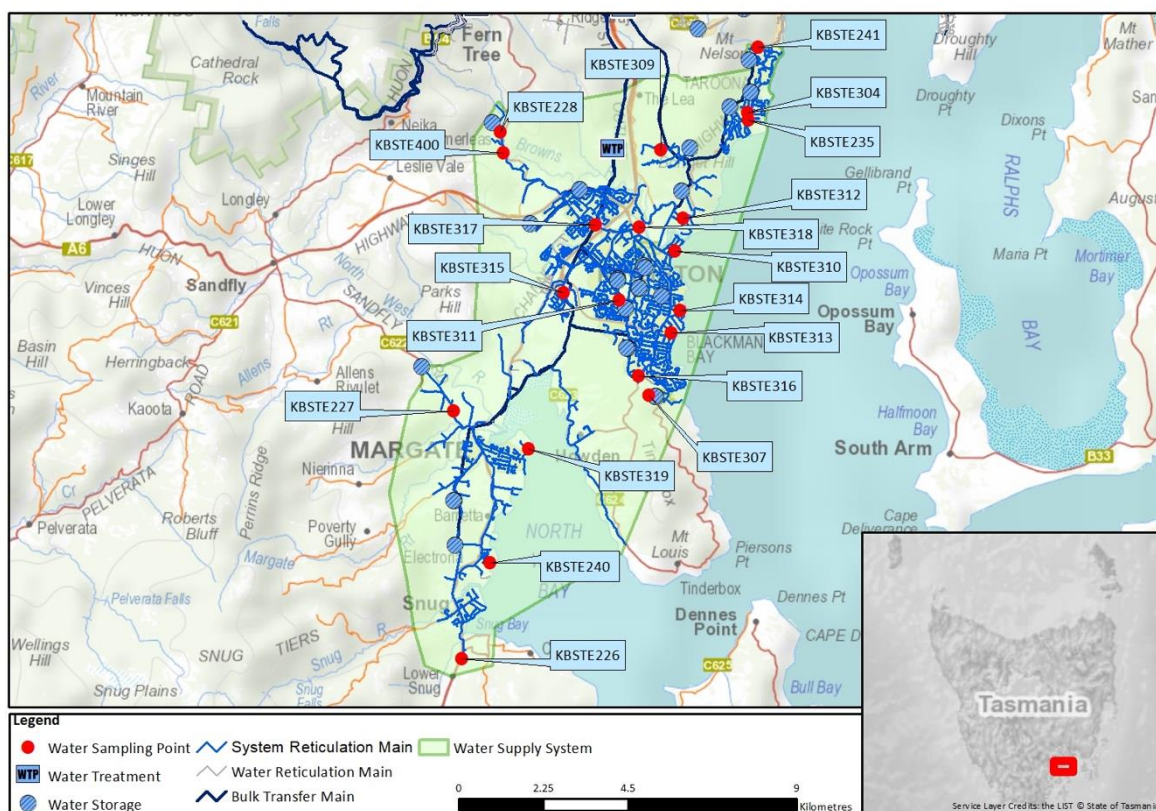


Figure 23.1-g Map of Greater Hobart – Kingborough monitoring system



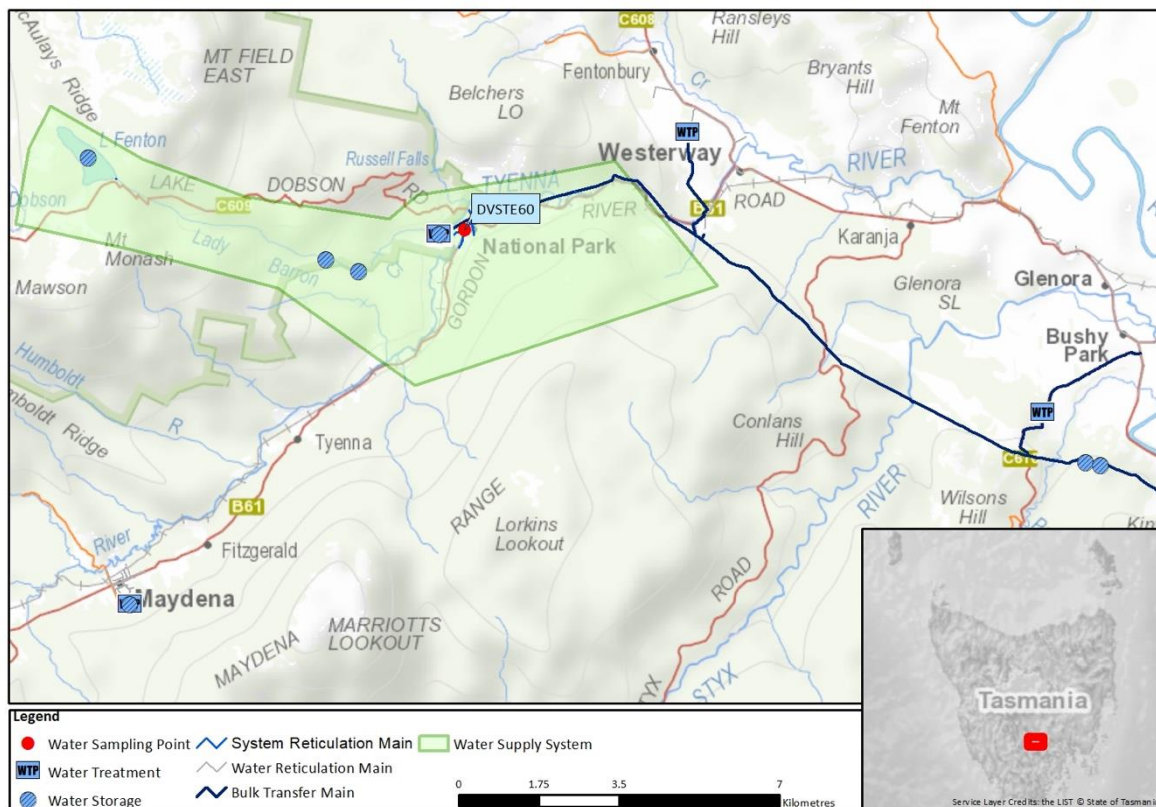


Figure 23.1-h Map of Greater Hobart – National Park monitoring system

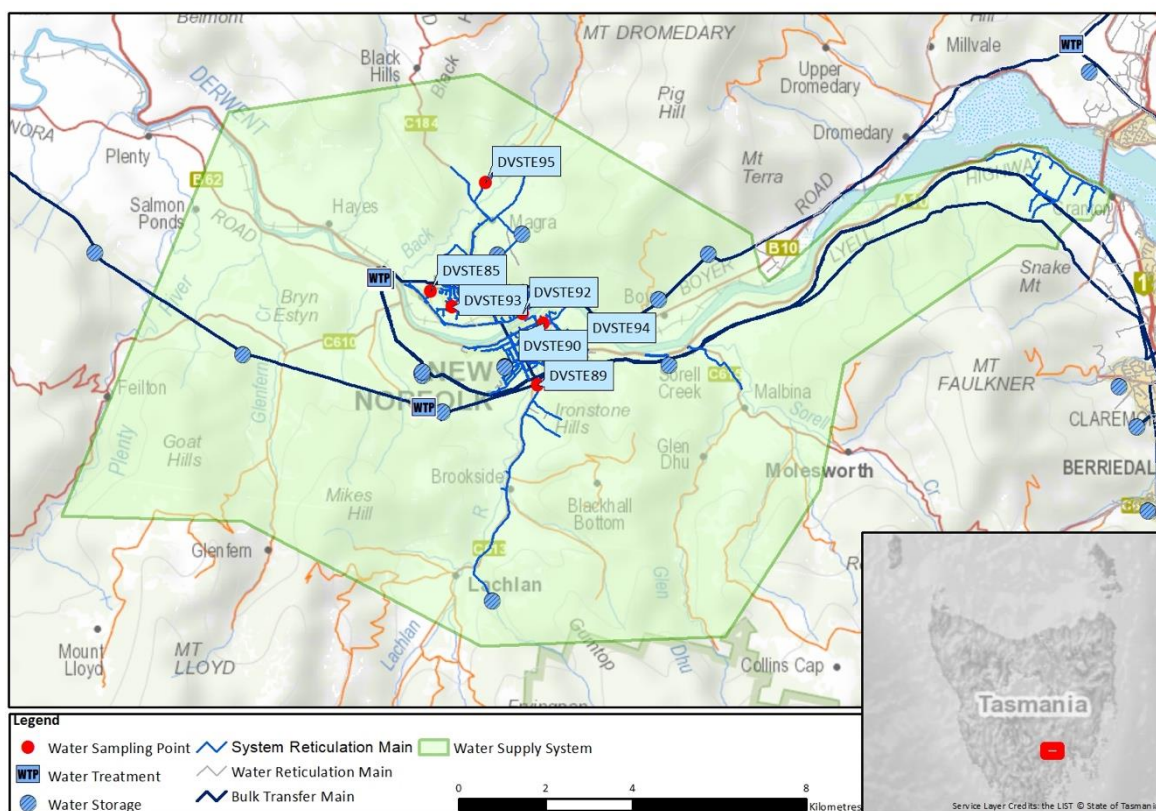


Figure 23.1-i Map of Greater Hobart – New Norfolk monitoring system

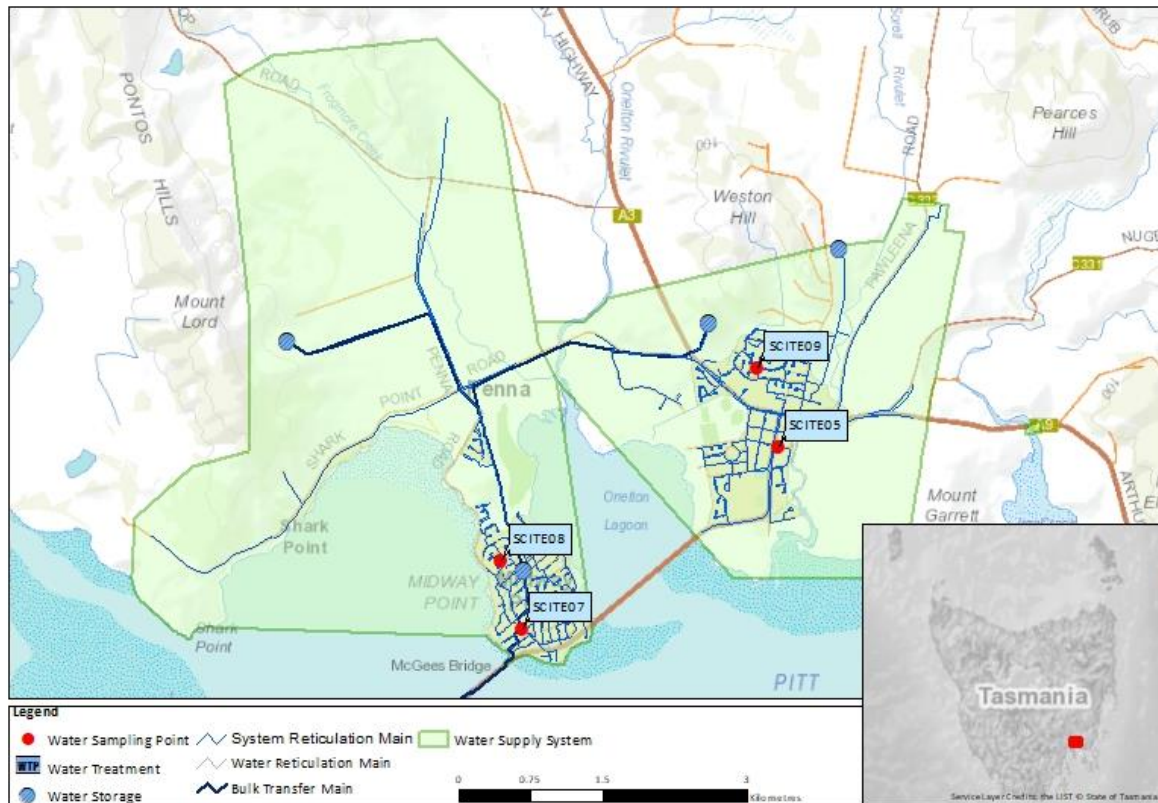


Figure 23.1-j Map of Greater Hobart – Sorell monitoring system

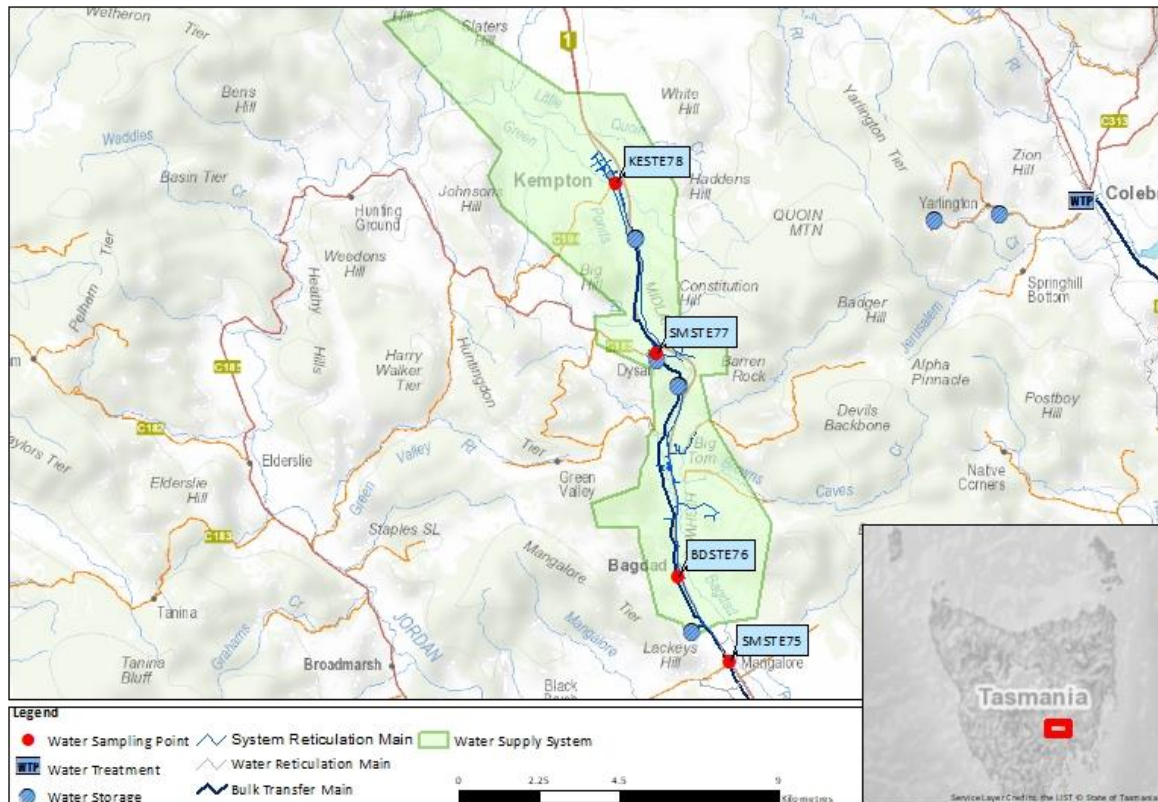


Figure 23.1-k Map of Greater Hobart – Southern Midlands monitoring system



## 23.2. Summary of annual reticulation compliance (2020–21)

Table 23.2-a Sampling program – Brighton

| Planned sampling program (2020–21)           |                        |        |        |     |                |                  |                   |
|--|------------------------|--------|--------|-----|----------------|------------------|-------------------|
| Site name                                    | Site Code              | Micros | Metals | DBP | Fluoride (Lab) | Chemical Profile | Process Chemicals |
| Vineyard Dr Tanks                            | BRSTE217               | W      | n/a    | n/a | n/a            | n/a              | n/a               |
| Campania Res                                 | NLSTE09                | W      | n/a    | n/a | n/a            | n/a              | n/a               |
| Richmond Res                                 | NLSTE10                | W      | n/a    | n/a | n/a            | n/a              | n/a               |
| Old Beach Res Sample Tap                     | SRSTE03                | W      | n/a    | n/a | n/a            | n/a              | n/a               |
| Bridgewater/Dental Clinic Opp Bus Stop 57    | BRSTE118               | W      | n/a    | n/a | n/a            | n/a              | n/a               |
| Compton Downs, St Anne's/NEW Street Entrance | BRSTE119               | W      | Q      | Q   | n/a            | Q                | n/a               |
| Gagebrook/9 Barrob St, Gagebrook             | BRSTE361 <sup>13</sup> | W      | n/a    | n/a | n/a            | n/a              | n/a               |
| 2 Mollineux Drive Old Beach                  | OLDBCH01               | W      | n/a    | n/a | n/a            | n/a              | n/a               |
| Brighton/Crn Briggs Rd and Redside Dr        | BRSTE122               | W      | n/a    | n/a | n/a            | n/a              | n/a               |
| Tea Tree/Merrieworth Rd (NEW)                | BRSTE225               | W      | n/a    | n/a | n/a            | n/a              | n/a               |
| Pontville Public Building                    | BRSTE120               | W      | Q      | Q   | 2M             | Q                | n/a               |
| Bridgewater/Herdmans Cove                    | BRSTE360               | W      | n/a    | n/a | n/a            | n/a              | n/a               |
| Number Planned Samples                       |                        | 572    | 8      | 8   | 24             | 8                | n/a               |
| Number Samples Tested                        |                        | 572    | 8      | 8   | 24             | 8                | n/a               |

Table 23.2-b Sampling program – Clarence

| Planned sampling program (2020–21)            |           |        |        |     |                |                  |                   |
|---|-----------|--------|--------|-----|----------------|------------------|-------------------|
| Site name                                     | Site Code | Micros | Metals | DBP | Fluoride (Lab) | Chemical Profile | Process Chemicals |
| Lindisfarne, Regis Aged Care Centre, Acorn Dr | CLSTE120  | W      | n/a    | n/a | n/a            | n/a              | n/a               |
| 73 Droughty Point Rd                          | CLSTE124  | W      | n/a    | n/a | n/a            | n/a              | n/a               |
| Cambridge, 273 Kennedy Drive                  | CLSTE126  | W      | n/a    | n/a | n/a            | n/a              | n/a               |
| Mt Rumney/68 Centauri Dr                      | CLSTE131  | W      | n/a    | n/a | n/a            | n/a              | n/a               |
| Otago,/77 Otago Bay Rd                        | CLSTE160  | W      | n/a    | n/a | n/a            | n/a              | n/a               |

<sup>13</sup> Replaced by OLDBCH01 8<sup>th</sup> February 2021

|  |          |             |           |           |          |           |            |
|--|----------|-------------|-----------|-----------|----------|-----------|------------|
| Tranmere, Norla St P/S                           | CLSTE158 | W           | Q         | Q         | n/a      | Q         | n/a        |
| Seven Mile Beach - 76 Surf Road                  | CLSTE125 | W           | n/a       | n/a       | n/a      | n/a       | n/a        |
| Rosny Esplanade Park Opp. No 2                   | CLSTE121 | W           | n/a       | n/a       | n/a      | n/a       | n/a        |
| Mornington, 116 Mornington Rd                    | CLSTE123 | W           | n/a       | n/a       | n/a      | n/a       | n/a        |
| Mount Rumney (private water supply) /Sample Tap  | CLSTE154 | M           | n/a       | n/a       | n/a      | n/a       | n/a        |
| Lauderdale, crn Balook St & Hadlow St/Sample Tap | CLSTE155 | W           | Q         | Q         | n/a      | Q         | n/a        |
| Howrah PRV Pit Cnr Howrah Rd and Clarence St     | CLSTE122 | W           | n/a       | n/a       | n/a      | n/a       | n/a        |
| Acton Park, 222 Acton Drive/PRV Shed Sample Tap  | CLSTE289 | W           | n/a       | n/a       | n/a      | n/a       | n/a        |
| Risdon, 26 Saundersons Rd/Sample tap             | CLSTE291 | W           | n/a       | n/a       | n/a      | n/a       | n/a        |
| 9 Geilston Creek Rd                              | CLSTE304 | W           | Q         | Q         | n/a      | Q         | n/a        |
| Warrane Sports Centre crn Dampier & Blight St    | CLSTE303 | W           | n/a       | n/a       | n/a      | n/a       | n/a        |
| 984 Oceana Drive                                 | CLSTE320 | W           | n/a       | n/a       | n/a      | n/a       | n/a        |
| 718 Oceana Drive                                 | CLSTE321 | W           | n/a       | n/a       | n/a      | n/a       | n/a        |
| 11 Ralph Terrace                                 | CLSTE159 | W           | n/a       | n/a       | n/a      | n/a       | n/a        |
| Matipo St Risdon Vale PS                         | CLSTE315 | W           | n/a       | n/a       | n/a      | n/a       | n/a        |
| Matipo Street/Matipo Rd Pump Station Top Side    | CLSTE319 | W           | n/a       | n/a       | n/a      | n/a       | n/a        |
| 118 Tara Drive                                   | CLSTE316 | W           | n/a       | n/a       | n/a      | n/a       | n/a        |
| Belbins Rd, just off Cambridge Rd                | SOSTE06  | W           | n/a       | n/a       | n/a      | n/a       | n/a        |
| Risdon Vale RES                                  | SRSTE01  | W           | n/a       | n/a       | n/a      | n/a       | n/a        |
| Acton Park, 111 Cahill Pl                        | CLSTE157 | W           | n/a       | n/a       | n/a      | n/a       | n/a        |
| <b>Number Planned Samples</b>                    |          | <b>1260</b> | <b>12</b> | <b>12</b> | <b>0</b> | <b>12</b> | <b>n/a</b> |
| <b>Number Samples Tested</b>                     |          | <b>1260</b> | <b>12</b> | <b>12</b> | <b>0</b> | <b>12</b> | <b>n/a</b> |

**Table 23.2-c Sampling program – Coal Valley**

| Planned sampling program (2020–21)    |           |            |           |           |                |                  |                   |
|---------------------------------------|-----------|------------|-----------|-----------|----------------|------------------|-------------------|
| Site name                             | Site Code | Micros     | Metals    | DBP       | Fluoride (Lab) | Chemical Profile | Process Chemicals |
| Richmond/31 Torrens St                | RISTE320  | W          | Q         | Q         | n/a            | Q                | n/a               |
| Campania/Tennis Court                 | CASTE82   | W          | Q         | Q         | n/a            | Q                | n/a               |
| Colebrook/14 Richmond Street (650073) | COSTE81   | W          | Q         | Q         | n/a            | Q                | n/a               |
| Colebrook/509 Yarlinton Rd            | COSTE82   | W          | n/a       | n/a       | n/a            | n/a              | n/a               |
| <b>Number Planned Samples</b>         |           | <b>208</b> | <b>12</b> | <b>12</b> | <b>0</b>       | <b>12</b>        | <b>n/a</b>        |
| <b>Number Samples Tested</b>          |           | <b>208</b> | <b>12</b> | <b>12</b> | <b>0</b>       | <b>12</b>        | <b>n/a</b>        |

Table 23.2-d Sampling program – Glenorchy

| Planned sampling program (2020–21)    |           |            |          |          |                |                  |                   |
|---------------------------------------|-----------|------------|----------|----------|----------------|------------------|-------------------|
| Site name                             | Site Code | Micros     | Metals   | DBP      | Fluoride (Lab) | Chemical Profile | Process Chemicals |
| Glenorchy, 22 Jackson Rd              | GOSTE301  | W          | n/a      | n/a      | n/a            | n/a              | n/a               |
| Glenorchy High Level Sample Tap       | GOSTE03   | W          | n/a      | n/a      | 2M             | n/a              | n/a               |
| St Thereses/Sample Tap                | GOSTE10   | W          | n/a      | n/a      | n/a            | n/a              | n/a               |
| Claremont/16 Mahoney Drive            | GOSTE144  | W          | n/a      | n/a      | n/a            | n/a              | n/a               |
| Claremont, 5 Box Hill Road            | GOSTE112  | W          | n/a      | n/a      | n/a            | n/a              | n/a               |
| Rosetta/7 Marys Hope Road             | GOSTE133  | W          | n/a      | n/a      | n/a            | n/a              | n/a               |
| Moonah, 125 Springfield Ave           | GOSTE137  | W          | Q        | Q        | 2M             | Q                | n/a               |
| Moonah, 50m Pas 98 Amy St             | GOSTE136  | W          | n/a      | n/a      | n/a            | n/a              | n/a               |
| Cnr Main and Hestercombe Road         | GOSTE140  | W          | n/a      | n/a      | n/a            | n/a              | n/a               |
| Derwent Park, 49 Milton Crescent      | GOSTE138  | W          | n/a      | n/a      | n/a            | n/a              | n/a               |
| Lutana/Risdon Rd SPS                  | GOSTE134  | W          | n/a      | n/a      | n/a            | n/a              | n/a               |
| Chigwell, Boondar St Opp 40 Arunta St | GOSTE135  | W          | n/a      | n/a      | n/a            | n/a              | n/a               |
| Claremont/22 Harbord Rd               | GOSTE141  | W          | Q        | Q        | n/a            | Q                | n/a               |
| Claremont - 3 Russell Road            | GOSTE139  | W          | n/a      | n/a      | n/a            | n/a              | n/a               |
| Montrose/118 Montrose Rd              | GOSTE291  | W          | n/a      | n/a      | n/a            | n/a              | n/a               |
| Chigwell, Res                         | LFSTE02   | W          | n/a      | n/a      | n/a            | n/a              | n/a               |
| Box Hill/Fenton Res/Glebe Street      | LFSTE15   | W          | n/a      | n/a      | n/a            | n/a              | n/a               |
| Pump Station - Fenton Line            | LFSTE30   | W          | n/a      | n/a      | n/a            | n/a              | n/a               |
| Claremont/Box Hill Road               | WDSTE06   | W          | n/a      | n/a      | n/a            | n/a              | n/a               |
| <b>Number Planned Samples</b>         |           | <b>970</b> | <b>8</b> | <b>8</b> | <b>48</b>      | <b>8</b>         | <b>n/a</b>        |
| <b>Number Samples Tested</b>          |           | <b>970</b> | <b>8</b> | <b>8</b> | <b>48</b>      | <b>8</b>         | <b>n/a</b>        |

Table 23.2-e Sampling program – Hobart

| Planned sampling program (2020–21) |           |        |        |     |                |                  |                   |
|------------------------------------|-----------|--------|--------|-----|----------------|------------------|-------------------|
| Site name                          | Site Code | Micros | Metals | DBP | Fluoride (Lab) | Chemical Profile | Process Chemicals |
| South Hobart/Opp 132 Forest Rd     | HDSTE191  | W      | n/a    | n/a | n/a            | n/a              | n/a               |

|   |            |          |          |           |          |            |     |
|---|------------|----------|----------|-----------|----------|------------|-----|
| Lenah Valley/9 Susan Parade                     | HDSTE208   | W        | n/a      | n/a       | n/a      | n/a        | n/a |
| South Hobart/90A Cascade Rd                     | HDSTE192   | W        | n/a      | n/a       | 2M       | n/a        | n/a |
| Lenah Valley/PRV Pit, Cnr Girrabong/Mowbray Crt | HDSTE54    | W        | n/a      | n/a       | n/a      | n/a        | n/a |
| Fern Tree/1 Menuggana Road                      | HMSTE27    | W        | n/a      | n/a       | 2M       | n/a        | n/a |
| Sandy Bay, 8 Lindeith Crt/Sample tap            | HDSTE163   | W        | n/a      | n/a       | n/a      | n/a        | n/a |
| Hobart/10 Evans St                              | HDSTE193   | W        | Q        | Q         | n/a      | Q          | n/a |
| Mt Nelson/22 Lachlan Dr                         | HDSTE194   | W        | n/a      | n/a       | n/a      | n/a        | n/a |
| 328 Churchill Ave                               | HDSTE186   | W        | n/a      | n/a       | n/a      | n/a        | n/a |
| Derwent Sailing Club - Marieville Esp           | HDSTE187   | W        | n/a      | n/a       | n/a      | n/a        | n/a |
| Taroona/26 Channel Hwy                          | KBSTE336   | W        | Q        | Q         | n/a      | Q          | n/a |
| HCC Mountain Park Depo - 518 Huon Rd            | HDSTE203   | W        | n/a      | n/a       | n/a      | n/a        | n/a |
| 84 Woodcutters Rd                               | HDSTE206   | W        | n/a      | n/a       | n/a      | n/a        | n/a |
| 2 Lyndhurst Ave                                 | HDSTE189   | W        | n/a      | n/a       | n/a      | n/a        | n/a |
| Queens Walk Flats                               | HDSTE207   | W        | n/a      | n/a       | n/a      | n/a        | n/a |
| 263 Lenah Valley Road                           | HDSTE25    | W        | n/a      | n/a       | n/a      | n/a        | n/a |
| <b>Number Planned Samples</b>                   | <b>833</b> | <b>8</b> | <b>8</b> | <b>48</b> | <b>8</b> | <b>n/a</b> |     |
| <b>Number Samples Tested</b>                    | <b>833</b> | <b>8</b> | <b>8</b> | <b>48</b> | <b>8</b> | <b>n/a</b> |     |

**Table 23.2-f Sampling program – Kingborough**

| Planned sampling program (2020–21)              |                        |        |        |     |                |                  |                   |
|---|------------------------|--------|--------|-----|----------------|------------------|-------------------|
| Site name                                       | Site Code              | Micros | Metals | DBP | Fluoride (Lab) | Chemical Profile | Process Chemicals |
| Blackmans Bay/23 Wells Parade                   | KBSTE313               | W      | n/a    | n/a | n/a            | n/a              | n/a               |
| Kingston High Level/181 Redwood Rd              | KBSTE311               | W      | n/a    | n/a | n/a            | n/a              | n/a               |
| Kingston Gateway Shopping Centre, Channel Hwy   | KBSTE318               | W      | n/a    | n/a | n/a            | n/a              | n/a               |
| St Lukes Church 2 Coolamon Rd                   | KBSTE304               | W      | n/a    | n/a | n/a            | n/a              | n/a               |
| 128 Albion Heights Drive                        | KBSTE309               | W      | n/a    | n/a | n/a            | n/a              | n/a               |
| Kingston Beach/Osborne Esplanade                | KBSTE310               | W      | Q      | Q   | n/a            | Q                | n/a               |
| Snug/2361 Channel Highway                       | KBSTE226               | W      | n/a    | n/a | n/a            | n/a              | n/a               |
| Margate, Sandfly Rd, Margate Cemetry/Sample tap | KBSTE227               | W      | n/a    | n/a | n/a            | n/a              | n/a               |
| Kingborough, Scotts Rd/Sample tap               | KBSTE228 <sup>14</sup> | W      | n/a    | n/a | n/a            | n/a              | n/a               |
| Kingston/Corner Summerleas/Old Summerleas Rd    | KBSTE400               | W      | n/a    | n/a | n/a            | n/a              | n/a               |

<sup>14</sup> Replaced by KBSTE400 29<sup>th</sup> March 2021

|  |            |           |           |          |           |            |     |
|--|------------|-----------|-----------|----------|-----------|------------|-----|
| Electrona/Waterfront – 35 Staff Rd       | KBSTE240   | W         | n/a       | n/a      | n/a       | n/a        | n/a |
| Taroona – 27 Oakleigh Ave                | KBSTE241   | W         | n/a       | n/a      | n/a       | n/a        | n/a |
| Blackmans Bay/23 Powell Rd               | KBSTE314   | W         | n/a       | n/a      | n/a       | n/a        | n/a |
| Taroona/Bachelor Way                     | KBSTE235   | W         | Q         | Q        | n/a       | Q          | n/a |
| Bonnet Hill/4 Tyndall Road               | KBSTE312   | W         | n/a       | n/a      | n/a       | n/a        | n/a |
| Bayton Street - Patriach Drive PRV Pit   | KBSTE315   | W         | n/a       | n/a      | n/a       | n/a        | n/a |
| Ash Drive - 69 Brightwater Road          | KBSTE316   | W         | n/a       | n/a      | n/a       | n/a        | n/a |
| Mt Pleasant - 51 Summerleas Road         | KBSTE317   | W         | n/a       | n/a      | n/a       | n/a        | n/a |
| Margate Offtake/Margate Esp off Beach Rd | KBSTE319   | W         | Q         | Q        | n/a       | Q          | n/a |
| Blackmans Bay, 41 Estuary Driver         | KBSTE307   | W         | n/a       | n/a      | n/a       | n/a        | n/a |
| <b>Number Planned Samples</b>            | <b>901</b> | <b>12</b> | <b>12</b> | <b>0</b> | <b>12</b> | <b>n/a</b> |     |
| <b>Number Samples Tested</b>             | <b>901</b> | <b>12</b> | <b>12</b> | <b>0</b> | <b>12</b> | <b>n/a</b> |     |

**Table 23.2-g Sampling program – National Park**

| Planned sampling program (2020–21) |           |          |          |          |                |                  |                   |
|------------------------------------|-----------|----------|----------|----------|----------------|------------------|-------------------|
| Site name                          | Site Code | Micros   | Metals   | DBP      | Fluoride (Lab) | Chemical Profile | Process Chemicals |
| Uxbridge Rd Airstrip               | LFSTE12   | W        | n/a      | n/a      | n/a            | n/a              | n/a               |
| <b>Number Planned Samples</b>      | <b>52</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b>       | <b>0</b>         | <b>n/a</b>        |
| <b>Number Samples Tested</b>       | <b>52</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b>       | <b>0</b>         | <b>n/a</b>        |

**Table 23.2-h Sampling program – New Norfolk**

| Planned sampling program (2020–21)                       |           |        |        |     |                |                  |                   |
|--|-----------|--------|--------|-----|----------------|------------------|-------------------|
| Site name  | Site Code | Micros | Metals | DBP | Fluoride (Lab) | Chemical Profile | Process Chemicals |
| New Norfolk/29 Alfred St                                 | DVSTE90   | W      | Q      | Q   | n/a            | Q                | n/a               |
| New Norfolk/Hobart Rd & Glebe Rd - 50m Past Intersection | DVSTE94   | W      | n/a    | n/a | n/a            | n/a              | n/a               |
| New Norfolk Rowing Club - 44 Rocks Rd                    | DVSTE92   | W      | n/a    | n/a | n/a            | n/a              | n/a               |
| 51 Daniels Rd, Magra                                     | DVSTE95   | W      | n/a    | n/a | n/a            | n/a              | n/a               |

|                                     |            |          |          |          |          |            |     |
|-------------------------------------|------------|----------|----------|----------|----------|------------|-----|
| crn Goldsmith & Bastian St Lawitta  | DVSTE85    | W        | n/a      | n/a      | n/a      | n/a        | n/a |
| Off Take on Glebe Rd                | DVSTE89    | W        | n/a      | n/a      | n/a      | n/a        | n/a |
| New Norfolk/Dead End of Tribolet Rd | DVSTE93    | W        | n/a      | n/a      | n/a      | n/a        | n/a |
| <b>Number Planned Samples</b>       | <b>364</b> | <b>4</b> | <b>4</b> | <b>0</b> | <b>4</b> | <b>n/a</b> |     |
| <b>Number Samples Tested</b>        | <b>364</b> | <b>4</b> | <b>4</b> | <b>0</b> | <b>4</b> | <b>n/a</b> |     |

**Table 23.2-i Sampling program – Sorell**

| Planned sampling program (2020–21) |            |          |          |          |                |                  |                   |
|------------------------------------|------------|----------|----------|----------|----------------|------------------|-------------------|
| Site name                          | Site Code  | Micros   | Metals   | DBP      | Fluoride (Lab) | Chemical Profile | Process Chemicals |
| Sorell/10 Sommerville St           | SCITE05    | W        | Q        | Q        | n/a            | Q                | n/a               |
| Sorell/Horizon Drive               | SCITE09    | W        | n/a      | n/a      | n/a            | n/a              | n/a               |
| Midway Point/24 Penna Road         | SCITE07    | W        | n/a      | n/a      | n/a            | n/a              | n/a               |
| Midway Point/24 Honolulu St        | SCITE08    | W        | n/a      | n/a      | n/a            | n/a              | n/a               |
| <b>Number Planned Samples</b>      | <b>208</b> | <b>4</b> | <b>4</b> | <b>0</b> | <b>4</b>       | <b>n/a</b>       |                   |
| <b>Number Samples Tested</b>       | <b>208</b> | <b>4</b> | <b>4</b> | <b>0</b> | <b>4</b>       | <b>n/a</b>       |                   |

**Table 23.2-j Sampling program – Southern Midlands**

| Planned sampling program (2020–21)                 |            |          |          |           |                |                  |                   |
|--|------------|----------|----------|-----------|----------------|------------------|-------------------|
| Site name  | Site Code  | Micros   | Metals   | DBP       | Fluoride (Lab) | Chemical Profile | Process Chemicals |
| Bagdad, Caltex Fuel stop shop/Sample Post          | BDSTE76    | W        | Q        | Q         | 2M             | Q                | n/a               |
| Kempton, Caravan Parking Bay/Sample Post on Street | KESTE78    | W        | n/a      | n/a       | n/a            | n/a              | n/a               |
| Mangalore/Park Sample Post                         | SMSTE75    | W        | n/a      | n/a       | n/a            | n/a              | n/a               |
| Dysart/Crn Ely & Church Lane                       | SMSTE77    | W        | n/a      | n/a       | n/a            | n/a              | n/a               |
| <b>Number Planned Samples</b>                      | <b>208</b> | <b>4</b> | <b>4</b> | <b>24</b> | <b>4</b>       | <b>n/a</b>       |                   |
| <b>Number Samples Tested</b>                       | <b>208</b> | <b>4</b> | <b>4</b> | <b>24</b> | <b>4</b>       | <b>n/a</b>       |                   |



### 23.3. Summary of current and historic performance (2016–21)

Table 23.3-a Historical health performance overview (5 year comparison)

| Historical health performance overview (5 year comparison)     |         |         |         |         |         |
|--|---------|---------|---------|---------|---------|
| Indicator  | 2016–17 | 2017–18 | 2018–19 | 2019–20 | 2020–21 |
| Microbiological  | 99.9%   | 99.9%   | 99.9%   | 100.0%  | 100.0%  |
| Fluoride   | 100.0%  | 100.0%  | 100.0%  | 100.0%  | 100.0%  |
| Metals   | 99.9%   | 100.0%  | 100.0%  | 100.0%  | 100.0%  |
| Disinfection by products                                       | 100.0%  | 100.0%  | 100.0%  | 100.0%  | 100.0%  |
| <div> <span>Compliant</span> <span>Non-compliant</span> </div> |         |         |         |         |         |

### 23.4. Analysis of current health performance (2020–21)

Table 23.4-a Summary of health guideline exceedances

| Summary of health guideline exceedances |          |  |           |
|---|----------|--|-----------|
| Parameter Exceeding                     | Date     | Details  | Resampled |
| Antimony                                | 8/7/2020 | Antimony of 0.0050 mg/L in monthly compliance sample | ✓         |

Table 23.4-b Fluoride distribution performance

| Distribution fluoride performance                              |         |
|--|---------|
| Indicator  | 2020–21 |
| F exceeding 1.5 mg/L   | 0       |
| Average F concentration range (0.8 mg/L – 1.1 mg/L)            | 0.9     |
| 90% of F results are equal to or less than 1.1 mg/L            | 100%    |
| <div> <span>Compliant</span> <span>Non-compliant</span> </div> |         |

**Table 23.4-c Metals performance**

| Metals – health regulated parameters |       |      |         |             |               |         |          |         |
|--------------------------------------|-------|------|---------|-------------|---------------|---------|----------|---------|
| Parameter                            | Limit | Unit | Samples | Exceedances | Performance % | Mean    | Min.     | Max.    |
| Antimony                             | 0.003 | mg/L | 72      | 1           | 99            | <0.0005 | <0.0005  | 0.0050  |
| Arsenic                              | 0.01  | mg/L | 72      | 0           | 100           | <0.0003 | <0.0003  | <0.0003 |
| Barium                               | 2     | mg/L | 72      | 0           | 100           | 0.0056  | 0.0012   | 0.0115  |
| Cadmium                              | 0.002 | mg/L | 72      | 0           | 100           | <0.0001 | <0.0001  | <0.0001 |
| Chromium                             | 0.05  | mg/L | 72      | 0           | 100           | 0.0002  | <0.0001  | 0.0005  |
| Copper                               | 2     | mg/L | 72      | 0           | 100           | 0.0068  | <0.0001  | 0.0270  |
| Lead                                 | 0.01  | mg/L | 72      | 0           | 100           | 0.0004  | <0.0001  | 0.0012  |
| Manganese                            | 0.5   | mg/L | 72      | 0           | 100           | 0.0020  | 0.0003   | 0.0129  |
| Mercury                              | 0.001 | mg/L | 72      | 0           | 100           | 0.00007 | <0.00003 | 0.00036 |
| Molybdenum                           | 0.05  | mg/L | 72      | 0           | 100           | <0.0001 | <0.0001  | <0.0001 |
| Nickel                               | 0.02  | mg/L | 72      | 0           | 100           | 0.0001  | <0.0001  | 0.0004  |
| Selenium                             | 0.01  | mg/L | 72      | 0           | 100           | 0.0001  | <0.0001  | 0.0013  |

**Table 23.4-d Disinfection by product performance**

| Disinfection by products – health regulated parameters |       |      |         |             |               |      |      |      |
|--|-------|------|---------|-------------|---------------|------|------|------|
| Parameter  | Limit | Unit | Samples | Exceedances | Performance % | Mean | Min. | Max. |
| Dichloroacetic acid                                    | 100   | µg/L | 72      | 0           | 100           | 10   | 2    | 31   |
| Monochloroacetic acid                                  | 150   | µg/L | 72      | 0           | 100           | <3   | <3   | <3   |
| Trichloroacetic acid                                   | 100   | µg/L | 72      | 0           | 100           | 24   | 9    | 84   |
| Total trihalomethanes                                  | 250   | µg/L | 72      | 0           | 100           | 44   | 14   | 104  |

**Table 23.4-e General physical performance**

| General physical parameters |       |                 |      |      |       |
|-----------------------------|-------|-----------------|------|------|-------|
| Parameter                   | Unit  | Guideline Value | Mean | Min  | Max   |
| Chlorine residual           | mg/L  | 0.1 – <0.8      | 0.64 | 0.00 | 2.50  |
| Colour True                 | HU    | 15              | <1   | <1   | 5     |
| pH                          | Units | 6.5 – 8.5       | 7.25 | 5.35 | 9.60  |
| Turbidity                   | NTU   | 1               | 0.44 | 0.01 | 22.00 |

## 23.5. Analysis of overall system performance (2020–21)

Table 23.5-a Summary of system issues/public health warnings

| Summary of system issues |  |                           |                           |
|--------------------------|--|---------------------------|---------------------------|
| Date                     | Description  | DoH notification required | DoH notification complete |
| 8/7/2020                 | <p>Routine quarterly sample taken from BDSTE76 (supply) detected antimony above the health limit.</p> <p>System was flushed, and subsequent sample was clear.</p> <p>Further investigations identified possible contamination of the sample bottle. All affected bottles have been recalled and no further action was taken. This was not counted as an exceedance</p> | ✓                         | ✓                         |

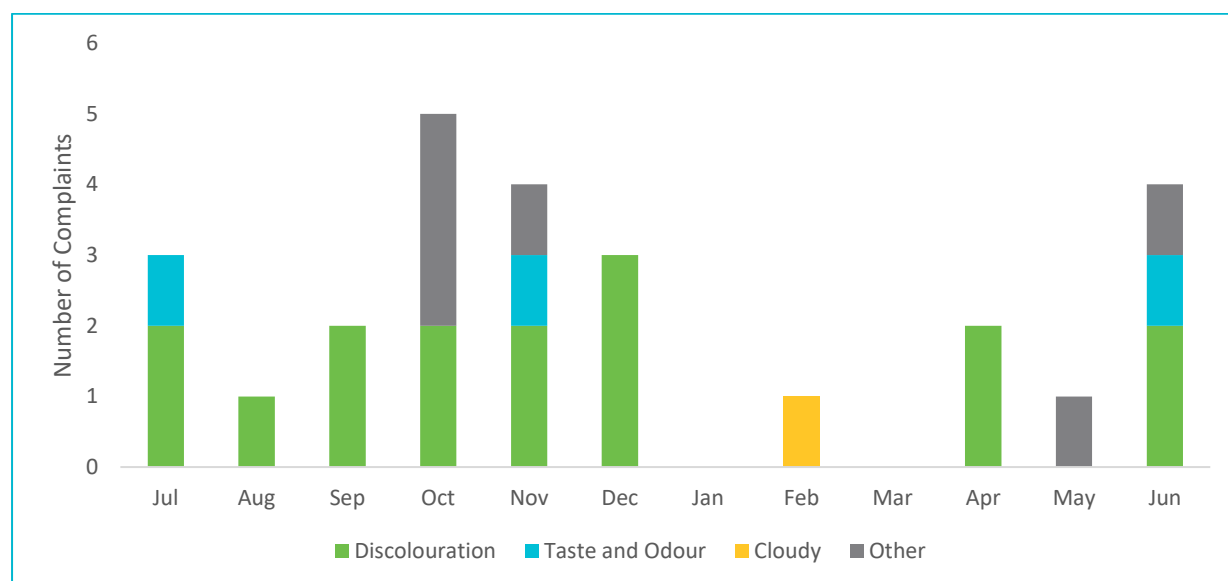


Figure 23.5-b Water quality customer complaints by month and type

## 24. Herrick drinking water system

### 24.1. System summary (2020–21)

| Herrick drinking water system      |         |
|------------------------------------|---------|
| System status (as at 30 June 2021) | Potable |
| Total number of connections        | 27      |
| Population serviced                | 61      |
| Fluoride                           | n/a     |

| Performance overview against health targets (2020–21)      |         |                                     |        |                 |             |
|--|---------|-------------------------------------|--------|-----------------|-------------|
| Indicator  | Outcome | Compliance                          | Target | Sampling Events | Exceedances |
| Microbiological  | 100.0%  | <input checked="" type="checkbox"/> | 98.0%  | 52              | 0           |
| Fluoride   | n/a     | n/a                                 | n/a    | n/a             | n/a         |
| Metals   | 100.0%  | <input checked="" type="checkbox"/> | 100.0% | 4               | 0           |
| DBPs   | 100.0%  | <input checked="" type="checkbox"/> | 100.0% | 4               | 0           |
| <div><div></div> Compliant <div></div> Non-compliant</div> |         |                                     |        |                 |             |

| Overall system performance (2020–21) |             |         |
|--------------------------------------|-------------|---------|
| Indicator                            | Occurrences | Details |
| System issues                        | 0           |         |
| Public health warnings issued        | 0           |         |
| Notifications made to DoH            | 0           |         |
| Customer complaints                  | 0           |         |

| Current and future planned capital investment |          |          |               |                     |
|---|----------|----------|---------------|---------------------|
| Project                                       | Overview | Progress | Est. Delivery | Est. Spend (\$'000) |
| No projected capital investment               |          |          |               |                     |

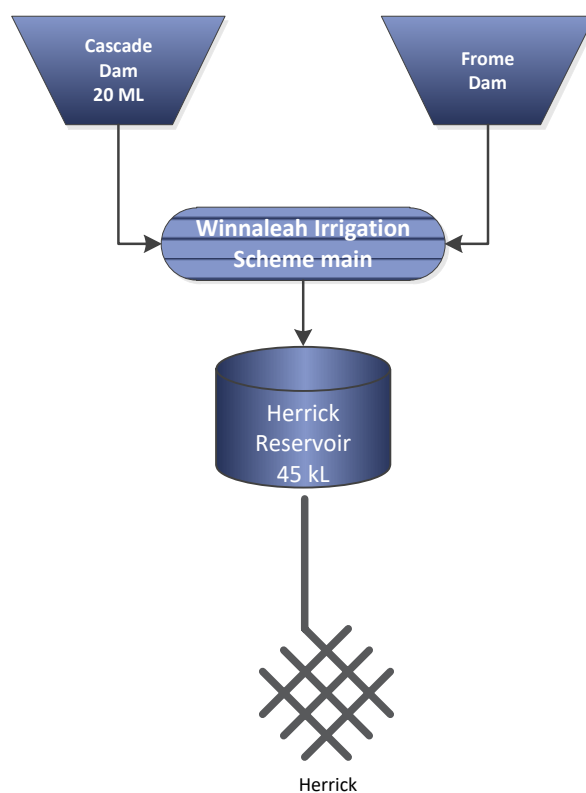


Figure 24.1-a Herrick system schematic

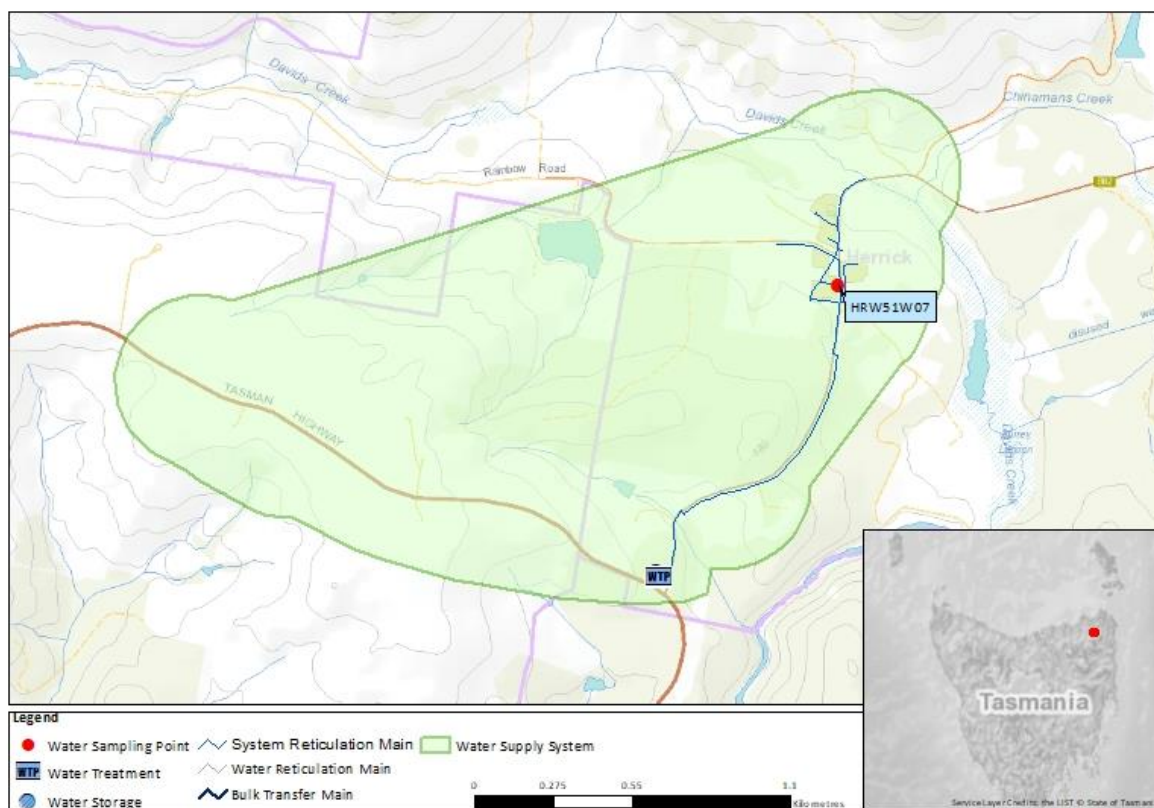


Figure 24.1-b Map of Herrick monitoring system

## 24.2. Summary of annual reticulation compliance (2020–21)

Table 24.2-a Sampling program

| Planned compliance sampling program (2020–21) |           |        |        |     |                |                  |                   |
|---|-----------|--------|--------|-----|----------------|------------------|-------------------|
| Site name                                     | Site Code | Micros | Metals | DBP | Fluoride (Lab) | Chemical Profile | Process Chemicals |
| Herrick/11 Gladstone Road                     | HRW51W07  | W      | Q      | Q   | n/a            | Q                | n/a               |
| Number Planned Samples                        |           | 52     | 4      | 4   | n/a            | 4                | n/a               |
| Number Samples Tested                         |           | 52     | 4      | 4   | n/a            | 4                | n/a               |

## 24.3. Summary of current and historic performance (2016–21)

Table 24.3-a Historical health performance overview (5 year comparison)

| Historical health performance overview (5 year comparison)   |         |         |         |         |         |
|--|---------|---------|---------|---------|---------|
| Indicator  | 2016–17 | 2017–18 | 2018–19 | 2019–20 | 2020–21 |
| Microbiological  | 58.3%   | 66.7%   | 98.1%   | 100.0%  | 100.0%  |
| Fluoride   | n/a     | n/a     | n/a     | n/a     | n/a     |
| Metals   | 100.0%  | 100.0%  | 100.0%  | 100.0%  | 100.0%  |
| Disinfection by products   | n/a     | n/a     | 100.0%  | 100.0%  | 100.0%  |
| <div> <span style="color: green;">■</span> Compliant           <span style="color: red;">■</span> Non-compliant         </div> |         |         |         |         |         |

## 24.4. Analysis of current health performance (2020–21)

Table 24.4-a Summary of health guideline exceedances

| Summary of health guideline exceedances |      |         |           |
|---|------|---------|-----------|
| Parameter Exceeding                     | Date | Details | Resampled |
| No ADWG exceedances                     |      |         |           |

**Table 24.4-b Metals performance**

| Metals – health regulated parameters |       |      |         |             |               |          |          |         |
|--------------------------------------|-------|------|---------|-------------|---------------|----------|----------|---------|
| Parameter                            | Limit | Unit | Samples | Exceedances | Performance % | Mean     | Min.     | Max.    |
| Antimony                             | 0.003 | mg/L | 4       | 0           | 100           | <0.0005  | <0.0005  | <0.0005 |
| Arsenic                              | 0.01  | mg/L | 4       | 0           | 100           | 0.0003   | <0.0003  | 0.0005  |
| Barium                               | 2     | mg/L | 4       | 0           | 100           | 0.0674   | 0.0487   | 0.0937  |
| Cadmium                              | 0.002 | mg/L | 4       | 0           | 100           | <0.0001  | <0.0001  | <0.0001 |
| Chromium                             | 0.05  | mg/L | 4       | 0           | 100           | <0.0001  | <0.0001  | 0.0002  |
| Copper                               | 2     | mg/L | 4       | 0           | 100           | 0.0039   | 0.0023   | 0.0048  |
| Lead                                 | 0.01  | mg/L | 4       | 0           | 100           | 0.0004   | 0.0003   | 0.0006  |
| Manganese                            | 0.5   | mg/L | 4       | 0           | 100           | 0.0024   | 0.0016   | 0.0035  |
| Mercury                              | 0.001 | mg/L | 4       | 0           | 100           | <0.00003 | <0.00003 | 0.00004 |
| Molybdenum                           | 0.05  | mg/L | 4       | 0           | 100           | <0.0001  | <0.0001  | 0.0001  |
| Nickel                               | 0.02  | mg/L | 4       | 0           | 100           | 0.0004   | 0.0001   | 0.0007  |
| Selenium                             | 0.01  | mg/L | 4       | 0           | 100           | <0.0001  | <0.0001  | <0.0001 |

**Table 24.4-c Disinfection by product performance**

| Disinfection by products – health regulated parameters |       |      |         |             |               |      |      |      |
|--|-------|------|---------|-------------|---------------|------|------|------|
| Parameter  | Limit | Unit | Samples | Exceedances | Performance % | Mean | Min. | Max. |
| Dichloroacetic acid                                    | 100   | µg/L | 4       | 0           | 100           | 18   | 12   | 22   |
| Monochloroacetic acid                                  | 150   | µg/L | 4       | 0           | 100           | <3   | <3   | <3   |
| Trichloroacetic acid                                   | 100   | µg/L | 4       | 0           | 100           | 57   | 39   | 92   |
| Total trihalomethanes                                  | 250   | µg/L | 4       | 0           | 100           | 62   | 35   | 92   |

**Table 24.4-d General physical performance**

| General physical parameters |       |                 |      |      |      |
|-----------------------------|-------|-----------------|------|------|------|
| Parameter                   | Unit  | Guideline Value | Mean | Min  | Max  |
| Chlorine residual           | mg/L  | 0.1 – <0.8      | 0.39 | 0.21 | 0.64 |
| Colour True                 | HU    | 15              | 1.25 | 1    | 2    |
| pH                          | Units | 6.5 – 8.5       | 7.43 | 6.38 | 8.05 |
| Turbidity                   | NTU   | 1               | 0.41 | 0.27 | 0.66 |

## 24.5. Analysis of overall system performance (2020–21)

Table 24.5-a Summary of system issues/public health warnings

| Summary of system issues                          |             |                           |                           |
|---|-------------|---------------------------|---------------------------|
| Date  | Description | DoH notification required | DoH notification complete |
| No system issues or public health warnings issued |             |                           |                           |



## 25. Huon Valley drinking water system

### 25.1. System summary (2020–21)

| Huon Valley drinking water system  |                 |
|------------------------------------|-----------------|
| System status (as at 30 June 2021) | Potable         |
| Total number of connections        | 4,339           |
| Population serviced                | 8,724           |
| Fluoride                           | Sodium fluoride |

| Performance overview against health targets (2020–21)      |         |            |        |                 |             |
|--|---------|------------|--------|-----------------|-------------|
| Indicator  | Outcome | Compliance | Target | Sampling Events | Exceedances |
| Microbiological  | 100.0%  | ☑          | 98.0%  | 477             | 0           |
| Fluoride   | 100.0%  | ☑          | 100.0% | 48              | 0           |
| Metals   | 100.0%  | ☑          | 100.0% | 12              | 0           |
| DBPs   | 100.0%  | ☑          | 100.0% | 28              | 0           |
| <div><div></div> Compliant <div></div> Non-compliant</div> |         |            |        |                 |             |

| Overall system performance (2020–21) |             |         |
|--------------------------------------|-------------|---------|
| Indicator                            | Occurrences | Details |
| System issues                        | 0           |         |
| Public health warnings issued        | 0           |         |
| Notifications made to DoH            | 0           |         |
| Customer complaints                  | 0           |         |

| Current and future planned capital investment |                 |          |               |            |
|---|-----------------|----------|---------------|------------|
| Project                                       | Overview        | Progress | Est. Delivery | Est. Spend |
| WTP Upgrade                                   | UV Installation | Planning | 2022/2023     | \$600,000  |

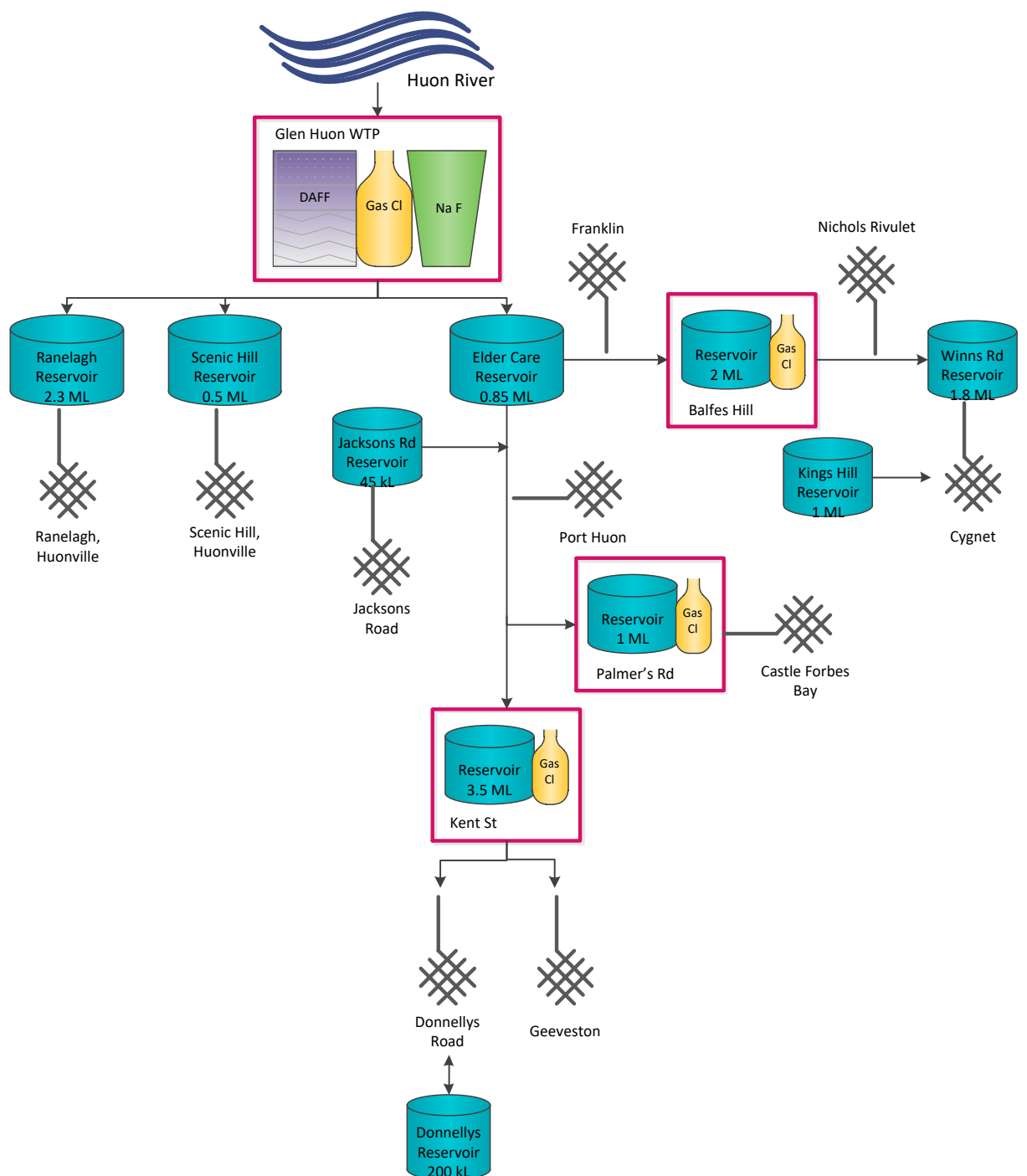


Figure 25.1-a Huon Valley system schematic

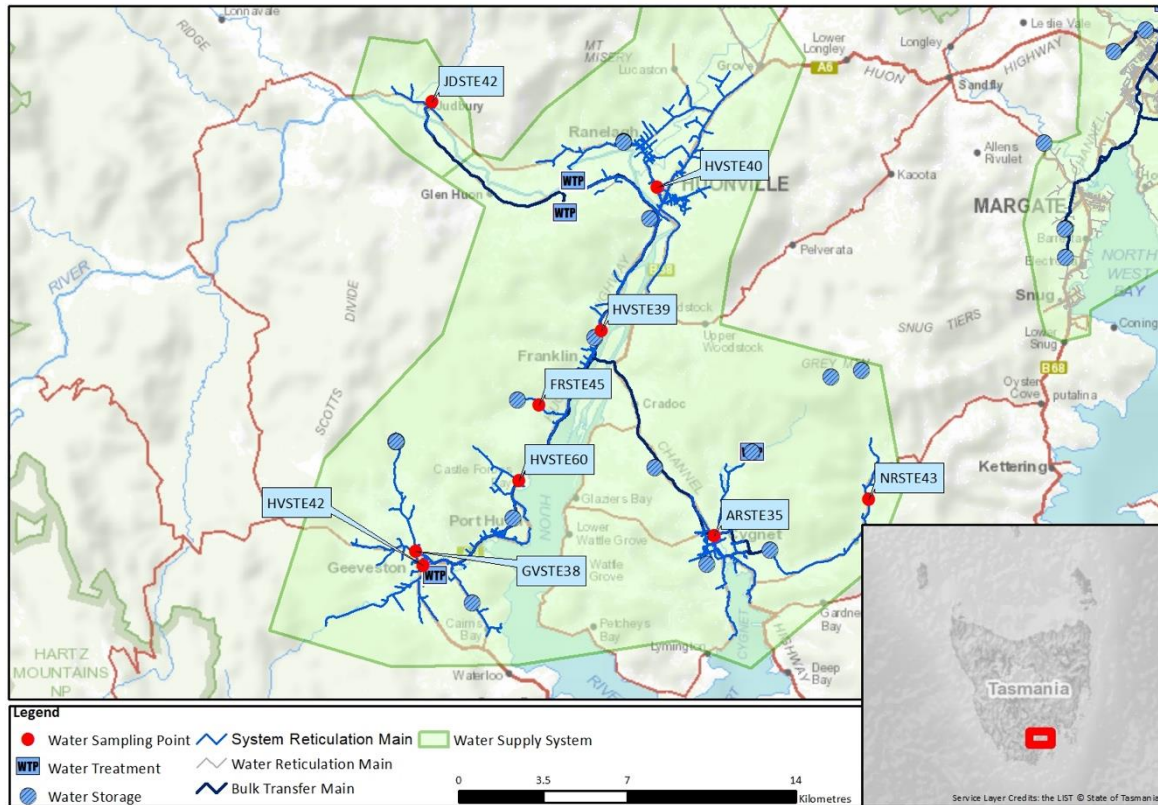


Figure 25.1-b Map of Huon Valley monitoring system

## 25.2. Summary of annual reticulation compliance (2020–21)

Table 25.2-a Sampling program

| Planned sampling program (2020–21)                            |           |            |           |           |                |                  |                   |
|---|-----------|------------|-----------|-----------|----------------|------------------|-------------------|
| Site name   | Site Code | Micros     | Metals    | DBP       | Fluoride (Lab) | Chemical Profile | Process Chemicals |
| Cygnet/Football Ground, Bridge Sample Tap                     | ARSTE35   | W          | n/a       | Q         | n/a            | n/a              | n/a               |
| South Franklin, Jacksons Rd/Sample Tap                        | FRSTE45   | W          | n/a       | Q         | n/a            | n/a              | n/a               |
| Franklin Retic/Opposite No. 1 PS, Sample Tap                  | HVSTE39   | W          | n/a       | Q         | n/a            | n/a              | n/a               |
| Huonville Retic/Football Club Entrance, Wilmot Rd, Sample Tap | HVSTE40   | W          | Q         | Q         | 2M             | Q                | n/a               |
| Geeveston/Intersection Bridge, School Rd, Main Rd             | HVSTE42   | W          | Q         | Q         | 2M             | Q                | n/a               |
| Geeveston/Fourfoot Rd 1st Bridge                              | GVSTE38   | W          | n/a       | n/a       | n/a            | n/a              | n/a               |
| 4046 Huon Hwy, Castle Forbes Bay                              | HVSTE60   | W          | n/a       | n/a       | n/a            | n/a              | n/a               |
| Nicholls Rivulet, Sample Tap                                  | NRSTE43   | W          | n/a       | Q         | n/a            | n/a              | n/a               |
| Judbury/19 George Street                                      | JDSTE42   | W          | Q         | Q         | n/a            | Q                | n/a               |
| <b>Number Planned Samples</b>                                 |           | <b>477</b> | <b>12</b> | <b>28</b> | <b>48</b>      | <b>12</b>        | <b>n/a</b>        |
| <b>Number Samples Tested</b>                                  |           | <b>477</b> | <b>12</b> | <b>28</b> | <b>48</b>      | <b>12</b>        | <b>n/a</b>        |

## 25.3. Summary of current and historic performance (2016–21)

Table 25.3-a Historical health performance overview (5 year comparison)

| Historical health performance overview (5 year comparison)   |         |         |         |         |         |
|--|---------|---------|---------|---------|---------|
| Indicator  | 2016–17 | 2017–18 | 2018–19 | 2019–20 | 2020–21 |
| Microbiological  | 99.7%   | 100.0%  | 100.0%  | 100.0%  | 100.0%  |
| Fluoride   | 100.0%  | 100.0%  | 100.0%  | 100.0%  | 100.0%  |
| Metals   | 100.0%  | 100.0%  | 100.0%  | 100.0%  | 100.0%  |
| Disinfection by products   | 100.0%  | 100.0%  | 100.0%  | 100.0%  | 100.0%  |
| <div> <span style="color: green;">■</span> Compliant           <span style="color: red;">■</span> Non-compliant         </div> |         |         |         |         |         |

## 25.4. Analysis of current health performance (2020–21)

Table 25.4-a Summary of health guideline exceedances

| Summary of health guideline exceedances |      |         |           |
|---|------|---------|-----------|
| Parameter Exceeding                     | Date | Details | Resampled |
| No ADWG exceedances                     |      |         |           |

Table 25.4-b Fluoride distribution performance

| Distribution fluoride performance   |         |
|---|---------|
| Indicator   | 2020–21 |
| F exceeding 1.5 mg/L  | 0       |
| Average F concentration range (0.8 mg/L – 1.1 mg/L)   | 0.9     |
| 90% of F results are equal to or less than 1.1 mg/L   | 100%    |
| <span style="color: green;">■</span> Compliant <span style="color: red;">■</span> Non-compliant |         |

Table 25.4-c Metals performance

| Metals – health regulated parameters |       |      |         |             |               |         |          |         |
|--------------------------------------|-------|------|---------|-------------|---------------|---------|----------|---------|
| Parameter                            | Limit | Unit | Samples | Exceedances | Performance % | Mean    | Min.     | Max.    |
| Antimony                             | 0.003 | mg/L | 12      | 0           | 100           | <0.0005 | <0.0005  | 0.0006  |
| Arsenic                              | 0.01  | mg/L | 12      | 0           | 100           | <0.0003 | <0.0003  | <0.0003 |
| Barium                               | 2     | mg/L | 12      | 0           | 100           | 0.0070  | 0.0046   | 0.0120  |
| Cadmium                              | 0.002 | mg/L | 12      | 0           | 100           | <0.0001 | <0.0001  | <0.0001 |
| Chromium                             | 0.05  | mg/L | 12      | 0           | 100           | 0.0001  | <0.0001  | 0.0002  |
| Copper                               | 2     | mg/L | 12      | 0           | 100           | 0.0045  | 0.0020   | 0.0081  |
| Lead                                 | 0.01  | mg/L | 12      | 0           | 100           | 0.0002  | <0.0001  | 0.0004  |
| Manganese                            | 0.5   | mg/L | 12      | 0           | 100           | 0.0013  | 0.0002   | 0.0047  |
| Mercury                              | 0.001 | mg/L | 12      | 0           | 100           | 0.00009 | <0.00003 | 0.00033 |
| Molybdenum                           | 0.05  | mg/L | 12      | 0           | 100           | <0.0001 | <0.0001  | <0.0001 |
| Nickel                               | 0.02  | mg/L | 12      | 0           | 100           | 0.0002  | 0.0001   | 0.0003  |
| Selenium                             | 0.01  | mg/L | 12      | 0           | 100           | <0.0001 | <0.0001  | <0.0001 |

**Table 25.4-d Disinfection by product performance**

| Disinfection by products – health regulated parameters |       |      |         |             |               |      |      |      |
|--|-------|------|---------|-------------|---------------|------|------|------|
| Parameter  | Limit | Unit | Samples | Exceedances | Performance % | Mean | Min. | Max. |
| Dichloroacetic acid                                    | 100   | µg/L | 24      | 0           | 100           | 14   | 3    | 25   |
| Monochloroacetic acid                                  | 150   | µg/L | 24      | 0           | 100           | <3   | <3   | <3   |
| Trichloroacetic acid                                   | 100   | µg/L | 24      | 0           | 100           | 26   | 11   | 55   |
| Total trihalomethanes                                  | 250   | µg/L | 24      | 0           | 100           | 49   | 29   | 76   |

**Table 25.4-e General physical performance**

| General physical parameters |       |                 |      |      |      |
|-----------------------------|-------|-----------------|------|------|------|
| Parameter                   | Unit  | Guideline Value | Mean | Min  | Max  |
| Chlorine residual           | mg/L  | 0.1 – <0.8      | 0.72 | 0.03 | 1.52 |
| Colour True                 | HU    | 15              | <1   | <1   | 1    |
| pH                          | Units | 6.5 – 8.5       | 7.38 | 6.23 | 8.36 |
| Turbidity                   | NTU   | 1               | 0.21 | 0.05 | 0.69 |

## 25.5. Analysis of overall system performance (2020–21)

**Table 25.5-a Summary of system issues/public health warnings**

| Summary of system issues                          |             |                           |                           |
|---|-------------|---------------------------|---------------------------|
| Date  | Description | DoH notification required | DoH notification complete |
| No system issues or public health warnings issued |             |                           |                           |

## 26. King Island drinking water system

### 26.1. System summary (2020–21)

| King Island drinking water system  |                 |
|------------------------------------|-----------------|
| System status (as at 30 June 2021) | Potable         |
| Total number of connections        | 603             |
| Population serviced                | 1,046           |
| Fluoride                           | Sodium fluoride |

| Performance overview against health targets (2020–21)   |         |            |        |                 |             |
|---|---------|------------|--------|-----------------|-------------|
| Indicator   | Outcome | Compliance | Target | Sampling Events | Exceedances |
| Microbiological   | 100.0%  | ☑          | 98.0%  | 103             | 0           |
| Fluoride  | 100.0%  | ☑          | 100.0% | 48              | 0           |
| Metals  | 100.0%  | ☑          | 100.0% | 8               | 0           |
| DBPs  | 100.0%  | ☑          | 100.0% | 8               | 0           |
| <span style="color: green;">■</span> Compliant <span style="color: red;">■</span> Non-compliant |         |            |        |                 |             |

| Overall system performance (2020–21) |             |         |
|--------------------------------------|-------------|---------|
| Indicator                            | Occurrences | Details |
| System issues                        | 0           |         |
| Public health warnings issued        | 0           |         |
| Notifications made to DoH            | 0           |         |
| Customer complaints                  | 0           |         |

| Current and future planned capital investment |          |          |               |            |
|---|----------|----------|---------------|------------|
| Project                                       | Overview | Progress | Est. Delivery | Est. Spend |
| No projected capital investment               |          |          |               |            |

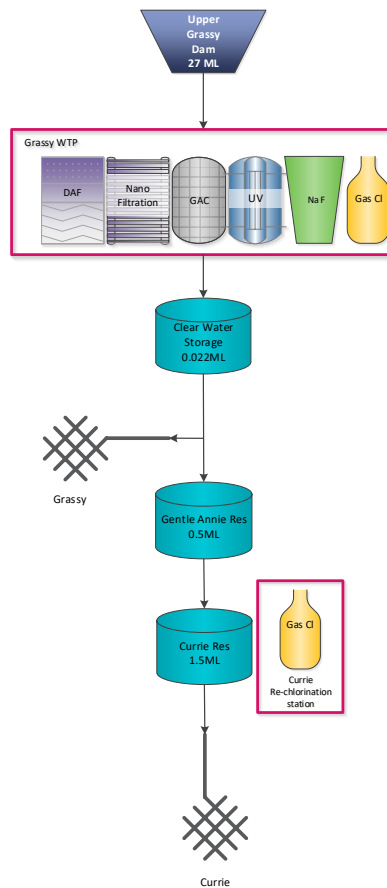


Figure 26.1-a King Island system schematic



Figure 26.1-b Map of King Island monitoring system



## 26.2. Summary of annual reticulation compliance (2020–21)

Table 26.2-a Sampling program

| Planned sampling program (2020–21) |                           |        |        |     |                |                  |                   |
|------------------------------------|---------------------------|--------|--------|-----|----------------|------------------|-------------------|
| Site name                          | Site Code                 | Micros | Metals | DBP | Fluoride (Lab) | Chemical Profile | Process Chemicals |
| Currie Hospital PRV                | 241GRSP0020 <sup>15</sup> | W      | n/a    | n/a | n/a            | n/a              | n/a               |
| Depot Site 3                       | 254CUSP0004 <sup>15</sup> | W      | Q      | Q   | 2M             | Q                | n/a               |
| Ti Tree Drive Site 3               | 241GRSP0004 <sup>15</sup> | W      | Q      | Q   | 2M             | Q                | n/a               |
| 21 Sassafrass St                   | 241GRSP0003 <sup>16</sup> | W      | Q      | Q   | 2M             | Q                | n/a               |
| Currie - Cnr Shaw & Hickmott St    | 241GRSP0030 <sup>16</sup> | W      | Q      | Q   | 2M             | Q                | n/a               |
| Number Planned Samples             |                           | 103    | 8      | 8   | 48             | 8                | n/a               |
| Number Samples Tested              |                           | 103    | 8      | 8   | 48             | 8                | n/a               |

## 26.3. Summary of current and historic performance (2016–21)

Table 26.3-a Historical health performance overview (5 year comparison)

| Historical health performance overview (5 year comparison)   |         |         |         |         |         |
|--|---------|---------|---------|---------|---------|
| Indicator  | 2016–17 | 2017–18 | 2018–19 | 2019–20 | 2020–21 |
| Microbiological  | 100.0%  | 100.0%  | 100.0%  | 100.0%  | 100.0%  |
| Fluoride   | n/a     | n/a     | n/a     | 100.0%  | 100.0%  |
| Metals   | 100.0%  | 100.0%  | 100.0%  | 100.0%  | 100.0%  |
| Disinfection by products   | 100.0%  | 100.0%  | 100.0%  | 100.0%  | 100.0%  |
| <div> <span style="color: green;">■</span> Compliant           <span style="color: red;">■</span> Non-compliant         </div> |         |         |         |         |         |

<sup>15</sup> Removed 12<sup>th</sup> July 2020

<sup>16</sup> Testing from 12<sup>th</sup> July 2020

## 26.4. Analysis of current health performance (2020–21)

Table 26.4-a Summary of health guideline exceedances

| Summary of health guideline exceedances |      |         |           |
|---|------|---------|-----------|
| Parameter Exceeding                     | Date | Details | Resampled |
| No ADWG exceedances                     |      |         |           |

Table 26.4-b Fluoride distribution performance

| Distribution fluoride performance   |         |
|---|---------|
| Indicator   | 2020–21 |
| F exceeding 1.5 mg/L  | 0       |
| Average F concentration range (0.8 mg/L – 1.1 mg/L)   | 0.8     |
| 90% of F results are equal to or less than 1.1 mg/L   | 100%    |
| <span style="color: green;">■</span> Compliant <span style="color: red;">■</span> Non-compliant |         |

Table 26.4-c Metals performance

| Metals – health regulated parameters |       |      |         |             |               |         |          |         |
|--------------------------------------|-------|------|---------|-------------|---------------|---------|----------|---------|
| Parameter                            | Limit | Unit | Samples | Exceedances | Performance % | Mean    | Min.     | Max.    |
| Antimony                             | 0.003 | mg/L | 8       | 0           | 100           | <0.0005 | <0.0005  | <0.0005 |
| Arsenic                              | 0.01  | mg/L | 8       | 0           | 100           | 0.0003  | <0.0003  | 0.0004  |
| Barium                               | 2     | mg/L | 8       | 0           | 100           | 0.0033  | 0.0026   | 0.0043  |
| Cadmium                              | 0.002 | mg/L | 8       | 0           | 100           | <0.0001 | <0.0001  | <0.0001 |
| Chromium                             | 0.05  | mg/L | 8       | 0           | 100           | 0.0001  | <0.0001  | 0.0003  |
| Copper                               | 2     | mg/L | 8       | 0           | 100           | 0.0111  | 0.0023   | 0.0246  |
| Lead                                 | 0.01  | mg/L | 8       | 0           | 100           | 0.0008  | 0.0003   | 0.0017  |
| Manganese                            | 0.5   | mg/L | 8       | 0           | 100           | 0.0003  | <0.0001  | 0.0007  |
| Mercury                              | 0.001 | mg/L | 8       | 0           | 100           | 0.00007 | <0.00003 | 0.00018 |
| Molybdenum                           | 0.05  | mg/L | 8       | 0           | 100           | 0.0038  | 0.0010   | 0.0080  |
| Nickel                               | 0.02  | mg/L | 8       | 0           | 100           | 0.0004  | 0.0003   | 0.0006  |
| Selenium                             | 0.01  | mg/L | 8       | 0           | 100           | <0.0001 | <0.0001  | <0.0001 |

**Table 26.4-d Disinfection by product performance**

| Disinfection by products – health regulated parameters |       |      |         |             |               |      |      |      |
|--|-------|------|---------|-------------|---------------|------|------|------|
| Parameter  | Limit | Unit | Samples | Exceedances | Performance % | Mean | Min. | Max. |
| Dichloroacetic acid                                    | 100   | µg/L | 8       | 0           | 100           | 11   | 4    | 24   |
| Monochloroacetic acid                                  | 150   | µg/L | 8       | 0           | 100           | <3   | <3   | <3   |
| Trichloroacetic acid                                   | 100   | µg/L | 8       | 0           | 100           | 11   | 2    | 28   |
| Total trihalomethanes                                  | 250   | µg/L | 8       | 0           | 100           | 105  | 76   | 171  |

**Table 26.4-e General physical performance**

| General physical parameters |       |                 |      |      |      |
|-----------------------------|-------|-----------------|------|------|------|
| Parameter                   | Unit  | Guideline Value | Mean | Min  | Max  |
| Chlorine residual           | mg/L  | 0.1 – <0.8      | 0.79 | 0.51 | 1.50 |
| Colour True                 | HU    | 15              | <1   | <1   | 2    |
| pH                          | Units | 6.5 – 8.5       | 7.22 | 6.90 | 7.98 |
| Turbidity                   | NTU   | 1               | 0.21 | 0.08 | 1.34 |

## 26.5. Analysis of overall system performance (2020–21)

**Table 26.5-a Summary of system issues/public health warnings**

| Summary of system issues                          |             |                           |                           |
|---|-------------|---------------------------|---------------------------|
| Date  | Description | DoH notification required | DoH notification complete |
| No system issues or public health warnings issued |             |                           |                           |

## 27. Lady Barron drinking water system

### 27.1. System summary (2020–21)

| Lady Barron drinking water system  |         |
|------------------------------------|---------|
| System status (as at 30 June 2021) | Potable |
| Total number of connections        | 112     |
| Population serviced                | 157     |
| Fluoride                           | n/a     |

| Performance overview against health targets (2020–21)      |         |            |        |                 |             |
|--|---------|------------|--------|-----------------|-------------|
| Indicator  | Outcome | Compliance | Target | Sampling Events | Exceedances |
| Microbiological  | 100.0%  | ☑          | 98.0%  | 52              | 0           |
| Fluoride   | n/a     | n/a        | n/a    | n/a             | n/a         |
| Metals   | 100.0%  | ☑          | 100.0% | 4               | 0           |
| DBPs   | 100.0%  | ☑          | 100.0% | 4               | 0           |
| <div><div></div> Compliant <div></div> Non-compliant</div> |         |            |        |                 |             |

| Overall system performance (2020–21) |             |         |
|--------------------------------------|-------------|---------|
| Indicator                            | Occurrences | Details |
| System issues                        | 0           |         |
| Public health warnings issued        | 0           |         |
| Notifications made to DoH            | 0           |         |
| Customer complaints                  | 0           |         |

| Current and future planned capital investment |          |          |               |            |
|---|----------|----------|---------------|------------|
| Project                                       | Overview | Progress | Est. Delivery | Est. Spend |
| No projected capital investment               |          |          |               |            |

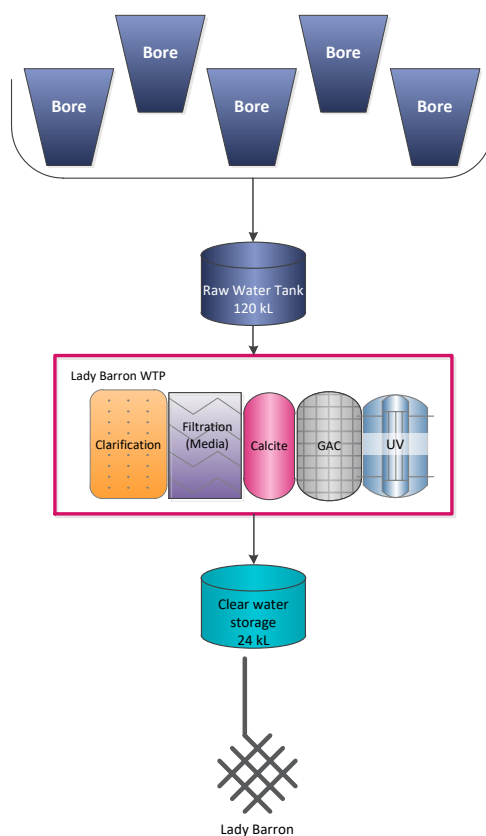


Figure 27.1-a Lady Barron system schematic

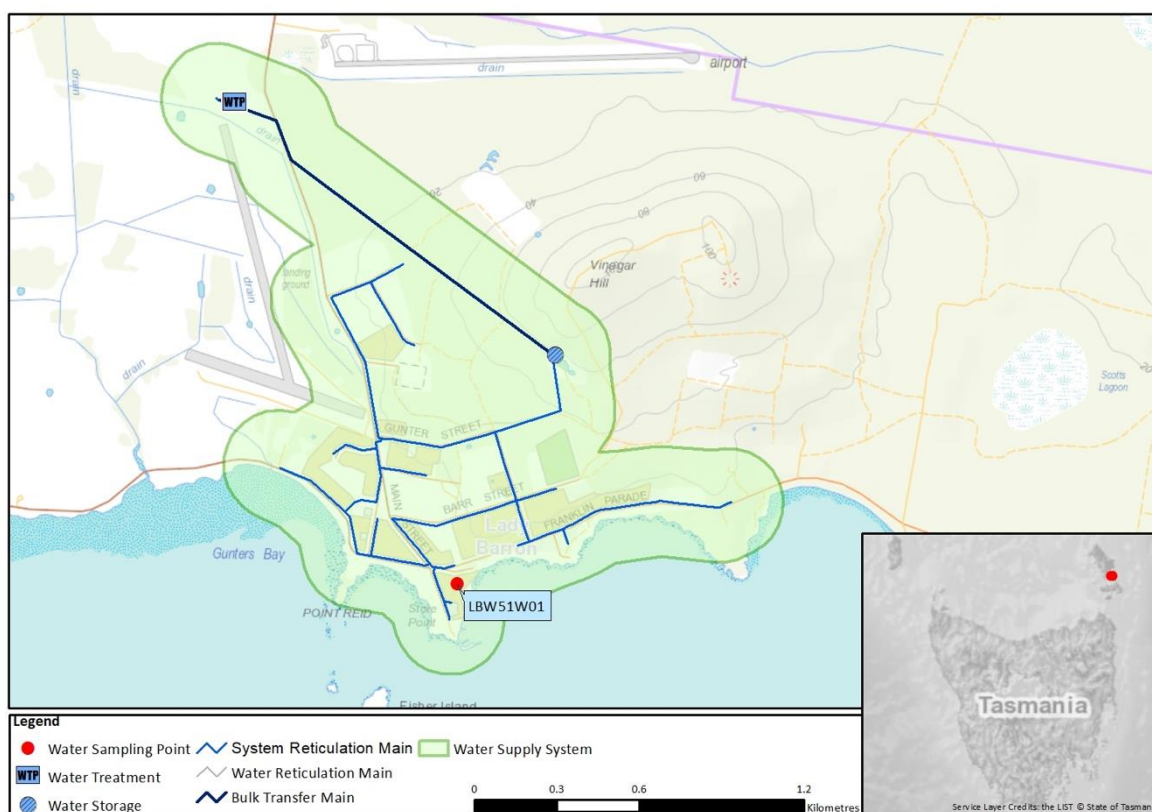


Figure 27.1-b Map of Lady Barron monitoring system

## 27.2. Summary of annual reticulation compliance (2020–21)

Table 27.2-a Sampling program

| Planned sampling program (2020–21) |           |        |        |     |                |                  |                   |
|------------------------------------|-----------|--------|--------|-----|----------------|------------------|-------------------|
| Site name                          | Site Code | Micros | Metals | DBP | Fluoride (Lab) | Chemical Profile | Process Chemicals |
| Lady Baron/Police Station          | LBW51W01  | W      | Q      | Q   | n/a            | Q                | n/a               |
| Number Planned Samples             |           | 52     | 4      | 4   | n/a            | 4                | n/a               |
| Number Samples Tested              |           | 52     | 4      | 4   | n/a            | 4                | n/a               |

## 27.3. Summary of current and historic performance (2016–21)

Table 27.3-a Historical health performance overview (5 year comparison)

| Historical health performance overview (5 year comparison)   |         |         |         |         |         |
|--|---------|---------|---------|---------|---------|
| Indicator  | 2016–17 | 2017–18 | 2018–19 | 2019–20 | 2020–21 |
| Microbiological  | 100.0%  | 100.0%  | 100.0%  | 100.0%  | 100.0%  |
| Fluoride   | n/a     | n/a     | n/a     | n/a     | n/a     |
| Metals   | 100.0%  | 100.0%  | 100.0%  | 100.0%  | 100.0%  |
| Disinfection by products   | n/a     | 100.0%  | 100.0%  | 100.0%  | 100.0%  |
| <div> <span style="color: green;">■</span> Compliant           <span style="color: red;">■</span> Non-compliant         </div> |         |         |         |         |         |

## 27.4. Analysis of current health performance (2020–21)

Table 27.4-a Summary of health guideline exceedances

| Summary of health guideline exceedances |      |         |           |
|---|------|---------|-----------|
| Parameter Exceeding                     | Date | Details | Resampled |
| No ADWG exceedances                     |      |         |           |

**Table 27.4-b Metals performance**

| Metals – health regulated parameters |       |      |         |             |               |         |          |         |
|--------------------------------------|-------|------|---------|-------------|---------------|---------|----------|---------|
| Parameter                            | Limit | Unit | Samples | Exceedances | Performance % | Mean    | Min.     | Max.    |
| Antimony                             | 0.003 | mg/L | 4       | 0           | 100           | <0.0005 | <0.0005  | <0.0005 |
| Arsenic                              | 0.01  | mg/L | 4       | 0           | 100           | <0.0003 | <0.0003  | 0.0003  |
| Barium                               | 2     | mg/L | 4       | 0           | 100           | 0.0401  | 0.0332   | 0.0540  |
| Cadmium                              | 0.002 | mg/L | 4       | 0           | 100           | <0.0001 | <0.0001  | <0.0001 |
| Chromium                             | 0.05  | mg/L | 4       | 0           | 100           | 0.0002  | <0.0001  | 0.0004  |
| Copper                               | 2     | mg/L | 4       | 0           | 100           | 0.0036  | 0.0022   | 0.0064  |
| Lead                                 | 0.01  | mg/L | 4       | 0           | 100           | 0.0004  | 0.0002   | 0.0006  |
| Manganese                            | 0.5   | mg/L | 4       | 0           | 100           | 0.0018  | 0.0006   | 0.0027  |
| Mercury                              | 0.001 | mg/L | 4       | 0           | 100           | 0.00005 | <0.00003 | 0.00010 |
| Molybdenum                           | 0.05  | mg/L | 4       | 0           | 100           | <0.0001 | <0.0001  | 0.0001  |
| Nickel                               | 0.02  | mg/L | 4       | 0           | 100           | 0.0004  | 0.0003   | 0.0005  |
| Selenium                             | 0.01  | mg/L | 4       | 0           | 100           | <0.0001 | <0.0001  | <0.0001 |

**Table 27.4-c Disinfection by product performance**

| Disinfection by products – health regulated parameters |       |      |         |             |               |      |      |      |
|--|-------|------|---------|-------------|---------------|------|------|------|
| Parameter  | Limit | Unit | Samples | Exceedances | Performance % | Mean | Min. | Max. |
| Dichloroacetic acid                                    | 100   | µg/L | 4       | 0           | 100           | 2    | <1   | 3    |
| Monochloroacetic acid                                  | 150   | µg/L | 4       | 0           | 100           | <3   | <3   | <3   |
| Trichloroacetic acid                                   | 100   | µg/L | 4       | 0           | 100           | <1   | <1   | <1   |
| Total trihalomethanes                                  | 250   | µg/L | 4       | 0           | 100           | 126  | 65   | 203  |

**Table 27.4-d General physical performance**

| General physical parameters |       |                 |      |      |      |
|-----------------------------|-------|-----------------|------|------|------|
| Parameter                   | Unit  | Guideline Value | Mean | Min  | Max  |
| Chlorine residual           | mg/L  | 0.1 – <0.8      | 0.88 | 0.50 | 1.42 |
| Colour True                 | HU    | 15              | <1   | <1   | <1   |
| pH                          | Units | 6.5 – 8.5       | 7.56 | 7.15 | 8.30 |
| Turbidity                   | NTU   | 1               | 0.42 | 0.11 | 1.59 |

## 27.5. Analysis of overall system performance (2020–21)

Table 27.5-a Summary of system issues/public health warnings

| Summary of system issues                          |             |                           |                           |
|---|-------------|---------------------------|---------------------------|
| Date  | Description | DoH notification required | DoH notification complete |
| No system issues or public health warnings issued |             |                           |                           |



## 28. Lake Barrington drinking water system

### 28.1. System summary (2020–21)

| Lake Barrington drinking water system |                 |
|---------------------------------------|-----------------|
| System status (as at 30 June 2021)    | Potable         |
| Total number of connections           | 1,228           |
| Population serviced                   | 2,482           |
| Fluoride                              | Sodium fluoride |

| Performance overview against health targets (2020–21)   |         |            |        |                 |             |
|---|---------|------------|--------|-----------------|-------------|
| Indicator   | Outcome | Compliance | Target | Sampling Events | Exceedances |
| Microbiological   | 100.0%  | ☑          | 98.0%  | 106             | 0           |
| Fluoride  | 100.0%  | ☑          | 100.0% | 48              | 0           |
| Metals  | 100.0%  | ☑          | 100.0% | 8               | 0           |
| DBPs  | 100.0%  | ☑          | 100.0% | 8               | 0           |
| <span style="color: green;">■</span> Compliant <span style="color: red;">■</span> Non-compliant |         |            |        |                 |             |

| Overall system performance (2020–21) |             |         |
|--------------------------------------|-------------|---------|
| Indicator                            | Occurrences | Details |
| System issues                        | 0           |         |
| Public health warnings issued        | 0           |         |
| Notifications made to DoH            | 0           |         |
| Customer complaints                  | 0           |         |

| Current and future planned capital investment |          |          |               |            |
|---|----------|----------|---------------|------------|
| Project                                       | Overview | Progress | Est. Delivery | Est. Spend |
| No projected capital investment               |          |          |               |            |

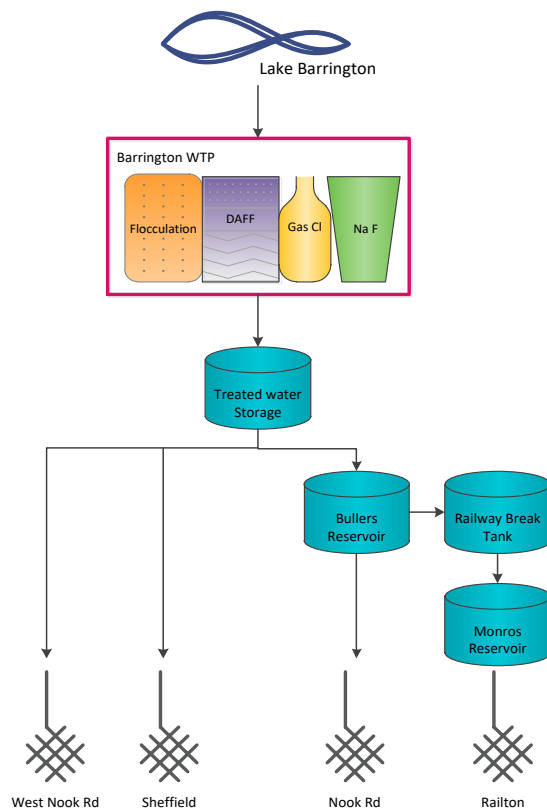


Figure 28.1-a Lake Barrington system schematic

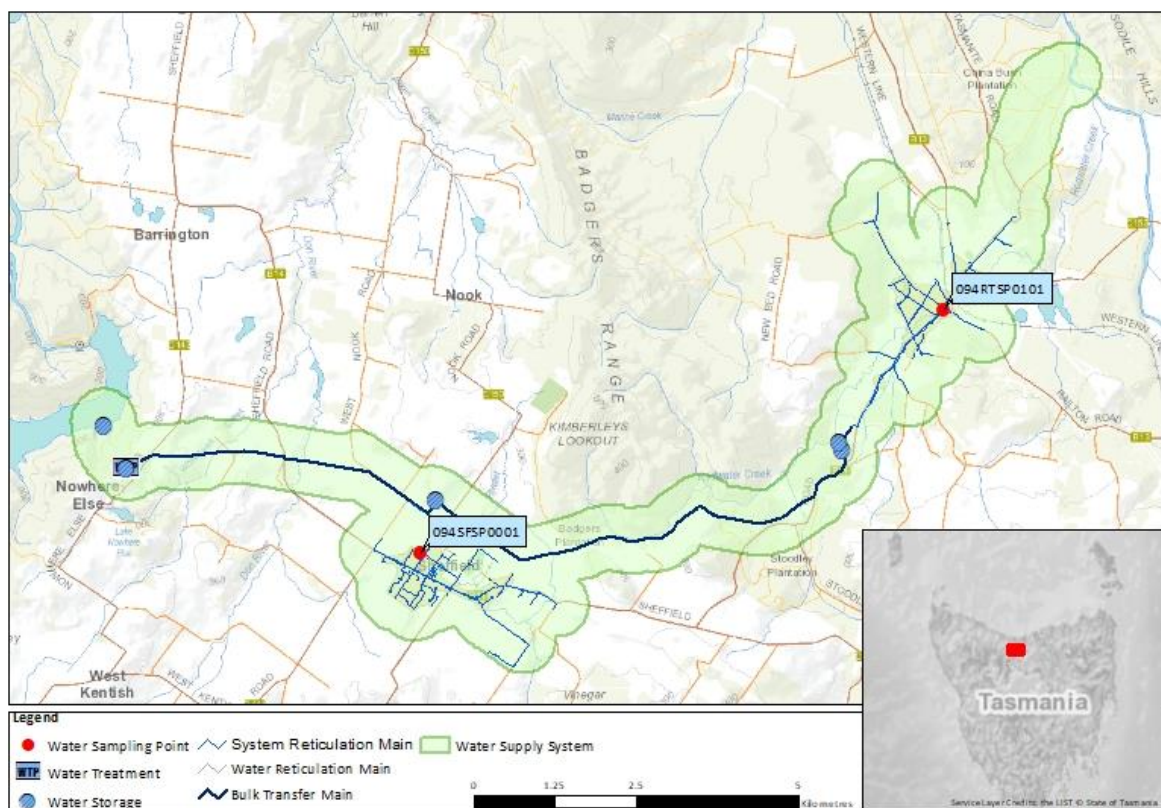


Figure 28.1-b Map of Lake Barrington monitoring system

## 28.2. Summary of annual reticulation compliance (2020–21)

Table 28.2-a Sampling program

| Planned sampling program (2020–21)        |           |        |        |     |                |                  |                   |
|---|-----------|--------|--------|-----|----------------|------------------|-------------------|
| Site name                                 | Site Code | Micros | Metals | DBP | Fluoride (Lab) | Chemical Profile | Process Chemicals |
| Barrington/ 15 Esplanade Avenue - Railton | BARST01   | W      | Q      | Q   | 2M             | Q                | n/a               |
| Barrington/7 Roland Crt - Sheffield       | BARST02   | W      | Q      | Q   | 2M             | Q                | n/a               |
| Number Planned Samples                    |           | 106    | 8      | 8   | 48             | 8                | n/a               |
| Number Samples Tested                     |           | 106    | 8      | 8   | 48             | 8                | n/a               |

## 28.3. Summary of current and historic performance (2016–21)

Table 28.3-a Historical health performance overview (5 year comparison)

| Historical health performance overview (5 year comparison)   |         |         |         |         |         |
|--|---------|---------|---------|---------|---------|
| Indicator  | 2016–17 | 2017–18 | 2018–19 | 2019–20 | 2020–21 |
| Microbiological  | 100.0%  | 100.0%  | 100.0%  | 100.0%  | 100.0%  |
| Fluoride   | 100.0%  | 100.0%  | 100.0%  | 100.0%  | 100.0%  |
| Metals   | 100.0%  | 100.0%  | 100.0%  | 100.0%  | 100.0%  |
| Disinfection by products   | 100.0%  | 100.0%  | 100.0%  | 100.0%  | 100.0%  |
| <div> <span style="color: green;">■</span> Compliant           <span style="color: red;">■</span> Non-compliant         </div> |         |         |         |         |         |

## 28.4. Analysis of current health performance (2020–21)

Table 28.4-a Summary of health guideline exceedances

| Summary of health guideline exceedances |      |         |           |
|---|------|---------|-----------|
| Parameter Exceeding                     | Date | Details | Resampled |
| No ADWG exceedances                     |      |         |           |

**Table 28.4-b Fluoride distribution performance**

| Distribution fluoride performance   |         |
|---|---------|
| Indicator   | 2020–21 |
| F exceeding 1.5 mg/L  | 0       |
| Average F concentration range (0.8 mg/L – 1.1 mg/L)   | 0.8     |
| 90% of F results are equal to or less than 1.1 mg/L   | 100%    |
| <span style="color: green;">■</span> Compliant <span style="color: red;">■</span> Non-compliant |         |

**Table 28.4-c Metals performance**

| Metals – health regulated parameters |       |      |         |             |               |         |          |         |
|--------------------------------------|-------|------|---------|-------------|---------------|---------|----------|---------|
| Parameter                            | Limit | Unit | Samples | Exceedances | Performance % | Mean    | Min.     | Max.    |
| Antimony                             | 0.003 | mg/L | 8       | 0           | 100           | <0.0005 | <0.0005  | <0.0005 |
| Arsenic                              | 0.01  | mg/L | 8       | 0           | 100           | <0.0003 | <0.0003  | <0.0003 |
| Barium                               | 2     | mg/L | 8       | 0           | 100           | 0.0070  | 0.0059   | 0.0081  |
| Cadmium                              | 0.002 | mg/L | 8       | 0           | 100           | <0.0001 | <0.0001  | <0.0001 |
| Chromium                             | 0.05  | mg/L | 8       | 0           | 100           | 0.0002  | 0.0001   | 0.0004  |
| Copper                               | 2     | mg/L | 8       | 0           | 100           | 0.0023  | 0.0009   | 0.0056  |
| Lead                                 | 0.01  | mg/L | 8       | 0           | 100           | 0.0006  | 0.0004   | 0.0011  |
| Manganese                            | 0.5   | mg/L | 8       | 0           | 100           | 0.0011  | 0.0004   | 0.0048  |
| Mercury                              | 0.001 | mg/L | 8       | 0           | 100           | 0.00011 | <0.00003 | 0.00031 |
| Molybdenum                           | 0.05  | mg/L | 8       | 0           | 100           | <0.0001 | <0.0001  | <0.0001 |
| Nickel                               | 0.02  | mg/L | 8       | 0           | 100           | 0.0001  | <0.0001  | 0.0002  |
| Selenium                             | 0.01  | mg/L | 8       | 0           | 100           | 0.0001  | <0.0001  | 0.0003  |

**Table 28.4-d Disinfection by product performance**

| Disinfection by products – health regulated parameters |       |      |         |             |               |      |      |      |
|--|-------|------|---------|-------------|---------------|------|------|------|
| Parameter  | Limit | Unit | Samples | Exceedances | Performance % | Mean | Min. | Max. |
| Dichloroacetic acid                                    | 100   | µg/L | 8       | 0           | 100           | 9    | 2    | 15   |
| Monochloroacetic acid                                  | 150   | µg/L | 8       | 0           | 100           | <3   | <3   | <3   |
| Trichloroacetic acid                                   | 100   | µg/L | 8       | 0           | 100           | 28   | 21   | 41   |
| Total trihalomethanes                                  | 250   | µg/L | 8       | 0           | 100           | 44   | 32   | 65   |

**Table 28.4-e General physical performance**

| General physical parameters |       |                 |      |      |      |
|-----------------------------|-------|-----------------|------|------|------|
| Parameter                   | Unit  | Guideline Value | Mean | Min  | Max  |
| Chlorine residual           | mg/L  | 0.1 – <0.8      | 0.64 | 0.00 | 1.26 |
| Colour True                 | HU    | 15              | <1   | <1   | 2    |
| pH                          | Units | 6.5 – 8.5       | 7.90 | 6.91 | 9.18 |
| Turbidity                   | NTU   | 1               | 0.21 | 0.08 | 1.76 |

## 28.5. Analysis of overall system performance (2020–21)

**Table 28.5-a Summary of system issues/public health warnings**

| Summary of system issues                          |             |                           |                           |
|---|-------------|---------------------------|---------------------------|
| Date  | Description | DoH notification required | DoH notification complete |
| No system issues or public health warnings issued |             |                           |                           |

## 29. Leven River drinking water system

### 29.1. System summary (2020–21)

| Leven River drinking water system  |                    |
|------------------------------------|--------------------|
| System status (as at 30 June 2021) | Potable            |
| Total number of connections        | 2,248              |
| Population serviced                | 4,609              |
| Fluoride                           | Fluorosilicic acid |

| Performance overview against health targets (2020–21)      |         |            |        |                 |             |
|--|---------|------------|--------|-----------------|-------------|
| Indicator  | Outcome | Compliance | Target | Sampling Events | Exceedances |
| Microbiological  | 100.0%  | ☑          | 98.0%  | 102             | 0           |
| Fluoride   | 100.0%  | ☑          | 100.0% | 48              | 0           |
| Metals   | 99.0%   | ☒          | 100.0% | 8               | 1           |
| DBPs   | 100.0%  | ☑          | 100.0% | 8               | 0           |
| <div><div></div> Compliant <div></div> Non-compliant</div> |         |            |        |                 |             |

| Overall system performance (2020–21) |             |  |
|--------------------------------------|-------------|--|
| Indicator                            | Occurrences | Details  |
| System issues                        | 1           | Mercury exceedance                               |
| Public health warnings issued        | 0           |  |
| Notifications made to DoH            | 1           | Low fluoride levels detected, mercury exceedance |
| Customer complaints                  | 1           | Other  |

| Current and future planned capital investment |                         |          |               |            |
|---|-------------------------|----------|---------------|------------|
| Project                                       | Overview                | Progress | Est. Delivery | Est. Spend |
| Fluoride Upgrade                              | Replacement of FSA Tank | Complete | 2020/2021     | \$200,000  |

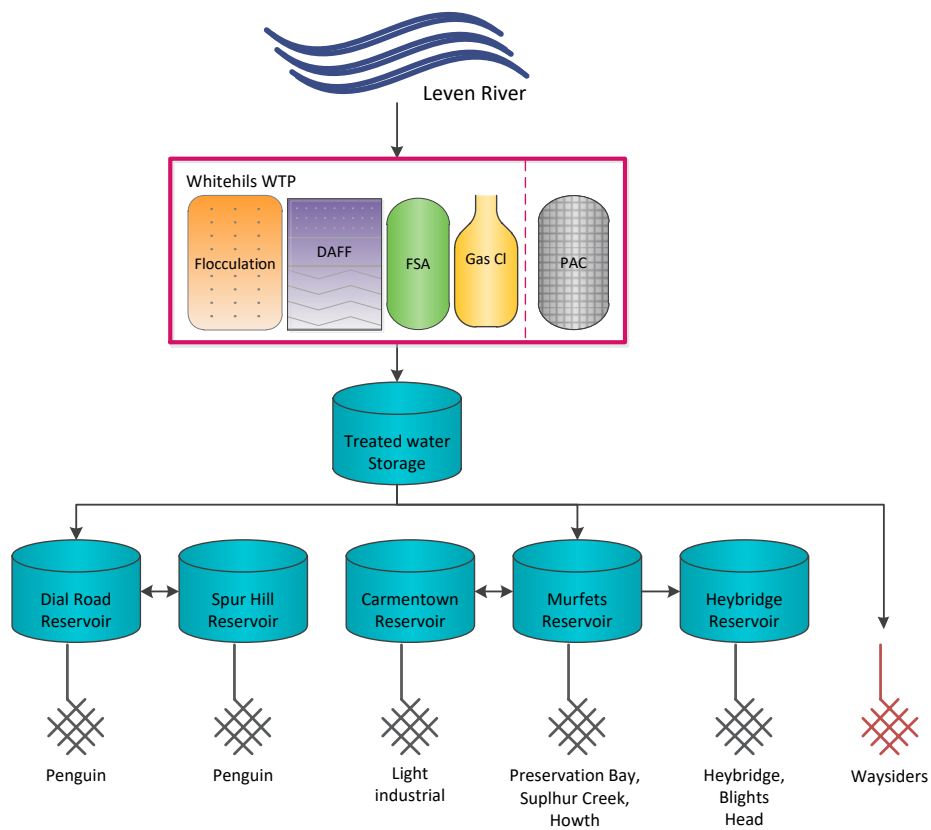


Figure 29.1-a Leven River system schematic

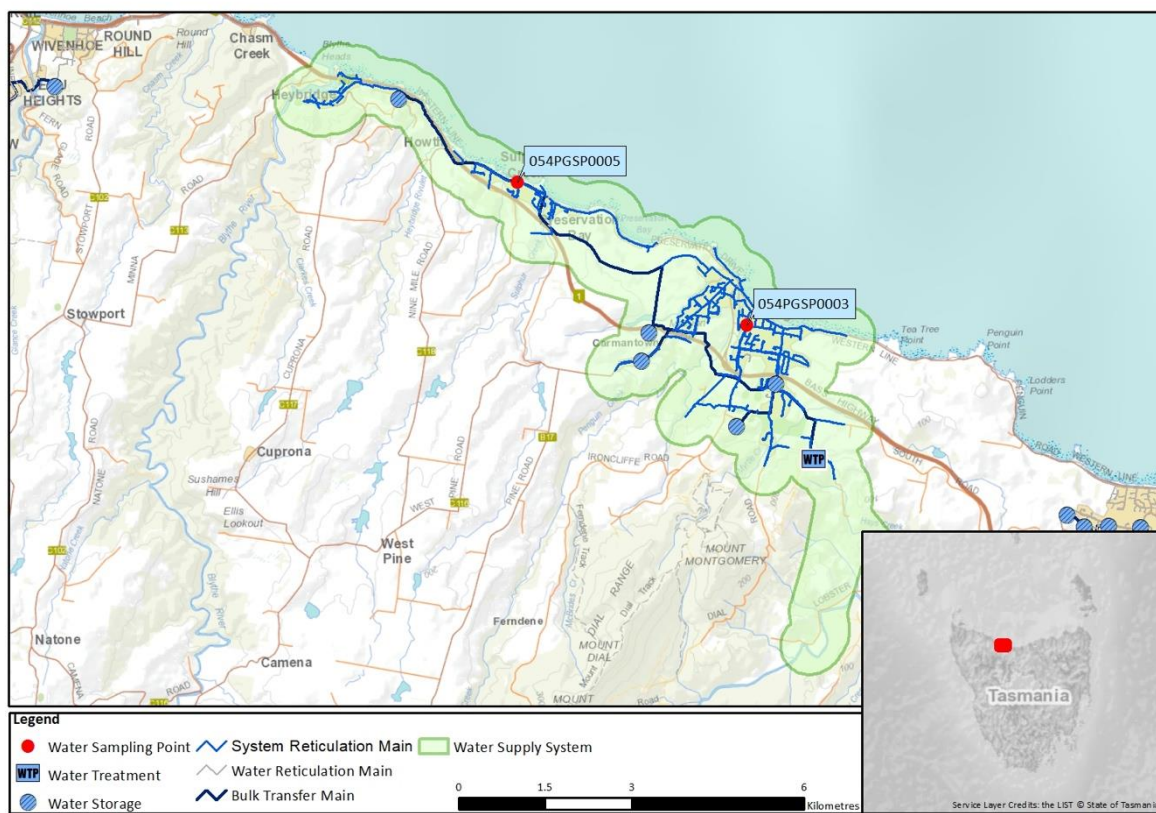


Figure 29.1-b Map of Leven River monitoring system

## 29.2. Summary of annual reticulation compliance (2020–21)

Table 29.2-a Sampling program

| Planned sampling program (2020–21)          |             |        |        |     |                |                  |                   |
|---|-------------|--------|--------|-----|----------------|------------------|-------------------|
| Site name                                   | Site Code   | Micros | Metals | DBP | Fluoride (Lab) | Chemical Profile | Process Chemicals |
| Whitehills/Penguin - 313 Preservation Drive | 054PGSP0005 | W      | Q      | Q   | 2M             | Q                | n/a               |
| Whitehills/Patrick St Clinic Sample Point   | 054PGSP0003 | W      | Q      | Q   | 2M             | Q                | n/a               |
| Number Planned Samples                      |             | 102    | 8      | 8   | 48             | 8                | n/a               |
| Number Samples Tested                       |             | 102    | 8      | 8   | 48             | 8                | n/a               |

## 29.3. Summary of current and historic performance (2016–21)

Table 29.3-a Historical health performance overview (5 year comparison)

| Historical health performance overview (5 year comparison)   |         |         |         |         |         |
|--|---------|---------|---------|---------|---------|
| Indicator  | 2016–17 | 2017–18 | 2018–19 | 2019–20 | 2020–21 |
| Microbiological  | 100.0%  | 100.0%  | 100.0%  | 100.0%  | 100.0%  |
| Fluoride   | 100.0%  | 100.0%  | 100.0%  | 100.0%  | 100.0%  |
| Metals   | 99.5%   | 100.0%  | 100.0%  | 100.0%  | 99.0%   |
| Disinfection by products   | 100.0%  | 100.0%  | 100.0%  | 100.0%  | 100.0%  |
| <div> <span style="color: green;">■</span> Compliant           <span style="color: red;">■</span> Non-compliant         </div> |         |         |         |         |         |

## 29.4. Analysis of current health performance (2020–21)

Table 29.4-a Summary of health guideline exceedances

| Summary of health guideline exceedances |           |  |           |
|---|-----------|--|-----------|
| Parameter Exceeding                     | Date      | Details  | Resampled |
| Mercury                                 | 1/10/2020 | Mercury of 0.00212 mg/L in monthly compliance sample | ✓         |



**Table 29.4-b Fluoride distribution performance**

| Distribution fluoride performance  |         |
|--|---------|
| Indicator  | 2020–21 |
| F exceeding 1.5 mg/L   | 0       |
| Average F concentration range (0.8 mg/L – 1.1 mg/L)  | 0.5     |
| 90% of F results are equal to or less than 1.1 mg/L  | 100%    |
| <div> <span style="color: green;">■</span> Compliant           <span style="color: red;">■</span> Non-compliant         </div> |         |

**Table 29.4-c Metals performance**

| Metals – health regulated parameters |       |      |         |             |               |         |          |         |
|--------------------------------------|-------|------|---------|-------------|---------------|---------|----------|---------|
| Parameter                            | Limit | Unit | Samples | Exceedances | Performance % | Mean    | Min.     | Max.    |
| Antimony                             | 0.003 | mg/L | 8       | 0           | 100           | <0.0005 | <0.0005  | <0.0005 |
| Arsenic                              | 0.01  | mg/L | 8       | 0           | 100           | <0.0003 | <0.0003  | <0.0003 |
| Barium                               | 2     | mg/L | 8       | 0           | 100           | 0.0133  | 0.0114   | 0.0157  |
| Cadmium                              | 0.002 | mg/L | 8       | 0           | 100           | <0.0001 | <0.0001  | <0.0001 |
| Chromium                             | 0.05  | mg/L | 8       | 0           | 100           | 0.0003  | 0.0002   | 0.0004  |
| Copper                               | 2     | mg/L | 8       | 0           | 100           | 0.0059  | 0.0029   | 0.0113  |
| Lead                                 | 0.01  | mg/L | 8       | 0           | 100           | 0.0002  | <0.0001  | 0.0005  |
| Manganese                            | 0.5   | mg/L | 8       | 0           | 100           | 0.0022  | 0.0005   | 0.0048  |
| Mercury                              | 0.001 | mg/L | 8       | 0           | 100           | 0.00036 | <0.00003 | 0.00212 |
| Molybdenum                           | 0.05  | mg/L | 8       | 0           | 100           | <0.0001 | <0.0001  | <0.0001 |
| Nickel                               | 0.02  | mg/L | 8       | 0           | 100           | 0.0003  | <0.0001  | 0.0004  |
| Selenium                             | 0.01  | mg/L | 8       | 0           | 100           | <0.0001 | <0.0001  | <0.0001 |

**Table 29.4-d Disinfection by product performance**

| Disinfection by products – health regulated parameters |       |      |         |             |               |      |      |      |
|--|-------|------|---------|-------------|---------------|------|------|------|
| Parameter  | Limit | Unit | Samples | Exceedances | Performance % | Mean | Min. | Max. |
| Dichloroacetic acid                                    | 100   | µg/L | 8       | 0           | 100           | 13   | 2    | 21   |
| Monochloroacetic acid                                  | 150   | µg/L | 8       | 0           | 100           | <3   | <3   | <3   |
| Trichloroacetic acid                                   | 100   | µg/L | 8       | 0           | 100           | 24   | 10   | 43   |
| Total trihalomethanes                                  | 250   | µg/L | 8       | 0           | 100           | 45   | 25   | 74   |

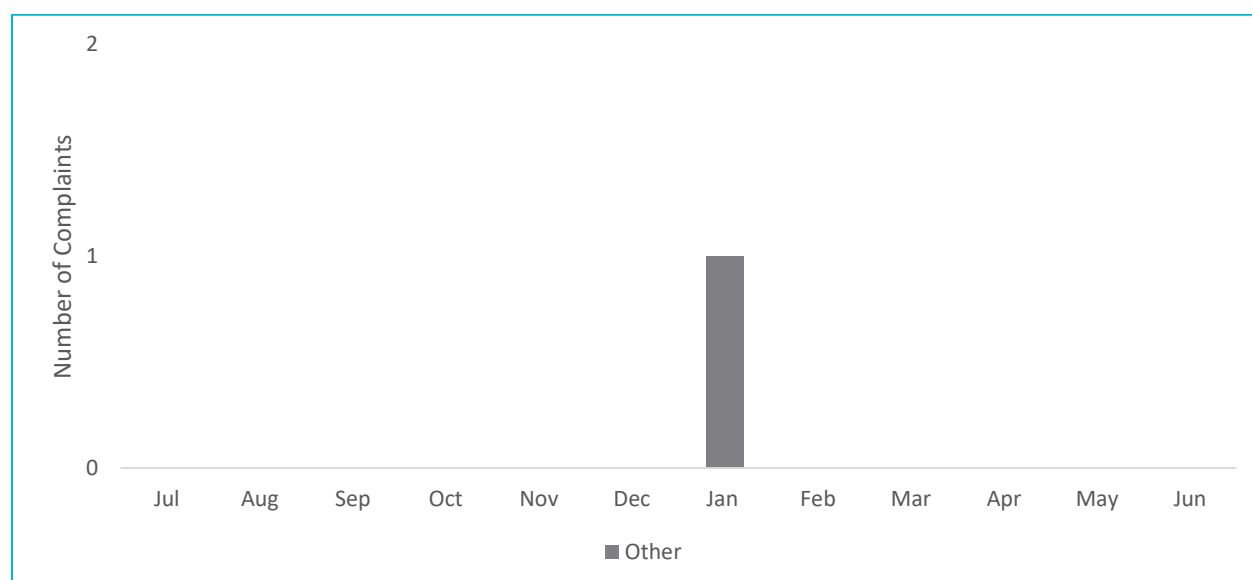
**Table 29.4-e General physical performance**

| General physical parameters |       |                 |      |      |      |
|-----------------------------|-------|-----------------|------|------|------|
| Parameter                   | Unit  | Guideline Value | Mean | Min  | Max  |
| Chlorine residual           | mg/L  | 0.1 – <0.8      | 0.97 | 0.02 | 1.95 |
| Colour True                 | HU    | 15              | <1   | <1   | 1    |
| pH                          | Units | 6.5 – 8.5       | 7.49 | 6.74 | 9.03 |
| Turbidity                   | NTU   | 1               | 0.39 | 0.00 | 1.89 |

## 29.5. Analysis of overall system performance (2020–21)

**Table 29.5-a Summary of system issues/public health warnings**

| Summary of system issues                              |  |                           |                           |
|---|--|---------------------------|---------------------------|
| Date  | Description  | DoH notification required | DoH notification complete |
| July 2020 – October 2020<br>December 2020 – June 2021 | Low fluoride levels detected   | ✓                         | ✓                         |
| 1/10/2020   | Routine quarterly sample taken from 054PGSP0003 detected mercury above the health limit. System was flushed and subsequent sample was clear. Further investigations identified a possible contamination of the sample bottle. All affected bottles have been recalled and no further action was taken. This was not counted as an exceedance | ✓                         | ✓                         |



**Figure 29.5-b Water quality customer complaints by month and type**

## 30. Longford drinking water system

### 30.1. System summary (2020–21)

| Longford drinking water system     |                    |
|------------------------------------|--------------------|
| System status (as at 30 June 2021) | Potable            |
| Total number of connections        | 4,643              |
| Population serviced                | 9,793              |
| Fluoride                           | Fluorosilicic acid |

| Performance overview against health targets (2020–21)      |         |            |        |                 |             |
|--|---------|------------|--------|-----------------|-------------|
| Indicator  | Outcome | Compliance | Target | Sampling Events | Exceedances |
| Microbiological  | 100.0%  | ☑          | 98.0%  | 208             | 0           |
| Fluoride   | 100.0%  | ☑          | 100.0% | 48              | 0           |
| Metals   | 100.0%  | ☑          | 100.0% | 8               | 0           |
| DBPs   | 100.0%  | ☑          | 100.0% | 8               | 0           |
| <div><div></div> Compliant <div></div> Non-compliant</div> |         |            |        |                 |             |

| Overall system performance (2020–21) |             |                              |
|--------------------------------------|-------------|------------------------------|
| Indicator                            | Occurrences | Details                      |
| System issues                        | 0           |                              |
| Public health warnings issued        | 0           |                              |
| Notifications made to DoH            | 1           | Low fluoride levels detected |
| Customer complaints                  | 7           | Discolouration               |

| Current and future planned capital investment |                                   |             |               |                     |
|---|-----------------------------------|-------------|---------------|---------------------|
| Project                                       | Overview                          | Progress    | Est. Delivery | Est. Spend (\$'000) |
| WTP Upgrade                                   | UV Installation                   | Planning    | 2022/2023     | \$600,000           |
| Fluoride Upgrade                              | Replacement of Day and Bulk Tanks | Complete    | 2020/2021     | TBD                 |
| Fluoride Upgrade                              | Compliance Upgrade                | In Progress | 2021/2022     | TBD                 |

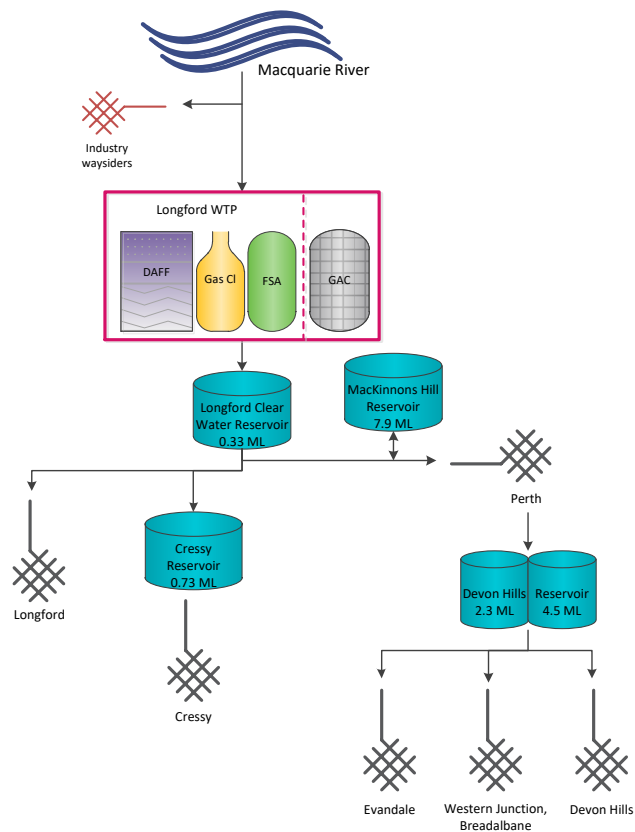


Figure 30.1-a Longford system schematic

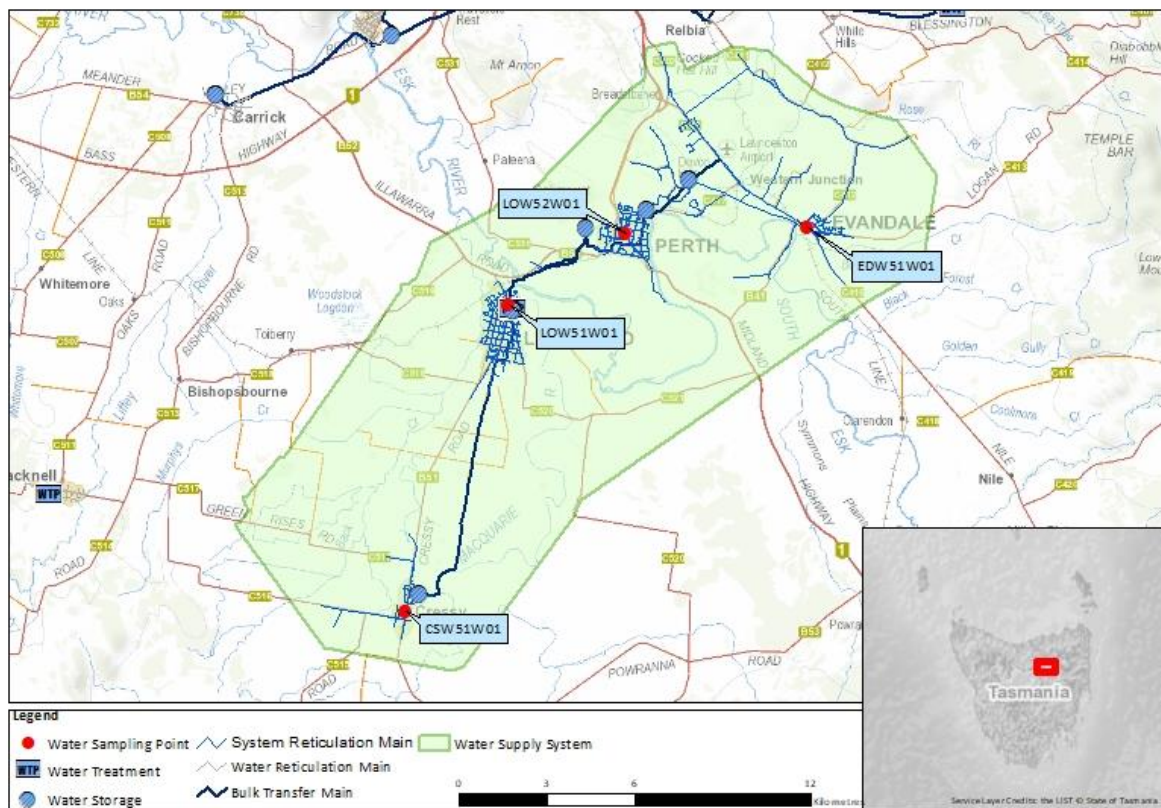


Figure 30.1-b Map of Longford monitoring system

## 30.2. Summary of annual reticulation compliance (2020–21)

Table 30.2-a Sampling program

| Planned sampling program (2020–21)        |                        |        |        |     |                |                  |                   |
|---|------------------------|--------|--------|-----|----------------|------------------|-------------------|
| Site name                                 | Site Code              | Micros | Metals | DBP | Fluoride (Lab) | Chemical Profile | Process Chemicals |
| Longford/Cressy Public Toilets            | CSW51W01 <sup>17</sup> | W      | Q      | Q   | 2M             | Q                | n/a               |
| Longford/Williams Street SPS Cressy       | CSW51W02               | W      | Q      | Q   | 2M             | Q                | n/a               |
| Longford/Evandale History Centre, High St | EDW51W01 <sup>18</sup> | W      | Q      | Q   | n/a            | Q                | n/a               |
| 910 & 876 White Hills Rd - Evandale       | LONGST03               | W      | Q      | Q   | n/a            | Q                | n/a               |
| Longford/Lyttleton St Toilets             | LOW51W01 <sup>19</sup> | W      | n/a    | n/a | n/a            | n/a              | n/a               |
| Longford/50-54 Lewis Street               | LONGST02               | W      | n/a    | n/a | n/a            | n/a              | n/a               |
| Longford/Perth, Little Mulgrave St        | LOW52W01 <sup>20</sup> | W      | n/a    | n/a | 2M             | n/a              | n/a               |
| Longford/119 Fairtlough St                | LONGST04               | W      | n/a    | n/a | 2M             | n/a              | n/a               |
| Number Planned Samples                    |                        | 208    | 8      | 8   | 48             | 8                | n/a               |
| Number Samples Tested                     |                        | 208    | 8      | 8   | 48             | 8                | n/a               |

## 30.3. Summary of current and historic performance (2016–21)

Table 30.3-a Historical health performance overview (5 year comparison)

| Historical health performance overview (5 year comparison)   |         |         |         |         |         |
|--|---------|---------|---------|---------|---------|
| Indicator  | 2016–17 | 2017–18 | 2018–19 | 2019–20 | 2020–21 |
| Microbiological  | 100.0%  | 99.5%   | 100.0%  | 100.0%  | 100.0%  |
| Fluoride   | 100.0%  | 100.0%  | 100.0%  | 100.0%  | 100.0%  |
| Metals   | 100.0%  | 100.0%  | 100.0%  | 100.0%  | 100.0%  |
| Disinfection by products   | 100.0%  | 100.0%  | 100.0%  | 100.0%  | 100.0%  |
| <div> <span style="color: green;">■</span> Compliant           <span style="color: red;">■</span> Non-compliant         </div> |         |         |         |         |         |

<sup>17</sup> Replaced by CSW51W02 1<sup>st</sup> November 2020

<sup>18</sup> Replaced by LONGST03 1<sup>st</sup> March 2021

<sup>19</sup> Replaced by LONGST02 1<sup>st</sup> November 2020

<sup>20</sup> Replaced by LONGST04 1<sup>st</sup> November 2020

### 30.4. Analysis of current health performance (2020–21)

Table 30.4-a Summary of health guideline exceedances

| Summary of health guideline exceedances |      |         |           |
|---|------|---------|-----------|
| Parameter Exceeding                     | Date | Details | Resampled |
| No ADWG exceedances                     |      |         |           |

Table 30.4-b Fluoride distribution performance

| Distribution fluoride performance  |         |
|--|---------|
| Indicator  | 2020–21 |
| F exceeding 1.5 mg/L   | 0       |
| Average F concentration range (0.8 mg/L – 1.1 mg/L)  | 0.5     |
| 90% of F results are equal to or less than 1.1 mg/L  | 100%    |
| <div> <span style="color: green;">■</span> Compliant           <span style="color: red;">■</span> Non-compliant         </div> |         |

Table 30.4-c Metals performance

| Metals – health regulated parameters |       |      |         |             |               |         |          |         |
|--------------------------------------|-------|------|---------|-------------|---------------|---------|----------|---------|
| Parameter                            | Limit | Unit | Samples | Exceedances | Performance % | Mean    | Min.     | Max.    |
| Antimony                             | 0.003 | mg/L | 8       | 0           | 100           | <0.0005 | <0.0005  | <0.0005 |
| Arsenic                              | 0.01  | mg/L | 8       | 0           | 100           | <0.0003 | <0.0003  | <0.0003 |
| Barium                               | 2     | mg/L | 8       | 0           | 100           | 0.0095  | 0.0059   | 0.0139  |
| Cadmium                              | 0.002 | mg/L | 8       | 0           | 100           | <0.0001 | <0.0001  | 0.0003  |
| Chromium                             | 0.05  | mg/L | 8       | 0           | 100           | 0.0001  | <0.0001  | 0.0002  |
| Copper                               | 2     | mg/L | 8       | 0           | 100           | 0.0075  | 0.0037   | 0.0142  |
| Lead                                 | 0.01  | mg/L | 8       | 0           | 100           | 0.0008  | 0.0002   | 0.0015  |
| Manganese                            | 0.5   | mg/L | 8       | 0           | 100           | 0.0158  | 0.0011   | 0.1010  |
| Mercury                              | 0.001 | mg/L | 8       | 0           | 100           | 0.00004 | <0.00003 | 0.00008 |
| Molybdenum                           | 0.05  | mg/L | 8       | 0           | 100           | <0.0001 | <0.0001  | 0.0001  |
| Nickel                               | 0.02  | mg/L | 8       | 0           | 100           | 0.0003  | <0.0001  | 0.0010  |
| Selenium                             | 0.01  | mg/L | 8       | 0           | 100           | 0.0001  | <0.0001  | 0.0004  |

**Table 30.4-d Disinfection by product performance**

| Disinfection by products – health regulated parameters |       |      |         |             |               |      |      |      |
|--|-------|------|---------|-------------|---------------|------|------|------|
| Parameter  | Limit | Unit | Samples | Exceedances | Performance % | Mean | Min. | Max. |
| Dichloroacetic acid                                    | 100   | µg/L | 8       | 0           | 100           | 6    | <1   | 16   |
| Monochloroacetic acid                                  | 150   | µg/L | 8       | 0           | 100           | <3   | <3   | <3   |
| Trichloroacetic acid                                   | 100   | µg/L | 8       | 0           | 100           | 8    | <1   | 20   |
| Total trihalomethanes                                  | 250   | µg/L | 8       | 0           | 100           | 37   | 12   | 90   |

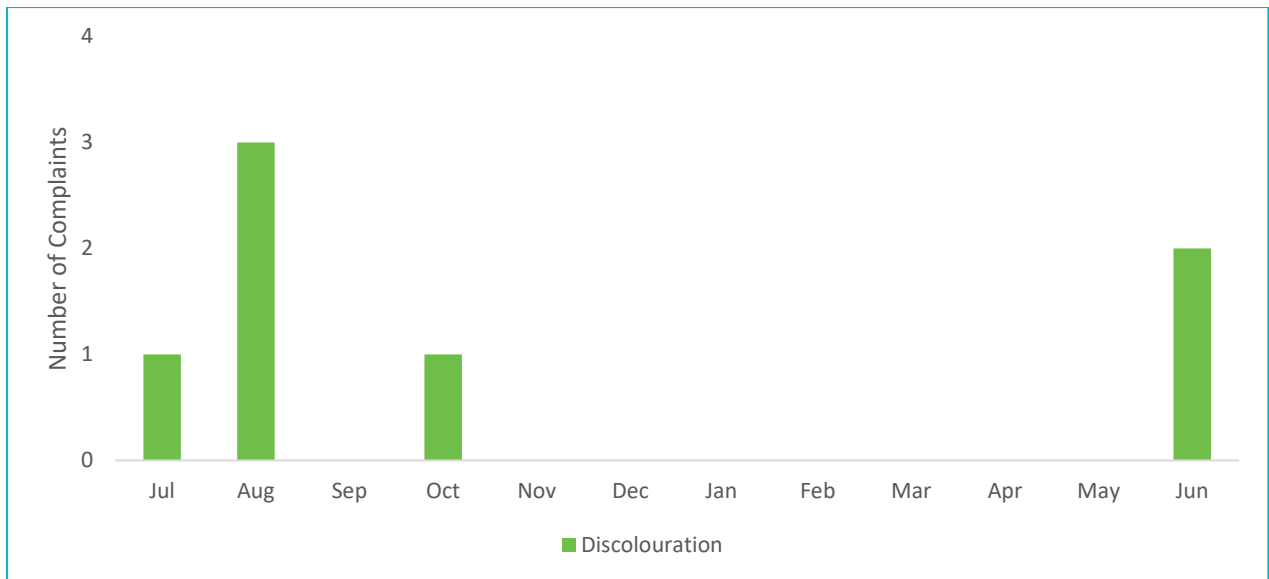
**Table 30.4-e General physical performance**

| General physical parameters |       |                 |      |      |       |
|-----------------------------|-------|-----------------|------|------|-------|
| Parameter                   | Unit  | Guideline Value | Mean | Min  | Max   |
| Chlorine residual           | mg/L  | 0.1 – <0.8      | 0.66 | 0.00 | 1.53  |
| Colour True                 | HU    | 15              | <1   | <1   | <1    |
| pH                          | Units | 6.5 – 8.5       | 7.20 | 6.35 | 7.76  |
| Turbidity                   | NTU   | 1               | 0.49 | 0.07 | 20.90 |

### 30.5. Analysis of overall system performance (2020–21)

**Table 30.5-a Summary of system issues/public health warnings**

| Summary of system issues   |                              |                           |                           |
|--|------------------------------|---------------------------|---------------------------|
| Date   | Description                  | DoH notification required | DoH notification complete |
| July 2020 – October 2020<br>December 2020 – March 2021<br>May 2021 – June 2021 | Low fluoride levels detected | ✓                         | ✓                         |



**Figure 30.5-b Water quality customer complaints by month and type**



## 31. Manuka River drinking water system

### 31.1. System summary (2020–21)

| Manuka River drinking water system |                 |
|------------------------------------|-----------------|
| System status (as at 30 June 2021) | Potable         |
| Total number of connections        | 593             |
| Population serviced                | 815             |
| Fluoride                           | Sodium fluoride |

| Performance overview against health targets (2020–21)      |         |            |        |                 |             |
|--|---------|------------|--------|-----------------|-------------|
| Indicator  | Outcome | Compliance | Target | Sampling Events | Exceedances |
| Microbiological  | 100.0%  | ☑          | 98.0%  | 104             | 0           |
| Fluoride   | 100.0%  | ☑          | 100.0% | 48              | 0           |
| Metals   | 100.0%  | ☑          | 100.0% | 8               | 0           |
| DBPs   | 100.0%  | ☑          | 100.0% | 8               | 0           |
| <div><div></div> Compliant <div></div> Non-compliant</div> |         |            |        |                 |             |

| Overall system performance (2020–21) |             |         |
|--------------------------------------|-------------|---------|
| Indicator                            | Occurrences | Details |
| System issues                        | 0           |         |
| Public health warnings issued        | 0           |         |
| Notifications made to DoH            | 0           |         |
| Customer complaints                  | 0           |         |

| Current and future planned capital investment |                 |          |               |             |
|---|-----------------|----------|---------------|-------------|
| Project                                       | Overview        | Progress | Est. Delivery | Est. Spend  |
| WTP Upgrade                                   | UV Installation | Planning | 2022/2023     | \$1,000,000 |

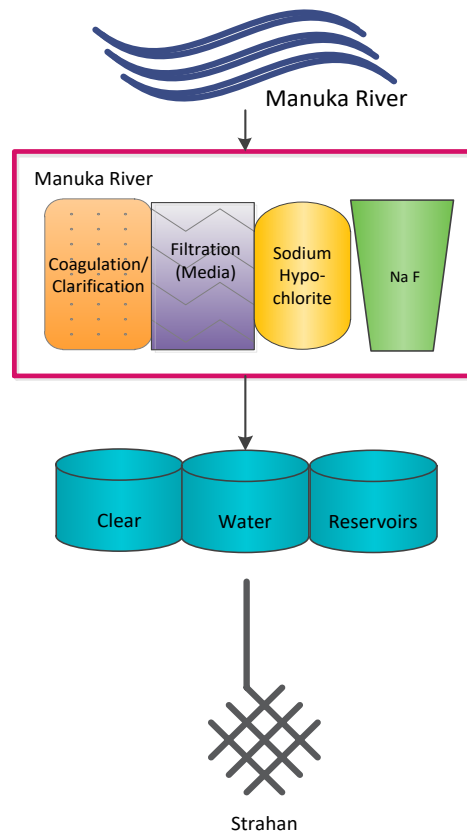


Figure 31.1-a Manuka River system schematic

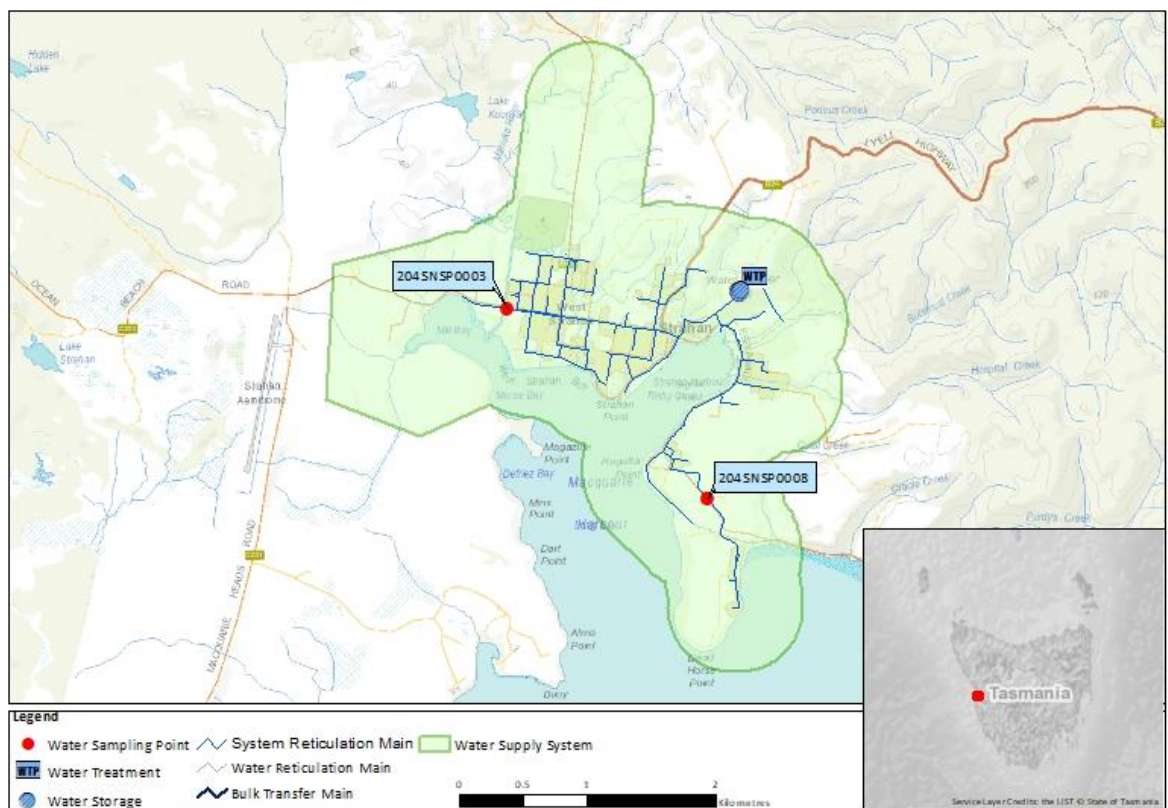


Figure 31.1-b Map of Manuka River monitoring system

### 31.2. Summary of annual reticulation compliance (2020–21)

Table 31.2-a Sampling program

| Planned sampling program (2020–21)      |             |        |        |     |                |                  |                   |
|---|-------------|--------|--------|-----|----------------|------------------|-------------------|
| Site name                               | Site Code   | Micros | Metals | DBP | Fluoride (Lab) | Chemical Profile | Process Chemicals |
| Strahan/Harvey St Sample Point          | 204SNSP0003 | W      | Q      | Q   | 2M             | Q                | n/a               |
| Strahan/Lot 1 Lowana Rd (WWTP Entrance) | 204SNSP0008 | W      | Q      | Q   | 2M             | n/a              | n/a               |
| Number Planned Samples                  |             | 104    | 8      | 8   | 48             | 4                | n/a               |
| Number Samples Tested                   |             | 104    | 8      | 8   | 48             | 4                | n/a               |

### 31.3. Summary of current and historic performance (2016–21)

Table 31.3-a Historical health performance overview (5 year comparison)

| Historical health performance overview (5 year comparison)   |         |         |         |         |         |
|--|---------|---------|---------|---------|---------|
| Indicator  | 2016–17 | 2017–18 | 2018–19 | 2019–20 | 2020–21 |
| Microbiological  | 99.6%   | 100.0%  | 100.0%  | 100.0%  | 100.0%  |
| Fluoride   | 100.0%  | 100.0%  | 100.0%  | 100.0%  | 100.0%  |
| Metals   | 100.0%  | 100.0%  | 100.0%  | 100.0%  | 100.0%  |
| Disinfection by products   | 100.0%  | 100.0%  | 100.0%  | 100.0%  | 100.0%  |
| <div> <span style="color: green;">■</span> Compliant           <span style="color: red;">■</span> Non-compliant         </div> |         |         |         |         |         |

### 31.4. Analysis of current health performance (2020–21)

Table 31.4-a Summary of health guideline exceedances

| Summary of health guideline exceedances |      |         |           |
|---|------|---------|-----------|
| Parameter Exceeding                     | Date | Details | Resampled |
| No ADWG exceedances                     |      |         |           |

**Table 31.4-b Fluoride distribution performance**

| Distribution fluoride performance  |         |
|--|---------|
| Indicator  | 2020–21 |
| F exceeding 1.5 mg/L   | 0       |
| Average F concentration range (0.8 mg/L – 1.1 mg/L)  | 0.8     |
| 90% of F results are equal to or less than 1.1 mg/L  | 100%    |
| <div> <span style="color: green;">■</span> Compliant           <span style="color: red;">■</span> Non-compliant         </div> |         |

**Table 31.4-c Metals performance**

| Metals – health regulated parameters |       |      |         |             |               |         |          |         |
|--------------------------------------|-------|------|---------|-------------|---------------|---------|----------|---------|
| Parameter                            | Limit | Unit | Samples | Exceedances | Performance % | Mean    | Min.     | Max.    |
| Antimony                             | 0.003 | mg/L | 8       | 0           | 100           | <0.0005 | <0.0005  | <0.0005 |
| Arsenic                              | 0.01  | mg/L | 8       | 0           | 100           | <0.0003 | <0.0003  | <0.0003 |
| Barium                               | 2     | mg/L | 8       | 0           | 100           | 0.0059  | 0.0054   | 0.0063  |
| Cadmium                              | 0.002 | mg/L | 8       | 0           | 100           | <0.0001 | <0.0001  | <0.0001 |
| Chromium                             | 0.05  | mg/L | 8       | 0           | 100           | <0.0001 | <0.0001  | 0.0002  |
| Copper                               | 2     | mg/L | 8       | 0           | 100           | 0.0068  | 0.0051   | 0.0091  |
| Lead                                 | 0.01  | mg/L | 8       | 0           | 100           | 0.0004  | 0.0003   | 0.0004  |
| Manganese                            | 0.5   | mg/L | 8       | 0           | 100           | 0.0018  | 0.0006   | 0.0025  |
| Mercury                              | 0.001 | mg/L | 8       | 0           | 100           | 0.00008 | <0.00003 | 0.00015 |
| Molybdenum                           | 0.05  | mg/L | 8       | 0           | 100           | <0.0001 | <0.0001  | <0.0001 |
| Nickel                               | 0.02  | mg/L | 8       | 0           | 100           | 0.0011  | 0.0010   | 0.0012  |
| Selenium                             | 0.01  | mg/L | 8       | 0           | 100           | 0.0002  | <0.0001  | 0.0010  |

**Table 31.4-d Disinfection by product performance**

| Disinfection by products – health regulated parameters |       |      |         |             |               |      |      |      |
|--|-------|------|---------|-------------|---------------|------|------|------|
| Parameter  | Limit | Unit | Samples | Exceedances | Performance % | Mean | Min. | Max. |
| Dichloroacetic acid                                    | 100   | µg/L | 8       | 0           | 100           | 8    | 5    | 13   |
| Monochloroacetic acid                                  | 150   | µg/L | 8       | 0           | 100           | <3   | <3   | <3   |
| Trichloroacetic acid                                   | 100   | µg/L | 8       | 0           | 100           | 27   | 15   | 45   |
| Total trihalomethanes                                  | 250   | µg/L | 8       | 0           | 100           | 71   | 52   | 94   |

**Table 31.4-e General physical performance**

| General physical parameters |       |                 |      |      |      |
|-----------------------------|-------|-----------------|------|------|------|
| Parameter                   | Unit  | Guideline Value | Mean | Min  | Max  |
| Chlorine residual           | mg/L  | 0.1 – <0.8      | 0.45 | 0.20 | 0.76 |
| Colour True                 | HU    | 15              | 1.5  | <1   | 3    |
| pH                          | Units | 6.5 – 8.5       | 7.58 | 7.08 | 7.86 |
| Turbidity                   | NTU   | 1               | 0.13 | 0.05 | 0.36 |

### 31.5. Analysis of overall system performance (2020–21)

**Table 31.5-a Summary of system issues/public health warnings**

| Summary of system issues                          |             |                           |                           |
|---|-------------|---------------------------|---------------------------|
| Date  | Description | DoH notification required | DoH notification complete |
| No system issues or public health warnings issued |             |                           |                           |

## 32. Mathinna drinking water system

### 32.1. System summary (2020–21)

| Mathinna drinking water system     |         |
|------------------------------------|---------|
| System status (as at 30 June 2021) | Potable |
| Total number of connections        | 82      |
| Population serviced                | 132     |
| Fluoride                           | n/a     |

| Performance overview against health targets (2020–21)      |         |                                     |        |                 |             |
|--|---------|-------------------------------------|--------|-----------------|-------------|
| Indicator  | Outcome | Compliance                          | Target | Sampling Events | Exceedances |
| Microbiological  | 100.0%  | <input checked="" type="checkbox"/> | 98.0%  | 52              | 0           |
| Fluoride   | n/a     | n/a                                 | n/a    | n/a             | n/a         |
| Metals   | 100.0%  | <input checked="" type="checkbox"/> | 100.0% | 4               | 0           |
| DBPs   | 100.0%  | <input checked="" type="checkbox"/> | 100.0% | 4               | 0           |
| <div><div></div> Compliant <div></div> Non-compliant</div> |         |                                     |        |                 |             |

| Overall system performance (2020–21) |             |         |
|--------------------------------------|-------------|---------|
| Indicator                            | Occurrences | Details |
| System issues                        | 0           |         |
| Public health warnings issued        | 0           |         |
| Notifications made to DoH            | 0           |         |
| Customer complaints                  | 0           |         |

| Current and future planned capital investment |          |          |               |                     |
|---|----------|----------|---------------|---------------------|
| Project                                       | Overview | Progress | Est. Delivery | Est. Spend (\$'000) |
| No projected capital investment               |          |          |               |                     |

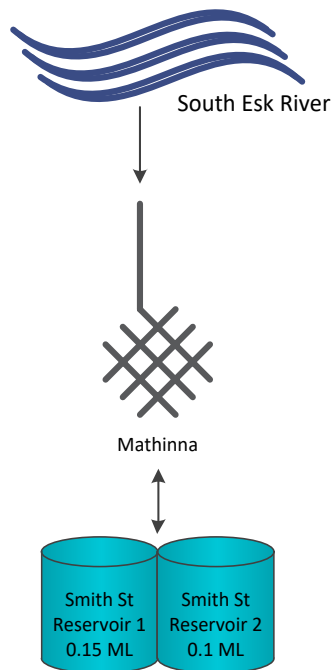


Figure 32.1-a Mathinna system schematic

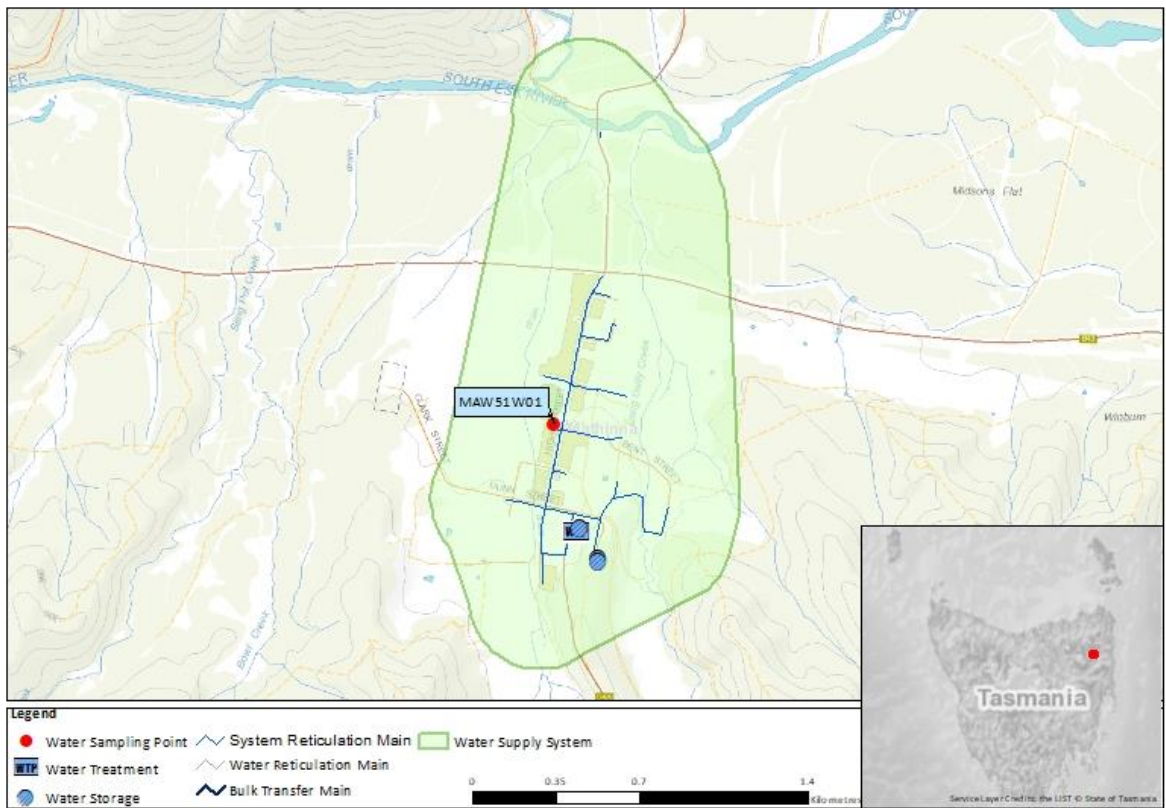


Figure 32.1-b Map of Mathinna monitoring system

## 32.2. Summary of annual reticulation compliance (2020–21)

Table 32.2-a Sampling program

| Planned compliance sampling program (2020–21) |           |        |        |     |                |                  |                   |
|---|-----------|--------|--------|-----|----------------|------------------|-------------------|
| Site name                                     | Site Code | Micros | Metals | DBP | Fluoride (Lab) | Chemical Profile | Process Chemicals |
| Mathinna/Rec Ground Recreation Ground         | MAW51W01  | W      | Q      | Q   | n/a            | Q                | n/a               |
| Number Planned Samples                        |           | 52     | 4      | 4   | n/a            | 4                | n/a               |
| Number Samples Tested                         |           | 52     | 4      | 4   | n/a            | 4                | n/a               |

## 32.3. Summary of current and historic performance (2016–21)

Table 32.3-a Historical health performance overview (5 year comparison)

| Historical health performance overview (5 year comparison)   |         |         |         |         |         |
|--|---------|---------|---------|---------|---------|
| Indicator  | 2016–17 | 2017–18 | 2018–19 | 2019–20 | 2020–21 |
| Microbiological  | 16.7%   | 66.7%   | 98.1%   | 100.0%  | 100.0%  |
| Fluoride   | n/a     | n/a     | n/a     | n/a     | n/a     |
| Metals   | 100.0%  | 100.0%  | 100.0%  | 100.0%  | 100.0%  |
| Disinfection by products   | n/a     | n/a     | 100.0%  | 100.0%  | 100.0%  |
| <div> <span style="color: green;">■</span> Compliant           <span style="color: red;">■</span> Non-compliant         </div> |         |         |         |         |         |

## 32.4. Analysis of current health performance (2020–21)

Table 32.4-a Summary of health guideline exceedances

| Summary of health guideline exceedances |      |         |           |
|---|------|---------|-----------|
| Parameter Exceeding                     | Date | Details | Resampled |
| No ADWG exceedances                     |      |         |           |



Table 32.4-b Metals performance

| Metals – health regulated parameters |       |      |         |             |               |         |          |         |
|--------------------------------------|-------|------|---------|-------------|---------------|---------|----------|---------|
| Parameter                            | Limit | Unit | Samples | Exceedances | Performance % | Mean    | Min.     | Max.    |
| Antimony                             | 0.003 | mg/L | 4       | 0           | 100           | <0.0005 | <0.0005  | <0.0005 |
| Arsenic                              | 0.01  | mg/L | 4       | 0           | 100           | <0.0003 | <0.0003  | <0.0003 |
| Barium                               | 2     | mg/L | 4       | 0           | 100           | 0.0129  | 0.0066   | 0.0223  |
| Cadmium                              | 0.002 | mg/L | 4       | 0           | 100           | <0.0001 | <0.0001  | <0.0001 |
| Chromium                             | 0.05  | mg/L | 4       | 0           | 100           | 0.0001  | <0.0001  | 0.0002  |
| Copper                               | 2     | mg/L | 4       | 0           | 100           | 0.0051  | 0.0037   | 0.0078  |
| Lead                                 | 0.01  | mg/L | 4       | 0           | 100           | 0.0002  | 0.0001   | 0.0003  |
| Manganese                            | 0.5   | mg/L | 4       | 0           | 100           | 0.0011  | 0.0008   | 0.0013  |
| Mercury                              | 0.001 | mg/L | 4       | 0           | 100           | 0.00013 | <0.00003 | 0.00044 |
| Molybdenum                           | 0.05  | mg/L | 4       | 0           | 100           | <0.0001 | <0.0001  | <0.0001 |
| Nickel                               | 0.02  | mg/L | 4       | 0           | 100           | 0.0003  | <0.0001  | 0.0007  |
| Selenium                             | 0.01  | mg/L | 4       | 0           | 100           | <0.0001 | <0.0001  | 0.0002  |

Table 32.4-c Disinfection by product performance

| Disinfection by products – health regulated parameters |       |      |         |             |               |      |      |      |
|--|-------|------|---------|-------------|---------------|------|------|------|
| Parameter  | Limit | Unit | Samples | Exceedances | Performance % | Mean | Min. | Max. |
| Dichloroacetic acid                                    | 100   | µg/L | 4       | 0           | 100           | 42   | 26   | 61   |
| Monochloroacetic acid                                  | 150   | µg/L | 4       | 0           | 100           | <3   | <3   | 4    |
| Trichloroacetic acid                                   | 100   | µg/L | 4       | 0           | 100           | 72   | 47   | 100  |
| Total trihalomethanes                                  | 250   | µg/L | 4       | 0           | 100           | 74   | 46   | 90   |

Table 32.4-d General physical performance

| General physical parameters |       |                 |      |      |      |
|-----------------------------|-------|-----------------|------|------|------|
| Parameter                   | Unit  | Guideline Value | Mean | Min  | Max  |
| Chlorine residual           | mg/L  | 0.1 – <0.8      | 0.70 | 0.28 | 1.08 |
| Colour True                 | HU    | 15              | <1   | <1   | 1    |
| pH                          | Units | 6.5 – 8.5       | 7.30 | 6.35 | 7.91 |
| Turbidity                   | NTU   | 1               | 0.32 | 0.14 | 0.65 |

### 32.5. Analysis of overall system performance (2020–21)

Table 32.5-a Summary of system issues/public health warnings

| Summary of system issues                          |             |                            |                            |
|---|-------------|----------------------------|----------------------------|
| Date  | Description | DHHS notification required | DHHS notification complete |
| No system issues or public health warnings issued |             |                            |                            |

## 33. Maydena drinking water system

### 33.1. System summary (2020–21)

| Maydena drinking water system      |         |
|------------------------------------|---------|
| System status (as at 30 June 2021) | Potable |
| Total number of connections        | 141     |
| Population serviced                | 218     |
| Fluoride                           | n/a     |

| Performance overview against health targets (2020–21)      |         |                                     |        |                 |             |
|--|---------|-------------------------------------|--------|-----------------|-------------|
| Indicator  | Outcome | Compliance                          | Target | Sampling Events | Exceedances |
| Microbiological  | 100.0%  | <input checked="" type="checkbox"/> | 98.0%  | 52              | 0           |
| Fluoride   | n/a     | n/a                                 | n/a    | n/a             | n/a         |
| Metals   | 100.0%  | <input checked="" type="checkbox"/> | 100.0% | 4               | 0           |
| DBPs   | 100.0%  | <input checked="" type="checkbox"/> | 100.0% | 4               | 0           |
| <div><div></div> Compliant <div></div> Non-compliant</div> |         |                                     |        |                 |             |

| Overall system performance (2020–21) |             |         |
|--------------------------------------|-------------|---------|
| Indicator                            | Occurrences | Details |
| System issues                        | 0           |         |
| Public health warnings issued        | 0           |         |
| Notifications made to DoH            | 0           |         |
| Customer complaints                  | 0           |         |

| Current and future planned capital investment |          |          |               |            |
|---|----------|----------|---------------|------------|
| Project                                       | Overview | Progress | Est. Delivery | Est. Spend |
| No projected capital investment               |          |          |               |            |

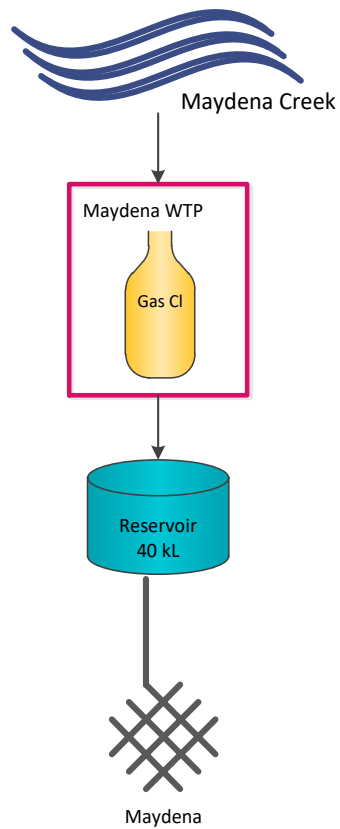


Figure 33.1-a Maydena system schematic

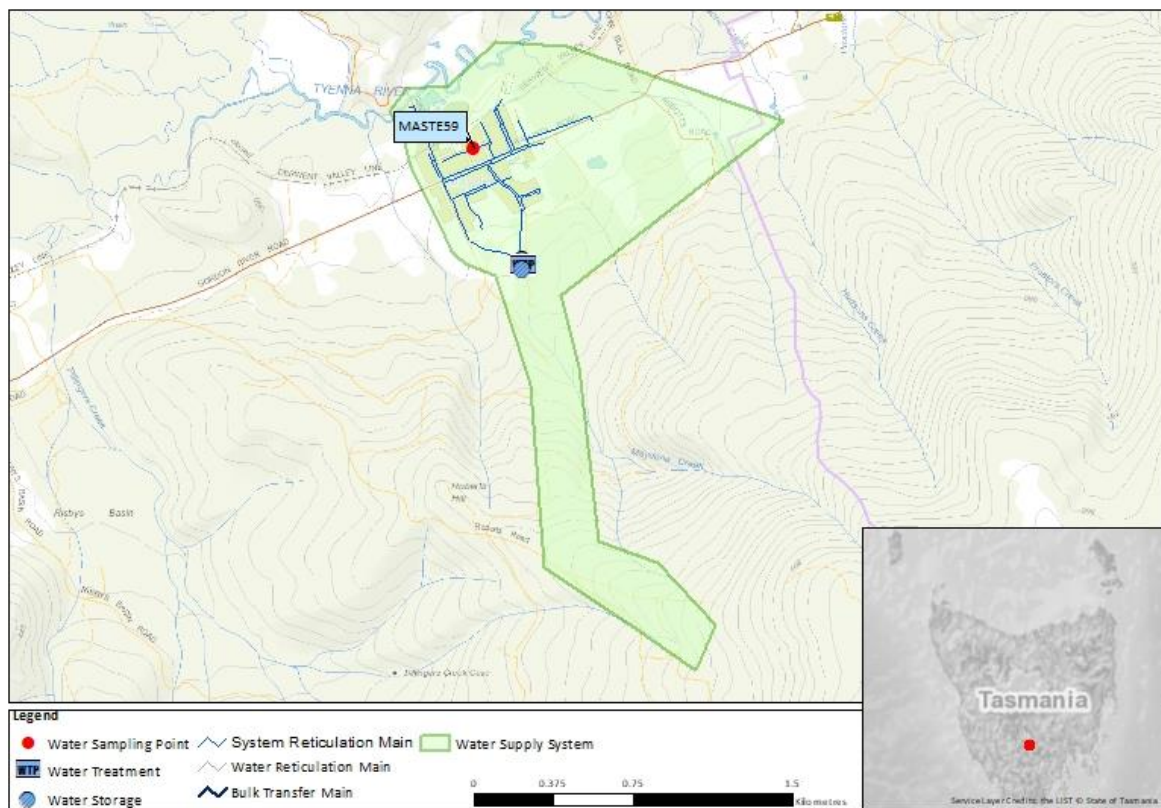


Figure 33.1-b Map of Maydena monitoring system

### 33.2. Summary of annual reticulation compliance (2020–21)

Table 33.2-a Sampling program

| Planned sampling program (2020–21) |           |        |        |     |                |                  |                   |
|------------------------------------|-----------|--------|--------|-----|----------------|------------------|-------------------|
| Site name                          | Site Code | Micros | Metals | DBP | Fluoride (Lab) | Chemical Profile | Process Chemicals |
| Maydena/12 Mayne St                | MASTE59   | W      | Q      | Q   | n/a            | Q                | n/a               |
| Number Planned Samples             |           | 52     | 4      | 4   | n/a            | 4                | n/a               |
| Number Samples Tested              |           | 52     | 4      | 4   | n/a            | 4                | n/a               |

### 33.3. Summary of current and historic performance (2016–21)

Table 33.3-a Historical health performance overview (5 year comparison)

| Historical health performance overview (5 year comparison)                     |         |         |         |         |         |
|--|---------|---------|---------|---------|---------|
| Indicator  | 2016–17 | 2017–18 | 2018–19 | 2019–20 | 2020–21 |
| Microbiological  | 100.0%  | 100.0%  | 100.0%  | 100.0%  | 100.0%  |
| Fluoride   | n/a     | n/a     | n/a     | n/a     | n/a     |
| Metals   | 100.0%  | 100.0%  | 100.0%  | 100.0%  | 100.0%  |
| Disinfection by products   | 100.0%  | 100.0%  | 100.0%  | 100.0%  | 100.0%  |
| <div> <div></div> Compliant           <div></div> Non-compliant         </div> |         |         |         |         |         |

### 33.4. Analysis of current health performance (2020–21)

Table 33.4-a Summary of health guideline exceedances

| Summary of health guideline exceedances |      |         |           |
|---|------|---------|-----------|
| Parameter Exceeding                     | Date | Details | Resampled |
| No ADWG exceedances                     |      |         |           |

**Table 33.4-b Metals performance**

| Metals – health regulated parameters |       |      |         |             |               |         |          |         |
|--------------------------------------|-------|------|---------|-------------|---------------|---------|----------|---------|
| Parameter                            | Limit | Unit | Samples | Exceedances | Performance % | Mean    | Min.     | Max.    |
| Antimony                             | 0.003 | mg/L | 4       | 0           | 100           | <0.0005 | <0.0005  | <0.0005 |
| Arsenic                              | 0.01  | mg/L | 4       | 0           | 100           | <0.0003 | <0.0003  | <0.0003 |
| Barium                               | 2     | mg/L | 4       | 0           | 100           | 0.0021  | 0.0018   | 0.0023  |
| Cadmium                              | 0.002 | mg/L | 4       | 0           | 100           | <0.0001 | <0.0001  | <0.0001 |
| Chromium                             | 0.05  | mg/L | 4       | 0           | 100           | 0.0010  | 0.0007   | 0.0013  |
| Copper                               | 2     | mg/L | 4       | 0           | 100           | 0.0015  | 0.0010   | 0.0021  |
| Lead                                 | 0.01  | mg/L | 4       | 0           | 100           | 0.0002  | <0.0001  | 0.0003  |
| Manganese                            | 0.5   | mg/L | 4       | 0           | 100           | 0.0002  | <0.0001  | 0.0005  |
| Mercury                              | 0.001 | mg/L | 4       | 0           | 100           | 0.00007 | <0.00003 | 0.00012 |
| Molybdenum                           | 0.05  | mg/L | 4       | 0           | 100           | <0.0001 | <0.0001  | <0.0001 |
| Nickel                               | 0.02  | mg/L | 4       | 0           | 100           | <0.0001 | <0.0001  | <0.0001 |
| Selenium                             | 0.01  | mg/L | 4       | 0           | 100           | <0.0001 | <0.0001  | <0.0001 |

**Table 33.4-c Disinfection by product performance**

| Disinfection by products – health regulated parameters |       |      |         |             |               |      |      |      |
|--|-------|------|---------|-------------|---------------|------|------|------|
| Parameter  | Limit | Unit | Samples | Exceedances | Performance % | Mean | Min. | Max. |
| Dichloroacetic acid                                    | 100   | µg/L | 4       | 0           | 100           | 20   | 9    | 26   |
| Monochloroacetic acid                                  | 150   | µg/L | 4       | 0           | 100           | <3   | <3   | <3   |
| Trichloroacetic acid                                   | 100   | µg/L | 4       | 0           | 100           | 34   | 13   | 44   |
| Total trihalomethanes                                  | 250   | µg/L | 4       | 0           | 100           | 43   | 28   | 52   |

**Table 33.4-d General physical performance**

| General physical parameters |       |                 |      |      |      |
|-----------------------------|-------|-----------------|------|------|------|
| Parameter                   | Unit  | Guideline Value | Mean | Min  | Max  |
| Chlorine residual           | mg/L  | 0.1 – <0.8      | 0.76 | 0.46 | 1.07 |
| Colour True                 | HU    | 15              | <1   | <1   | 1    |
| pH                          | Units | 6.5 – 8.5       | 7.46 | 7.02 | 7.76 |
| Turbidity                   | NTU   | 1               | 0.24 | 0.06 | 0.70 |

### 33.5. Analysis of overall system performance (2020–21)

Table 33.5-a Summary of system issues/public health warnings

| Summary of system issues                          |             |                           |                           |
|---|-------------|---------------------------|---------------------------|
| Date  | Description | DoH notification required | DoH notification complete |
| No system issues or public health warnings issued |             |                           |                           |

## 34. Mole Creek drinking water system

### 34.1. System summary (2020–21)

| Mole Creek drinking water system   |         |
|------------------------------------|---------|
| System status (as at 30 June 2021) | Potable |
| Total number of connections        | 202     |
| Population serviced                | 391     |
| Fluoride                           | n/a     |

| Performance overview against health targets (2020–21)                                |         |                                     |        |                 |             |
|--|---------|-------------------------------------|--------|-----------------|-------------|
| Indicator  | Outcome | Compliance                          | Target | Sampling Events | Exceedances |
| Microbiological  | 100.0%  | <input checked="" type="checkbox"/> | 98.0%  | 53              | 0           |
| Fluoride   | n/a     | n/a                                 | n/a    | n/a             | n/a         |
| Metals   | 100.0%  | <input checked="" type="checkbox"/> | 100.0% | 4               | 0           |
| DBPs   | 100.0%  | <input checked="" type="checkbox"/> | 100.0% | 4               | 0           |
| <input checked="" type="checkbox"/> Compliant <input type="checkbox"/> Non-compliant |         |                                     |        |                 |             |

| Overall system performance (2020–21) |             |         |
|--------------------------------------|-------------|---------|
| Indicator                            | Occurrences | Details |
| System issues                        | 0           |         |
| Public health warnings issued        | 0           |         |
| Notifications made to DoH            | 0           |         |
| Customer complaints                  | 0           |         |

| Current and future planned capital investment |          |          |               |            |
|---|----------|----------|---------------|------------|
| Project                                       | Overview | Progress | Est. Delivery | Est. Spend |
| No projected capital investment               |          |          |               |            |



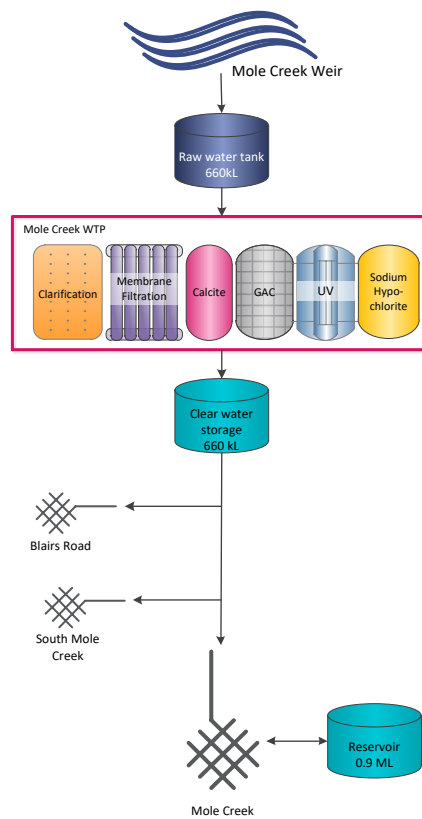


Figure 34.1-a Mole Creek system schematic

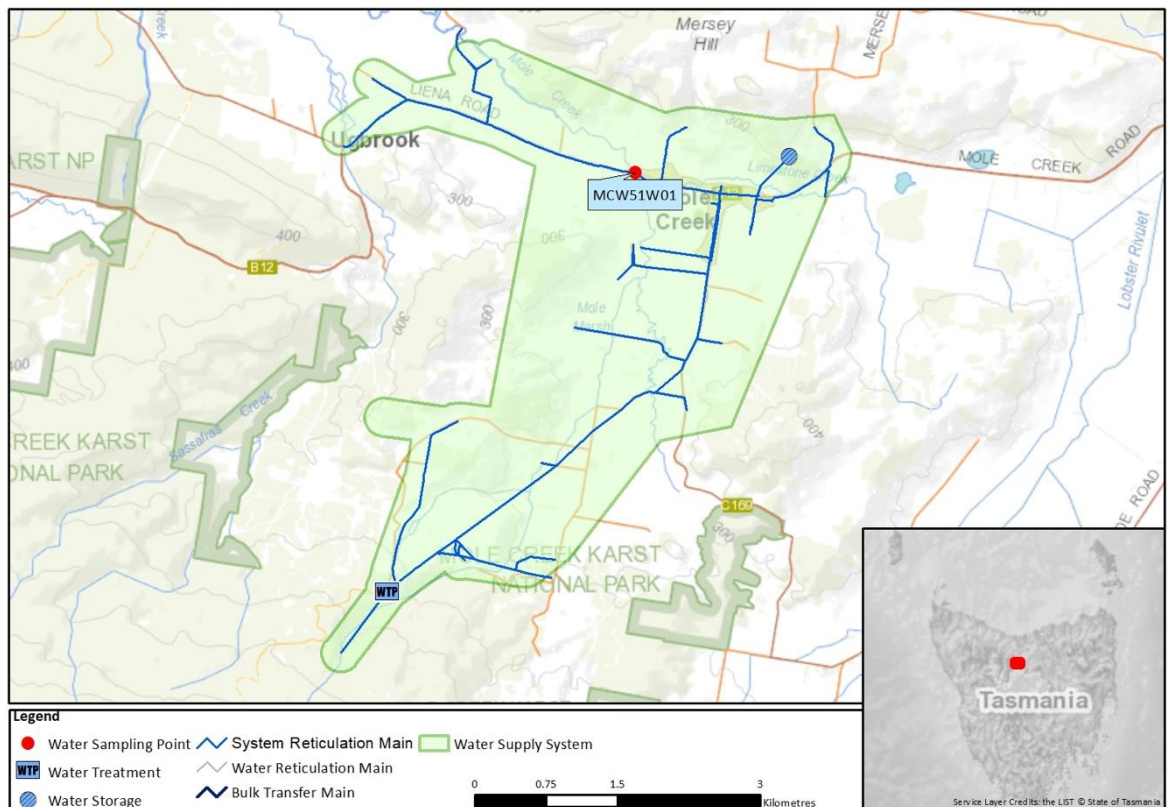


Figure 34.1-b Map of Mole Creek monitoring system

## 34.2. Summary of annual reticulation compliance (2020–21)

Table 34.2-a Sampling program

| Planned sampling program (2020–21) |           |        |        |     |                |                  |                   |
|------------------------------------|-----------|--------|--------|-----|----------------|------------------|-------------------|
| Site name                          | Site Code | Micros | Metals | DBP | Fluoride (Lab) | Chemical Profile | Process Chemicals |
| Mole Creek/Pioneer Drive (650094)  | MCW51W01  | W      | Q      | Q   | n/a            | Q                | n/a               |
| Number Planned Samples             |           | 53     | 4      | 4   | n/a            | 8                | n/a               |
| Number Samples Tested              |           | 53     | 4      | 4   | n/a            | 8                | n/a               |

## 34.3. Summary of current and historic performance (2016–21)

Table 34.3-a Historical health performance overview (5 year comparison)

| Historical health performance overview (5 year comparison)   |         |         |         |         |         |
|--|---------|---------|---------|---------|---------|
| Indicator  | 2016–17 | 2017–18 | 2018–19 | 2019–20 | 2020–21 |
| Microbiological  | 50.0%   | 99.0%   | 100.0%  | 100.0%  | 100.0%  |
| Fluoride   | n/a     | n/a     | n/a     | n/a     | n/a     |
| Metals   | 100.0%  | 100.0%  | 100.0%  | 100.0%  | 100.0%  |
| Disinfection by products   | n/a     | 100.0%  | 100.0%  | 100.0%  | 100.0%  |
| <div> <span style="color: green;">■</span> Compliant           <span style="color: red;">■</span> Non-compliant         </div> |         |         |         |         |         |

## 34.4. Analysis of current health performance (2020–21)

Table 34.4-a Summary of health guideline exceedances

| Summary of health guideline exceedances |      |         |           |
|---|------|---------|-----------|
| Parameter Exceeding                     | Date | Details | Resampled |
| No ADWG exceedances                     |      |         |           |

Table 34.4-b Metals performance

| Metals – health regulated parameters |       |      |         |             |               |         |          |         |
|--------------------------------------|-------|------|---------|-------------|---------------|---------|----------|---------|
| Parameter                            | Limit | Unit | Samples | Exceedances | Performance % | Mean    | Min.     | Max.    |
| Antimony                             | 0.003 | mg/L | 4       | 0           | 100           | <0.0005 | <0.0005  | <0.0005 |
| Arsenic                              | 0.01  | mg/L | 4       | 0           | 100           | <0.0003 | <0.0003  | <0.0003 |
| Barium                               | 2     | mg/L | 4       | 0           | 100           | 0.0038  | 0.0026   | 0.0047  |
| Cadmium                              | 0.002 | mg/L | 4       | 0           | 100           | <0.0001 | <0.0001  | <0.0001 |
| Chromium                             | 0.05  | mg/L | 4       | 0           | 100           | 0.0002  | <0.0001  | 0.0003  |
| Copper                               | 2     | mg/L | 4       | 0           | 100           | 0.0007  | 0.0006   | 0.0009  |
| Lead                                 | 0.01  | mg/L | 4       | 0           | 100           | <0.0001 | <0.0001  | <0.0001 |
| Manganese                            | 0.5   | mg/L | 4       | 0           | 100           | 0.0003  | 0.0001   | 0.0006  |
| Mercury                              | 0.001 | mg/L | 4       | 0           | 100           | 0.00008 | <0.00003 | 0.00016 |
| Molybdenum                           | 0.05  | mg/L | 4       | 0           | 100           | <0.0001 | <0.0001  | <0.0001 |
| Nickel                               | 0.02  | mg/L | 4       | 0           | 100           | <0.0001 | <0.0001  | 0.0001  |
| Selenium                             | 0.01  | mg/L | 4       | 0           | 100           | 0.0001  | <0.0001  | 0.0002  |

Table 34.4-c Disinfection by product performance

| Disinfection by products – health regulated parameters |       |      |         |             |               |      |      |      |
|--|-------|------|---------|-------------|---------------|------|------|------|
| Parameter  | Limit | Unit | Samples | Exceedances | Performance % | Mean | Min. | Max. |
| Dichloroacetic acid                                    | 100   | µg/L | 4       | 0           | 100           | 2    | <1   | 6    |
| Monochloroacetic acid                                  | 150   | µg/L | 4       | 0           | 100           | <3   | <3   | <3   |
| Trichloroacetic acid                                   | 100   | µg/L | 4       | 0           | 100           | 2    | <1   | 5    |
| Total trihalomethanes                                  | 250   | µg/L | 4       | 0           | 100           | 7    | 4    | 14   |

Table 34.4-d General physical performance

| General physical parameters |       |                 |      |      |      |
|-----------------------------|-------|-----------------|------|------|------|
| Parameter                   | Unit  | Guideline Value | Mean | Min  | Max  |
| Chlorine residual           | mg/L  | 0.1 – <0.8      | 0.71 | 0.22 | 0.97 |
| Colour True                 | HU    | 15              | <1   | <1   | <1   |
| pH                          | Units | 6.5 – 8.5       | 7.58 | 7.00 | 8.56 |
| Turbidity                   | NTU   | 1               | 0.29 | 0.09 | 0.98 |

### 34.5. Analysis of overall system performance (2020–21)

Table 34.5-a Summary of system issues/public health warnings

| Summary of system issues                          |             |                           |                           |
|---|-------------|---------------------------|---------------------------|
| Date  | Description | DoH notification required | DoH notification complete |
| No system issues or public health warnings issued |             |                           |                           |

## 35. National Park drinking water system

### 35.1. System summary (2020–21)

| National Park drinking water system |         |
|-------------------------------------|---------|
| System status (as at 30 June 2021)  | Potable |
| Total number of connections         | 23      |
| Population serviced                 | 32      |
| Fluoride                            | n/a     |

| Performance overview against health targets (2020–21)      |         |            |        |                 |             |
|--|---------|------------|--------|-----------------|-------------|
| Indicator  | Outcome | Compliance | Target | Sampling Events | Exceedances |
| Microbiological  | 100.0%  | ☑          | 98.0%  | 52              | 0           |
| Fluoride   | n/a     | n/a        | n/a    | n/a             | n/a         |
| Metals   | 100.0%  | ☑          | 100.0% | 4               | 0           |
| DBPs   | 100.0%  | ☑          | 100.0% | 4               | 0           |
| <div><div></div> Compliant <div></div> Non-compliant</div> |         |            |        |                 |             |

| Overall system performance (2020–21) |             |         |
|--------------------------------------|-------------|---------|
| Indicator                            | Occurrences | Details |
| System issues                        | 0           |         |
| Public health warnings issued        | 0           |         |
| Notifications made to DoH            | 0           |         |
| Customer complaints                  | 0           |         |

| Current and future planned capital investment |          |          |               |            |
|---|----------|----------|---------------|------------|
| Project                                       | Overview | Progress | Est. Delivery | Est. Spend |
| No projected capital investment               |          |          |               |            |

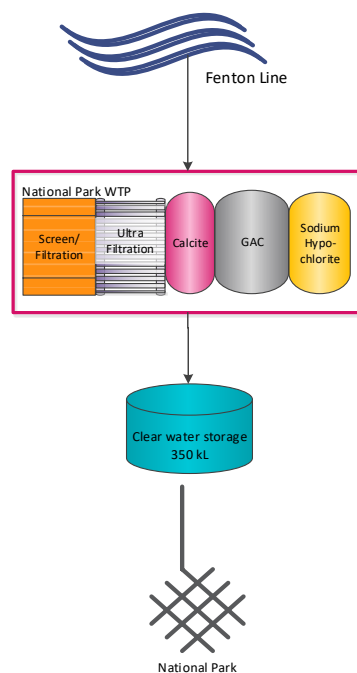


Figure 35.1-a National Park system schematic

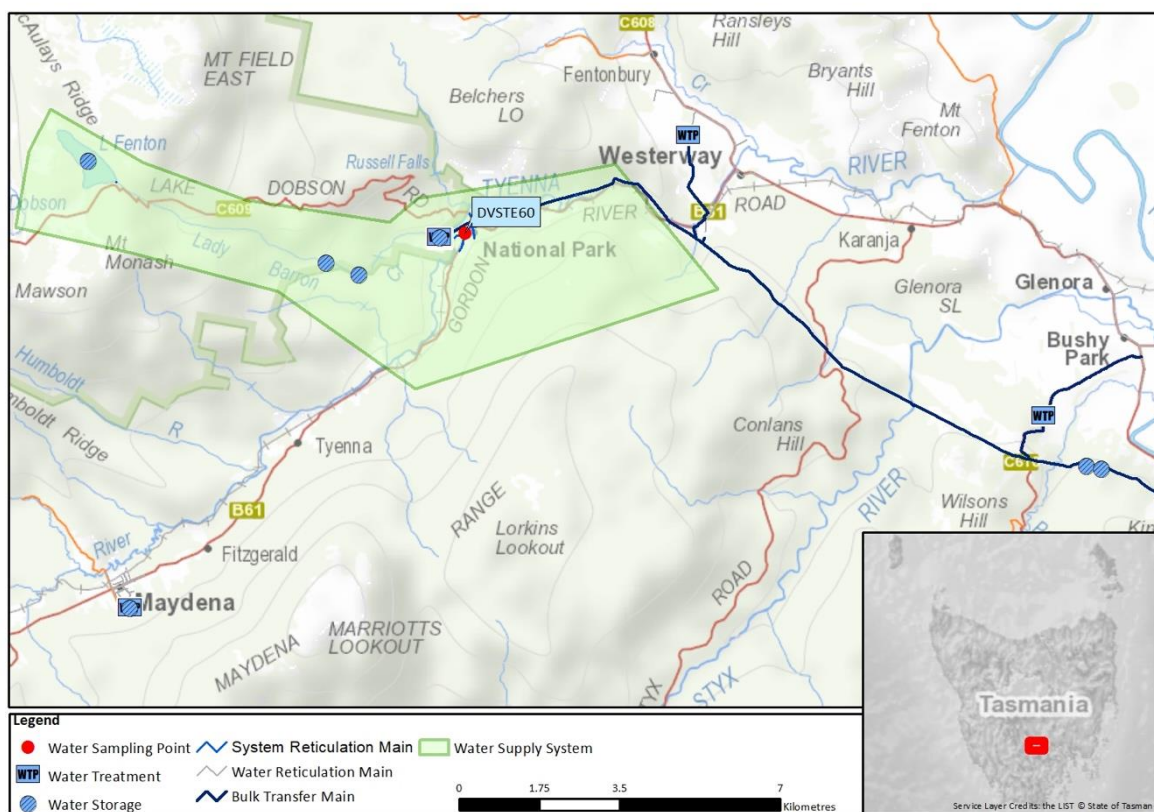


Figure 35.1-b Map of National Park monitoring system

## 35.2. Summary of annual reticulation compliance (2020–21)

Table 35.2-a Sampling program

| Planned sampling program (2020–21)            |           |        |        |     |                |                  |                   |
|---|-----------|--------|--------|-----|----------------|------------------|-------------------|
| Site name                                     | Site Code | Micros | Metals | DBP | Fluoride (Lab) | Chemical Profile | Process Chemicals |
| National Park/crn Weir Rd and Gordon River Rd | DVSTE60   | W      | Q      | Q   | n/a            | Q                | n/a               |
| Number Planned Samples                        |           | 52     | 4      | 4   | n/a            | 4                | n/a               |
| Number Samples Tested                         |           | 52     | 4      | 4   | n/a            | 4                | n/a               |

## 35.3. Summary of current and historic performance (2016–21)

Table 35.3-a Historical health performance overview (5 year comparison)

| Historical health performance overview (5 year comparison)   |         |         |         |         |         |
|--|---------|---------|---------|---------|---------|
| Indicator  | 2016–17 | 2017–18 | 2018–19 | 2019–20 | 2020–21 |
| Microbiological  | n/a     | n/a     | 100.0%  | 100.0%  | 100.0%  |
| Fluoride   | n/a     | n/a     | n/a     | n/a     | n/a     |
| Metals   | n/a     | n/a     | 100.0%  | 100.0%  | 100.0%  |
| Disinfection by products   | n/a     | n/a     | 100.0%  | 100.0%  | 100.0%  |
| <div> <span style="color: green;">■</span> Compliant           <span style="color: red;">■</span> Non-compliant         </div> |         |         |         |         |         |

## 35.4. Analysis of current health performance (2020–21)

Table 35.4-a Summary of health guideline exceedances

| Summary of health guideline exceedances |      |         |           |
|---|------|---------|-----------|
| Parameter Exceeding                     | Date | Details | Resampled |
| No ADWG exceedances                     |      |         |           |

Table 35.4-b Metals performance

| Metals – health regulated parameters |       |      |         |             |               |         |          |         |
|--------------------------------------|-------|------|---------|-------------|---------------|---------|----------|---------|
| Parameter                            | Limit | Unit | Samples | Exceedances | Performance % | Mean    | Min.     | Max.    |
| Antimony                             | 0.003 | mg/L | 4       | 0           | 100           | <0.0005 | <0.0005  | <0.0005 |
| Arsenic                              | 0.01  | mg/L | 4       | 0           | 100           | 0.0003  | <0.0003  | 0.0004  |
| Barium                               | 2     | mg/L | 4       | 0           | 100           | 0.0025  | 0.0019   | 0.0033  |
| Cadmium                              | 0.002 | mg/L | 4       | 0           | 100           | <0.0001 | <0.0001  | <0.0001 |
| Chromium                             | 0.05  | mg/L | 4       | 0           | 100           | 0.0002  | 0.0001   | 0.0003  |
| Copper                               | 2     | mg/L | 4       | 0           | 100           | 0.0066  | 0.0044   | 0.0103  |
| Lead                                 | 0.01  | mg/L | 4       | 0           | 100           | 0.0006  | 0.0004   | 0.0007  |
| Manganese                            | 0.5   | mg/L | 4       | 0           | 100           | 0.0009  | 0.0007   | 0.0013  |
| Mercury                              | 0.001 | mg/L | 4       | 0           | 100           | 0.00006 | <0.00003 | 0.00012 |
| Molybdenum                           | 0.05  | mg/L | 4       | 0           | 100           | <0.0001 | <0.0001  | <0.0001 |
| Nickel                               | 0.02  | mg/L | 4       | 0           | 100           | 0.0002  | 0.0001   | 0.0004  |
| Selenium                             | 0.01  | mg/L | 4       | 0           | 100           | <0.0001 | <0.0001  | <0.0001 |

Table 35.4-c Disinfection by product performance

| Disinfection by products – health regulated parameters |       |      |         |             |               |      |      |      |
|--|-------|------|---------|-------------|---------------|------|------|------|
| Parameter  | Limit | Unit | Samples | Exceedances | Performance % | Mean | Min. | Max. |
| Dichloroacetic acid                                    | 100   | µg/L | 4       | 0           | 100           | 31   | 22   | 40   |
| Monochloroacetic acid                                  | 150   | µg/L | 4       | 0           | 100           | <3   | <3   | <3   |
| Trichloroacetic acid                                   | 100   | µg/L | 4       | 0           | 100           | 56   | 39   | 74   |
| Total trihalomethanes                                  | 250   | µg/L | 4       | 0           | 100           | 50   | 47   | 61   |

Table 35.4-d General physical performance

| General physical parameters |       |                 |      |      |      |
|-----------------------------|-------|-----------------|------|------|------|
| Parameter                   | Unit  | Guideline Value | Mean | Min  | Max  |
| Chlorine residual           | mg/L  | 0.1 – <0.8      | 0.86 | 0.46 | 1.42 |
| Colour True                 | HU    | 15              | 1.25 | 1    | 2    |
| pH                          | Units | 6.5 – 8.5       | 7.25 | 6.90 | 7.56 |
| Turbidity                   | NTU   | 1               | 0.25 | 0.10 | 0.58 |



### 35.5. Analysis of overall system performance (2020–21)

Table 35.5-a Summary of system issues/public health warnings

| Summary of system issues                        |             |                           |                           |
|---|-------------|---------------------------|---------------------------|
| Date  | Description | DoH notification required | DoH notification complete |
| No system issues or public health alerts issued |             |                           |                           |

## 36. North Esk drinking water system

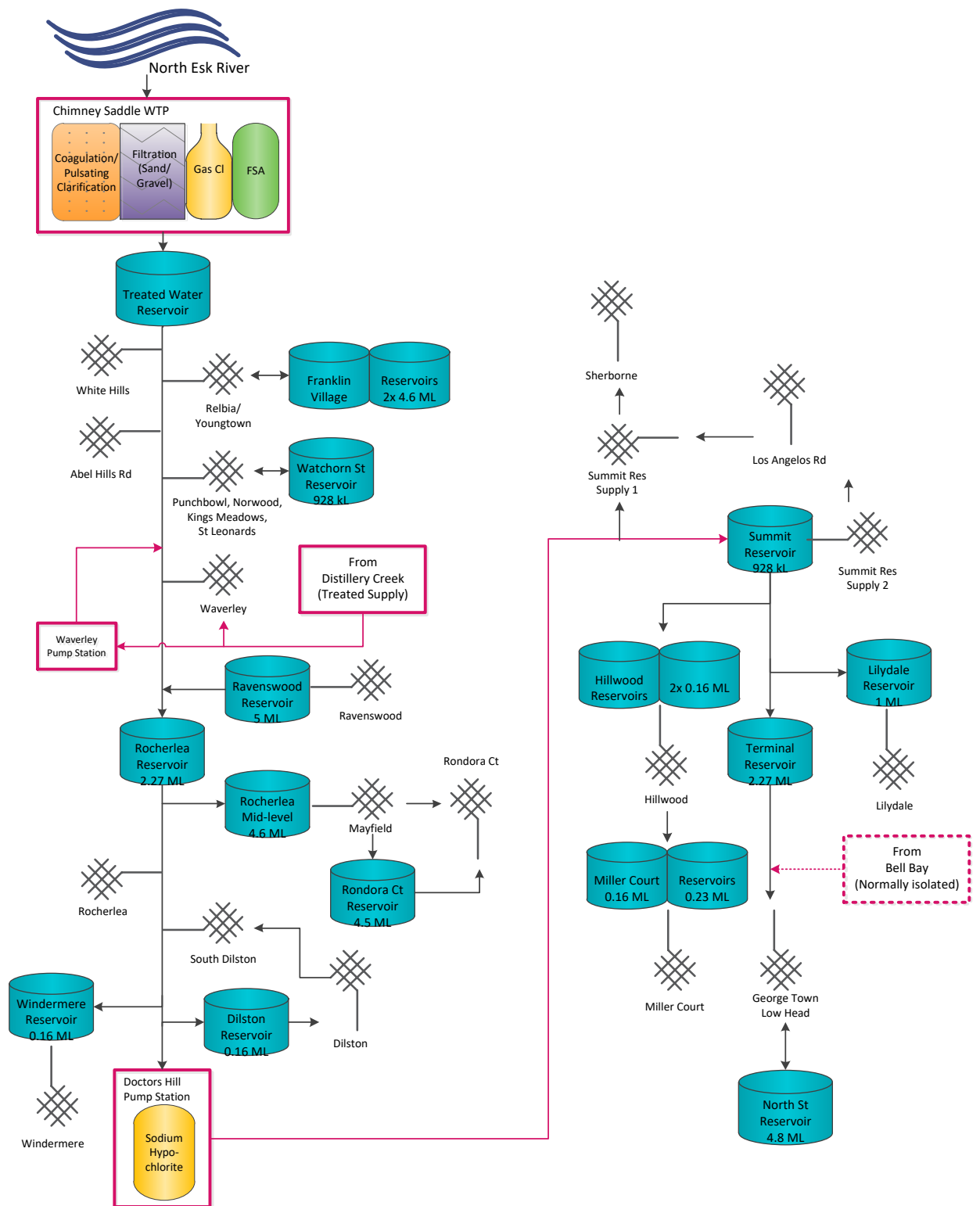
### 36.1. System summary (2020–21)

| North Esk drinking water system    |                    |
|------------------------------------|--------------------|
| System status (as at 30 June 2021) | Potable            |
| Total number of connections        | 15,094             |
| Population serviced                | 31,978             |
| Fluoride                           | Fluorosilicic acid |

| Performance overview against health targets (2020–21)  |         |            |        |                 |             |
|--|---------|------------|--------|-----------------|-------------|
| Indicator  | Outcome | Compliance | Target | Sampling Events | Exceedances |
| Microbiological  | 100.0%  | ☑          | 98.0%  | 699             | 0           |
| Fluoride   | 100.0%  | ☑          | 100.0% | 48              | 0           |
| Metals   | 100.0%  | ☑          | 100.0% | 4               | 0           |
| DBPs   | 100.0%  | ☑          | 100.0% | 4               | 0           |
| <div><span style="color: green;">■</span> Compliant <span style="color: red;">■</span> Non-compliant</div> |         |            |        |                 |             |

| Overall system performance (2020–21) |             |                |
|--------------------------------------|-------------|----------------|
| Indicator                            | Occurrences | Details        |
| System issues                        | 0           |                |
| Public health warnings issued        | 0           |                |
| Notifications made to DoH            | 0           |                |
| Customer complaints                  | 1           | Discolouration |

| Current and future planned capital investment |                  |             |               |            |
|---|------------------|-------------|---------------|------------|
| Project                                       | Overview         | Progress    | Est. Delivery | Est. Spend |
| Fluoride Upgrade                              | Tank Replacement | Complete    | 2020/2021     | TBD        |
| WTP Upgrade                                   | UV Installation  | In Progress | 2022/2023     | TBD        |



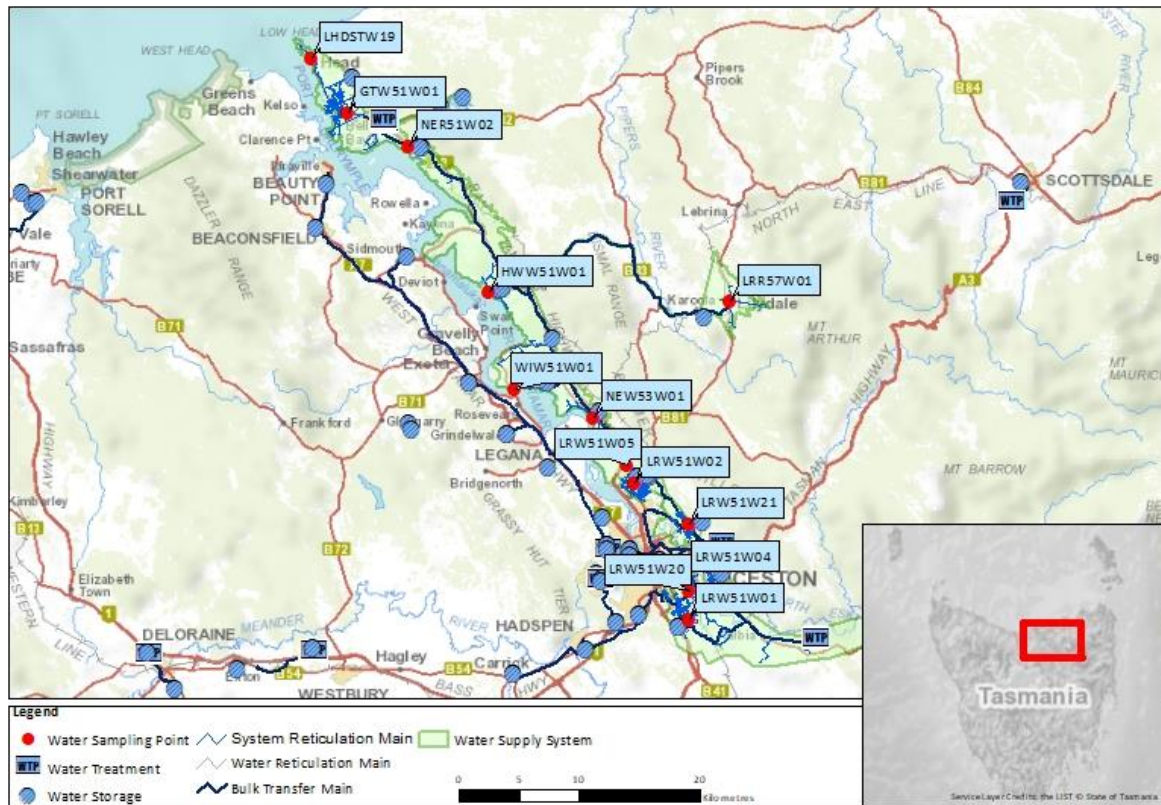


Figure 36.1-b Map of North Esk monitoring system

## 36.2. Summary of annual reticulation compliance (2020–21)

Table 36.2-a Sampling program

| Planned sampling program (2020–21)           |                        |            |          |          |                |                  |                   |
|--|------------------------|------------|----------|----------|----------------|------------------|-------------------|
| Site name                                    | Site Code              | Micros     | Metals   | DBP      | Fluoride (Lab) | Chemical Profile | Process Chemicals |
| Youngtown, Poplar Parade                     | LRW51W01 <sup>21</sup> | W          | n/a      | n/a      | 2M             | n/a              | n/a               |
| 4 Dorset Place - Kings Meadows               | NEST07                 | W          | n/a      | n/a      | 2M             | n/a              | n/a               |
| Norwood, Charlton Park                       | LRW51W20               | W          | n/a      | n/a      | n/a            | n/a              | n/a               |
| Norwood, Leith St                            | LRW51W04               | W          | n/a      | n/a      | n/a            | n/a              | n/a               |
| Ravenswood, Primary School                   | LRW51W21 <sup>22</sup> | W          | n/a      | n/a      | n/a            | n/a              | n/a               |
| 49 Wildor Cres                               | NEST05                 | W          | n/a      | n/a      | n/a            | n/a              | n/a               |
| Newnham, Franmaree St                        | LRW51W02               | W          | n/a      | n/a      | n/a            | n/a              | n/a               |
| Rocherlea, TasWater Depot                    | LRW51W05               | W          | n/a      | n/a      | n/a            | n/a              | n/a               |
| Dilston Hall                                 | NEW53W01 <sup>23</sup> | W          | n/a      | n/a      | n/a            | n/a              | n/a               |
| 1 Dilston Road                               | NEST06                 | W          | n/a      | n/a      | n/a            | n/a              | n/a               |
| Windermere, Church                           | WIW51W01               | W          | n/a      | n/a      | n/a            | n/a              | n/a               |
| Hillwood, Jetty                              | HWW51W01               | W          | n/a      | n/a      | n/a            | n/a              | n/a               |
| Lilydale, 1972 Lilydale Rd (Public Toilets)  | LRR57W01 <sup>24</sup> | W          | n/a      | n/a      | n/a            | n/a              | n/a               |
| 2 Doaks Rd                                   | NEST10                 | W          | n/a      | n/a      | n/a            | n/a              | n/a               |
| George Town, Information Centre              | GTW51W01 <sup>25</sup> | W          | Q        | Q        | 2M             | Q                | n/a               |
| Opposite 42 Davies Street                    | NEST01                 | W          | Q        | Q        | 2M             | Q                | n/a               |
| Low Head Park Toilet                         | LHDSTW19 <sup>26</sup> | W          | n/a      | n/a      | n/a            | n/a              | n/a               |
| 372 Low Head Road                            | NEST02                 | W          | n/a      | n/a      | n/a            | n/a              | n/a               |
| Bell Bay Interconnector                      | NER51W02               | W          | n/a      | n/a      | n/a            | n/a              | n/a               |
| Miller Court Res and Booster P/Stn           | NEST11 <sup>27</sup>   | W          | n/a      | n/a      | n/a            | n/a              | n/a               |
| Bethune Place side fence of 71 Alanvale Road | NEST12 <sup>27</sup>   | W          | n/a      | n/a      | n/a            | n/a              | n/a               |
| 444 Los Angeles Road                         | NEST13 <sup>27</sup>   | W          | n/a      | n/a      | n/a            | n/a              | n/a               |
| <b>Number Planned Samples</b>                |                        | <b>699</b> | <b>4</b> | <b>4</b> | <b>48</b>      | <b>4</b>         | <b>n/a</b>        |
| <b>Number Samples Tested</b>                 |                        | <b>699</b> | <b>4</b> | <b>4</b> | <b>48</b>      | <b>4</b>         | <b>n/a</b>        |

<sup>21</sup> Replaced by NEST07 31<sup>st</sup> May 2021

<sup>22</sup> Replaced by NEST05 1<sup>st</sup> November 2020

<sup>23</sup> Replaced by NEST06 1<sup>st</sup> November 2020

<sup>24</sup> Replaced by NEST10 1<sup>st</sup> November 2020



<sup>25</sup> Replaced by NEST01 24<sup>th</sup> March 2021

<sup>26</sup> Replaced by NEST02 1<sup>st</sup> November 2020

<sup>27</sup> New installation from 31<sup>st</sup> May 2021. Zone was not being sampled.

### 36.3. Summary of current and historic performance (2016–21)

Table 36.3-a Historical health performance overview (5 year comparison)



| Historical health performance overview (5 year comparison)  |         |         |         |         |         |
|---|---------|---------|---------|---------|---------|
| Indicator   | 2016–17 | 2017–18 | 2018–19 | 2019–20 | 2020–21 |
| Microbiological   | 100.0%  | 100.0%  | 100.0%  | 100.0%  | 100.0%  |
| Fluoride  | 100.0%  | 100.0%  | 100.0%  | 100.0%  | 100.0%  |
| Metals  | 100.0%  | 100.0%  | 100.0%  | 100.0%  | 100.0%  |
| Disinfection by products  | 100.0%  | 100.0%  | 100.0%  | 100.0%  | 100.0%  |
|  Compliant  Non-compliant |         |         |         |         |         |

### 36.4. Analysis of current health performance (2020–21)

Table 36.4-a Summary of health guideline exceedances

| Summary of health guideline exceedances |      |         |           |
|---|------|---------|-----------|
| Parameter Exceeding                     | Date | Details | Resampled |
| No ADWG exceedances                     |      |         |           |

Table 36.4-b Fluoride distribution performance

| Distribution fluoride performance   |         |
|---|---------|
| Indicator   | 2020–21 |
| F exceeding 1.5 mg/L  | 0       |
| Average F concentration range (0.8 mg/L – 1.1 mg/L)   | 0.9     |
| 90% of F results are equal to or less than 1.1 mg/L   | 100%    |
|  Compliant  Non-compliant |         |

**Table 36.4-c Metals performance**

| Metals – health regulated parameters |       |      |         |             |               |         |          |         |
|--------------------------------------|-------|------|---------|-------------|---------------|---------|----------|---------|
| Parameter                            | Limit | Unit | Samples | Exceedances | Performance % | Mean    | Min.     | Max.    |
| Antimony                             | 0.003 | mg/L | 4       | 0           | 100           | <0.0005 | <0.0005  | <0.0005 |
| Arsenic                              | 0.01  | mg/L | 4       | 0           | 100           | <0.0003 | <0.0003  | <0.0003 |
| Barium                               | 2     | mg/L | 4       | 0           | 100           | 0.0080  | 0.0066   | 0.0087  |
| Cadmium                              | 0.002 | mg/L | 4       | 0           | 100           | <0.0001 | <0.0001  | <0.0001 |
| Chromium                             | 0.05  | mg/L | 4       | 0           | 100           | 0.0002  | 0.0001   | 0.0003  |
| Copper                               | 2     | mg/L | 4       | 0           | 100           | 0.0063  | 0.0039   | 0.0090  |
| Lead                                 | 0.01  | mg/L | 4       | 0           | 100           | 0.0002  | 0.0001   | 0.0005  |
| Manganese                            | 0.5   | mg/L | 4       | 0           | 100           | 0.0016  | 0.0002   | 0.0055  |
| Mercury                              | 0.001 | mg/L | 4       | 0           | 100           | 0.00007 | <0.00003 | 0.00014 |
| Molybdenum                           | 0.05  | mg/L | 4       | 0           | 100           | <0.0001 | <0.0001  | <0.0001 |
| Nickel                               | 0.02  | mg/L | 4       | 0           | 100           | 0.0001  | <0.0001  | 0.0002  |
| Selenium                             | 0.01  | mg/L | 4       | 0           | 100           | <0.0001 | <0.0001  | <0.0001 |

**Table 36.4-d Disinfection by product performance**

| Disinfection by products – health regulated parameters |       |      |         |             |               |      |      |      |
|--|-------|------|---------|-------------|---------------|------|------|------|
| Parameter  | Limit | Unit | Samples | Exceedances | Performance % | Mean | Min. | Max. |
| Dichloroacetic acid                                    | 100   | µg/L | 4       | 0           | 100           | 4    | 3    | 7    |
| Monochloroacetic acid                                  | 150   | µg/L | 4       | 0           | 100           | <3   | <3   | <3   |
| Trichloroacetic acid                                   | 100   | µg/L | 4       | 0           | 100           | 12   | 6    | 18   |
| Total trihalomethanes                                  | 250   | µg/L | 4       | 0           | 100           | 29   | 17   | 39   |

**Table 36.4-e General physical performance**

| General physical parameters |       |                 |      |      |      |
|-----------------------------|-------|-----------------|------|------|------|
| Parameter                   | Unit  | Guideline Value | Mean | Min  | Max  |
| Chlorine residual           | mg/L  | 0.1 – <0.8      | 0.51 | 0.01 | 1.09 |
| Colour True                 | HU    | 15              | <1   | <1   | <1   |
| pH                          | Units | 6.5 – 8.5       | 7.26 | 6.14 | 9.05 |
| Turbidity                   | NTU   | 1               | 0.36 | 0.00 | 1.82 |

36.5. Analysis of overall system performance (2020–21)

Table 36.5-a Summary of system issues/public health warnings

| Summary of system issues                          |             |                           |                           |
|---|-------------|---------------------------|---------------------------|
| Date  | Description | DoH notification required | DoH notification complete |
| No system issues or public health warnings issued |             |                           |                           |

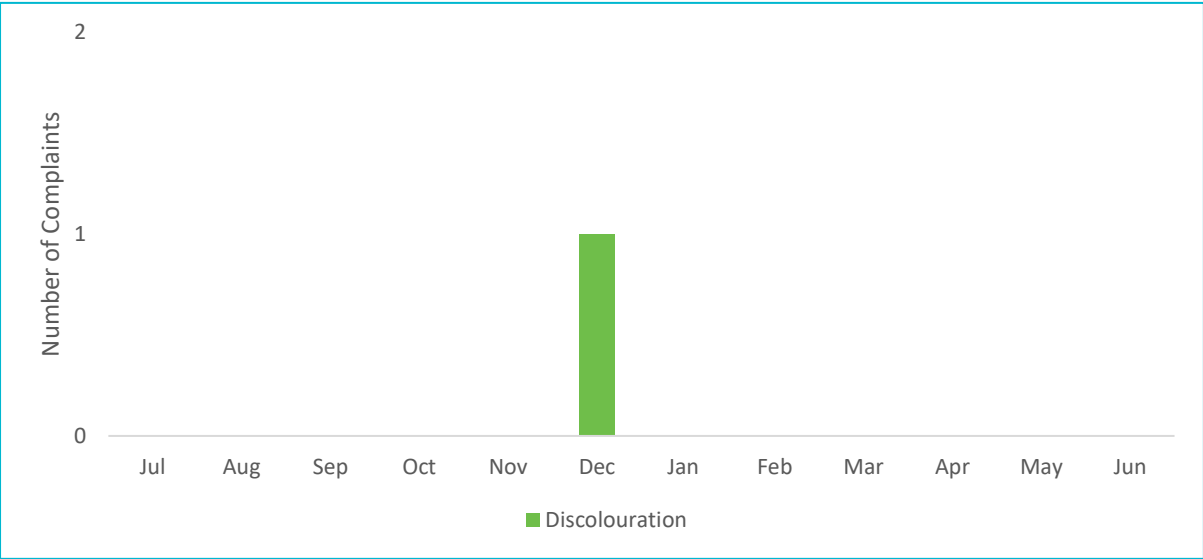


Figure 36.5-b Water quality customer complaints by month and type



## 37. Oatlands drinking water system

### 37.1. System summary (2020–21)

| Oatlands drinking water system     |                 |
|------------------------------------|-----------------|
| System status (as at 30 June 2021) | Potable         |
| Total number of connections        | 493             |
| Population serviced                | 873             |
| Fluoride                           | Sodium fluoride |

| Performance overview against health targets (2020–21)      |         |            |        |                 |             |
|--|---------|------------|--------|-----------------|-------------|
| Indicator  | Outcome | Compliance | Target | Sampling Events | Exceedances |
| Microbiological  | 100.0%  | ☑          | 98.0%  | 52              | 0           |
| Fluoride   | 100.0%  | ☑          | 100.0% | 48              | 0           |
| Metals   | 100.0%  | ☑          | 100.0% | 4               | 0           |
| DBPs   | 100.0%  | ☑          | 100.0% | 4               | 0           |
| <div><div></div> Compliant <div></div> Non-compliant</div> |         |            |        |                 |             |

| Overall system performance (2020–21) |             |         |
|--------------------------------------|-------------|---------|
| Indicator                            | Occurrences | Details |
| System issues                        | 0           |         |
| Public health warnings issued        | 0           |         |
| Notifications made to DoH            | 0           |         |
| Customer complaints                  | 0           |         |

| Current and future planned capital investment |             |          |               |            |
|---|-------------|----------|---------------|------------|
| Project                                       | Overview    | Progress | Est. Delivery | Est. Spend |
| WTP Upgrade                                   | WTP Upgrade | Planning | 2024/2025     | TBD        |

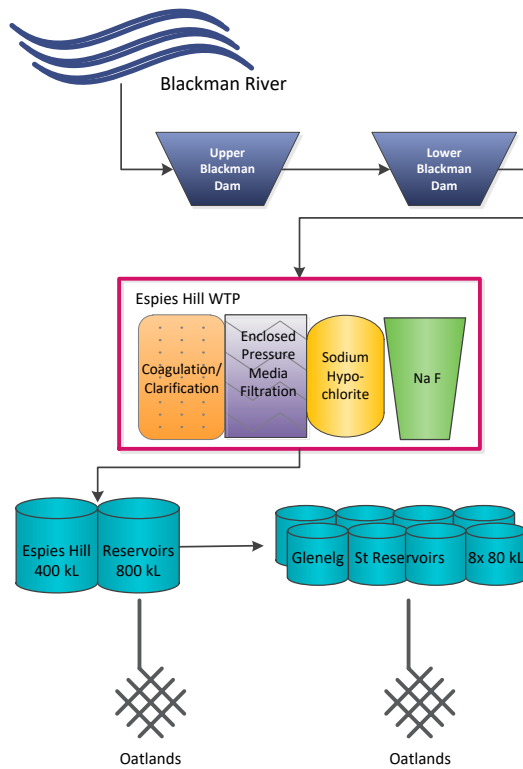


Figure 37.1-a Oatlands system schematic

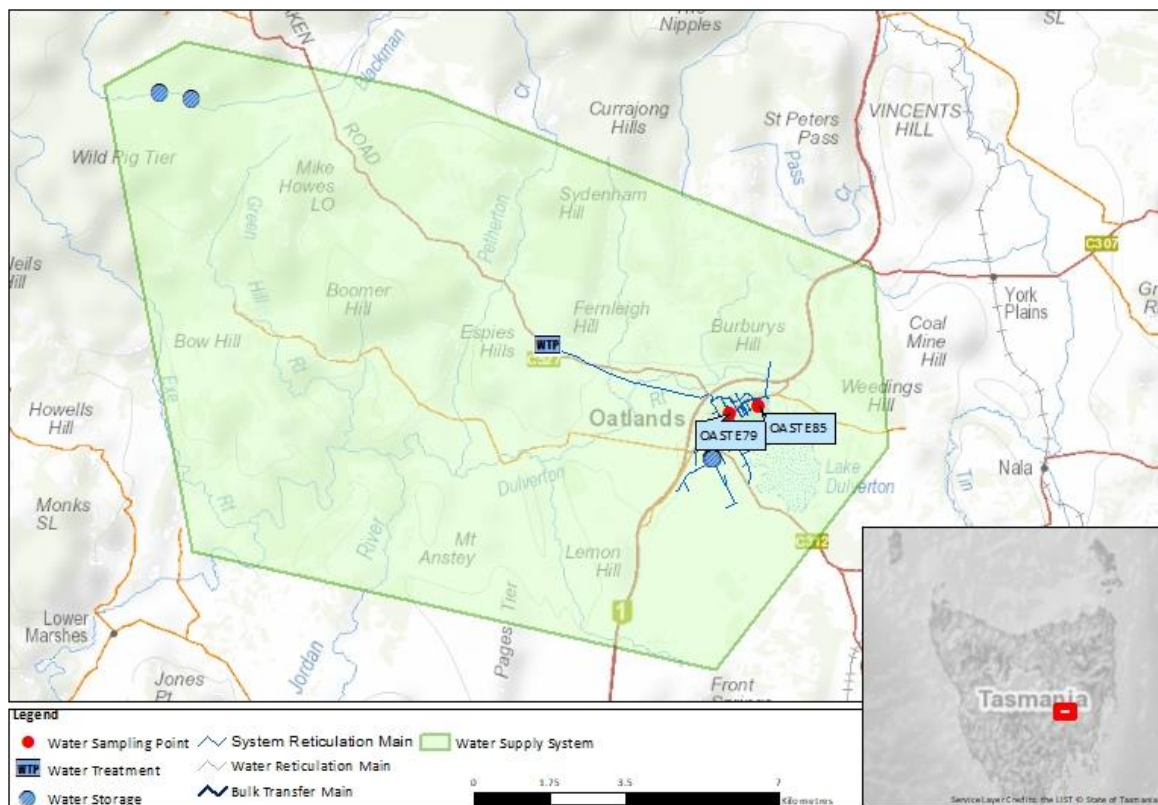


Figure 37.1-b Map of Oatlands monitoring system

## 37.2. Summary of annual reticulation compliance (2020–21)

Table 37.2-a Sampling program

| Planned sampling program (2020–21)  |           |        |        |     |                |                  |                   |
|-------------------------------------|-----------|--------|--------|-----|----------------|------------------|-------------------|
| Site name                           | Site Code | Micros | Metals | DBP | Fluoride (Lab) | Chemical Profile | Process Chemicals |
| Oatlands/Wellington St, Sample Post | OASTE79   | W      | Q      | Q   | 2M             | Q                | n/a               |
| Oatlands/Lake SPS                   | OASTE85   | n/a    | n/a    | n/a | 2M             | n/a              | n/a               |
| Number Planned Samples              |           | 52     | 4      | 4   | 48             | 4                | n/a               |
| Number Samples Tested               |           | 52     | 4      | 4   | 48             | 4                | n/a               |

## 37.3. Summary of current and historic performance (2016–21)

Table 37.3-a Historical health performance overview (5 year comparison)

| Historical health performance overview (5 year comparison)   |         |         |         |         |         |
|--|---------|---------|---------|---------|---------|
| Indicator  | 2016–17 | 2017–18 | 2018–19 | 2019–20 | 2020–21 |
| Microbiological  | 100.0%  | 100.0%  | 100.0%  | 100.0%  | 100.0%  |
| Fluoride   | 100.0%  | 100.0%  | 100.0%  | 100.0%  | 100.0%  |
| Metals   | 100.0%  | 100.0%  | 100.0%  | 100.0%  | 100.0%  |
| Disinfection by products   | 100.0%  | 100.0%  | 100.0%  | 100.0%  | 100.0%  |
| <div> <span style="color: green;">■</span> Compliant           <span style="color: red;">■</span> Non-compliant         </div> |         |         |         |         |         |

## 37.4. Analysis of current health performance (2020–21)

Table 37.4-a Summary of health guideline exceedances

| Summary of health guideline exceedances |      |         |           |
|---|------|---------|-----------|
| Parameter Exceeding                     | Date | Details | Resampled |
| No ADWG exceedances                     |      |         |           |

**Table 37.4-b Fluoride distribution performance**

| Distribution fluoride performance  |         |
|--|---------|
| Indicator  | 2020–21 |
| F exceeding 1.5 mg/L   | 0       |
| Average F concentration range (0.8 mg/L – 1.2 mg/L)  | 1.0     |
| 90% of F results are equal to or less than 1.1 mg/L  | 100%    |
| <div> <span style="color: green;">■</span> Compliant           <span style="color: red;">■</span> Non-compliant         </div> |         |

**Table 37.4-c Metals performance**

| Metals – health regulated parameters |       |      |         |             |               |         |          |         |
|--------------------------------------|-------|------|---------|-------------|---------------|---------|----------|---------|
| Parameter                            | Limit | Unit | Samples | Exceedances | Performance % | Mean    | Min.     | Max.    |
| Antimony                             | 0.003 | mg/L | 4       | 0           | 100           | <0.0005 | <0.0005  | <0.0005 |
| Arsenic                              | 0.01  | mg/L | 4       | 0           | 100           | <0.0003 | <0.0003  | <0.0003 |
| Barium                               | 2     | mg/L | 4       | 0           | 100           | 0.0059  | 0.0046   | 0.0072  |
| Cadmium                              | 0.002 | mg/L | 4       | 0           | 100           | <0.0001 | <0.0001  | <0.0001 |
| Chromium                             | 0.05  | mg/L | 4       | 0           | 100           | <0.0001 | <0.0001  | 0.0001  |
| Copper                               | 2     | mg/L | 4       | 0           | 100           | 0.0041  | 0.0030   | 0.0049  |
| Lead                                 | 0.01  | mg/L | 4       | 0           | 100           | 0.0003  | 0.0002   | 0.0005  |
| Manganese                            | 0.5   | mg/L | 4       | 0           | 100           | 0.0013  | 0.0001   | 0.0039  |
| Mercury                              | 0.001 | mg/L | 4       | 0           | 100           | 0.00007 | <0.00003 | 0.00022 |
| Molybdenum                           | 0.05  | mg/L | 4       | 0           | 100           | <0.0001 | <0.0001  | <0.0001 |
| Nickel                               | 0.02  | mg/L | 4       | 0           | 100           | 0.0003  | 0.0002   | 0.0004  |
| Selenium                             | 0.01  | mg/L | 4       | 0           | 100           | 0.0001  | <0.0001  | 0.0003  |

**Table 37.4-d Disinfection by product performance**

| Disinfection by products – health regulated parameters |       |      |         |             |               |      |      |      |
|--|-------|------|---------|-------------|---------------|------|------|------|
| Parameter  | Limit | Unit | Samples | Exceedances | Performance % | Mean | Min. | Max. |
| Dichloroacetic acid                                    | 100   | µg/L | 4       | 0           | 100           | 23   | 19   | 30   |
| Monochloroacetic acid                                  | 150   | µg/L | 4       | 0           | 100           | 4    | <3   | 6    |
| Trichloroacetic acid                                   | 100   | µg/L | 4       | 0           | 100           | 35   | 28   | 42   |
| Total trihalomethanes                                  | 250   | µg/L | 4       | 0           | 100           | 57   | 46   | 73   |

**Table 37.4-e General physical performance**

| General physical parameters |       |                 |      |      |      |
|-----------------------------|-------|-----------------|------|------|------|
| Parameter                   | Unit  | Guideline Value | Mean | Min  | Max  |
| Chlorine residual           | mg/L  | 0.1 – <0.8      | 0.58 | 0.11 | 1.08 |
| Colour True                 | HU    | 15              | 1    | <1   | 2    |
| pH                          | Units | 6.5 – 8.5       | 7.12 | 6.53 | 7.61 |
| Turbidity                   | NTU   | 1               | 0.38 | 0.10 | 0.94 |

### 37.5. Analysis of overall system performance (2020–21)

**Table 37.5-a Summary of system issues/public health warnings**

| Summary of system issues                          |             |                           |                           |
|---|-------------|---------------------------|---------------------------|
| Date  | Description | DoH notification required | DoH notification complete |
| No system issues or public health warnings issued |             |                           |                           |

## 38. Orford drinking water system

### 38.1. System summary (2020–21)

| Orford drinking water system       |                 |
|------------------------------------|-----------------|
| System status (as at 30 June 2021) | Potable         |
| Total number of connections        | 1,187           |
| Population serviced                | 857             |
| Fluoride                           | Sodium fluoride |

| Performance overview against health targets (2020–21)      |         |            |        |                 |             |
|--|---------|------------|--------|-----------------|-------------|
| Indicator  | Outcome | Compliance | Target | Sampling Events | Exceedances |
| Microbiological  | 100.0%  | ☑          | 98.0%  | 104             | 0           |
| Fluoride   | 100.0%  | ☑          | 100.0% | 48              | 0           |
| Metals   | 100.0%  | ☑          | 100.0% | 4               | 0           |
| DBPs   | 100.0%  | ☑          | 100.0% | 4               | 0           |
| <div><div></div> Compliant <div></div> Non-compliant</div> |         |            |        |                 |             |

| Overall system performance (2020–21) |             |         |
|--------------------------------------|-------------|---------|
| Indicator                            | Occurrences | Details |
| System issues                        | 0           |         |
| Public health warnings issued        | 0           |         |
| Notifications made to DoH            | 0           |         |
| Customer complaints                  | 0           |         |

| Current and future planned capital investment |                 |          |               |             |
|---|-----------------|----------|---------------|-------------|
| Project                                       | Overview        | Progress | Est. Delivery | Est. Spend  |
| WTP Upgrade                                   | UV Installation | Planning | 2022/2023     | \$1,000,000 |

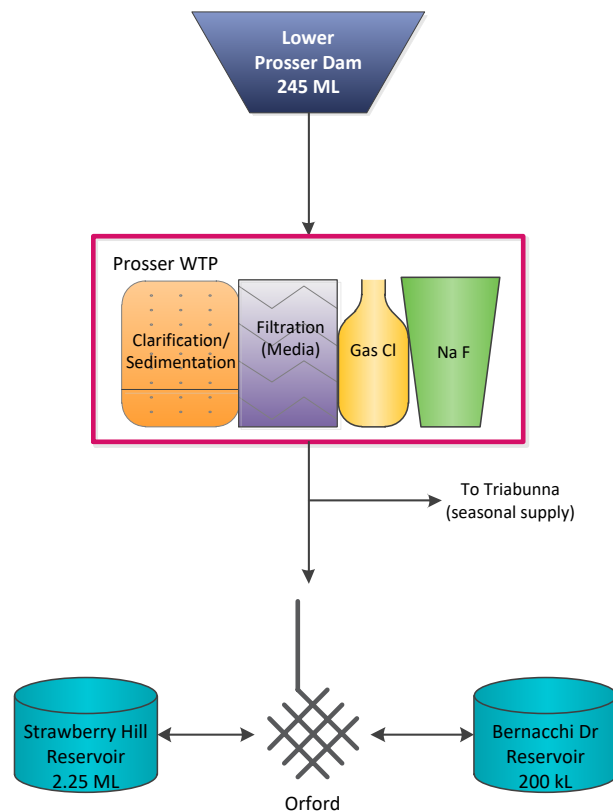


Figure 38.1-a Orford system schematic

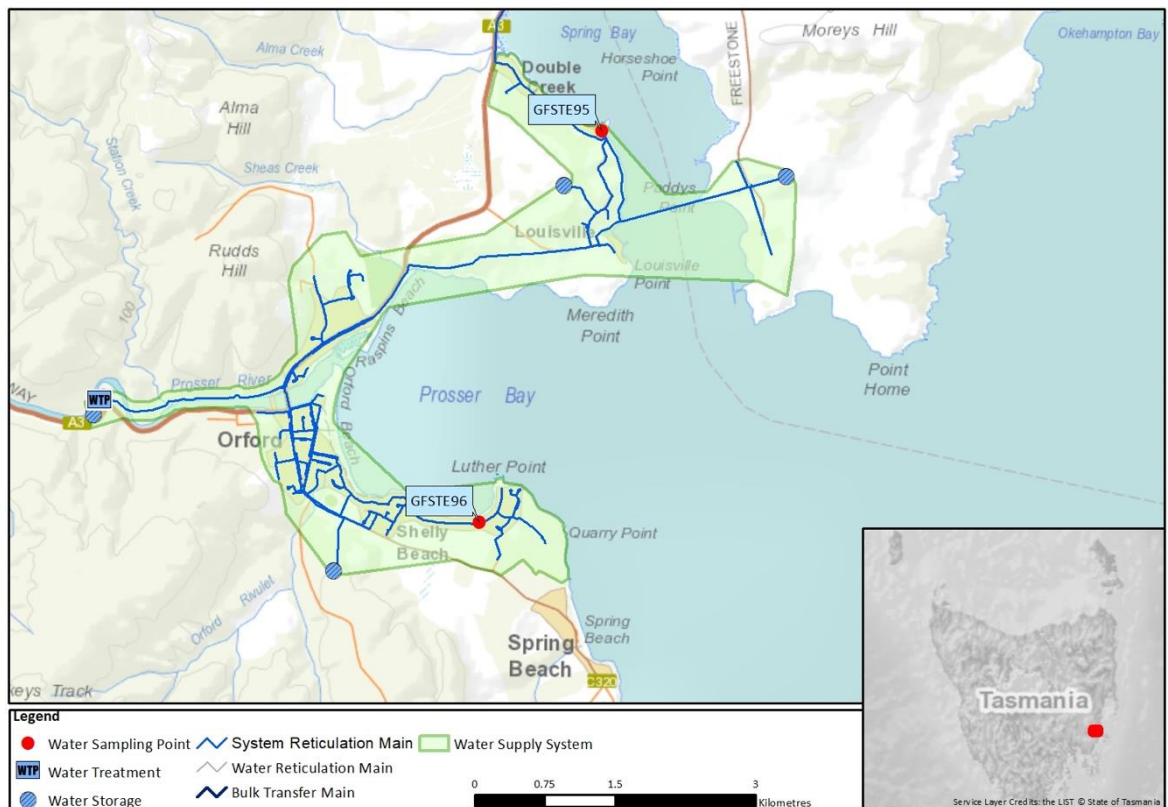


Figure 38.1-b Map of Orford monitoring system

## 38.2. Summary of annual reticulation compliance (2020–21)

Table 38.2-a Sampling program

| Planned sampling program (2020–21) |           |        |        |     |                |                  |                   |
|------------------------------------|-----------|--------|--------|-----|----------------|------------------|-------------------|
| Site name                          | Site Code | Micros | Metals | DBP | Fluoride (Lab) | Chemical Profile | Process Chemicals |
| Orford/71 Barton Ave               | GFSTE95   | W      | n/a    | n/a | 2M             | n/a              | n/a               |
| Orford/53 East Shelley Rd          | GFSTE96   | W      | Q      | Q   | 2M             | Q                | n/a               |
| Number Planned Samples             |           | 104    | 4      | 4   | 48             | 4                | n/a               |
| Number Samples Tested              |           | 104    | 4      | 4   | 48             | 4                | n/a               |

## 38.3. Summary of current and historic performance (2016–21)

Table 38.3-a Historical health performance overview (5 year comparison)

| Historical health performance overview (5 year comparison)   |         |         |         |         |         |
|--|---------|---------|---------|---------|---------|
| Indicator  | 2016–17 | 2017–18 | 2018–19 | 2019–20 | 2020–21 |
| Microbiological  | 100.0%  | 100.0%  | 100.0%  | 100.0%  | 100.0%  |
| Fluoride   | 100.0%  | 100.0%  | 100.0%  | 100.0%  | 100.0%  |
| Metals   | 100.0%  | 100.0%  | 100.0%  | 100.0%  | 100.0%  |
| Disinfection by products   | 100.0%  | 100.0%  | 100.0%  | 100.0%  | 100.0%  |
| <div> <span style="color: green;">■</span> Compliant           <span style="color: red;">■</span> Non-compliant         </div> |         |         |         |         |         |

## 38.4. Analysis of current health performance (2020–21)

Table 38.4-a Summary of health guideline exceedances

| Summary of health guideline exceedances |      |         |           |
|---|------|---------|-----------|
| Parameter Exceeding                     | Date | Details | Resampled |
| No ADWG exceedances                     |      |         |           |



**Table 38.4-b Fluoride distribution performance**

| Distribution fluoride performance  |         |
|--|---------|
| Indicator  | 2020–21 |
| F exceeding 1.5 mg/L   | 0       |
| Average F concentration range (0.8 mg/L – 1.1 mg/L)  | 0.9     |
| 90% of F results are equal to or less than 1.1 mg/L  | 100%    |
| <div> <span style="color: green;">■</span> Compliant           <span style="color: red;">■</span> Non-compliant         </div> |         |

**Table 38.4-c Metals performance**

| Metals – health regulated parameters |       |      |         |             |               |         |          |         |
|--------------------------------------|-------|------|---------|-------------|---------------|---------|----------|---------|
| Parameter                            | Limit | Unit | Samples | Exceedances | Performance % | Mean    | Min.     | Max.    |
| Antimony                             | 0.003 | mg/L | 4       | 0           | 100           | <0.0005 | <0.0005  | <0.0005 |
| Arsenic                              | 0.01  | mg/L | 4       | 0           | 100           | <0.0003 | <0.0003  | <0.0003 |
| Barium                               | 2     | mg/L | 4       | 0           | 100           | 0.0134  | 0.0109   | 0.0186  |
| Cadmium                              | 0.002 | mg/L | 4       | 0           | 100           | <0.0001 | <0.0001  | <0.0001 |
| Chromium                             | 0.05  | mg/L | 4       | 0           | 100           | 0.0001  | <0.0001  | 0.0002  |
| Copper                               | 2     | mg/L | 4       | 0           | 100           | 0.0237  | 0.0166   | 0.0307  |
| Lead                                 | 0.01  | mg/L | 4       | 0           | 100           | 0.0019  | 0.0014   | 0.0029  |
| Manganese                            | 0.5   | mg/L | 4       | 0           | 100           | 0.0010  | 0.0004   | 0.0018  |
| Mercury                              | 0.001 | mg/L | 4       | 0           | 100           | 0.00004 | <0.00003 | 0.00008 |
| Molybdenum                           | 0.05  | mg/L | 4       | 0           | 100           | <0.0001 | <0.0001  | <0.0001 |
| Nickel                               | 0.02  | mg/L | 4       | 0           | 100           | 0.0006  | 0.0004   | 0.0009  |
| Selenium                             | 0.01  | mg/L | 4       | 0           | 100           | <0.0001 | <0.0001  | 0.0001  |

**Table 38.4-d Disinfection by product performance**

| Disinfection by products – health regulated parameters |       |      |         |             |               |      |      |      |
|--|-------|------|---------|-------------|---------------|------|------|------|
| Parameter  | Limit | Unit | Samples | Exceedances | Performance % | Mean | Min. | Max. |
| Dichloroacetic acid                                    | 100   | µg/L | 4       | 0           | 100           | 9    | 6    | 13   |
| Monochloroacetic acid                                  | 150   | µg/L | 4       | 0           | 100           | <3   | <3   | <3   |
| Trichloroacetic acid                                   | 100   | µg/L | 4       | 0           | 100           | 28   | 24   | 33   |
| Total trihalomethanes                                  | 250   | µg/L | 4       | 0           | 100           | 137  | 81   | 214  |

**Table 38.4-e General physical performance**

| General physical parameters |       |                 |      |      |      |
|-----------------------------|-------|-----------------|------|------|------|
| Parameter                   | Unit  | Guideline Value | Mean | Min  | Max  |
| Chlorine residual           | mg/L  | 0.1 – <0.8      | 0.17 | 0.00 | 1.56 |
| Colour True                 | HU    | 15              | 1.75 | 1    | 3    |
| pH                          | Units | 6.5 – 8.5       | 7.15 | 6.76 | 7.44 |
| Turbidity                   | NTU   | 1               | 0.21 | 0.08 | 0.59 |

### 38.5. Analysis of overall system performance (2020–21)

**Table 38.5-a Summary of system issues/public health warnings**

| Summary of system issues                          |             |                           |                           |
|---|-------------|---------------------------|---------------------------|
| Date  | Description | DoH notification required | DoH notification complete |
| No system issues or public health warnings issued |             |                           |                           |

## 39. Ouse and Hamilton drinking water system

### 39.1. System summary (2020–21)

| Ouse and Hamilton drinking water system |         |
|---|---------|
| System status (as at 30 June 2021)      | Potable |
| Total number of connections             | 282     |
| Population serviced                     | 444     |
| Fluoride                                | n/a     |

| Performance overview against health targets (2020–21)                                |         |                                     |        |                 |             |
|--|---------|-------------------------------------|--------|-----------------|-------------|
| Indicator  | Outcome | Compliance                          | Target | Sampling Events | Exceedances |
| Microbiological  | 100.0%  | <input checked="" type="checkbox"/> | 98.0%  | 104             | 0           |
| Fluoride   | n/a     | n/a                                 | n/a    | n/a             | n/a         |
| Metals   | 100.0%  | <input checked="" type="checkbox"/> | 100.0% | 8               | 0           |
| DBPs   | 100.0%  | <input checked="" type="checkbox"/> | 100.0% | 8               | 0           |
| <input checked="" type="checkbox"/> Compliant <input type="checkbox"/> Non-compliant |         |                                     |        |                 |             |

| Overall system performance (2020–21) |             |         |
|--------------------------------------|-------------|---------|
| Indicator                            | Occurrences | Details |
| System issues                        | 0           |         |
| Public health warnings issued        | 0           |         |
| Notifications made to DoH            | 0           |         |
| Customer complaints                  | 0           |         |

| Current and future planned capital investment |          |          |               |            |
|---|----------|----------|---------------|------------|
| Project                                       | Overview | Progress | Est. Delivery | Est. Spend |
| No projected capital investment               |          |          |               |            |

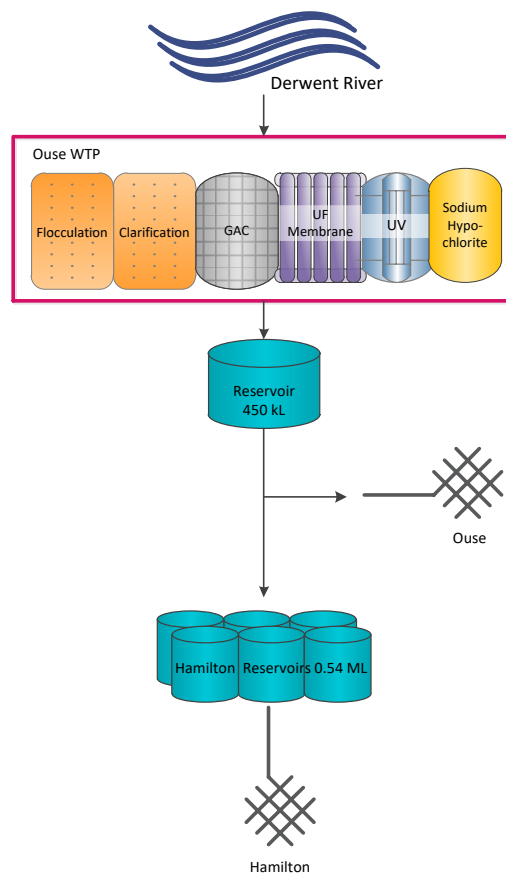


Figure 39.1-a Ouse and Hamilton system schematic

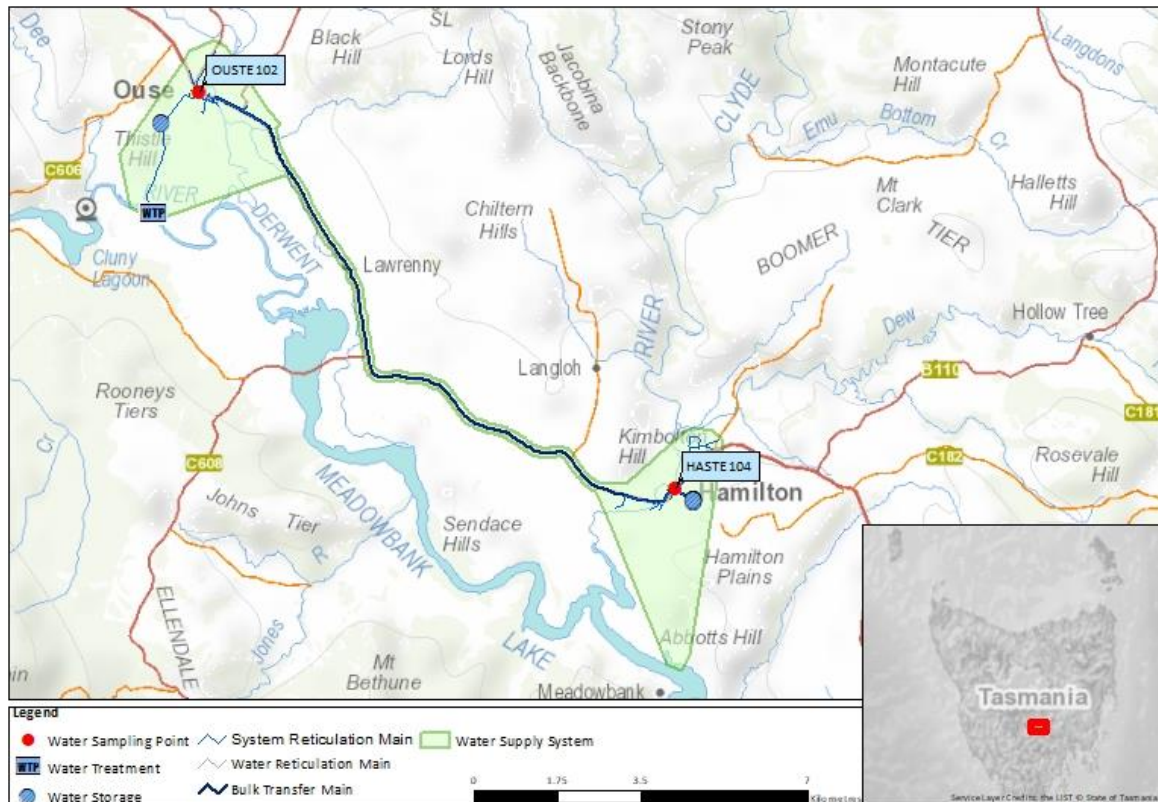


Figure 39.1-b Map of Ouse and Hamilton monitoring system



## 39.2. Summary of annual reticulation compliance (2020–21)

Table 39.2-a Sampling program

| Planned sampling program (2020–21) |           |        |        |     |                |                  |                   |
|------------------------------------|-----------|--------|--------|-----|----------------|------------------|-------------------|
| Site name                          | Site Code | Micros | Metals | DBP | Fluoride (Lab) | Chemical Profile | Process Chemicals |
| Ouse/Public Toilets, Sample Tap    | OUSTE102  | W      | Q      | Q   | n/a            | Q                | n/a               |
| Hamilton/Park, Sample Tap          | HASTE104  | W      | Q      | Q   | n/a            | Q                | n/a               |
| Number Planned Samples             |           | 104    | 8      | 8   | n/a            | 8                | n/a               |
| Number Samples Tested              |           | 104    | 8      | 8   | n/a            | 8                | n/a               |

## 39.3. Summary of current and historic performance (2016–21)

Table 39.3-a Historical health performance overview (5 year comparison)

| Historical health performance overview (5 year comparison)  |         |         |         |         |         |
|---|---------|---------|---------|---------|---------|
| Indicator   | 2016–17 | 2017–18 | 2018–19 | 2019–20 | 2020–21 |
| Microbiological   | 100.0%  | 100.0%  | 100.0%  | 100.0%  | 100.0%  |
| Fluoride  | n/a     | n/a     | n/a     | n/a     | n/a     |
| Metals  | 100.0%  | 100.0%  | 100.0%  | 100.0%  | 100.0%  |
| Disinfection by products  | 100.0%  | 100.0%  | 100.0%  | 100.0%  | 100.0%  |
|  Compliant  Non-compliant |         |         |         |         |         |

## 39.4. Analysis of current health performance (2020–21)

Table 39.4-a Summary of health guideline exceedances

| Summary of health guideline exceedances |      |         |           |
|---|------|---------|-----------|
| Parameter Exceeding                     | Date | Details | Resampled |
| No ADWG exceedances                     |      |         |           |

**Table 39.4-b Metals performance**

| Metals – health regulated parameters |       |      |         |             |               |         |          |         |
|--------------------------------------|-------|------|---------|-------------|---------------|---------|----------|---------|
| Parameter                            | Limit | Unit | Samples | Exceedances | Performance % | Mean    | Min.     | Max.    |
| Antimony                             | 0.003 | mg/L | 8       | 0           | 100           | <0.0005 | <0.0005  | <0.0005 |
| Arsenic                              | 0.01  | mg/L | 8       | 0           | 100           | <0.0003 | <0.0003  | <0.0003 |
| Barium                               | 2     | mg/L | 8       | 0           | 100           | 0.0024  | 0.0019   | 0.0027  |
| Cadmium                              | 0.002 | mg/L | 8       | 0           | 100           | <0.0001 | <0.0001  | <0.0001 |
| Chromium                             | 0.05  | mg/L | 8       | 0           | 100           | 0.0001  | <0.0001  | 0.0002  |
| Copper                               | 2     | mg/L | 8       | 0           | 100           | 0.0050  | 0.0036   | 0.0074  |
| Lead                                 | 0.01  | mg/L | 8       | 0           | 100           | 0.0002  | <0.0001  | 0.0003  |
| Manganese                            | 0.5   | mg/L | 8       | 0           | 100           | 0.0003  | <0.0001  | 0.0005  |
| Mercury                              | 0.001 | mg/L | 8       | 0           | 100           | 0.00008 | <0.00003 | 0.00021 |
| Molybdenum                           | 0.05  | mg/L | 8       | 0           | 100           | <0.0001 | <0.0001  | <0.0001 |
| Nickel                               | 0.02  | mg/L | 8       | 0           | 100           | 0.0001  | <0.0001  | 0.0002  |
| Selenium                             | 0.01  | mg/L | 8       | 0           | 100           | <0.0001 | <0.0001  | <0.0001 |

**Table 39.4-c Disinfection by product performance**

| Disinfection by products – health regulated parameters |       |      |         |             |               |      |      |      |
|--|-------|------|---------|-------------|---------------|------|------|------|
| Parameter  | Limit | Unit | Samples | Exceedances | Performance % | Mean | Min. | Max. |
| Dichloroacetic acid                                    | 100   | µg/L | 8       | 0           | 100           | 11   | 5    | 17   |
| Monochloroacetic acid                                  | 150   | µg/L | 8       | 0           | 100           | <3   | <3   | <3   |
| Trichloroacetic acid                                   | 100   | µg/L | 8       | 0           | 100           | 13   | 5    | 23   |
| Total trihalomethanes                                  | 250   | µg/L | 8       | 0           | 100           | 26   | 19   | 32   |

**Table 39.4-d General physical performance**

| General physical parameters |       |                 |      |      |      |
|-----------------------------|-------|-----------------|------|------|------|
| Parameter                   | Unit  | Guideline Value | Mean | Min  | Max  |
| Chlorine residual           | mg/L  | 0.1 – <0.8      | 0.68 | 0.25 | 1.19 |
| Colour True                 | HU    | 15              | 1.19 | <1   | 2    |
| pH                          | Units | 6.5 – 8.5       | 6.91 | 6.36 | 7.28 |
| Turbidity                   | NTU   | 1               | 0.15 | 0.06 | 0.74 |

### 39.5. Analysis of overall system performance (2020–21)

Table 39.5-a Summary of system issues/public health warnings

| Summary of system issues                          |             |                           |                           |
|---|-------------|---------------------------|---------------------------|
| Date  | Description | DoH notification required | DoH notification complete |
| No system issues or public health warnings issued |             |                           |                           |

## 40. Pet River drinking water system

### 40.1. System summary (2020–21)

| Pet River drinking water system    |                    |
|------------------------------------|--------------------|
| System status (as at 30 June 2021) | Potable            |
| Total number of connections        | 13,593             |
| Population serviced                | 26,787             |
| Fluoride                           | Fluorosilicic acid |

| Performance overview against health targets (2020–21)  |         |            |        |                 |             |
|--|---------|------------|--------|-----------------|-------------|
| Indicator  | Outcome | Compliance | Target | Sampling Events | Exceedances |
| Microbiological  | 100.0%  | ☑          | 98.0%  | 409             | 0           |
| Fluoride   | 100.0%  | ☑          | 100.0% | 48              | 0           |
| Metals   | 100.0%  | ☑          | 100.0% | 16              | 0           |
| DBPs   | 100.0%  | ☑          | 100.0% | 16              | 0           |
| <div><span style="color: green;">■</span> Compliant <span style="color: red;">■</span> Non-compliant</div> |         |            |        |                 |             |

| Overall system performance (2020–21) |             |  |
|--------------------------------------|-------------|--|
| Indicator                            | Occurrences | Details  |
| System issues                        | 0           |  |
| Public health warnings issued        | 0           |  |
| Notifications made to DoH            | 1           | Low fluoride levels detected                             |
| Customer complaints                  | 6           | Discolouration, taste and odour, other (stained washing) |

| Current and future planned capital investment |                         |             |               |            |
|---|-------------------------|-------------|---------------|------------|
| Project                                       | Overview                | Progress    | Est. Delivery | Est. Spend |
| WTP Upgrade                                   | UV Installation         | In Progress | 2022/2023     | TBD        |
| Fluoride Upgrade                              | Replacement of FSA Tank | Complete    | 2020/2021     | \$400,000  |



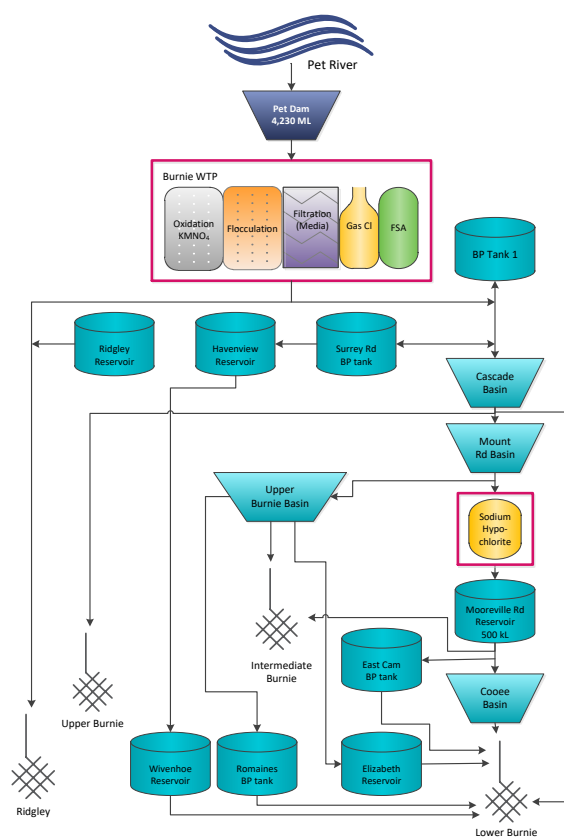


Figure 40.1-a Pet River system schematic

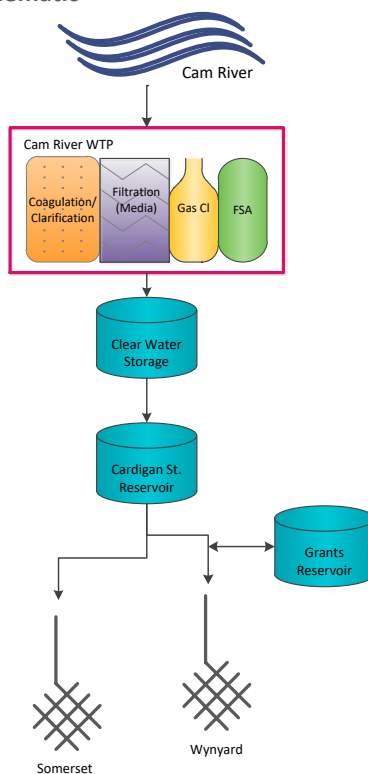


Figure 40.1-b Cam River system schematic

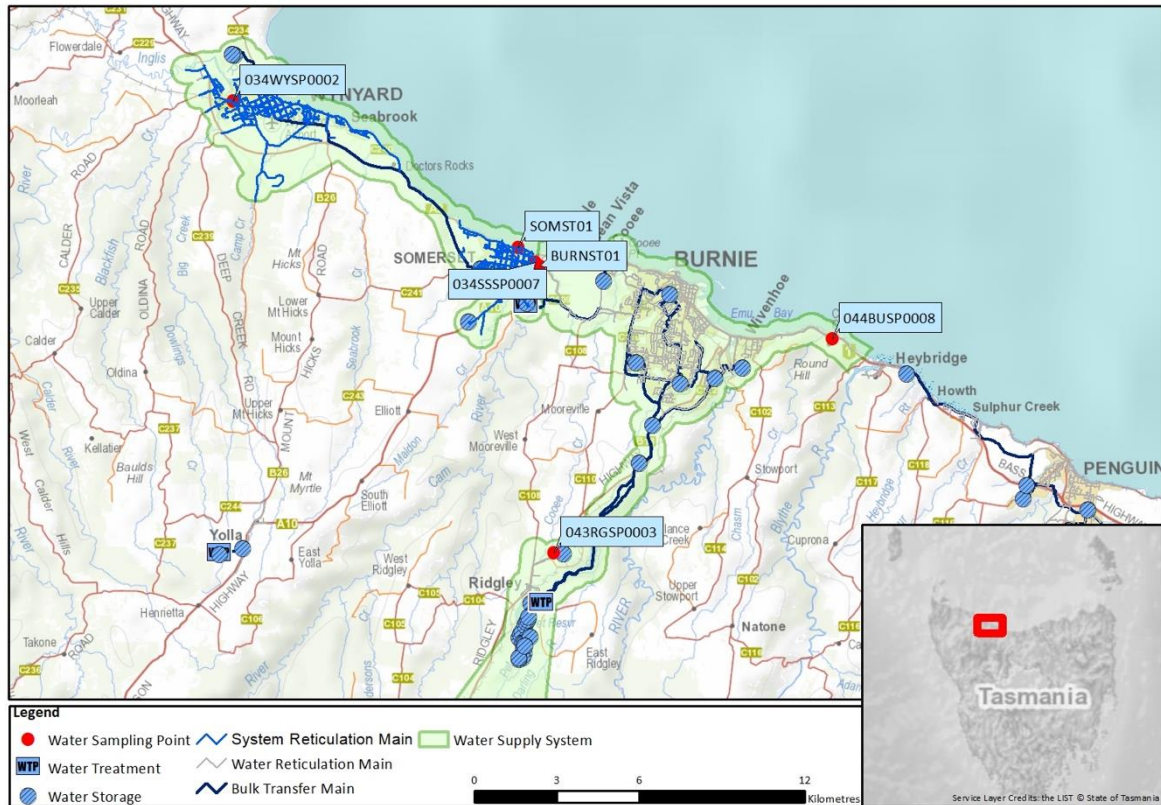


Figure 40.1-c Map of Pet River monitoring system

## 40.2. Summary of annual reticulation compliance (2020–21)

Table 40.2-a Sampling program

| Planned sampling program (2020–21)        |             |            |           |           |                |                  |                   |
|---|-------------|------------|-----------|-----------|----------------|------------------|-------------------|
| Site name                                 | Site Code   | Micros     | Metals    | DBP       | Fluoride (Lab) | Chemical Profile | Process Chemicals |
| Burnie/Ridgley Mount Road                 | 043RGSP0003 | W          | n/a       | n/a       | 2M             | n/a              | n/a               |
| Burnie/146 Old Surrey Rd                  | BURNST06    | W          | n/a       | n/a       | n/a            | n/a              | n/a               |
| Burnie/Brickport SPS 2 Bridport Rd        | BURNST02    | W          | n/a       | n/a       | n/a            | n/a              | n/a               |
| Burnie/39 Scarfe St                       | BURNST01    | W          | Q         | Q         | 2M             | Q                | n/a               |
| Burnie/Chasm Cr Sample Point              | 044BUSP0008 | W          | Q         | Q         | n/a            | Q                | n/a               |
| Somerset/Murchison Highway Sampling Point | 034SSSP0007 | W          | n/a       | n/a       | n/a            | n/a              | n/a               |
| Somerset/16 Somerset Esplanade            | SOMST01     | W          | Q         | Q         | n/a            | n/a              | n/a               |
| Wynyard/Big Creek Sampling Point          | 034WYSP0002 | W          | Q         | Q         | n/a            | Q                | n/a               |
| <b>Number Planned Samples</b>             |             | <b>409</b> | <b>16</b> | <b>16</b> | <b>48</b>      | <b>12</b>        | <b>n/a</b>        |
| <b>Number Samples Tested</b>              |             | <b>409</b> | <b>16</b> | <b>16</b> | <b>48</b>      | <b>12</b>        | <b>n/a</b>        |

## 40.3. Summary of current and historic performance (2016–21)

Table 40.3-a Historical health performance overview (5 year comparison)

| Historical health performance overview (5 year comparison)   |         |         |         |         |         |
|--|---------|---------|---------|---------|---------|
| Indicator  | 2016–17 | 2017–18 | 2018–19 | 2019–20 | 2020–21 |
| Microbiological  | 100.0%  | 100.0%  | 100.0%  | 100.0%  | 100.0%  |
| Fluoride   | 100.0%  | 100.0%  | 100.0%  | 100.0%  | 100.0%  |
| Metals   | 100.0%  | 100.0%  | 100.0%  | 100.0%  | 100.0%  |
| Disinfection by products   | 100.0%  | 100.0%  | 100.0%  | 100.0%  | 100.0%  |
| <div> <span style="color: green;">■</span> Compliant           <span style="color: red;">■</span> Non-compliant         </div> |         |         |         |         |         |

#### 40.4. Analysis of current health performance (2020–21)

Table 40.4-a Summary of health guideline exceedances

| Summary of health guideline exceedances |      |         |           |
|---|------|---------|-----------|
| Parameter Exceeding                     | Date | Details | Resampled |
| No ADWG exceedances                     |      |         |           |

Table 40.4-b Fluoride distribution performance

| Distribution fluoride performance  |         |
|--|---------|
| Indicator  | 2020–21 |
| F exceeding 1.5 mg/L   | 0       |
| Average F concentration range (0.8 mg/L – 1.2 mg/L)                            | 0.7     |
| 90% of F results are equal to or less than 1.1 mg/L                            | 100%    |
| <div> <div></div> Compliant           <div></div> Non-compliant         </div> |         |

Table 40.4-c Metals performance

| Metals – health regulated parameters |       |      |         |             |               |         |          |         |
|--------------------------------------|-------|------|---------|-------------|---------------|---------|----------|---------|
| Parameter                            | Limit | Unit | Samples | Exceedances | Performance % | Mean    | Min.     | Max.    |
| Antimony                             | 0.003 | mg/L | 8       | 0           | 100           | <0.0005 | <0.0005  | <0.0005 |
| Arsenic                              | 0.01  | mg/L | 8       | 0           | 100           | <0.0003 | <0.0003  | <0.0003 |
| Barium                               | 2     | mg/L | 8       | 0           | 100           | 0.0048  | 0.0035   | 0.0061  |
| Cadmium                              | 0.002 | mg/L | 8       | 0           | 100           | <0.0001 | <0.0001  | <0.0001 |
| Chromium                             | 0.05  | mg/L | 8       | 0           | 100           | 0.0002  | <0.0001  | 0.0003  |
| Copper                               | 2     | mg/L | 8       | 0           | 100           | 0.0020  | 0.0005   | 0.0047  |
| Lead                                 | 0.01  | mg/L | 8       | 0           | 100           | 0.0004  | <0.0001  | 0.0008  |
| Manganese                            | 0.5   | mg/L | 8       | 0           | 100           | 0.0059  | 0.0011   | 0.0231  |
| Mercury                              | 0.001 | mg/L | 8       | 0           | 100           | 0.00006 | <0.00003 | 0.00015 |
| Molybdenum                           | 0.05  | mg/L | 8       | 0           | 100           | <0.0001 | <0.0001  | <0.0001 |
| Nickel                               | 0.02  | mg/L | 8       | 0           | 100           | 0.0001  | <0.0001  | 0.0004  |
| Selenium                             | 0.01  | mg/L | 8       | 0           | 100           | <0.0001 | <0.0001  | 0.0002  |

**Table 40.4-d Disinfection by product performance**

| Disinfection by products – health regulated parameters |       |      |         |             |               |      |      |      |
|--|-------|------|---------|-------------|---------------|------|------|------|
| Parameter  | Limit | Unit | Samples | Exceedances | Performance % | Mean | Min. | Max. |
| Dichloroacetic acid                                    | 100   | µg/L | 8       | 0           | 100           | 7    | 2    | 12   |
| Monochloroacetic acid                                  | 150   | µg/L | 8       | 0           | 100           | <3   | <3   | <3   |
| Trichloroacetic acid                                   | 100   | µg/L | 8       | 0           | 100           | 5    | 2    | 9    |
| Total trihalomethanes                                  | 250   | µg/L | 8       | 0           | 100           | 54   | 39   | 79   |

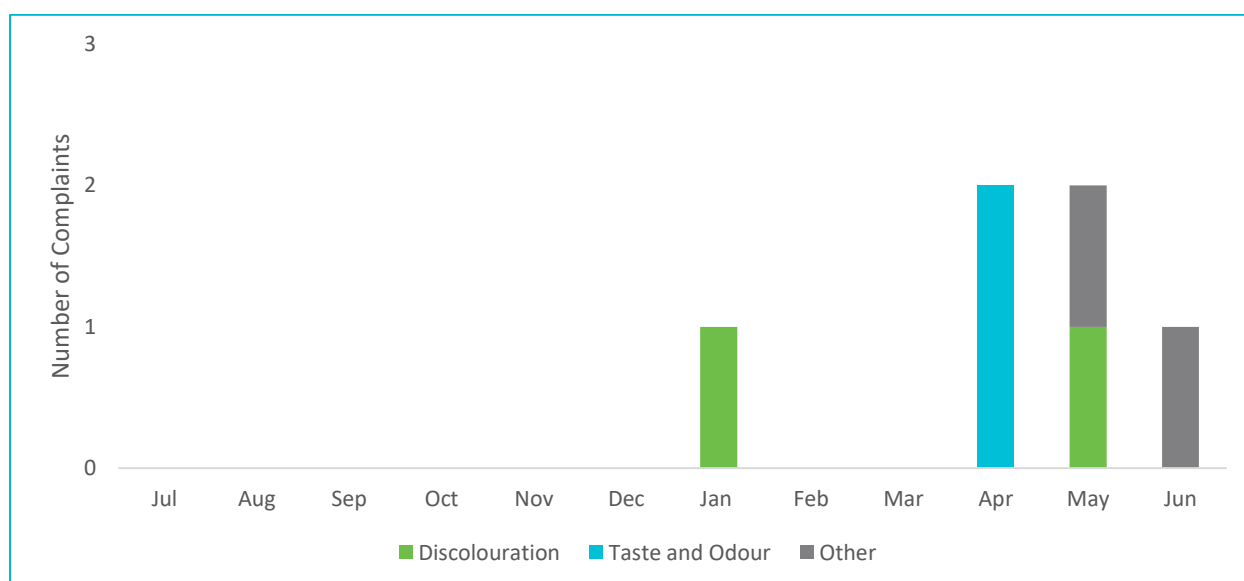
**Table 40.4-e General physical performance**

| General physical parameters |       |                 |      |      |      |
|-----------------------------|-------|-----------------|------|------|------|
| Parameter                   | Unit  | Guideline Value | Mean | Min  | Max  |
| Chlorine residual           | mg/L  | 0.1 – <0.8      | 0.63 | 0.03 | 1.80 |
| Colour True                 | HU    | 15              | <1   | <1   | 2    |
| pH                          | Units | 6.5 – 8.5       | 7.88 | 7.15 | 9.52 |
| Turbidity                   | NTU   | 1               | 0.24 | 0.09 | 2.87 |

## 40.5. Analysis of overall system performance (2020–21)

**Table 40.5-a Summary of system issues/public health warnings**

| Summary of system issues |                              |                           |                           |
|--------------------------|------------------------------|---------------------------|---------------------------|
| Date                     | Description                  | DoH notification required | DoH notification complete |
| March 2021 – May 2021    | Low fluoride levels detected | ✓                         | ✓                         |



**Figure 40.5-b Water quality customer complaints by month and type**

## 41. Queenstown (Conglomerate Creek) drinking water system

### 41.1. System summary (2020–21)

| Queenstown drinking water system   |                 |
|------------------------------------|-----------------|
| System status (as at 30 June 2021) | Potable         |
| Total number of connections        | 1,513           |
| Population serviced                | 2,257           |
| Fluoride                           | Sodium fluoride |

| Performance overview against health targets (2020–21)      |         |            |        |                 |             |
|--|---------|------------|--------|-----------------|-------------|
| Indicator  | Outcome | Compliance | Target | Sampling Events | Exceedances |
| Microbiological  | 100.0%  | ☑          | 98.0%  | 153             | 0           |
| Fluoride   | 100.0%  | ☑          | 100.0% | 48              | 0           |
| Metals   | 100.0%  | ☑          | 100.0% | 8               | 0           |
| DBPs   | 100.0%  | ☑          | 100.0% | 4               | 0           |
| <div><div></div> Compliant <div></div> Non-compliant</div> |         |            |        |                 |             |

| Overall system performance (2020–21) |             |  |
|--------------------------------------|-------------|--|
| Indicator                            | Occurrences | Details  |
| System issues                        | 0           |  |
| Public health warnings issued        | 0           |  |
| Notifications made to DoH            | 0           |  |
| Customer complaints                  | 8           | Discolouration, other (stained washing, illness) |

| Current and future planned capital investment |                 |          |               |             |
|---|-----------------|----------|---------------|-------------|
| Project                                       | Overview        | Progress | Est. Delivery | Est. Spend  |
| WTP Upgrade                                   | UV Installation | Planning | 2022/2023     | \$1,000,000 |

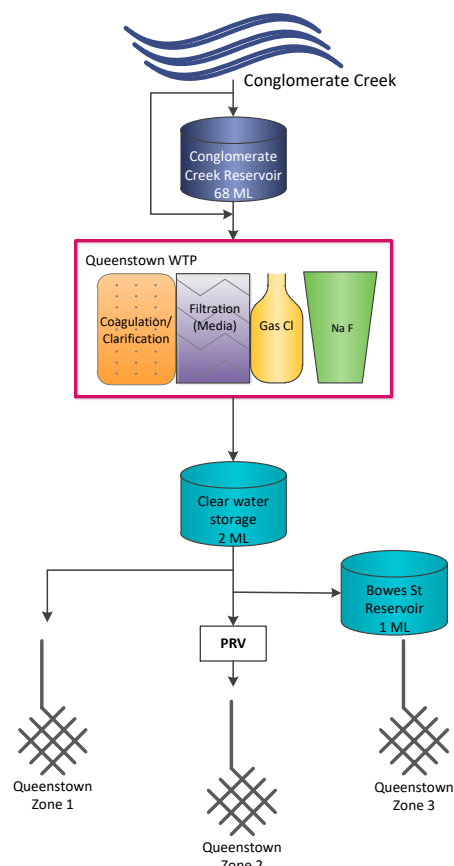


Figure 41.1-a Queenstown system schematic

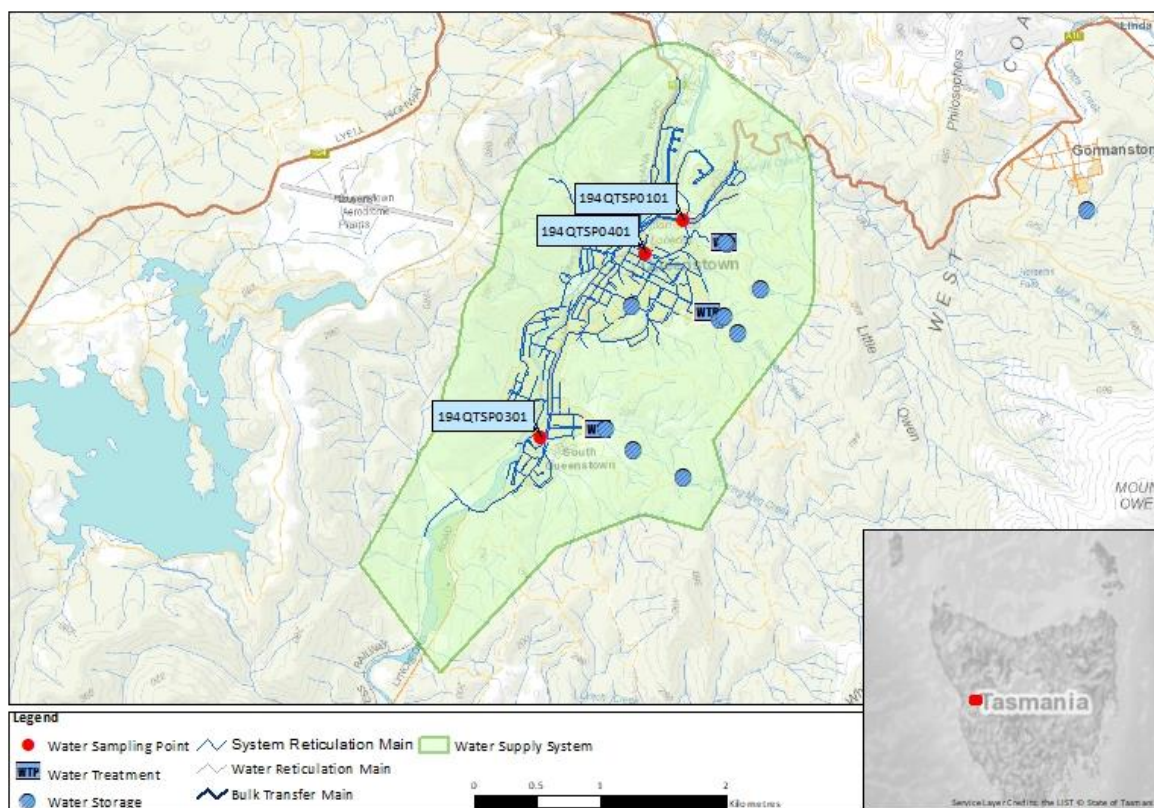


Figure 41.1-b Map of Queenstown monitoring system

## 41.2. Summary of annual reticulation compliance (2020–21)

Table 41.2-a Sampling program

| Planned sampling program (2020–21)   |             |        |        |     |                |                  |                   |
|--------------------------------------|-------------|--------|--------|-----|----------------|------------------|-------------------|
| Site name                            | Site Code   | Micros | Metals | DBP | Fluoride (Lab) | Chemical Profile | Process Chemicals |
| Queenstown/Batchelor St Sample Point | 194QTSP0101 | W      | Q      | n/a | 2M             | n/a              | n/a               |
| Queenstown/Murray St Sample Point    | 194QTSP0301 | W      | Q      | Q   | 2M             | Q                | n/a               |
| Queenstown/Sticht St Sample Point    | 194QTSP0401 | W      | n/a    | n/a | n/a            | n/a              | n/a               |
| Number Planned Samples               |             | 153    | 8      | 4   | 48             | 4                | n/a               |
| Number Samples Tested                |             | 153    | 8      | 4   | 48             | 4                | n/a               |

## 41.3. Summary of current and historic performance (2016–21)

Table 41.3-a Historical health performance overview (5 year comparison)

| Historical health performance overview (5 year comparison)   |         |         |         |         |         |
|--|---------|---------|---------|---------|---------|
| Indicator  | 2016–17 | 2017–18 | 2018–19 | 2019–20 | 2020–21 |
| Microbiological  | 100.0%  | 100.0%  | 100.0%  | 100.0%  | 100.0%  |
| Fluoride   | 100.0%  | 100.0%  | 100.0%  | 100.0%  | 100.0%  |
| Metals   | 100.0%  | 100.0%  | 100.0%  | 100.0%  | 100.0%  |
| Disinfection by products   | 100.0%  | 100.0%  | 100.0%  | 100.0%  | 100.0%  |
| <div> <span style="color: green;">■</span> Compliant           <span style="color: red;">■</span> Non-compliant         </div> |         |         |         |         |         |

## 41.4. Analysis of current health performance (2020–21)

Table 41.4-a Summary of health guideline exceedances

| Summary of health guideline exceedances |      |         |           |
|---|------|---------|-----------|
| Parameter Exceeding                     | Date | Details | Resampled |
| No ADWG exceedances                     |      |         |           |



**Table 41.4-b Fluoride distribution performance**

| Distribution fluoride performance  |         |
|--|---------|
| Indicator  | 2020–21 |
| F exceeding 1.5 mg/L   | 0       |
| Average F concentration range (0.8 mg/L – 1.1 mg/L)  | 0.9     |
| 90% of F results are equal to or less than 1.1 mg/L  | 100%    |
| <div> <span style="color: green;">■</span> Compliant           <span style="color: red;">■</span> Non-compliant         </div> |         |

**Table 41.4-c Metals performance**

| Metals – health regulated parameters |       |      |         |             |               |         |          |         |
|--------------------------------------|-------|------|---------|-------------|---------------|---------|----------|---------|
| Parameter                            | Limit | Unit | Samples | Exceedances | Performance % | Mean    | Min.     | Max.    |
| Antimony                             | 0.003 | mg/L | 8       | 0           | 100           | <0.0005 | <0.0005  | <0.0005 |
| Arsenic                              | 0.01  | mg/L | 8       | 0           | 100           | 0.0004  | 0.0004   | 0.0005  |
| Barium                               | 2     | mg/L | 8       | 0           | 100           | 0.0173  | 0.0151   | 0.0217  |
| Cadmium                              | 0.002 | mg/L | 8       | 0           | 100           | <0.0001 | <0.0001  | <0.0001 |
| Chromium                             | 0.05  | mg/L | 8       | 0           | 100           | <0.0001 | <0.0001  | 0.0001  |
| Copper                               | 2     | mg/L | 8       | 0           | 100           | 0.0144  | 0.0099   | 0.0335  |
| Lead                                 | 0.01  | mg/L | 8       | 0           | 100           | 0.0003  | 0.0002   | 0.0004  |
| Manganese                            | 0.5   | mg/L | 8       | 0           | 100           | 0.0144  | 0.0021   | 0.0388  |
| Mercury                              | 0.001 | mg/L | 8       | 0           | 100           | 0.00007 | <0.00003 | 0.00012 |
| Molybdenum                           | 0.05  | mg/L | 8       | 0           | 100           | <0.0001 | <0.0001  | <0.0001 |
| Nickel                               | 0.02  | mg/L | 8       | 0           | 100           | 0.0003  | 0.0002   | 0.0005  |
| Selenium                             | 0.01  | mg/L | 8       | 0           | 100           | <0.0001 | <0.0001  | 0.0001  |

**Table 41.4-d Disinfection by product performance**

| Disinfection by products – health regulated parameters |       |      |         |             |               |      |      |      |
|--|-------|------|---------|-------------|---------------|------|------|------|
| Parameter  | Limit | Unit | Samples | Exceedances | Performance % | Mean | Min. | Max. |
| Dichloroacetic acid                                    | 100   | µg/L | 4       | 0           | 100           | 51   | 37   | 70   |
| Monochloroacetic acid                                  | 150   | µg/L | 4       | 0           | 100           | 3    | <3   | 4    |
| Trichloroacetic acid                                   | 100   | µg/L | 4       | 0           | 100           | 61   | 49   | 68   |
| Total trihalomethanes                                  | 250   | µg/L | 4       | 0           | 100           | 111  | 90   | 139  |

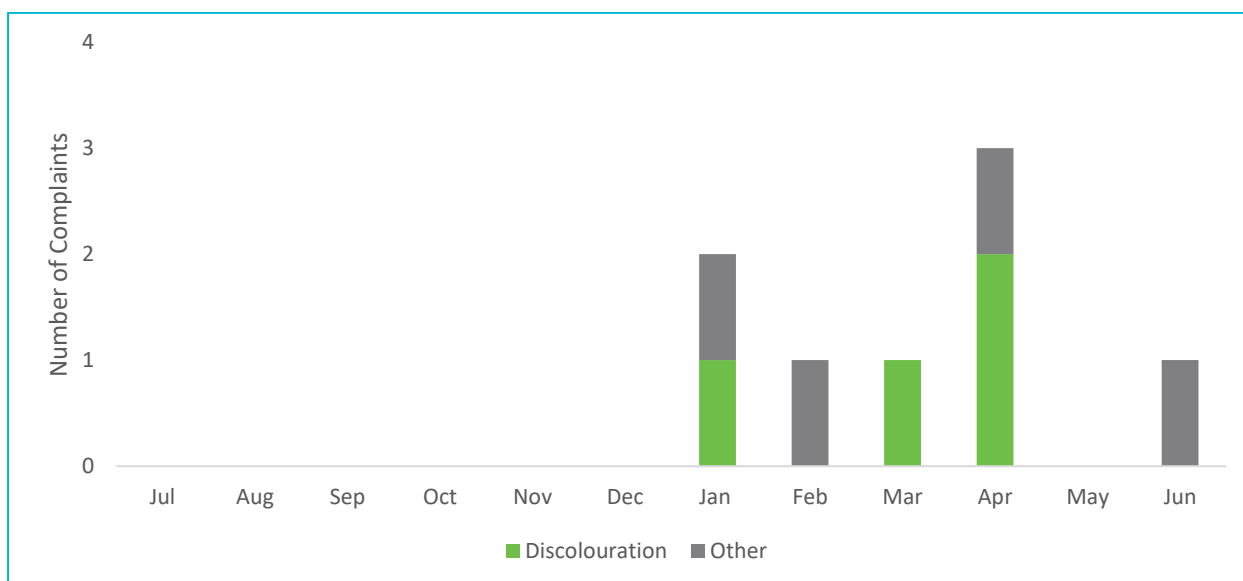
**Table 41.4-e General physical performance**

| General physical parameters |       |                 |      |      |      |
|-----------------------------|-------|-----------------|------|------|------|
| Parameter                   | Unit  | Guideline Value | Mean | Min  | Max  |
| Chlorine residual           | mg/L  | 0.1 – <0.8      | 0.53 | 0.07 | 1.75 |
| Colour True                 | HU    | 15              | 1.75 | 1    | 2    |
| pH                          | Units | 6.5 – 8.5       | 7.61 | 7.11 | 7.95 |
| Turbidity                   | NTU   | 1               | 0.20 | 0.08 | 0.88 |

## 41.5. Analysis of overall system performance (2020–21)

**Table 41.5-a Summary of system issues/public health warnings**

| Summary of system issues                          |             |                           |                           |
|---|-------------|---------------------------|---------------------------|
| Date  | Description | DoH notification required | DoH notification complete |
| No system issues or public health warnings issued |             |                           |                           |



**Figure 41.5-b Water quality customer complaints by month and type**

## 42. Ringarooma System drinking water system

### 42.1. System summary (2020–21)

| Ringarooma System drinking water system |                 |
|---|-----------------|
| System status (as at 30 June 2021)      | Potable         |
| Total number of connections             | 679             |
| Population serviced                     | 1,138           |
| Fluoride                                | Sodium Fluoride |

| Performance overview against health targets (2020–21)      |         |            |        |                 |             |
|--|---------|------------|--------|-----------------|-------------|
| Indicator  | Outcome | Compliance | Target | Sampling Events | Exceedances |
| Microbiological  | 100.0%  | ☑          | 98.0%  | 260             | 0           |
| Fluoride   | 100.0%  | ☑          | 100.0% | 48              | 0           |
| Metals   | 100.0%  | ☑          | 100.0% | 20              | 0           |
| DBPs   | 100.0%  | ☑          | 100.0% | 20              | 0           |
| <div><div></div> Compliant <div></div> Non-compliant</div> |         |            |        |                 |             |

| Overall system performance (2020–21) |             |  |
|--------------------------------------|-------------|--|
| Indicator                            | Occurrences | Details                                |
| System issues                        | 1           | Lead exceedance in an operational site |
| Public health warnings issued        | 0           |  |
| Notifications made to DoH            | 1           | Lead exceedance in an operational site |
| Customer complaints                  | 0           |  |

| Current and future planned capital investment |          |          |               |            |
|---|----------|----------|---------------|------------|
| Project                                       | Overview | Progress | Est. Delivery | Est. Spend |
| No projected capital investment               |          |          |               |            |

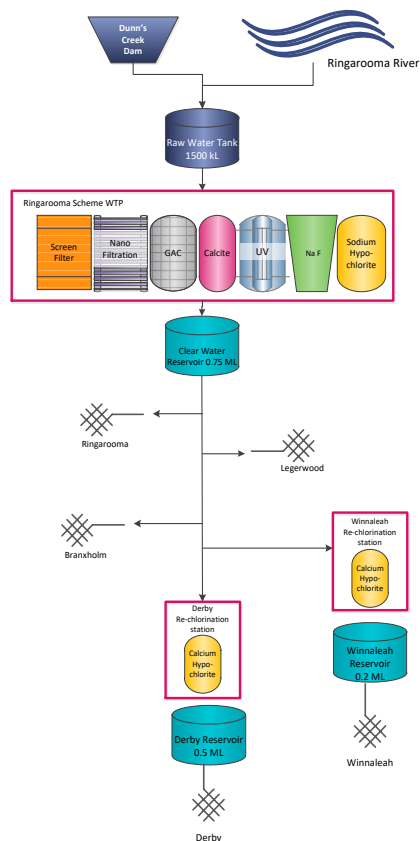


Figure 42.1-a Ringarooma System schematic

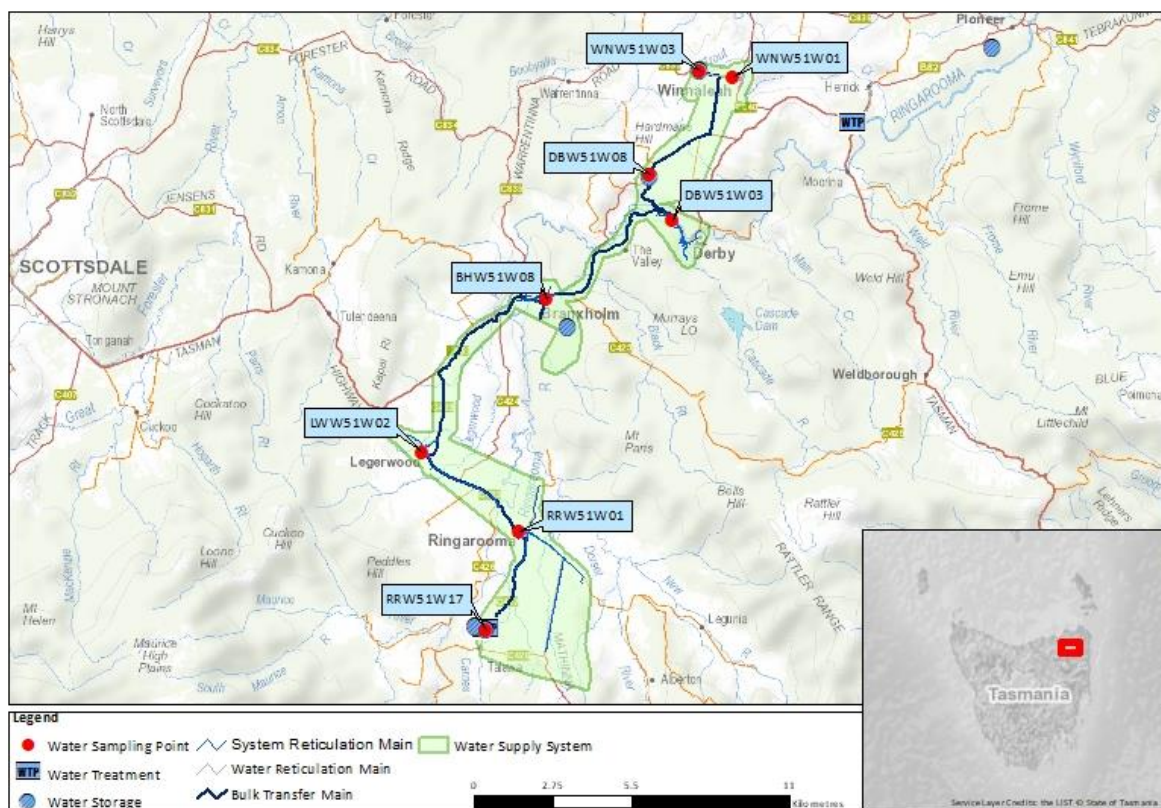


Figure 42.1-b Map of Ringarooma System monitoring system

## 42.2. Summary of annual reticulation compliance (2020–21)

Table 42.2-a Sampling program

| Planned sampling program (2020–21) |                        |        |        |     |                |                  |                   |
|------------------------------------|------------------------|--------|--------|-----|----------------|------------------|-------------------|
| Site name                          | Site Code              | Micros | Metals | DBP | Fluoride (Lab) | Chemical Profile | Process Chemicals |
| Ringarooma/Opposite Police Station | RRW51W01               | W      | Q      | Q   | n/a            | Q                | n/a               |
| Legerwood/Carvings                 | LWW51W02 <sup>28</sup> | W      | Q      | Q   | n/a            | Q                | n/a               |
| Legerwood/PRV - Main Rd            | RINGST01               | W      | Q      | Q   | n/a            | Q                | n/a               |
| Branhholm/17 Albert Street         | BHW51W08               | W      | Q      | Q   | n/a            | Q                | n/a               |
| Derby/Opp Netball Court            | DBW51W03               | W      | Q      | Q   | 2M             | Q                | n/a               |
| Winnaleah/School                   | WNW51W01               | W      | Q      | Q   | 2M             | Q                | n/a               |
| Number Planned Samples             |                        | 260    | 20     | 20  | 48             | 20               | n/a               |
| Number Samples Tested              |                        | 260    | 20     | 20  | 48             | 20               | n/a               |

## 42.3. Summary of current and historic performance (2016–21)

Table 42.3-a Historical health performance overview (5 year comparison)

| Historical health performance overview (5 year comparison)   |         |         |         |         |         |
|--|---------|---------|---------|---------|---------|
| Indicator  | 2016–17 | 2017–18 | 2018–19 | 2019–20 | 2020–21 |
| Microbiological  | 50.0%   | 100.0%  | 100.0%  | 100.0%  | 100.0%  |
| Fluoride   | n/a     | 100.0%  | 100.0%  | 100.0%  | 100.0%  |
| Metals   | 100.0%  | 100.0%  | 100.0%  | 100.0%  | 100.0%  |
| Disinfection by products   | n/a     | 100.0%  | 100.0%  | 100.0%  | 100.0%  |
| <div> <span style="color: green;">■</span> Compliant           <span style="color: red;">■</span> Non-compliant         </div> |         |         |         |         |         |

<sup>28</sup> Replaced by RINGST01 26<sup>th</sup> April 2021

## 42.4. Analysis of current health performance (2020–21)

Table 42.4-a Summary of health guideline exceedances

| Summary of health guideline exceedances |          |  |           |
|---|----------|--|-----------|
| Parameter Exceeding                     | Date     | Details  | Resampled |
| Lead                                    | 6/1/2021 | Lead of 0.0021 mg/L in a sample at an operational site | ✓         |

Table 42.4-b Fluoride distribution performance

| Distribution fluoride performance  |         |
|--|---------|
| Indicator  | 2020–21 |
| F exceeding 1.5 mg/L   | 0       |
| Average F concentration range (0.8 mg/L – 1.1 mg/L)                            | 0.8     |
| 90% of F results are equal to or less than 1.1 mg/L                            | 100%    |
| <div> <div></div> Compliant           <div></div> Non-compliant         </div> |         |

Table 42.4-c Metals performance

| Metals – health regulated parameters |       |      |         |             |               |         |          |         |
|--------------------------------------|-------|------|---------|-------------|---------------|---------|----------|---------|
| Parameter                            | Limit | Unit | Samples | Exceedances | Performance % | Mean    | Min.     | Max.    |
| Antimony                             | 0.003 | mg/L | 20      | 0           | 100           | <0.0005 | <0.0005  | <0.0005 |
| Arsenic                              | 0.01  | mg/L | 20      | 0           | 100           | <0.0003 | <0.0003  | <0.0003 |
| Barium                               | 2     | mg/L | 20      | 0           | 100           | 0.0076  | 0.0044   | 0.0255  |
| Cadmium                              | 0.002 | mg/L | 20      | 0           | 100           | <0.0001 | <0.0001  | <0.0001 |
| Chromium                             | 0.05  | mg/L | 20      | 0           | 100           | <0.0001 | <0.0001  | 0.0003  |
| Copper                               | 2     | mg/L | 20      | 0           | 100           | 0.0133  | 0.0048   | 0.0479  |
| Lead                                 | 0.01  | mg/L | 20      | 0           | 100           | 0.0008  | 0.0002   | 0.0028  |
| Manganese                            | 0.5   | mg/L | 20      | 0           | 100           | 0.0002  | <0.0001  | 0.0005  |
| Mercury                              | 0.001 | mg/L | 20      | 0           | 100           | 0.00005 | <0.00003 | 0.00016 |
| Molybdenum                           | 0.05  | mg/L | 20      | 0           | 100           | <0.0001 | <0.0001  | <0.0001 |
| Nickel                               | 0.02  | mg/L | 20      | 0           | 100           | 0.0002  | <0.0001  | 0.0008  |
| Selenium                             | 0.01  | mg/L | 20      | 0           | 100           | 0.0001  | <0.0001  | 0.0004  |

**Table 42.4-d Disinfection by product performance**

| Disinfection by products – health regulated parameters |       |      |         |             |               |      |      |                   |
|--|-------|------|---------|-------------|---------------|------|------|-------------------|
| Parameter  | Limit | Unit | Samples | Exceedances | Performance % | Mean | Min. | Max.              |
| Dichloroacetic acid                                    | 100   | µg/L | 52      | 0           | 100           | 28   | 14   | 46                |
| Monochloroacetic acid                                  | 150   | µg/L | 52      | 0           | 100           | <3   | <3   | <3                |
| Trichloroacetic acid                                   | 100   | µg/L | 52      | 0           | 100           | 58   | 22   | 106 <sup>29</sup> |
| Total trihalomethanes                                  | 250   | µg/L | 52      | 0           | 100           | 51   | 25   | 93                |

**Table 42.4-e General physical performance**

| General physical parameters |       |                 |      |      |      |
|-----------------------------|-------|-----------------|------|------|------|
| Parameter                   | Unit  | Guideline Value | Mean | Min  | Max  |
| Chlorine residual           | mg/L  | 0.1 – <0.8      | 0.83 | 0.27 | 1.71 |
| Colour True                 | HU    | 15              | <1   | <1   | 2    |
| pH                          | Units | 6.5 – 8.5       | 7.12 | 6.36 | 7.74 |
| Turbidity                   | NTU   | 1               | 0.27 | 0.06 | 2.93 |

## 42.5. Analysis of overall system performance (2020–21)

**Table 42.5-a Summary of system issues/public health warnings**







| Summary of system issues |  |                           |                           |
|--------------------------|--|---------------------------|---------------------------|
| Date                     | Description  | DoH notification required | DoH notification complete |
| 6/1/2021                 | Lead exceedance in operational site.   | ✓                         | ✓                         |
| 23/2/2021                | Trichloroacetic acid exceedance of 106 µg/L. Does not exceed rounding limit. | ✓                         | ✓                         |

<sup>29</sup> Maximum result, when rounded, does not exceed limit.

## 43. Rocky Creek drinking water system

### 43.1. System summary (2020–21)

| Rocky Creek drinking water system  |                 |
|------------------------------------|-----------------|
| System status (as at 30 June 2021) | Potable         |
| Total number of connections        | 226             |
| Population serviced                | 506             |
| Fluoride                           | Sodium fluoride |

| Performance overview against health targets (2020–21)   |         |   |        |                 |             |
|---|---------|---|--------|-----------------|-------------|
| Indicator   | Outcome | Compliance  | Target | Sampling Events | Exceedances |
| Microbiological   | 100.0%  |  | 98.0%  | 106             | 0           |
| Fluoride  | 100.0%  |  | 100.0% | 48              | 0           |
| Metals  | 100.0%  |  | 100.0% | 4               | 0           |
| DBPs  | 100.0%  |  | 100.0% | 4               | 0           |
|  Compliant  Non-compliant |         |   |        |                 |             |

| Overall system performance (2020–21) |             |         |
|--------------------------------------|-------------|---------|
| Indicator                            | Occurrences | Details |
| System issues                        | 0           |         |
| Public health warnings issued        | 0           |         |
| Notifications made to DoH            | 0           |         |
| Customer complaints                  | 0           |         |

| Current and future planned capital investment |          |          |               |                     |
|---|----------|----------|---------------|---------------------|
| Project                                       | Overview | Progress | Est. Delivery | Est. Spend (\$'000) |
| No projected capital investment               |          |          |               |                     |



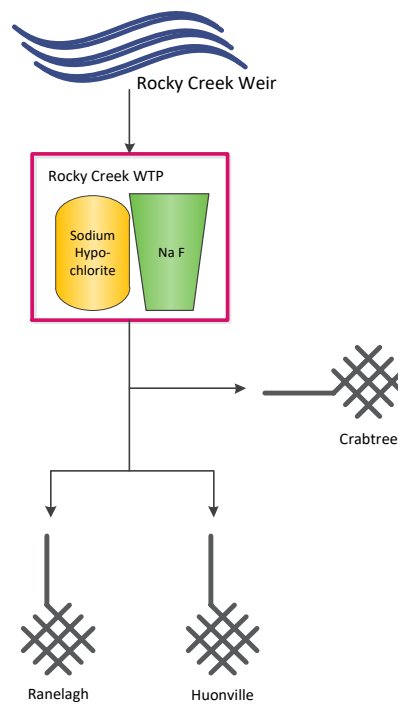


Figure 43.1-a Rocky Creek system schematic

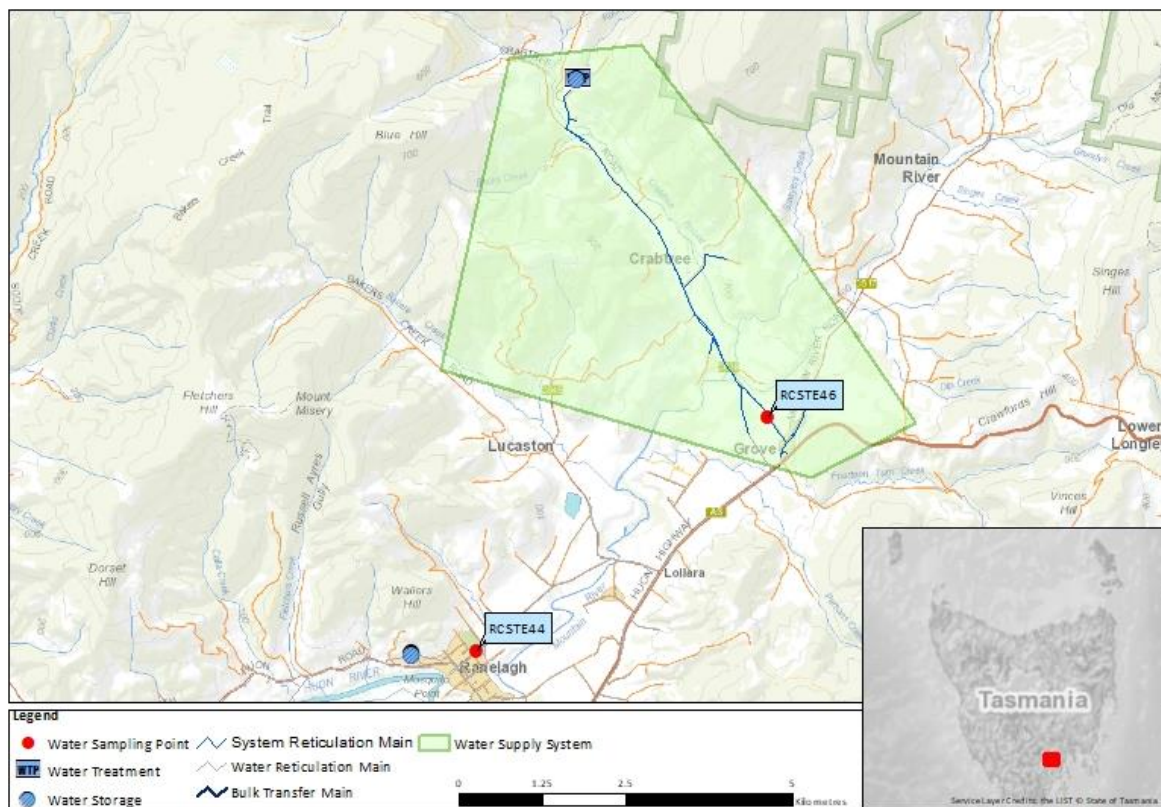


Figure 43.1-b Map of Rocky Creek monitoring system

## 43.2. Summary of annual reticulation compliance (2020–21)

Table 43.2-a Sampling program

| Planned compliance sampling program (2020–21) |           |        |        |     |                |                  |                   |
|---|-----------|--------|--------|-----|----------------|------------------|-------------------|
| Site name                                     | Site Code | Micros | Metals | DBP | Fluoride (Lab) | Chemical Profile | Process Chemicals |
| Ranelagh Showgrounds/Sample Tap (650023)      | RCSTE44   | W      | Q      | Q   | 2M             | Q                | n/a               |
| Ranelagh/Grove Fire Station                   | RCSTE46   | W      | n/a    | n/a | 2M             | n/a              | n/a               |
| Number Planned Samples                        |           | 106    | 4      | 4   | 48             | 4                | n/a               |
| Number Samples Tested                         |           | 106    | 4      | 4   | 48             | 4                | n/a               |

## 43.3. Summary of current and historic performance (2016–21)

Table 43.3-a Historical health performance overview (5 year comparison)

| Historical health performance overview (5 year comparison)   |         |         |         |         |         |
|--|---------|---------|---------|---------|---------|
| Indicator  | 2016–17 | 2017–18 | 2018–19 | 2019–20 | 2020–21 |
| Microbiological  | 100.0%  | 100.0%  | 100.0%  | 100.0%  | 100.0%  |
| Fluoride   | 100.0%  | 100.0%  | 100.0%  | 100.0%  | 100.0%  |
| Metals   | 100.0%  | 100.0%  | 100.0%  | 100.0%  | 100.0%  |
| Disinfection by products   | 100.0%  | 100.0%  | 100.0%  | 100.0%  | 100.0%  |
| <div> <span style="color: green;">■</span> Compliant           <span style="color: red;">■</span> Non-compliant         </div> |         |         |         |         |         |

## 43.4. Analysis of current health performance (2020–21)

Table 43.4-a Summary of health guideline exceedances

| Summary of health guideline exceedances |      |         |           |
|---|------|---------|-----------|
| Parameter Exceeding                     | Date | Details | Resampled |
| No ADWG exceedances                     |      |         |           |

**Table 43.4-b Fluoride distribution performance**

| Distribution fluoride performance  |         |
|--|---------|
| Indicator  | 2020–21 |
| F exceeding 1.5 mg/L   | 0       |
| Average F concentration range (0.8 mg/L – 1.1 mg/L)  | 0.8     |
| 90% of F results are equal to or less than 1.1 mg/L  | 100%    |
| <div> <span style="color: green;">■</span> Compliant           <span style="color: red;">■</span> Non-compliant         </div> |         |

**Table 43.4-c Metals performance**

| Metals – health regulated parameters |       |      |         |             |               |         |          |         |
|--------------------------------------|-------|------|---------|-------------|---------------|---------|----------|---------|
| Parameter                            | Limit | Unit | Samples | Exceedances | Performance % | Mean    | Min.     | Max.    |
| Antimony                             | 0.003 | mg/L | 4       | 0           | 100           | <0.0005 | <0.0005  | <0.0005 |
| Arsenic                              | 0.01  | mg/L | 4       | 0           | 100           | <0.0003 | <0.0003  | <0.0003 |
| Barium                               | 2     | mg/L | 4       | 0           | 100           | 0.0016  | 0.0013   | 0.0020  |
| Cadmium                              | 0.002 | mg/L | 4       | 0           | 100           | <0.0001 | <0.0001  | <0.0001 |
| Chromium                             | 0.05  | mg/L | 4       | 0           | 100           | 0.0003  | 0.0002   | 0.0004  |
| Copper                               | 2     | mg/L | 4       | 0           | 100           | 0.0048  | 0.0039   | 0.0069  |
| Lead                                 | 0.01  | mg/L | 4       | 0           | 100           | 0.0002  | 0.0002   | 0.0004  |
| Manganese                            | 0.5   | mg/L | 4       | 0           | 100           | 0.0002  | 0.0002   | 0.0003  |
| Mercury                              | 0.001 | mg/L | 4       | 0           | 100           | 0.00003 | <0.00003 | 0.00004 |
| Molybdenum                           | 0.05  | mg/L | 4       | 0           | 100           | <0.0001 | <0.0001  | <0.0001 |
| Nickel                               | 0.02  | mg/L | 4       | 0           | 100           | <0.0001 | <0.0001  | <0.0001 |
| Selenium                             | 0.01  | mg/L | 4       | 0           | 100           | <0.0001 | <0.0001  | <0.0001 |

**Table 43.4-d Disinfection by product performance**

| Disinfection by products – health regulated parameters |       |      |         |             |               |      |      |      |
|--|-------|------|---------|-------------|---------------|------|------|------|
| Parameter  | Limit | Unit | Samples | Exceedances | Performance % | Mean | Min. | Max. |
| Dichloroacetic acid                                    | 100   | µg/L | 4       | 0           | 100           | 30   | 19   | 39   |
| Monochloroacetic acid                                  | 150   | µg/L | 4       | 0           | 100           | <3   | <3   | <3   |
| Trichloroacetic acid                                   | 100   | µg/L | 4       | 0           | 100           | 55   | 29   | 64   |
| Total trihalomethanes                                  | 250   | µg/L | 4       | 0           | 100           | 64   | 45   | 80   |

**Table 43.4-e General physical performance**

| General physical parameters |       |                 |      |      |      |
|-----------------------------|-------|-----------------|------|------|------|
| Parameter                   | Unit  | Guideline Value | Mean | Min  | Max  |
| Chlorine residual           | mg/L  | 0.1 – <0.8      | 0.90 | 0.00 | 1.36 |
| Colour True                 | HU    | 15              | 1.88 | <1   | 3    |
| pH                          | Units | 6.5 – 8.5       | 7.21 | 5.98 | 7.76 |
| Turbidity                   | NTU   | 1               | 0.20 | 0.06 | 0.84 |

## 43.5. Analysis of overall system performance (2020–21)

**Table 43.5-a Summary of system issues/public health warnings**

| Summary of system issues                        |             |                           |                           |
|---|-------------|---------------------------|---------------------------|
| Date  | Description | DoH notification required | DoH notification complete |
| No system issues or public health alerts issued |             |                           |                           |

## 44. Rosebery drinking water system

### 44.1. System summary (2020–21)

| Rosebery drinking water system     |                 |
|------------------------------------|-----------------|
| System status (as at 30 June 2021) | Potable         |
| Total number of connections        | 677             |
| Population serviced                | 804             |
| Fluoride                           | Sodium fluoride |

| Performance overview against health targets (2020–21)  |         |            |        |                 |             |
|--|---------|------------|--------|-----------------|-------------|
| Indicator  | Outcome | Compliance | Target | Sampling Events | Exceedances |
| Microbiological  | 100.0%  | ☑          | 98.0%  | 102             | 0           |
| Fluoride   | 100.0%  | ☑          | 100.0% | 48              | 0           |
| Metals   | 100.0%  | ☑          | 100.0% | 8               | 0           |
| DBPs   | 100.0%  | ☑          | 100.0% | 8               | 0           |
| <div><span style="color: green;">■</span> Compliant <span style="color: red;">■</span> Non-compliant</div> |         |            |        |                 |             |

| Overall system performance (2020–21) |             |         |
|--------------------------------------|-------------|---------|
| Indicator                            | Occurrences | Details |
| System issues                        | 0           |         |
| Public health warnings issued        | 0           |         |
| Notifications made to DoH            | 0           |         |
| Customer complaints                  | 0           |         |

| Current and future planned capital investment |                   |             |               |             |
|---|-------------------|-------------|---------------|-------------|
| Project                                       | Overview          | Progress    | Est. Delivery | Est. Spend  |
| WTP Upgrade                                   | Reservoir Upgrade | In Progress | 2021/2022     | \$3,000,000 |

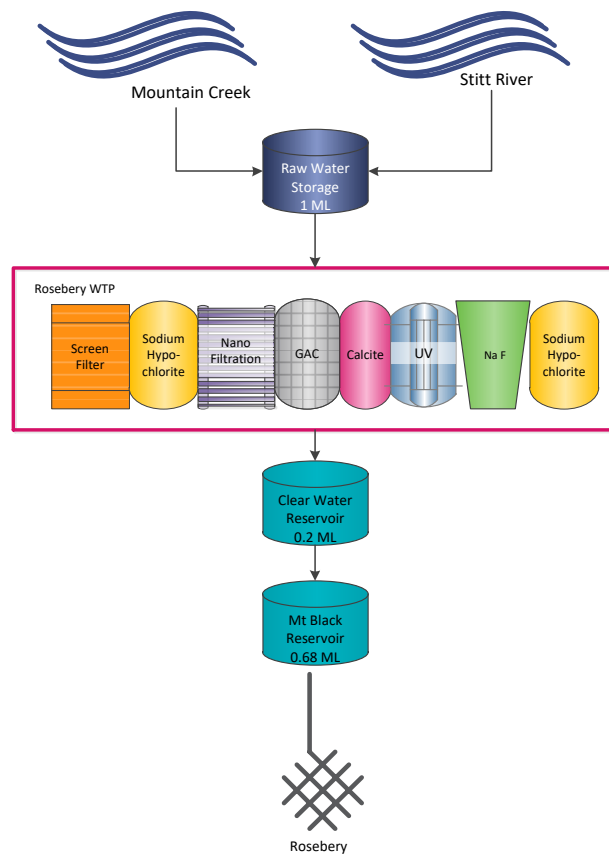


Figure 44.1-a Rosebery system schematic

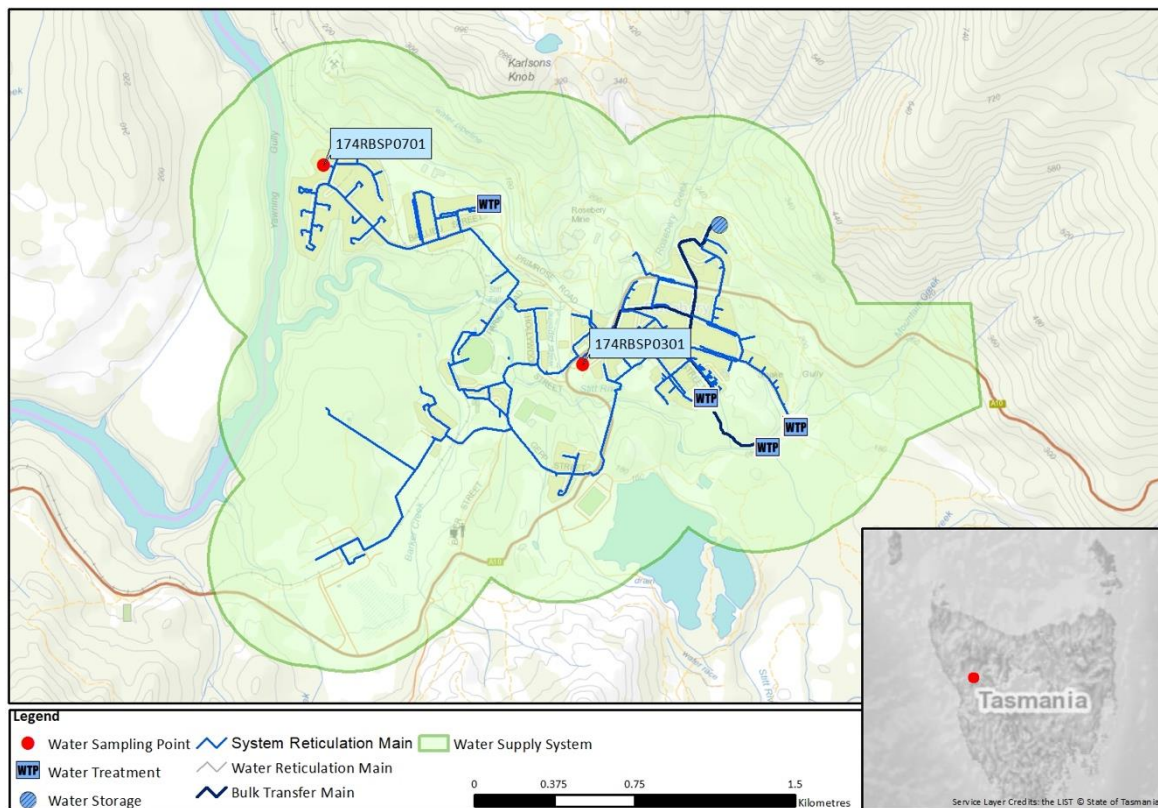


Figure 44.1-b Map of Rosebery monitoring system

## 44.2. Summary of annual reticulation compliance (2020–21)

Table 44.2-a Sampling program

| Planned sampling program (2020–21)                   |             |            |          |          |                |                  |                   |
|--|-------------|------------|----------|----------|----------------|------------------|-------------------|
| Site name  | Site Code   | Micros     | Metals   | DBP      | Fluoride (Lab) | Chemical Profile | Process Chemicals |
| Rosebery/Murchison Highway Tap Behind Public Toilets | 174RBSP0301 | W          | Q        | Q        | 2M             | Q                | n/a               |
| Rosebery/Blackwood St Sample Point                   | 174RBSP0701 | W          | Q        | Q        | 2M             | Q                | n/a               |
| <b>Number Planned Samples</b>                        |             | <b>102</b> | <b>8</b> | <b>8</b> | <b>48</b>      | <b>8</b>         | <b>n/a</b>        |
| <b>Number Samples Tested</b>                         |             | <b>102</b> | <b>8</b> | <b>8</b> | <b>48</b>      | <b>8</b>         | <b>n/a</b>        |

## 44.3. Summary of current and historic performance (2016–21)

Table 44.3-a Historical health performance overview (5 year comparison)

| Historical health performance overview (5 year comparison)                     |         |                     |                      |         |         |
|--|---------|---------------------|----------------------|---------|---------|
| Indicator  | 2016–17 | 2017–18             | 2018–19              | 2019–20 | 2020–21 |
| Microbiological  | 100.0%  | 100.0%              | 100.0%               | 100.0%  | 100.0%  |
| Fluoride   | 100.0%  | 100.0%              | 100.0%               | 100.0%  | 100.0%  |
| Metals   | 99.9%   | 99.9% <sup>30</sup> | 100.0% <sup>31</sup> | 100.0%  | 100.0%  |
| Disinfection by products   | 100.0%  | 100.0%              | 100.0%               | 100.0%  | 100.0%  |
| <div> <div></div> Compliant           <div></div> Non-compliant         </div> |         |                     |                      |         |         |

## 44.4. Analysis of current health performance (2020–21)

Table 44.4-a Summary of health guideline exceedances

| Summary of health guideline exceedances |      |         |           |
|---|------|---------|-----------|
| Parameter Exceeding                     | Date | Details | Resampled |
| No ADWG exceedances                     |      |         |           |

<sup>30</sup> New WTP to improve ADWG compliance

<sup>31</sup> Two failed tests

**Table 44.4-b Fluoride distribution performance**

| Distribution fluoride performance  |         |
|--|---------|
| Indicator  | 2018-19 |
| F exceeding 1.5 mg/L   | 0       |
| Average F concentration range (0.8 mg/L – 1.1 mg/L)  | 0.8     |
| 90% of F results are equal to or less than 1.1 mg/L  | 100%    |
| <div> <span style="color: green;">■</span> Compliant           <span style="color: red;">■</span> Non-compliant         </div> |         |

**Table 44.4-c Metals performance**

| Metals – health regulated parameters |       |      |         |             |               |         |          |         |
|--------------------------------------|-------|------|---------|-------------|---------------|---------|----------|---------|
| Parameter                            | Limit | Unit | Samples | Exceedances | Performance % | Mean    | Min.     | Max.    |
| Antimony                             | 0.003 | mg/L | 38      | 0           | 100           | <0.0005 | <0.0005  | <0.0005 |
| Arsenic                              | 0.01  | mg/L | 38      | 0           | 100           | <0.0003 | <0.0003  | <0.0003 |
| Barium                               | 2     | mg/L | 38      | 0           | 100           | 0.0045  | 0.0038   | 0.0056  |
| Cadmium                              | 0.002 | mg/L | 38      | 0           | 100           | <0.0001 | <0.0001  | <0.0001 |
| Chromium                             | 0.05  | mg/L | 38      | 0           | 100           | 0.0001  | <0.0001  | 0.0002  |
| Copper                               | 2     | mg/L | 38      | 0           | 100           | 0.0090  | 0.0048   | 0.0165  |
| Lead                                 | 0.01  | mg/L | 38      | 0           | 100           | 0.0005  | 0.0002   | 0.0012  |
| Manganese                            | 0.5   | mg/L | 38      | 0           | 100           | 0.0003  | 0.0002   | 0.0004  |
| Mercury                              | 0.001 | mg/L | 38      | 0           | 99.5          | 0.00011 | <0.00003 | 0.00047 |
| Molybdenum                           | 0.05  | mg/L | 38      | 0           | 100           | <0.0001 | <0.0001  | <0.0001 |
| Nickel                               | 0.02  | mg/L | 38      | 0           | 100           | <0.0001 | <0.0001  | <0.0001 |
| Selenium                             | 0.01  | mg/L | 38      | 0           | 100           | <0.0001 | <0.0001  | <0.0001 |

**Table 44.4-d Disinfection by product performance**

| Disinfection by products – health regulated parameters |       |      |         |             |               |      |      |      |
|--|-------|------|---------|-------------|---------------|------|------|------|
| Parameter  | Limit | Unit | Samples | Exceedances | Performance % | Mean | Min. | Max. |
| Dichloroacetic acid                                    | 100   | µg/L | 8       | 0           | 100           | 10   | 4    | 14   |
| Monochloroacetic acid                                  | 150   | µg/L | 8       | 0           | 100           | <3   | <3   | <3   |
| Trichloroacetic acid                                   | 100   | µg/L | 8       | 0           | 100           | 11   | 2    | 16   |
| Total trihalomethanes                                  | 250   | µg/L | 8       | 0           | 100           | 31   | 18   | 40   |



**Table 44.4-e General physical performance**

| General physical parameters |       |                 |      |      |      |
|-----------------------------|-------|-----------------|------|------|------|
| Parameter                   | Unit  | Guideline Value | Mean | Min  | Max  |
| Chlorine residual           | mg/L  | 0.1 – <0.8      | 0.83 | 0.46 | 1.18 |
| Colour True                 | HU    | 15              | 1.13 | <1   | 2    |
| pH                          | Units | 6.5 – 8.5       | 7.38 | 6.82 | 7.83 |
| Turbidity                   | NTU   | 1               | 0.14 | 0.07 | 0.28 |

## 44.5. Analysis of overall system performance (2020–21)

**Table 44.5-a Summary of system issues/public health warnings**

| Summary of system issues                          |             |                           |                           |
|---|-------------|---------------------------|---------------------------|
| Date  | Description | DoH notification required | DoH notification complete |
| No system issues or public health warnings issued |             |                           |                           |

## 45. Rossarden drinking water system

### 45.1. System summary (2020–21)

| Rossarden drinking water system    |         |
|------------------------------------|---------|
| System status (as at 30 June 2021) | Potable |
| Total number of connections        | 32      |
| Population serviced                | 36      |
| Fluoride                           | n/a     |

| Performance overview against health targets (2020–21)      |         |            |        |                 |             |
|--|---------|------------|--------|-----------------|-------------|
| Indicator  | Outcome | Compliance | Target | Sampling Events | Exceedances |
| Microbiological  | 100.0%  | ☑          | 98.0%  | 104             | 0           |
| Fluoride   | n/a     | n/a        | n/a    | n/a             | n/a         |
| Metals   | 100.0%  | ☑          | 100.0% | 8               | 0           |
| DBPs   | 100.0%  | ☑          | 100.0% | 8               | 0           |
| <div><div></div> Compliant <div></div> Non-compliant</div> |         |            |        |                 |             |

| Overall system performance (2020–21) |             |         |
|--------------------------------------|-------------|---------|
| Indicator                            | Occurrences | Details |
| System issues                        | 0           |         |
| Public health warnings issued        | 0           |         |
| Notifications made to DoH            | 0           |         |
| Customer complaints                  | 0           |         |

| Current and future planned capital investment |          |          |               |                     |
|---|----------|----------|---------------|---------------------|
| Project                                       | Overview | Progress | Est. Delivery | Est. Spend (\$'000) |
| No projected capital investment               |          |          |               |                     |

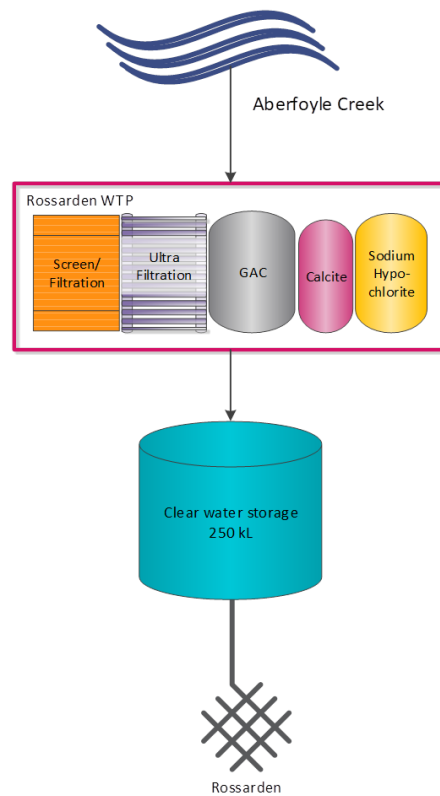


Figure 45.1-a Rossarden system schematic

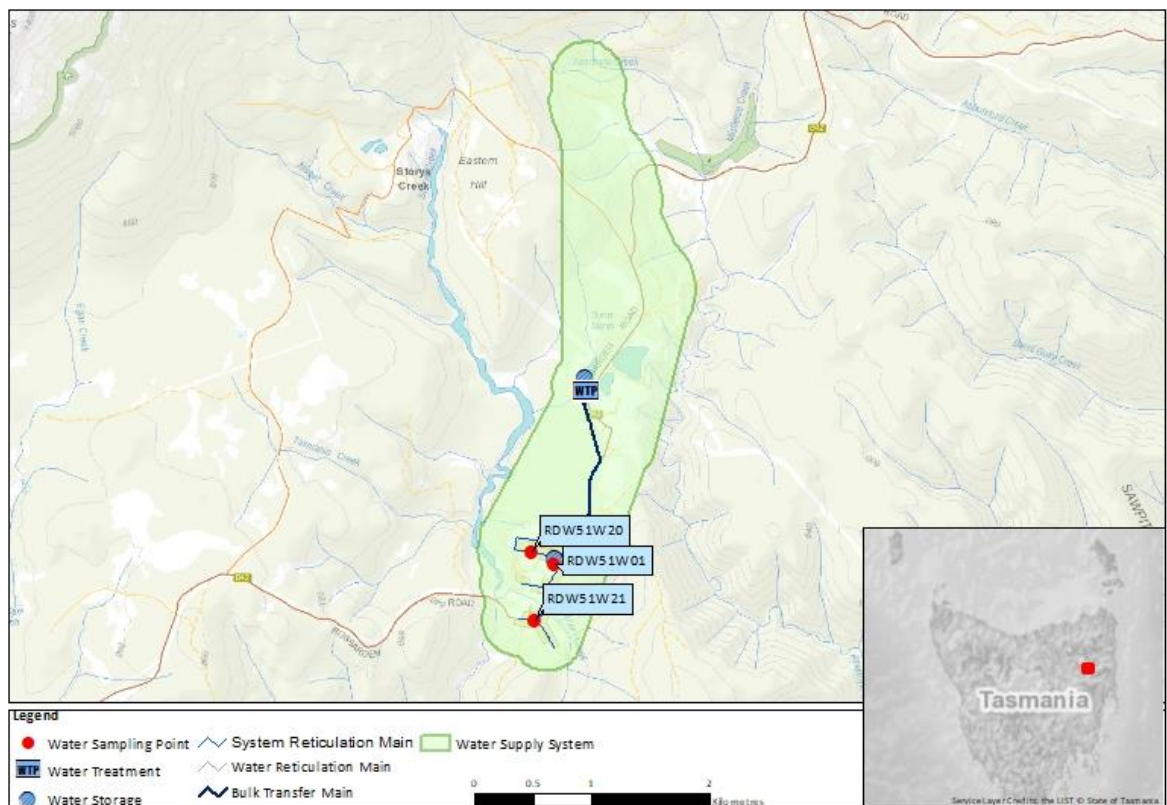


Figure 45.1-b Map of Rossarden monitoring system

## 45.2. Summary of annual reticulation compliance (2020–21)

Table 45.2-a Sampling program

| Planned compliance sampling program (2020–21) |           |        |        |     |                |                  |                   |
|---|-----------|--------|--------|-----|----------------|------------------|-------------------|
| Site name                                     | Site Code | Micros | Metals | DBP | Fluoride (Lab) | Chemical Profile | Process Chemicals |
| Rossarden/21-23 Schell Street                 | RDW51W20  | W      | Q      | Q   | n/a            | Q                | n/a               |
| Rossarden/14 Walter Street                    | RDW51W21  | W      | Q      | Q   | n/a            | Q                | n/a               |
| Number Planned Samples                        |           | 104    | 8      | 8   | n/a            | 8                | n/a               |
| Number Samples Tested                         |           | 104    | 8      | 8   | n/a            | 8                | n/a               |

## 45.3. Summary of current and historic performance (2016–21)

Table 45.3-a Historical health performance overview (5 year comparison)

| Historical health performance overview (5 year comparison)   |         |         |                      |         |         |
|--|---------|---------|----------------------|---------|---------|
| Indicator  | 2016–17 | 2017–18 | 2018–19              | 2019–20 | 2020–21 |
| Microbiological  | 100.0%  | 99.4%   | 100.0% <sup>32</sup> | 100.0%  | 100.0%  |
| Fluoride   | n/a     | n/a     | n/a                  | n/a     | n/a     |
| Metals   | n/a     | n/a     | 100.0%               | 100.0%  | 100.0%  |
| Disinfection by products   | n/a     | n/a     | 100.0%               | 100.0%  | 100.0%  |
| <div> <span style="color: green;">■</span> Compliant           <span style="color: red;">■</span> Non-compliant         </div> |         |         |                      |         |         |

## 45.4. Analysis of current health performance (2020–21)

Table 45.4-a Summary of health guideline exceedances

| Summary of health guideline exceedances |      |         |           |
|---|------|---------|-----------|
| Parameter Exceeding                     | Date | Details | Resampled |
| No ADWG exceedances                     |      |         |           |

<sup>32</sup> On boil water removal verification program until 3<sup>rd</sup> August 2018

**Table 45.4-b Metals performance**

| Metals – health regulated parameters |       |      |         |             |               |         |          |         |
|--------------------------------------|-------|------|---------|-------------|---------------|---------|----------|---------|
| Parameter                            | Limit | Unit | Samples | Exceedances | Performance % | Mean    | Min.     | Max.    |
| Antimony                             | 0.003 | mg/L | 8       | 0           | 100           | <0.0005 | <0.0005  | <0.0005 |
| Arsenic                              | 0.01  | mg/L | 8       | 0           | 100           | <0.0003 | <0.0003  | <0.0003 |
| Barium                               | 2     | mg/L | 8       | 0           | 100           | 0.0014  | 0.0012   | 0.0016  |
| Cadmium                              | 0.002 | mg/L | 8       | 0           | 100           | <0.0001 | <0.0001  | <0.0001 |
| Chromium                             | 0.05  | mg/L | 8       | 0           | 100           | 0.0002  | <0.0001  | 0.0006  |
| Copper                               | 2     | mg/L | 8       | 0           | 100           | 0.0054  | 0.0040   | 0.0099  |
| Lead                                 | 0.01  | mg/L | 8       | 0           | 100           | 0.0004  | 0.0002   | 0.0007  |
| Manganese                            | 0.5   | mg/L | 8       | 0           | 100           | 0.0011  | 0.0007   | 0.0020  |
| Mercury                              | 0.001 | mg/L | 8       | 0           | 100           | 0.00008 | <0.00003 | 0.00027 |
| Molybdenum                           | 0.05  | mg/L | 8       | 0           | 100           | <0.0001 | <0.0001  | <0.0001 |
| Nickel                               | 0.02  | mg/L | 8       | 0           | 100           | 0.0002  | <0.0001  | 0.0006  |
| Selenium                             | 0.01  | mg/L | 8       | 0           | 100           | <0.0001 | <0.0001  | 0.0002  |

**Table 45.4-c Disinfection by product performance**

| Disinfection by products – health regulated parameters |       |      |         |             |               |      |      |      |
|--|-------|------|---------|-------------|---------------|------|------|------|
| Parameter  | Limit | Unit | Samples | Exceedances | Performance % | Mean | Min. | Max. |
| Dichloroacetic acid                                    | 100   | µg/L | 8       | 0           | 100           | 11   | 9    | 13   |
| Monochloroacetic acid                                  | 150   | µg/L | 8       | 0           | 100           | <3   | <3   | <3   |
| Trichloroacetic acid                                   | 100   | µg/L | 8       | 0           | 100           | 15   | 14   | 18   |
| Total trihalomethanes                                  | 250   | µg/L | 8       | 0           | 100           | 18   | 14   | 26   |

**Table 45.4-d General physical performance**

| General physical parameters |       |                 |      |      |      |
|-----------------------------|-------|-----------------|------|------|------|
| Parameter                   | Unit  | Guideline Value | Mean | Min  | Max  |
| Chlorine residual           | mg/L  | 0.1 – <0.8      | 0.68 | 0.36 | 1.00 |
| Colour True                 | HU    | 15              | <1   | <1   | 1    |
| pH                          | Units | 6.5 – 8.5       | 7.47 | 6.50 | 7.97 |
| Turbidity                   | NTU   | 1               | 0.26 | 0.11 | 0.81 |

## 45.5. Analysis of overall system performance (2020–21)

Table 45.5-a Summary of system issues/public health warnings

| Summary of system issues                        |             |                           |                           |
|---|-------------|---------------------------|---------------------------|
| Date  | Description | DoH notification required | DoH notification complete |
| No system issues or public health alerts issued |             |                           |                           |

## 46. Scamander drinking water system

### 46.1. System summary (2020–21)

| Scamander drinking water system    |                 |
|------------------------------------|-----------------|
| System status (as at 30 June 2021) | Potable         |
| Total number of connections        | 530             |
| Population serviced                | 692             |
| Fluoride                           | Sodium fluoride |

| Performance overview against health targets (2020–21)  |         |            |        |                 |             |
|--|---------|------------|--------|-----------------|-------------|
| Indicator  | Outcome | Compliance | Target | Sampling Events | Exceedances |
| Microbiological  | 100.0%  | ☑          | 98.0%  | 53              | 0           |
| Fluoride   | 100.0%  | ☑          | 100.0% | 48              | 0           |
| Metals   | 100.0%  | ☑          | 100.0% | 4               | 0           |
| DBPs   | 100.0%  | ☑          | 100.0% | 4               | 0           |
| <div><span style="color: green;">■</span> Compliant <span style="color: red;">■</span> Non-compliant</div> |         |            |        |                 |             |

| Overall system performance (2020–21) |             |                              |
|--------------------------------------|-------------|------------------------------|
| Indicator                            | Occurrences | Details                      |
| System issues                        | 0           |                              |
| Public health warnings issued        | 0           |                              |
| Notifications made to DoH            | 1           | Low fluoride levels detected |
| Customer complaints                  | 0           |                              |

| Current and future planned capital investment |          |          |               |            |
|---|----------|----------|---------------|------------|
| Project                                       | Overview | Progress | Est. Delivery | Est. Spend |
| No projected capital investment               |          |          |               |            |

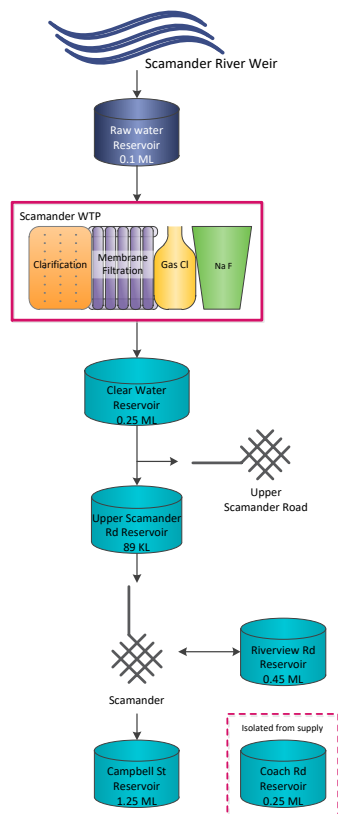


Figure 46.1-a Scamander system schematic

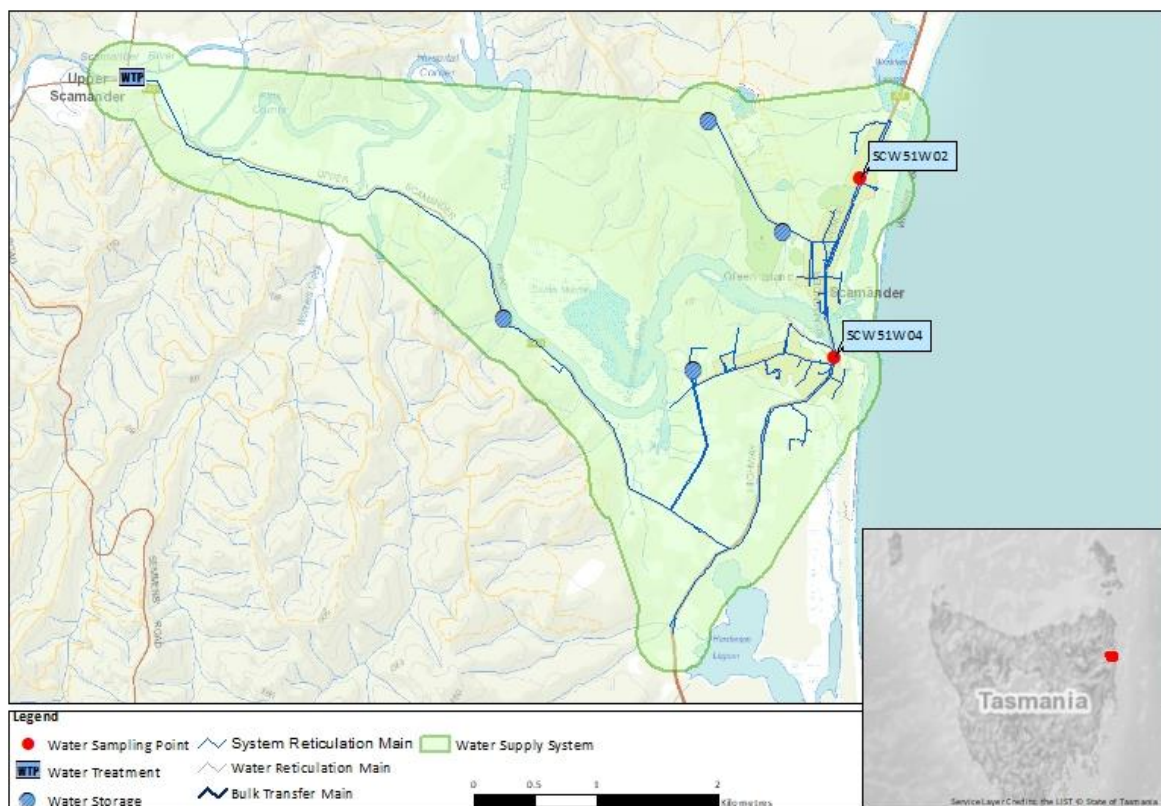


Figure 46.1-b Map of Scamander monitoring system



## 46.2. Summary of annual reticulation compliance (2020–21)

Table 46.2-a Sampling program

| Planned sampling program (2020–21)                |           |           |          |          |                |                  |                   |
|---|-----------|-----------|----------|----------|----------------|------------------|-------------------|
| Site name   | Site Code | Micros    | Metals   | DBP      | Fluoride (Lab) | Chemical Profile | Process Chemicals |
| Scamander/River Mouth Carpark – 166 Scamander Ave | SCW51W04  | n/a       | n/a      | n/a      | 2M             | n/a              | n/a               |
| Scamander/56 Scamander Ave                        | SCW51W02  | W         | Q        | Q        | 2M             | Q                | n/a               |
| <b>Number Planned Samples</b>                     |           | <b>53</b> | <b>4</b> | <b>4</b> | <b>48</b>      | <b>4</b>         | <b>n/a</b>        |
| <b>Number Samples Tested</b>                      |           | <b>53</b> | <b>4</b> | <b>4</b> | <b>48</b>      | <b>4</b>         | <b>n/a</b>        |

## 46.3. Summary of current and historic performance (2016–21)

Table 46.3-a Historical health performance overview (5 year comparison)

| Historical health performance overview (5 year comparison)   |         |         |         |         |         |
|--|---------|---------|---------|---------|---------|
| Indicator  | 2016–17 | 2017–18 | 2018–19 | 2019–20 | 2020–21 |
| Microbiological  | 100.0%  | 100.0%  | 100.0%  | 100.0%  | 100.0%  |
| Fluoride   | 100.0%  | 100.0%  | 100.0%  | 100.0%  | 100.0%  |
| Metals   | 100.0%  | 100.0%  | 100.0%  | 100.0%  | 100.0%  |
| Disinfection by products   | 100.0%  | 100.0%  | 100.0%  | 100.0%  | 100.0%  |
| <div> <span style="color: green;">■</span> Compliant           <span style="color: red;">■</span> Non-compliant         </div> |         |         |         |         |         |

## 46.4. Analysis of current health performance (2020–21)

Table 46.4-a Summary of health guideline exceedances

| Summary of health guideline exceedances |      |         |           |
|---|------|---------|-----------|
| Parameter Exceeding                     | Date | Details | Resampled |
| No ADWG exceedances                     |      |         |           |

**Table 46.4-b Fluoride distribution performance**

| Distribution fluoride performance  |         |
|--|---------|
| Indicator  | 2020–21 |
| F exceeding 1.5 mg/L   | 0       |
| Average F concentration range (0.8 mg/L – 1.1 mg/L)  | 0.7     |
| 90% of F results are equal to or less than 1.1 mg/L  | 100%    |
| <div> <span style="color: green;">■</span> Compliant           <span style="color: red;">■</span> Non-compliant         </div> |         |

**Table 46.4-c Metals performance**

| Metals – health regulated parameters |       |      |         |             |               |         |          |         |
|--------------------------------------|-------|------|---------|-------------|---------------|---------|----------|---------|
| Parameter                            | Limit | Unit | Samples | Exceedances | Performance % | Mean    | Min.     | Max.    |
| Antimony                             | 0.003 | mg/L | 4       | 0           | 100           | <0.0005 | <0.0005  | <0.0005 |
| Arsenic                              | 0.01  | mg/L | 4       | 0           | 100           | <0.0003 | <0.0003  | 0.0004  |
| Barium                               | 2     | mg/L | 4       | 0           | 100           | 0.0075  | 0.0066   | 0.0081  |
| Cadmium                              | 0.002 | mg/L | 4       | 0           | 100           | <0.0001 | <0.0001  | <0.0001 |
| Chromium                             | 0.05  | mg/L | 4       | 0           | 100           | 0.0001  | <0.0001  | 0.0002  |
| Copper                               | 2     | mg/L | 4       | 0           | 100           | 0.0030  | 0.0022   | 0.0042  |
| Lead                                 | 0.01  | mg/L | 4       | 0           | 100           | 0.0004  | 0.0003   | 0.0005  |
| Manganese                            | 0.5   | mg/L | 4       | 0           | 100           | 0.0012  | <0.0001  | 0.0038  |
| Mercury                              | 0.001 | mg/L | 4       | 0           | 100           | 0.00006 | <0.00003 | 0.00009 |
| Molybdenum                           | 0.05  | mg/L | 4       | 0           | 100           | <0.0001 | <0.0001  | <0.0001 |
| Nickel                               | 0.02  | mg/L | 4       | 0           | 100           | <0.0001 | <0.0001  | 0.0001  |
| Selenium                             | 0.01  | mg/L | 4       | 0           | 100           | <0.0001 | <0.0001  | <0.0001 |

**Table 46.4-d Disinfection by product performance**

| Disinfection by products – health regulated parameters |       |      |         |             |               |      |      |      |
|--|-------|------|---------|-------------|---------------|------|------|------|
| Parameter  | Limit | Unit | Samples | Exceedances | Performance % | Mean | Min. | Max. |
| Dichloroacetic acid                                    | 100   | µg/L | 4       | 0           | 100           | 13   | 10   | 18   |
| Monochloroacetic acid                                  | 150   | µg/L | 4       | 0           | 100           | <3   | <3   | 6    |
| Trichloroacetic acid                                   | 100   | µg/L | 4       | 0           | 100           | 17   | 13   | 21   |
| Total trihalomethanes                                  | 250   | µg/L | 4       | 0           | 100           | 50   | 40   | 57   |

**Table 46.4-e General physical performance**

| General physical parameters |       |                 |      |      |      |
|-----------------------------|-------|-----------------|------|------|------|
| Parameter                   | Unit  | Guideline Value | Mean | Min  | Max  |
| Chlorine residual           | mg/L  | 0.1 – <0.8      | 0.60 | 0.01 | 1.01 |
| Colour True                 | HU    | 15              | <1   | <1   | <1   |
| pH                          | Units | 6.5 – 8.5       | 7.34 | 6.63 | 8.31 |
| Turbidity                   | NTU   | 1               | 0.31 | 0.06 | 0.75 |

## 46.5. Analysis of overall system performance (2020–21)

**Table 46.5-a Summary of system issues/public health warnings**

| Summary of system issues                          |                              |                           |                           |
|---|------------------------------|---------------------------|---------------------------|
| Date  | Description                  | DoH notification required | DoH notification complete |
| July 2020 – December 2020<br>May 2021 – June 2021 | Low fluoride levels detected | ✓                         | ✓                         |

## 47. Scottsdale drinking water system

### 47.1. System summary (2020–21)

| Scottsdale drinking water system   |                 |
|------------------------------------|-----------------|
| System status (as at 30 June 2021) | Potable         |
| Total number of connections        | 1,340           |
| Population serviced                | 2,803           |
| Fluoride                           | Sodium fluoride |

| Performance overview against health targets (2020–21)  |         |            |        |                 |             |
|--|---------|------------|--------|-----------------|-------------|
| Indicator  | Outcome | Compliance | Target | Sampling Events | Exceedances |
| Microbiological  | 100.0%  | ☑          | 98.0%  | 104             | 0           |
| Fluoride   | 100.0%  | ☑          | 100.0% | 48              | 0           |
| Metals   | 100.0%  | ☑          | 100.0% | 4               | 0           |
| DBPs   | 100.0%  | ☑          | 100.0% | 4               | 0           |
| <div><span style="color: green;">■</span> Compliant <span style="color: red;">■</span> Non-compliant</div> |         |            |        |                 |             |

| Overall system performance (2020–21) |             |                 |
|--------------------------------------|-------------|-----------------|
| Indicator                            | Occurrences | Details         |
| System issues                        | 0           |                 |
| Public health warnings issued        | 0           |                 |
| Notifications made to DoH            | 0           |                 |
| Customer complaints                  | 2           | Other (illness) |

| Current and future planned capital investment |                 |          |               |            |
|---|-----------------|----------|---------------|------------|
| Project                                       | Overview        | Progress | Est. Delivery | Est. Spend |
| WTP Upgrade                                   | UV Installation | Planning | 2022/2023     | \$600,000  |

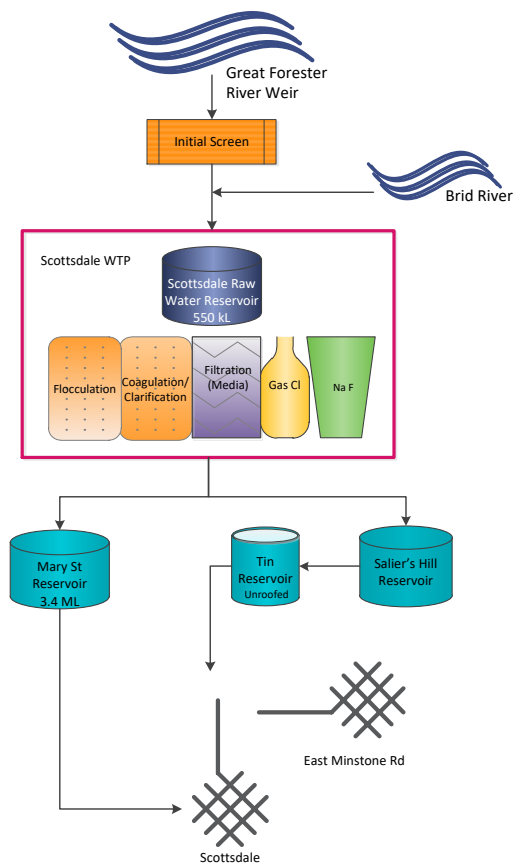


Figure 47.1-a Scottsdale system schematic

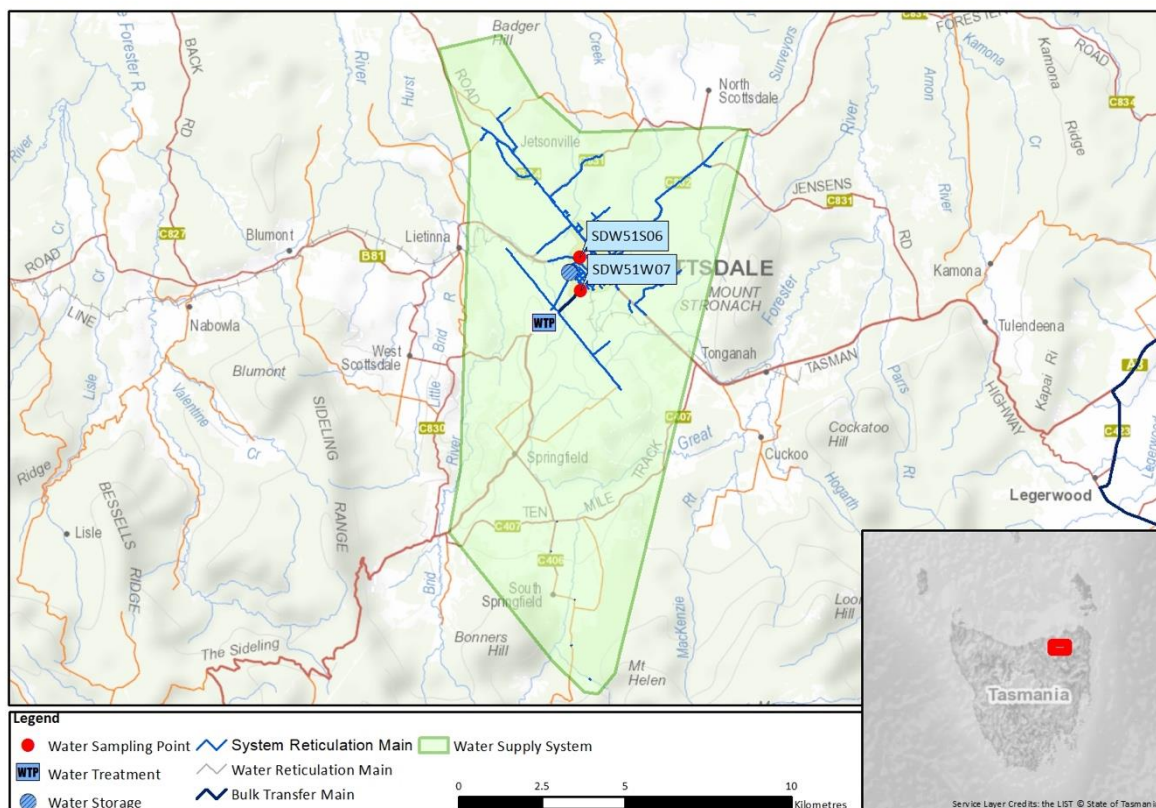


Figure 47.1-b Map of Scottsdale monitoring system

## 47.2. Summary of annual reticulation compliance (2020–21)

Table 47.2-a Sampling program

| Planned sampling program (2020–21)                     |           |        |        |     |                |                  |                   |
|--|-----------|--------|--------|-----|----------------|------------------|-------------------|
| Site name  | Site Code | Micros | Metals | DBP | Fluoride (Lab) | Chemical Profile | Process Chemicals |
| Scottsdale/Opposite Recreation Ground                  | SDW51S06  | W      | Q      | Q   | 2M             | Q                | n/a               |
| Scottsdale/King St Opposite Visitor Information Centre | SDW51W07  | W      | n/a    | n/a | 2M             | n/a              | n/a               |
| Number Planned Samples                                 |           | 104    | 4      | 4   | 48             | 4                | n/a               |
| Number Samples Tested                                  |           | 104    | 4      | 4   | 48             | 4                | n/a               |

## 47.3. Summary of current and historic performance (2016–21)

Table 47.3-a Historical health performance overview (5 year comparison)

| Historical health performance overview (5 year comparison)   |         |         |         |         |         |
|--|---------|---------|---------|---------|---------|
| Indicator  | 2016–17 | 2017–18 | 2018–19 | 2019–20 | 2020–21 |
| Microbiological  | 100.0%  | 100.0%  | 100.0%  | 100.0%  | 100.0%  |
| Fluoride   | 100.0%  | 100.0%  | 100.0%  | 100.0%  | 100.0%  |
| Metals   | 100.0%  | 100.0%  | 100.0%  | 100.0%  | 100.0%  |
| Disinfection by products   | 100.0%  | 100.0%  | 100.0%  | 100.0%  | 100.0%  |
| <div> <span style="color: green;">■</span> Compliant           <span style="color: red;">■</span> Non-compliant         </div> |         |         |         |         |         |

## 47.4. Analysis of current health performance (2020–21)

Table 47.4-a Summary of health guideline exceedances

| Summary of health guideline exceedances |      |         |           |
|---|------|---------|-----------|
| Parameter Exceeding                     | Date | Details | Resampled |
| No ADWG exceedances                     |      |         |           |

**Table 47.4-b Fluoride distribution performance**

| Distribution fluoride performance  |         |
|--|---------|
| Indicator  | 2020–21 |
| F exceeding 1.5 mg/L   | 0       |
| Average F concentration range (0.8 mg/L – 1.1 mg/L)  | 0.9     |
| 90% of F results are equal to or less than 1.1 mg/L  | 100%    |
| <div> <span style="color: green;">■</span> Compliant           <span style="color: red;">■</span> Non-compliant         </div> |         |

**Table 47.4-c Metals performance**

| Metals – health regulated parameters |       |      |         |             |               |         |          |         |
|--------------------------------------|-------|------|---------|-------------|---------------|---------|----------|---------|
| Parameter                            | Limit | Unit | Samples | Exceedances | Performance % | Mean    | Min.     | Max.    |
| Antimony                             | 0.003 | mg/L | 4       | 0           | 100           | <0.0005 | <0.0005  | <0.0005 |
| Arsenic                              | 0.01  | mg/L | 4       | 0           | 100           | <0.0003 | <0.0003  | <0.0003 |
| Barium                               | 2     | mg/L | 4       | 0           | 100           | 0.0110  | 0.0100   | 0.0122  |
| Cadmium                              | 0.002 | mg/L | 4       | 0           | 100           | <0.0001 | <0.0001  | <0.0001 |
| Chromium                             | 0.05  | mg/L | 4       | 0           | 100           | <0.0001 | <0.0001  | 0.0001  |
| Copper                               | 2     | mg/L | 4       | 0           | 100           | 0.0033  | 0.0026   | 0.0040  |
| Lead                                 | 0.01  | mg/L | 4       | 0           | 100           | 0.0002  | 0.0002   | 0.0003  |
| Manganese                            | 0.5   | mg/L | 4       | 0           | 100           | 0.0018  | 0.0011   | 0.0025  |
| Mercury                              | 0.001 | mg/L | 4       | 0           | 100           | 0.00006 | <0.00003 | 0.00010 |
| Molybdenum                           | 0.05  | mg/L | 4       | 0           | 100           | <0.0001 | <0.0001  | <0.0001 |
| Nickel                               | 0.02  | mg/L | 4       | 0           | 100           | <0.0001 | <0.0001  | 0.0001  |
| Selenium                             | 0.01  | mg/L | 4       | 0           | 100           | 0.0001  | <0.0001  | 0.0003  |

**Table 47.4-d Disinfection by product performance**

| Disinfection by products – health regulated parameters |       |      |         |             |               |      |      |      |
|--|-------|------|---------|-------------|---------------|------|------|------|
| Parameter  | Limit | Unit | Samples | Exceedances | Performance % | Mean | Min. | Max. |
| Dichloroacetic acid                                    | 100   | µg/L | 4       | 0           | 100           | 5    | 3    | 9    |
| Monochloroacetic acid                                  | 150   | µg/L | 4       | 0           | 100           | <3   | <3   | <3   |
| Trichloroacetic acid                                   | 100   | µg/L | 4       | 0           | 100           | 4    | 2    | 8    |
| Total trihalomethanes                                  | 250   | µg/L | 4       | 0           | 100           | 19   | 13   | 26   |

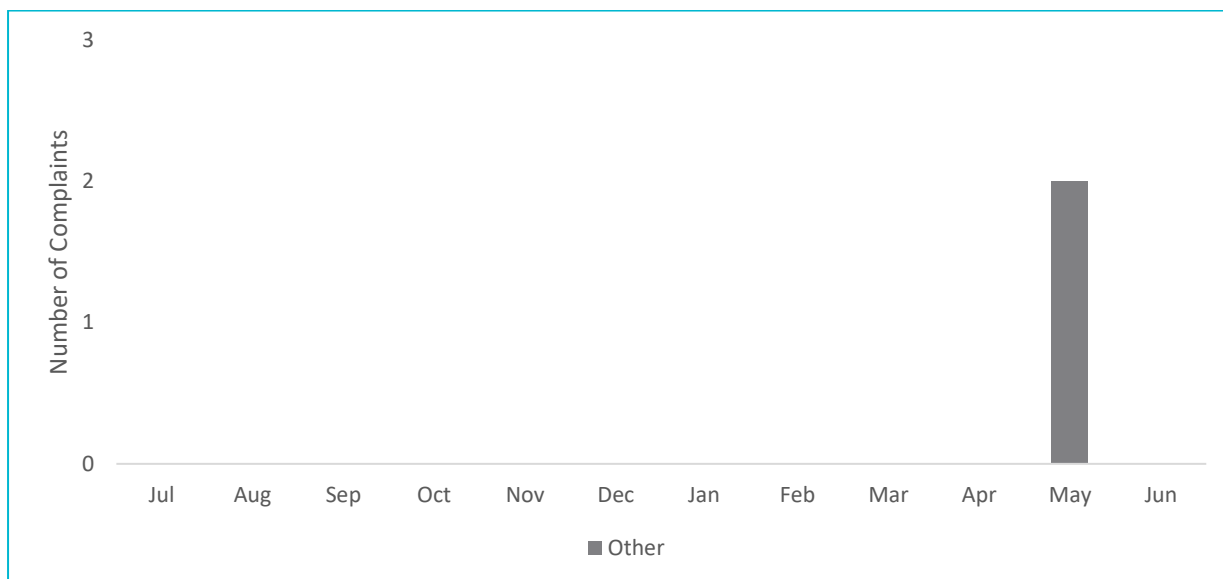
**Table 47.4-e General physical performance**

| General physical parameters |       |                 |      |      |      |
|-----------------------------|-------|-----------------|------|------|------|
| Parameter                   | Unit  | Guideline Value | Mean | Min  | Max  |
| Chlorine residual           | mg/L  | 0.1 – <0.8      | 0.92 | 0.45 | 1.23 |
| Colour True                 | HU    | 15              | <1   | <1   | 1    |
| pH                          | Units | 6.5 – 8.5       | 7.16 | 6.77 | 7.59 |
| Turbidity                   | NTU   | 1               | 0.36 | 0.07 | 5.87 |

## 47.5. Analysis of overall system performance (2020–21)

**Table 47.5-a Summary of system issues/public health warnings**

| Summary of system issues                          |             |                           |                           |
|---|-------------|---------------------------|---------------------------|
| Date  | Description | DoH notification required | DoH notification complete |
| No system issues or public health warnings issued |             |                           |                           |



**Figure 47.5-b Water quality customer complaints by month and type**



## 48. South Esk drinking water system

### 48.1. System summary (2020–21)

| South Esk drinking water system    |                    |
|------------------------------------|--------------------|
| System status (as at 30 June 2021) | Potable            |
| Total number of connections        | 5,442              |
| Population serviced                | 11,766             |
| Fluoride                           | Fluorosilicic acid |

| Performance overview against health targets (2020–21)      |         |            |        |                 |             |
|--|---------|------------|--------|-----------------|-------------|
| Indicator  | Outcome | Compliance | Target | Sampling Events | Exceedances |
| Microbiological  | 100.0%  | ☑          | 98.0%  | 364             | 0           |
| Fluoride   | 100.0%  | ☑          | 100.0% | 48              | 0           |
| Metals   | 100.0%  | ☑          | 100.0% | 4               | 0           |
| DBPs   | 100.0%  | ☑          | 100.0% | 4               | 0           |
| <div><div></div> Compliant <div></div> Non-compliant</div> |         |            |        |                 |             |

| Overall system performance (2020–21) |             |         |
|--------------------------------------|-------------|---------|
| Indicator                            | Occurrences | Details |
| System issues                        | 0           |         |
| Public health warnings issued        | 0           |         |
| Notifications made to DoH            | 0           |         |
| Customer complaints                  | 0           |         |

| Current and future planned capital investment |                             |             |               |            |
|---|-----------------------------|-------------|---------------|------------|
| Project                                       | Overview                    | Progress    | Est. Delivery | Est. Spend |
| WTP Upgrade                                   | UV Installation             | In Progress | 2022/2023     | TBD        |
| Fluoride Upgrade                              | Replacement of Storage Tank | In Progress | 2021/2022     | TBD        |



## 48.2. Summary of annual reticulation compliance (2020–21)

Table 48.2-a Sampling program

| Planned sampling program (2020–21)  |                        |        |        |     |                |                  |                   |
|-------------------------------------|------------------------|--------|--------|-----|----------------|------------------|-------------------|
| Site name                           | Site Code              | Micros | Metals | DBP | Fluoride (Lab) | Chemical Profile | Process Chemicals |
| Blackstone Heights, Longvista Drive | PVW52W01               | W      | n/a    | n/a | n/a            | n/a              | n/a               |
| Prospect Vale, Country Club         | PVW51W02               | W      | n/a    | n/a | n/a            | n/a              | n/a               |
| Kings Meadows, Connector Park       | LRW51W07               | W      | n/a    | n/a | n/a            | n/a              | n/a               |
| Prospect Vale, Chris St Res         | LRR58W01               | W      | n/a    | n/a | n/a            | n/a              | n/a               |
| Carrick, Public Hall                | CAW51W01 <sup>33</sup> | W      | n/a    | n/a | n/a            | n/a              | n/a               |
| 35 East Street                      | SEST01                 | W      | n/a    | n/a | n/a            | n/a              | n/a               |
| Prospect Vale, Willow Lane          | PVW51W01               | W      | n/a    | n/a | 2M             | n/a              | n/a               |
| Hadspen, South Esk Drive            | HSW51W01               | W      | Q      | Q   | 2M             | Q                | n/a               |
| Number Planned Samples              |                        | 364    | 4      | 4   | 48             | 4                | n/a               |
| Number Samples Tested               |                        | 364    | 4      | 4   | 48             | 4                | n/a               |

## 48.3. Summary of current and historic performance (2016–21)

Table 48.3-a Historical health performance overview (5 year comparison)

| Historical health performance overview (5 year comparison)   |         |         |         |         |         |
|--|---------|---------|---------|---------|---------|
| Indicator  | 2016–17 | 2017–18 | 2018–19 | 2019–20 | 2020–21 |
| Microbiological  | 100.0%  | 100.0%  | 100.0%  | 100.0%  | 100.0%  |
| Fluoride   | 100.0%  | 100.0%  | 100.0%  | 100.0%  | 100.0%  |
| Metals   | 100.0%  | 100.0%  | 100.0%  | 100.0%  | 100.0%  |
| Disinfection by products   | 100.0%  | 100.0%  | 100.0%  | 100.0%  | 100.0%  |
| <div> <span style="color: green;">■</span> Compliant           <span style="color: red;">■</span> Non-compliant         </div> |         |         |         |         |         |

<sup>33</sup> Replaced by SEST01 1<sup>st</sup> November 2020

## 48.4. Analysis of current health performance (2020–21)

Table 48.4-a Summary of health guideline exceedances

| Summary of health guideline exceedances |      |         |           |
|---|------|---------|-----------|
| Parameter Exceeding                     | Date | Details | Resampled |
| No ADWG exceedances                     |      |         |           |

Table 48.4-b Fluoride distribution performance

| Distribution fluoride performance  |         |
|--|---------|
| Indicator  | 2020–21 |
| F exceeding 1.5 mg/L   | 0       |
| Average F concentration range (0.8 mg/L – 1.1 mg/L)  | 0.9     |
| 90% of F results are equal to or less than 1.1 mg/L  | 100%    |
| <div> <span style="color: green;">■</span> Compliant           <span style="color: red;">■</span> Non-compliant         </div> |         |

Table 48.4-c Metals performance

| Metals – health regulated parameters |       |      |         |             |               |         |          |         |
|--------------------------------------|-------|------|---------|-------------|---------------|---------|----------|---------|
| Parameter                            | Limit | Unit | Samples | Exceedances | Performance % | Mean    | Min.     | Max.    |
| Antimony                             | 0.003 | mg/L | 4       | 0           | 100           | <0.0005 | <0.0005  | <0.0005 |
| Arsenic                              | 0.01  | mg/L | 4       | 0           | 100           | <0.0003 | <0.0003  | <0.0003 |
| Barium                               | 2     | mg/L | 4       | 0           | 100           | 0.0098  | 0.0056   | 0.0143  |
| Cadmium                              | 0.002 | mg/L | 4       | 0           | 100           | <0.0001 | <0.0001  | <0.0001 |
| Chromium                             | 0.05  | mg/L | 4       | 0           | 100           | 0.0002  | <0.0001  | 0.0003  |
| Copper                               | 2     | mg/L | 4       | 0           | 100           | 0.0062  | 0.0032   | 0.0130  |
| Lead                                 | 0.01  | mg/L | 4       | 0           | 100           | 0.0012  | 0.0004   | 0.0030  |
| Manganese                            | 0.5   | mg/L | 4       | 0           | 100           | 0.0090  | 0.0012   | 0.0306  |
| Mercury                              | 0.001 | mg/L | 4       | 0           | 100           | 0.00012 | <0.00003 | 0.00031 |
| Molybdenum                           | 0.05  | mg/L | 4       | 0           | 100           | <0.0001 | <0.0001  | 0.0001  |
| Nickel                               | 0.02  | mg/L | 4       | 0           | 100           | 0.0004  | 0.0002   | 0.0008  |
| Selenium                             | 0.01  | mg/L | 4       | 0           | 100           | 0.0001  | <0.0001  | 0.0003  |

**Table 48.4-d Disinfection by product performance**

| Disinfection by products – health regulated parameters |       |      |         |             |               |      |      |      |
|--|-------|------|---------|-------------|---------------|------|------|------|
| Parameter  | Limit | Unit | Samples | Exceedances | Performance % | Mean | Min. | Max. |
| Dichloroacetic acid                                    | 100   | µg/L | 4       | 0           | 100           | 10   | 5    | 14   |
| Monochloroacetic acid                                  | 150   | µg/L | 4       | 0           | 100           | <3   | <3   | <3   |
| Trichloroacetic acid                                   | 100   | µg/L | 4       | 0           | 100           | 11   | 3    | 18   |
| Total trihalomethanes                                  | 250   | µg/L | 4       | 0           | 100           | 32   | 15   | 54   |

**Table 48.4-e General physical performance**

| General physical parameters |       |                 |      |      |      |
|-----------------------------|-------|-----------------|------|------|------|
| Parameter                   | Unit  | Guideline Value | Mean | Min  | Max  |
| Chlorine residual           | mg/L  | 0.1 – <0.8      | 0.74 | 0.10 | 1.55 |
| Colour True                 | HU    | 15              | <1   | <1   | 1    |
| pH                          | Units | 6.5 – 8.5       | 7.14 | 6.17 | 9.19 |
| Turbidity                   | NTU   | 1               | 0.37 | 0.10 | 2.10 |

## 48.5. Analysis of overall system performance (2020–21)

**Table 48.5-a Summary of system issues/public health warnings**

| Summary of system issues                          |             |                           |                           |
|---|-------------|---------------------------|---------------------------|
| Date  | Description | DoH notification required | DoH notification complete |
| No system issues or public health warnings issued |             |                           |                           |

## 49. St Helens drinking water system

### 49.1. System summary (2020–21)

| St Helens drinking water system    |                 |
|------------------------------------|-----------------|
| System status (as at 30 June 2021) | Potable         |
| Total number of connections        | 1,908           |
| Population serviced                | 2,417           |
| Fluoride                           | Sodium fluoride |

| Performance overview against health targets (2020–21)  |         |            |        |                 |             |
|--|---------|------------|--------|-----------------|-------------|
| Indicator  | Outcome | Compliance | Target | Sampling Events | Exceedances |
| Microbiological  | 100.0%  | ☑          | 98.0%  | 104             | 0           |
| Fluoride   | 100.0%  | ☑          | 100.0% | 48              | 0           |
| Metals   | 100.0%  | ☑          | 100.0% | 4               | 0           |
| DBPs   | 100.0%  | ☑          | 100.0% | 4               | 0           |
| <div><span style="color: green;">■</span> Compliant <span style="color: red;">■</span> Non-compliant</div> |         |            |        |                 |             |

| Overall system performance (2020–21) |             |         |
|--------------------------------------|-------------|---------|
| Indicator                            | Occurrences | Details |
| System issues                        | 0           |         |
| Public health warnings issued        | 0           |         |
| Notifications made to DoH            | 0           |         |
| Customer complaints                  | 0           |         |

| Current and future planned capital investment |                 |          |               |            |
|---|-----------------|----------|---------------|------------|
| Project                                       | Overview        | Progress | Est. Delivery | Est. Spend |
| WTP Upgrade                                   | UV Installation | Planning | 2022/2023     | \$600,000  |

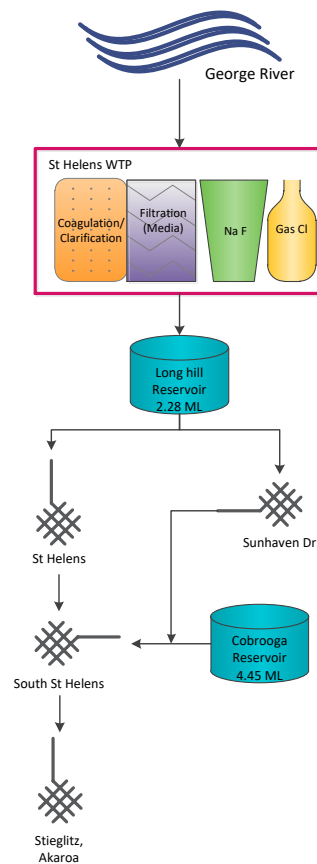


Figure 49.1-a St Helens system schematic

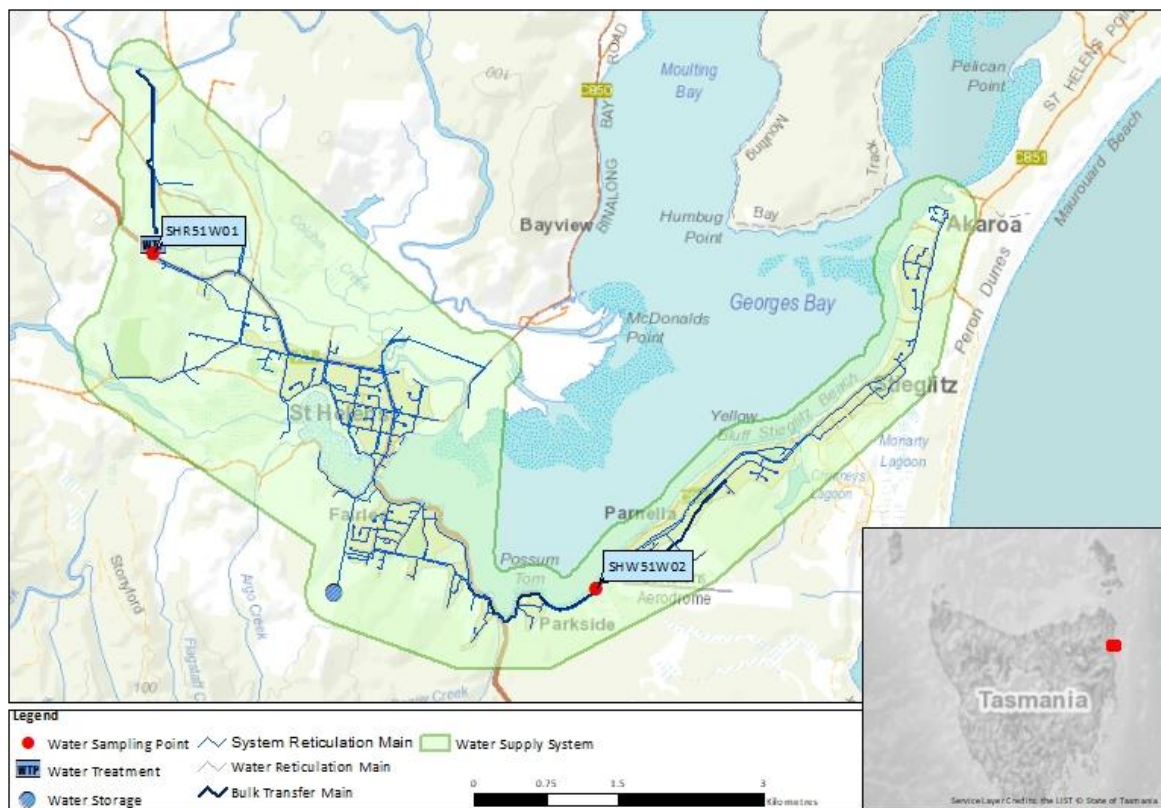


Figure 49.1-b Map of St Helens monitoring system

## 49.2. Summary of annual reticulation compliance (2020–21)

Table 49.2-a Sampling program

| Planned sampling program (2020–21) |           |        |        |     |                |                  |                   |
|------------------------------------|-----------|--------|--------|-----|----------------|------------------|-------------------|
| Site name                          | Site Code | Micros | Metals | DBP | Fluoride (Lab) | Chemical Profile | Process Chemicals |
| St Helens/Longhill Reservoir       | SHR51W01  | W      | n/a    | n/a | 2M             | n/a              | n/a               |
| St Helens/228 St Helens Point Rd   | SHW51W04  | W      | Q      | Q   | 2M             | Q                | n/a               |
| Number Planned Samples             |           | 104    | 4      | 4   | 48             | 4                | n/a               |
| Number Samples Tested              |           | 104    | 4      | 4   | 48             | 4                | n/a               |

## 49.3. Summary of current and historic performance (2016–21)

Table 49.3-a Historical health performance overview (5 year comparison)

| Historical health performance overview (5 year comparison)   |         |         |         |         |         |
|--|---------|---------|---------|---------|---------|
| Indicator  | 2016–17 | 2017–18 | 2018–19 | 2019–20 | 2020–21 |
| Microbiological  | 100.0%  | 100.0%  | 100.0%  | 100.0%  | 100.0%  |
| Fluoride   | 100.0%  | 100.0%  | 100.0%  | 100.0%  | 100.0%  |
| Metals   | 100.0%  | 100.0%  | 100.0%  | 100.0%  | 100.0%  |
| Disinfection by products   | 100.0%  | 100.0%  | 100.0%  | 100.0%  | 100.0%  |
| <div> <span style="color: green;">■</span> Compliant           <span style="color: red;">■</span> Non-compliant         </div> |         |         |         |         |         |

## 49.4. Analysis of current health performance (2020–21)

Table 49.4-a Summary of health guideline exceedances

| Summary of health guideline exceedances |      |         |           |
|---|------|---------|-----------|
| Parameter Exceeding                     | Date | Details | Resampled |
| No ADWG exceedances                     |      |         |           |



**Table 49.4-b Fluoride distribution performance**

| Distribution fluoride performance  |         |
|--|---------|
| Indicator  | 2020–21 |
| F exceeding 1.5 mg/L   | 0       |
| Average F concentration range (0.8 mg/L – 1.1 mg/L)  | 0.8     |
| 90% of F results are equal to or less than 1.1 mg/L  | 100%    |
| <div> <span style="color: green;">■</span> Compliant           <span style="color: red;">■</span> Non-compliant         </div> |         |

**Table 49.4-c Metals performance**

| Metals – health regulated parameters |       |      |         |             |               |         |          |         |
|--------------------------------------|-------|------|---------|-------------|---------------|---------|----------|---------|
| Parameter                            | Limit | Unit | Samples | Exceedances | Performance % | Mean    | Min.     | Max.    |
| Antimony                             | 0.003 | mg/L | 4       | 0           | 100           | <0.0005 | <0.0005  | <0.0005 |
| Arsenic                              | 0.01  | mg/L | 4       | 0           | 100           | <0.0003 | <0.0003  | <0.0003 |
| Barium                               | 2     | mg/L | 4       | 0           | 100           | 0.0061  | 0.0056   | 0.0065  |
| Cadmium                              | 0.002 | mg/L | 4       | 0           | 100           | <0.0001 | <0.0001  | <0.0001 |
| Chromium                             | 0.05  | mg/L | 4       | 0           | 100           | <0.0001 | <0.0001  | 0.0001  |
| Copper                               | 2     | mg/L | 4       | 0           | 100           | 0.0028  | 0.0013   | 0.0039  |
| Lead                                 | 0.01  | mg/L | 4       | 0           | 100           | 0.0007  | 0.0003   | 0.0010  |
| Manganese                            | 0.5   | mg/L | 4       | 0           | 100           | 0.0006  | 0.0004   | 0.0009  |
| Mercury                              | 0.001 | mg/L | 4       | 0           | 100           | 0.00003 | <0.00003 | 0.00004 |
| Molybdenum                           | 0.05  | mg/L | 4       | 0           | 100           | <0.0001 | <0.0001  | 0.0001  |
| Nickel                               | 0.02  | mg/L | 4       | 0           | 100           | <0.0001 | <0.0001  | 0.0001  |
| Selenium                             | 0.01  | mg/L | 4       | 0           | 100           | 0.0001  | <0.0001  | 0.0002  |

**Table 49.4-d Disinfection by product performance**

| Disinfection by products – health regulated parameters |       |      |         |             |               |      |      |      |
|--|-------|------|---------|-------------|---------------|------|------|------|
| Parameter  | Limit | Unit | Samples | Exceedances | Performance % | Mean | Min. | Max. |
| Dichloroacetic acid                                    | 100   | µg/L | 4       | 0           | 100           | 7    | 5    | 9    |
| Monochloroacetic acid                                  | 150   | µg/L | 4       | 0           | 100           | <3   | <3   | <3   |
| Trichloroacetic acid                                   | 100   | µg/L | 4       | 0           | 100           | 19   | 11   | 26   |
| Total trihalomethanes                                  | 250   | µg/L | 4       | 0           | 100           | 50   | 39   | 63   |

**Table 49.4-e General physical performance**

| General physical parameters |       |                 |      |      |      |
|-----------------------------|-------|-----------------|------|------|------|
| Parameter                   | Unit  | Guideline Value | Mean | Min  | Max  |
| Chlorine residual           | mg/L  | 0.1 – <0.8      | 0.82 | 0.02 | 1.51 |
| Colour True                 | HU    | 15              | <1   | <1   | <1   |
| pH                          | Units | 6.5 – 8.5       | 7.26 | 6.66 | 7.78 |
| Turbidity                   | NTU   | 1               | 0.37 | 0.11 | 0.97 |

## 49.5. Analysis of overall system performance (2020–21)

**Table 49.5-a Summary of system issues/public health warnings**

| Summary of system issues                          |             |                           |                           |
|---|-------------|---------------------------|---------------------------|
| Date  | Description | DoH notification required | DoH notification complete |
| No system issues or public health warnings issued |             |                           |                           |

## 50. St Marys drinking water system

### 50.1. System summary (2020–21)

| St Marys drinking water system     |                 |
|------------------------------------|-----------------|
| System status (as at 30 June 2021) | Potable         |
| Total number of connections        | 367             |
| Population serviced                | 605             |
| Fluoride                           | Sodium fluoride |

| Performance overview against health targets (2020–21)      |         |            |        |                 |             |
|--|---------|------------|--------|-----------------|-------------|
| Indicator  | Outcome | Compliance | Target | Sampling Events | Exceedances |
| Microbiological  | 100.0%  | ☑          | 98.0%  | 52              | 0           |
| Fluoride   | 100.0%  | ☑          | 100.0% | 48              | 0           |
| Metals   | 100.0%  | ☑          | 100.0% | 4               | 0           |
| DBPs   | 100.0%  | ☑          | 100.0% | 4               | 0           |
| <div><div></div> Compliant <div></div> Non-compliant</div> |         |            |        |                 |             |

| Overall system performance (2020–21) |             |         |
|--------------------------------------|-------------|---------|
| Indicator                            | Occurrences | Details |
| System issues                        | 0           |         |
| Public health warnings issued        | 0           |         |
| Notifications made to DoH            | 0           |         |
| Customer complaints                  | 0           |         |

| Current and future planned capital investment |             |          |               |            |
|---|-------------|----------|---------------|------------|
| Project                                       | Overview    | Progress | Est. Delivery | Est. Spend |
| WTP Upgrade                                   | WTP Upgrade | Planning | 2024/2025     | TBD        |

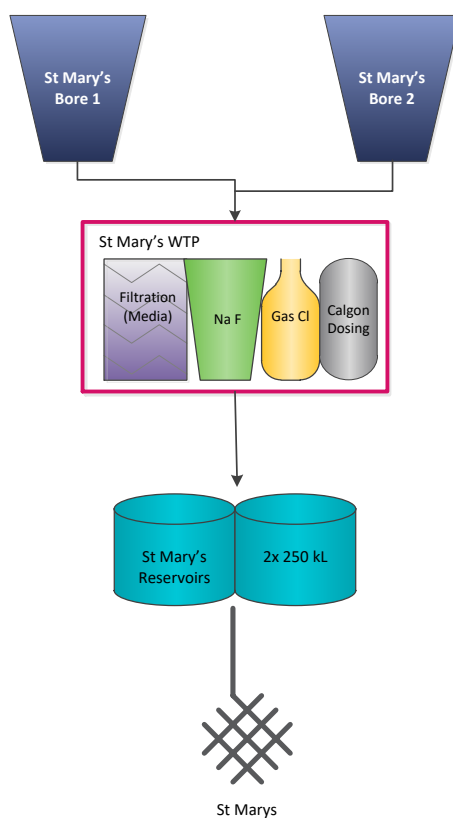


Figure 50.1-a St Marys system schematic

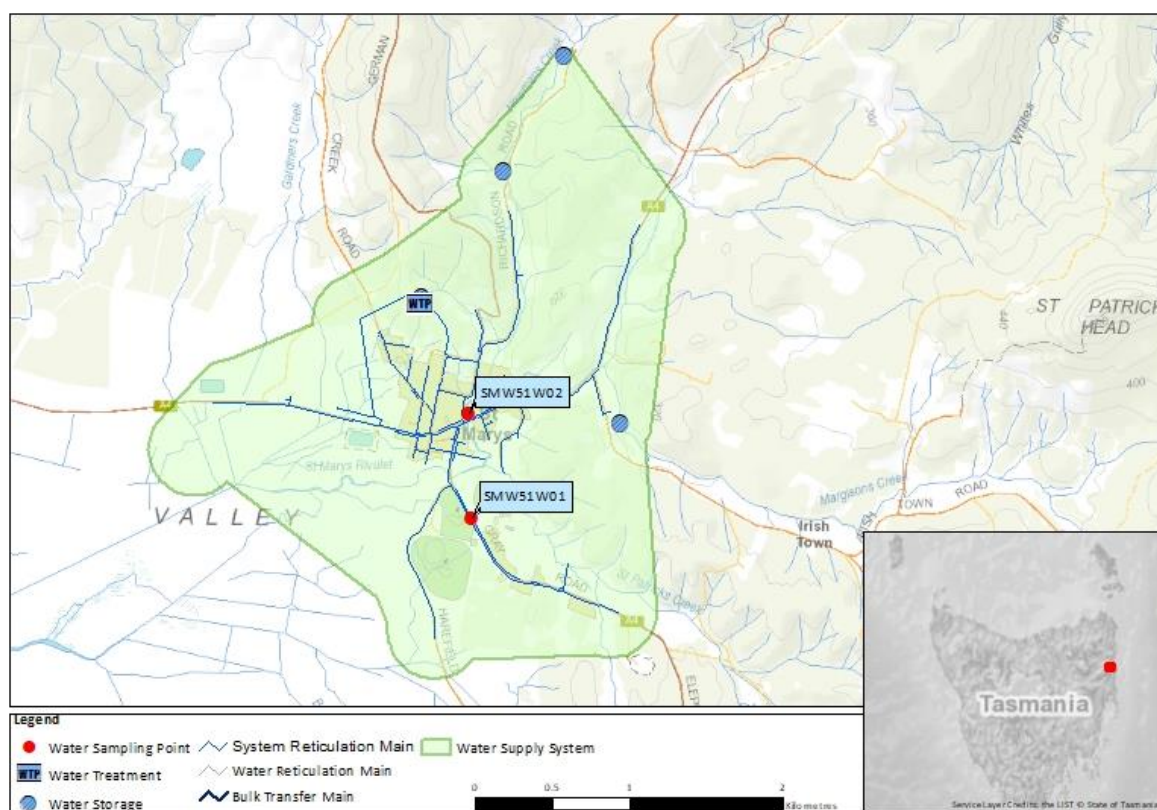


Figure 50.1-b Map of St Marys monitoring system

## 50.2. Summary of annual reticulation compliance (2020–21)

Table 50.2-a Sampling program

| Planned sampling program (2020–21) |           |        |        |     |                |                  |                   |
|------------------------------------|-----------|--------|--------|-----|----------------|------------------|-------------------|
| Site name                          | Site Code | Micros | Metals | DBP | Fluoride (Lab) | Chemical Profile | Process Chemicals |
| St Marys/Park Near Library         | SMW51W02  | n/a    | n/a    | n/a | 2M             | n/a              | n/a               |
| St Marys/St. Marys School          | SMW51W01  | W      | Q      | Q   | 2M             | Q                | n/a               |
| Number Planned Samples             |           | 52     | 4      | 4   | 48             | 4                | n/a               |
| Number Samples Tested              |           | 52     | 4      | 4   | 48             | 4                | n/a               |

## 50.3. Summary of current and historic performance (2016–21)

Table 50.3-a Historical health performance overview (5 year comparison)

| Historical health performance overview (5 year comparison)   |         |         |         |         |         |
|--|---------|---------|---------|---------|---------|
| Indicator  | 2016–17 | 2017–18 | 2018–19 | 2019–20 | 2020–21 |
| Microbiological  | 100.0%  | 100.0%  | 100.0%  | 100.0%  | 100.0%  |
| Fluoride   | 100.0%  | 100.0%  | 100.0%  | 100.0%  | 100.0%  |
| Metals   | 100.0%  | 100.0%  | 100.0%  | 100.0%  | 100.0%  |
| Disinfection by products   | 100.0%  | 100.0%  | 100.0%  | 100.0%  | 100.0%  |
| <div> <span style="color: green;">■</span> Compliant           <span style="color: red;">■</span> Non-compliant         </div> |         |         |         |         |         |

## 50.4. Analysis of current health performance (2020–21)

Table 50.4-a Summary of health guideline exceedances

| Summary of health guideline exceedances |      |         |           |
|---|------|---------|-----------|
| Parameter Exceeding                     | Date | Details | Resampled |
| No ADWG exceedances                     |      |         |           |

**Table 50.4-b Fluoride distribution performance**

| Distribution fluoride performance  |         |
|--|---------|
| Indicator  | 2020–21 |
| F exceeding 1.5 mg/L   | 0       |
| Average F concentration range (0.8 mg/L – 1.1 mg/L)  | 0.8     |
| 90% of F results are equal to or less than 1.1 mg/L  | 100%    |
| <div> <span style="color: green;">■</span> Compliant           <span style="color: red;">■</span> Non-compliant         </div> |         |

**Table 50.4-c Metals performance**

| Metals – health regulated parameters |       |      |         |             |               |         |          |         |
|--------------------------------------|-------|------|---------|-------------|---------------|---------|----------|---------|
| Parameter                            | Limit | Unit | Samples | Exceedances | Performance % | Mean    | Min.     | Max.    |
| Antimony                             | 0.003 | mg/L | 4       | 0           | 100           | <0.0005 | <0.0005  | <0.0005 |
| Arsenic                              | 0.01  | mg/L | 4       | 0           | 100           | <0.0003 | <0.0003  | <0.0003 |
| Barium                               | 2     | mg/L | 4       | 0           | 100           | 0.1481  | 0.1404   | 0.1519  |
| Cadmium                              | 0.002 | mg/L | 4       | 0           | 100           | <0.0001 | <0.0001  | <0.0001 |
| Chromium                             | 0.05  | mg/L | 4       | 0           | 100           | <0.0001 | <0.0001  | <0.0001 |
| Copper                               | 2     | mg/L | 4       | 0           | 100           | 0.0138  | 0.0121   | 0.0170  |
| Lead                                 | 0.01  | mg/L | 4       | 0           | 100           | 0.0003  | 0.0002   | 0.0004  |
| Manganese                            | 0.5   | mg/L | 4       | 0           | 100           | 0.0056  | 0.0039   | 0.0073  |
| Mercury                              | 0.001 | mg/L | 4       | 0           | 100           | 0.00015 | <0.00003 | 0.00041 |
| Molybdenum                           | 0.05  | mg/L | 4       | 0           | 100           | 0.0002  | 0.0002   | 0.0002  |
| Nickel                               | 0.02  | mg/L | 4       | 0           | 100           | 0.0002  | <0.0001  | 0.0002  |
| Selenium                             | 0.01  | mg/L | 4       | 0           | 100           | 0.0001  | <0.0001  | 0.0002  |

**Table 50.4-d Disinfection by product performance**

| Disinfection by products – health regulated parameters |       |      |         |             |               |      |      |      |
|--|-------|------|---------|-------------|---------------|------|------|------|
| Parameter  | Limit | Unit | Samples | Exceedances | Performance % | Mean | Min. | Max. |
| Dichloroacetic acid                                    | 100   | µg/L | 4       | 0           | 100           | 2    | 1    | 2    |
| Monochloroacetic acid                                  | 150   | µg/L | 4       | 0           | 100           | <3   | <3   | <3   |
| Trichloroacetic acid                                   | 100   | µg/L | 4       | 0           | 100           | <1   | <1   | 1    |
| Total trihalomethanes                                  | 250   | µg/L | 4       | 0           | 100           | 14   | 11   | 16   |

**Table 50.4-e General physical performance**

| General physical parameters |       |                 |      |      |      |
|-----------------------------|-------|-----------------|------|------|------|
| Parameter                   | Unit  | Guideline Value | Mean | Min  | Max  |
| Chlorine residual           | mg/L  | 0.1 – <0.8      | 0.67 | 0.31 | 1.38 |
| Colour True                 | HU    | 15              | 1.38 | <1   | 4    |
| pH                          | Units | 6.5 – 8.5       | 7.03 | 6.55 | 7.38 |
| Turbidity                   | NTU   | 1               | 0.62 | 0.34 | 1.07 |

## 50.5. Analysis of overall system performance (2020–21)

**Table 50.5-a Summary of system issues/public health warnings**

| Summary of system issues                          |             |                           |                           |
|---|-------------|---------------------------|---------------------------|
| Date  | Description | DoH notification required | DoH notification complete |
| No system issues or public health warnings issued |             |                           |                           |

## 51. Swansea drinking water system

### 51.1. System summary (2020–21)

| Swansea drinking water system      |                 |
|------------------------------------|-----------------|
| System status (as at 30 June 2021) | Potable         |
| Total number of connections        | 897             |
| Population serviced                | 1,274           |
| Fluoride                           | Sodium fluoride |

| Performance overview against health targets (2020–21)      |         |            |        |                 |             |
|--|---------|------------|--------|-----------------|-------------|
| Indicator  | Outcome | Compliance | Target | Sampling Events | Exceedances |
| Microbiological  | 100.0%  | ☑          | 98.0%  | 104             | 0           |
| Fluoride   | 100.0%  | ☑          | 100.0% | 48              | 0           |
| Metals   | 100.0%  | ☑          | 100.0% | 4               | 0           |
| DBPs   | 100.0%  | ☑          | 100.0% | 4               | 0           |
| <div><div></div> Compliant <div></div> Non-compliant</div> |         |            |        |                 |             |

| Overall system performance (2020–21) |             |         |
|--------------------------------------|-------------|---------|
| Indicator                            | Occurrences | Details |
| System issues                        | 0           |         |
| Public health warnings issued        | 0           |         |
| Notifications made to DoH            | 0           |         |
| Customer complaints                  | 0           |         |

| Current and future planned capital investment |                 |          |               |             |
|---|-----------------|----------|---------------|-------------|
| Project                                       | Overview        | Progress | Est. Delivery | Est. Spend  |
| WTP Upgrade                                   | UV Installation | Planning | 2022/2023     | \$1,000,000 |



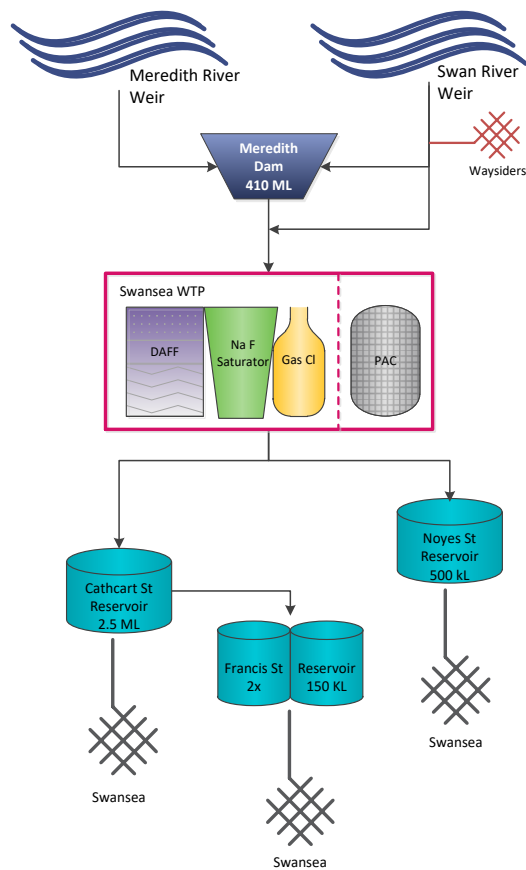


Figure 51.1-a Swansea system schematic

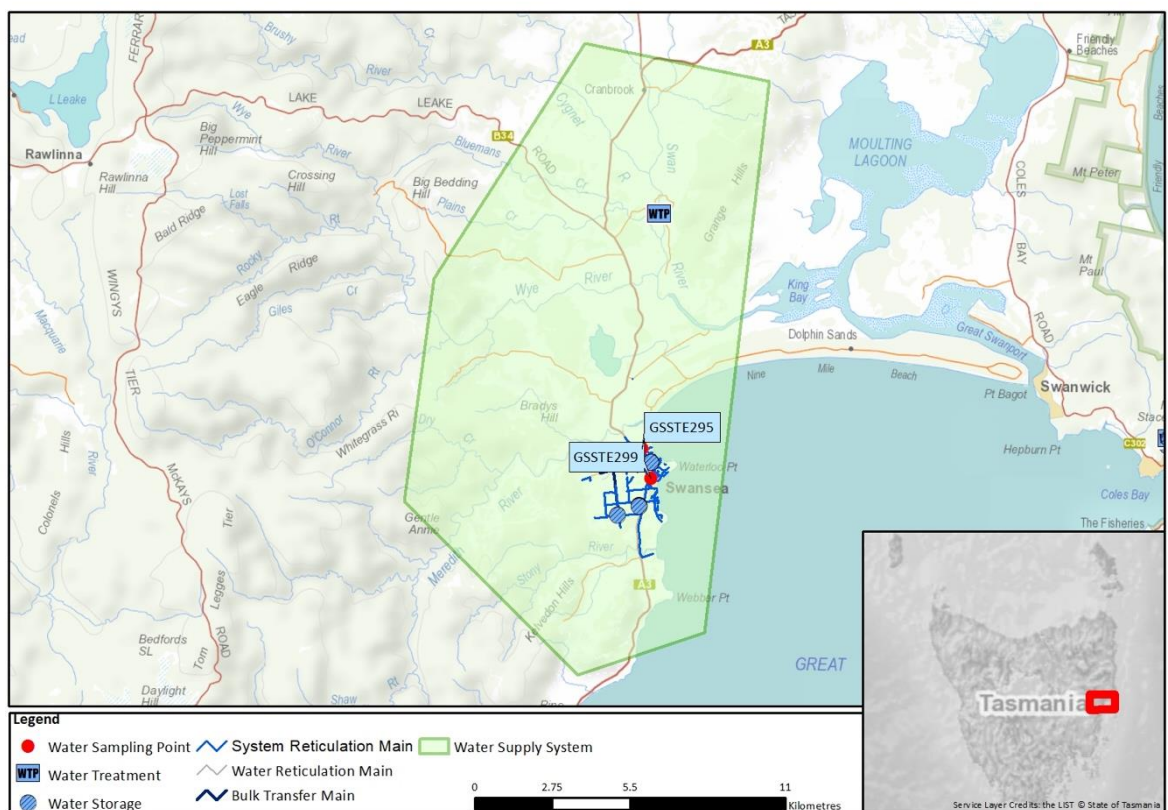


Figure 51.1-b Map of Swansea monitoring system

## 51.2. Summary of annual reticulation compliance (2020–21)

Table 51.2-a Sampling program

| Planned sampling program (2020–21) |           |        |        |     |                |                  |                   |
|------------------------------------|-----------|--------|--------|-----|----------------|------------------|-------------------|
| Site name                          | Site Code | Micros | Metals | DBP | Fluoride (Lab) | Chemical Profile | Process Chemicals |
| Swansea/Bark Mill                  | GSSTE295  | W      | n/a    | n/a | 2M             | n/a              | n/a               |
| Swansea/1 Esplanade                | GSSTE299  | W      | Q      | Q   | 2M             | Q                | n/a               |
| Number Planned Samples             |           | 104    | 4      | 4   | 48             | 4                | n/a               |
| Number Samples Tested              |           | 104    | 4      | 4   | 48             | 8                | n/a               |

## 51.3. Summary of current and historic performance (2016–21)

Table 51.3-a Historical health performance overview (5 year comparison)

| Historical health performance overview (5 year comparison)   |         |         |         |         |         |
|--|---------|---------|---------|---------|---------|
| Indicator  | 2016–17 | 2017–18 | 2018–19 | 2019–20 | 2020–21 |
| Microbiological  | 100.0%  | 100.0%  | 100.0%  | 100.0%  | 100.0%  |
| Fluoride   | 100.0%  | 100.0%  | 100.0%  | 100.0%  | 100.0%  |
| Metals   | 100.0%  | 100.0%  | 100.0%  | 100.0%  | 100.0%  |
| Disinfection by products   | 100.0%  | 100.0%  | 100.0%  | 100.0%  | 100.0%  |
| <div> <span style="color: green;">■</span> Compliant           <span style="color: red;">■</span> Non-compliant         </div> |         |         |         |         |         |

## 51.4. Analysis of current health performance (2020–21)

Table 51.4-a Summary of health guideline exceedances

| Summary of health guideline exceedances |      |         |           |
|---|------|---------|-----------|
| Parameter Exceeding                     | Date | Details | Resampled |
| No ADWG exceedances                     |      |         |           |

**Table 51.4-b Fluoride distribution performance**

| Distribution fluoride performance  |         |
|--|---------|
| Indicator  | 2020–21 |
| F exceeding 1.5 mg/L   | 0       |
| Average F concentration range (0.8 mg/L – 1.1 mg/L)  | 0.8     |
| 90% of F results are equal to or less than 1.1 mg/L  | 100%    |
| <div> <span style="color: green;">■</span> Compliant           <span style="color: red;">■</span> Non-compliant         </div> |         |

**Table 51.4-c Metals performance**

| Metals – health regulated parameters |       |      |         |             |               |         |          |         |
|--------------------------------------|-------|------|---------|-------------|---------------|---------|----------|---------|
| Parameter                            | Limit | Unit | Samples | Exceedances | Performance % | Mean    | Min.     | Max.    |
| Antimony                             | 0.003 | mg/L | 4       | 0           | 100           | <0.0005 | <0.0005  | <0.0005 |
| Arsenic                              | 0.01  | mg/L | 4       | 0           | 100           | <0.0003 | <0.0003  | <0.0003 |
| Barium                               | 2     | mg/L | 4       | 0           | 100           | 0.0037  | 0.0033   | 0.0039  |
| Cadmium                              | 0.002 | mg/L | 4       | 0           | 100           | <0.0001 | <0.0001  | <0.0001 |
| Chromium                             | 0.05  | mg/L | 4       | 0           | 100           | <0.0001 | <0.0001  | 0.0001  |
| Copper                               | 2     | mg/L | 4       | 0           | 100           | 0.0179  | 0.0162   | 0.2108  |
| Lead                                 | 0.01  | mg/L | 4       | 0           | 100           | 0.0010  | 0.0009   | 0.0012  |
| Manganese                            | 0.5   | mg/L | 4       | 0           | 100           | 0.0002  | 0.0001   | 0.0003  |
| Mercury                              | 0.001 | mg/L | 4       | 0           | 100           | 0.00006 | <0.00003 | 0.00010 |
| Molybdenum                           | 0.05  | mg/L | 4       | 0           | 100           | <0.0001 | <0.0001  | 0.0001  |
| Nickel                               | 0.02  | mg/L | 4       | 0           | 100           | 0.0002  | 0.0002   | 0.0003  |
| Selenium                             | 0.01  | mg/L | 4       | 0           | 100           | <0.0001 | <0.0001  | <0.0001 |

**Table 51.4-d Disinfection by product performance**

| Disinfection by products – health regulated parameters |       |      |         |             |               |      |      |      |
|--|-------|------|---------|-------------|---------------|------|------|------|
| Parameter  | Limit | Unit | Samples | Exceedances | Performance % | Mean | Min. | Max. |
| Dichloroacetic acid                                    | 100   | µg/L | 4       | 0           | 100           | 7    | 4    | 10   |
| Monochloroacetic acid                                  | 150   | µg/L | 4       | 0           | 100           | <3   | <3   | <3   |
| Trichloroacetic acid                                   | 100   | µg/L | 4       | 0           | 100           | 6    | 3    | 8    |
| Total trihalomethanes                                  | 250   | µg/L | 4       | 0           | 100           | 45   | 40   | 54   |

**Table 51.4-e General physical performance**

| General physical parameters |       |                 |      |      |      |
|-----------------------------|-------|-----------------|------|------|------|
| Parameter                   | Unit  | Guideline Value | Mean | Min  | Max  |
| Chlorine residual           | mg/L  | 0.1 – <0.8      | 0.74 | 0.20 | 1.42 |
| Colour True                 | HU    | 15              | <1   | <1   | <1   |
| pH                          | Units | 6.5 – 8.5       | 7.04 | 6.84 | 7.33 |
| Turbidity                   | NTU   | 1               | 0.15 | 0.07 | 0.41 |

## 51.5. Analysis of overall system performance (2020–21)

**Table 51.5-a Summary of system issues/public health warnings**

| Summary of system issues                          |             |                           |                           |
|---|-------------|---------------------------|---------------------------|
| Date  | Description | DoH notification required | DoH notification complete |
| No system issues or public health warnings issued |             |                           |                           |

## 52. Triabunna drinking water system

### 52.1. System summary (2020–21)

| Triabunna drinking water system    |                 |
|------------------------------------|-----------------|
| System status (as at 30 June 2021) | Potable         |
| Total number of connections        | 548             |
| Population serviced                | 951             |
| Fluoride                           | Sodium fluoride |

| Performance overview against health targets (2020–21)      |         |            |        |                 |             |
|--|---------|------------|--------|-----------------|-------------|
| Indicator  | Outcome | Compliance | Target | Sampling Events | Exceedances |
| Microbiological  | 100.0%  | ☑          | 98.0%  | 104             | 0           |
| Fluoride   | 100.0%  | ☑          | 100.0% | 48              | 0           |
| Metals   | 100.0%  | ☑          | 100.0% | 4               | 0           |
| DBPs   | 100.0%  | ☑          | 100.0% | 4               | 0           |
| <div><div></div> Compliant <div></div> Non-compliant</div> |         |            |        |                 |             |

| Overall system performance (2020–21) |             |         |
|--------------------------------------|-------------|---------|
| Indicator                            | Occurrences | Details |
| System issues                        | 0           |         |
| Public health warnings issued        | 0           |         |
| Notifications made to DoH            | 0           |         |
| Customer complaints                  | 0           |         |

| Current and future planned capital investment |                   |             |               |             |
|---|-------------------|-------------|---------------|-------------|
| Project                                       | Overview          | Progress    | Est. Delivery | Est. Spend  |
| WTP Upgrade                                   | UV Installation   | Planning    | 2022/2023     | \$1,000,000 |
| WTP Upgrade                                   | Reservoir Upgrade | In Progress | 2021/2022     | \$3,000,000 |

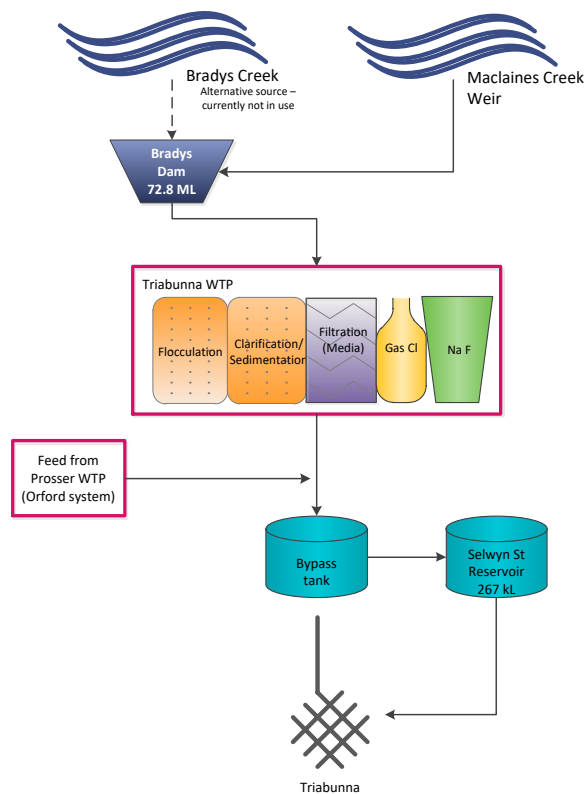


Figure 52.1-a Triabunna system schematic

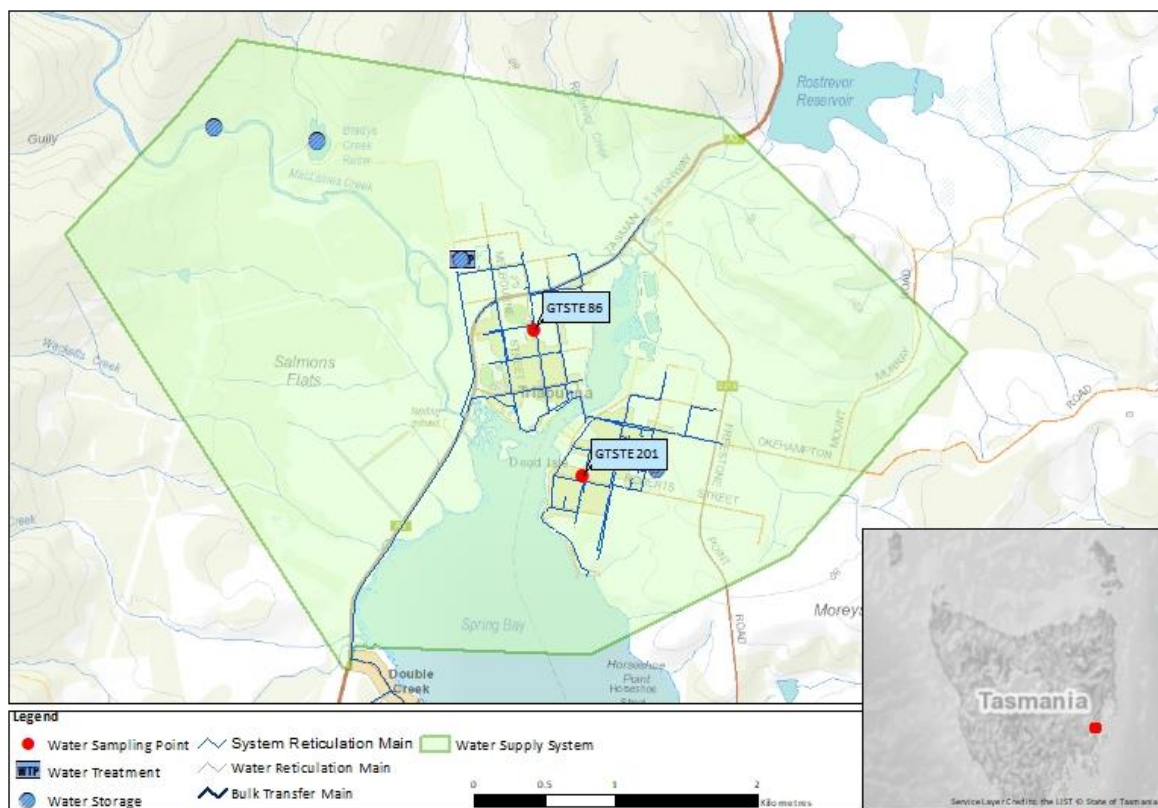


Figure 52.1-b Map of Triabunna monitoring system

## 52.2. Summary of annual reticulation compliance (2020–21)

Table 52.2-a Sampling program

| Planned sampling program (2020–21)         |           |        |        |     |                |                  |                   |
|--|-----------|--------|--------|-----|----------------|------------------|-------------------|
| Site name                                  | Site Code | Micros | Metals | DBP | Fluoride (Lab) | Chemical Profile | Process Chemicals |
| Triabunna Ada street                       | GTSTE201  | W      | n/a    | n/a | 2M             | n/a              | n/a               |
| Triabunna/Cemetery, Charles St, Sample Tap | GTSTE86   | W      | Q      | Q   | 2M             | Q                | n/a               |
| Number Planned Samples                     |           | 104    | 4      | 4   | 48             | 4                | n/a               |
| Number Samples Tested                      |           | 104    | 4      | 4   | 48             | 4                | n/a               |

## 52.3. Summary of current and historic performance (2016–21)

Table 52.3-a Historical health performance overview (5 year comparison)

| Historical health performance overview (5 year comparison)   |         |         |         |         |         |
|--|---------|---------|---------|---------|---------|
| Indicator  | 2016–17 | 2017–18 | 2018–19 | 2019–20 | 2020–21 |
| Microbiological  | 100.0%  | 100.0%  | 100.0%  | 100.0%  | 100.0%  |
| Fluoride   | 100.0%  | 100.0%  | 100.0%  | 100.0%  | 100.0%  |
| Metals   | 100.0%  | 100.0%  | 100.0%  | 100.0%  | 100.0%  |
| Disinfection by products   | 100.0%  | 100.0%  | 100.0%  | 100.0%  | 100.0%  |
| <div> <span style="color: green;">■</span> Compliant           <span style="color: red;">■</span> Non-compliant         </div> |         |         |         |         |         |

## 52.4. Analysis of current health performance (2020–21)

Table 52.4-a Summary of health guideline exceedances

| Summary of health guideline exceedances |      |         |           |
|---|------|---------|-----------|
| Parameter Exceeding                     | Date | Details | Resampled |
| No ADWG exceedances                     |      |         |           |

**Table 52.4-b Fluoride distribution performance**

| Distribution fluoride performance  |         |
|--|---------|
| Indicator  | 2020–21 |
| F exceeding 1.5 mg/L   | 0       |
| Average F concentration range (0.8 mg/L – 1.1 mg/L)  | 0.9     |
| 90% of F results are equal to or less than 1.1 mg/L  | 100%    |
| <div> <span style="color: green;">■</span> Compliant           <span style="color: red;">■</span> Non-compliant         </div> |         |

**Table 52.4-c Metals performance**

| Metals – health regulated parameters |       |      |         |             |               |         |          |         |
|--------------------------------------|-------|------|---------|-------------|---------------|---------|----------|---------|
| Parameter                            | Limit | Unit | Samples | Exceedances | Performance % | Mean    | Min.     | Max.    |
| Antimony                             | 0.003 | mg/L | 4       | 0           | 100           | <0.0005 | <0.0005  | <0.0005 |
| Arsenic                              | 0.01  | mg/L | 4       | 0           | 100           | <0.0003 | <0.0003  | <0.0003 |
| Barium                               | 2     | mg/L | 4       | 0           | 100           | 0.0124  | 0.0089   | 0.0186  |
| Cadmium                              | 0.002 | mg/L | 4       | 0           | 100           | <0.0001 | <0.0001  | <0.0001 |
| Chromium                             | 0.05  | mg/L | 4       | 0           | 100           | 0.0001  | <0.0001  | 0.0002  |
| Copper                               | 2     | mg/L | 4       | 0           | 100           | 0.0054  | 0.0035   | 0.0074  |
| Lead                                 | 0.01  | mg/L | 4       | 0           | 100           | 0.0005  | 0.0003   | 0.0008  |
| Manganese                            | 0.5   | mg/L | 4       | 0           | 100           | 0.0073  | 0.0020   | 0.0140  |
| Mercury                              | 0.001 | mg/L | 4       | 0           | 100           | 0.00023 | <0.00003 | 0.00042 |
| Molybdenum                           | 0.05  | mg/L | 4       | 0           | 100           | <0.0001 | <0.0001  | <0.0001 |
| Nickel                               | 0.02  | mg/L | 4       | 0           | 100           | 0.0004  | 0.0003   | 0.0005  |
| Selenium                             | 0.01  | mg/L | 4       | 0           | 100           | <0.0001 | <0.0001  | 0.0001  |

**Table 52.4-d Disinfection by product performance**

| Disinfection by products – health regulated parameters |       |      |         |             |               |      |      |      |
|--|-------|------|---------|-------------|---------------|------|------|------|
| Parameter  | Limit | Unit | Samples | Exceedances | Performance % | Mean | Min. | Max. |
| Dichloroacetic acid                                    | 100   | µg/L | 4       | 0           | 100           | 18   | 8    | 27   |
| Monochloroacetic acid                                  | 150   | µg/L | 4       | 0           | 100           | <3   | <3   | <3   |
| Trichloroacetic acid                                   | 100   | µg/L | 4       | 0           | 100           | 38   | 16   | 66   |
| Total trihalomethanes                                  | 250   | µg/L | 4       | 0           | 100           | 120  | 83   | 143  |



**Table 52.4-e General physical performance**

| General physical parameters |       |                 |      |      |      |
|-----------------------------|-------|-----------------|------|------|------|
| Parameter                   | Unit  | Guideline Value | Mean | Min  | Max  |
| Chlorine residual           | mg/L  | 0.1 – <0.8      | 0.77 | 0.02 | 1.91 |
| Colour True                 | HU    | 15              | 1.13 | <1   | 2    |
| pH                          | Units | 6.5 – 8.5       | 7.17 | 6.48 | 7.63 |
| Turbidity                   | NTU   | 1               | 0.22 | 0.09 | 0.49 |

## 52.5. Analysis of overall system performance (2020–21)

**Table 52.5-a Summary of system issues/public health warnings**

| Summary of system issues                          |             |                           |                           |
|---|-------------|---------------------------|---------------------------|
| Date  | Description | DoH notification required | DoH notification complete |
| No system issues or public health warnings issued |             |                           |                           |

## 53. Tullah drinking water system

### 53.1. System summary (2020–21)

| Tullah drinking water system       |         |
|------------------------------------|---------|
| System status (as at 30 June 2021) | Potable |
| Total number of connections        | 218     |
| Population serviced                | 236     |
| Fluoride                           | n/a     |

| Performance overview against health targets (2020–21)      |         |            |        |                 |             |
|--|---------|------------|--------|-----------------|-------------|
| Indicator  | Outcome | Compliance | Target | Sampling Events | Exceedances |
| Microbiological  | 100.0%  | ☑          | 98.0%  | 104             | 0           |
| Fluoride   | n/a     | n/a        | n/a    | n/a             | n/a         |
| Metals   | 100.0%  | ☑          | 100.0% | 4               | 0           |
| DBPs   | 100.0%  | ☑          | 100.0% | 12              | 0           |
| <div><div></div> Compliant <div></div> Non-compliant</div> |         |            |        |                 |             |

| Overall system performance (2020–21) |             |         |
|--------------------------------------|-------------|---------|
| Indicator                            | Occurrences | Details |
| System issues                        | 0           |         |
| Public health warnings issued        | 0           |         |
| Notifications made to DoH            | 0           |         |
| Customer complaints                  | 0           |         |

| Current and future planned capital investment |             |          |               |            |
|---|-------------|----------|---------------|------------|
| Project                                       | Overview    | Progress | Est. Delivery | Est. Spend |
| WTP Upgrade                                   | WTP Upgrade | Planning | 2024/2025     | TBD        |

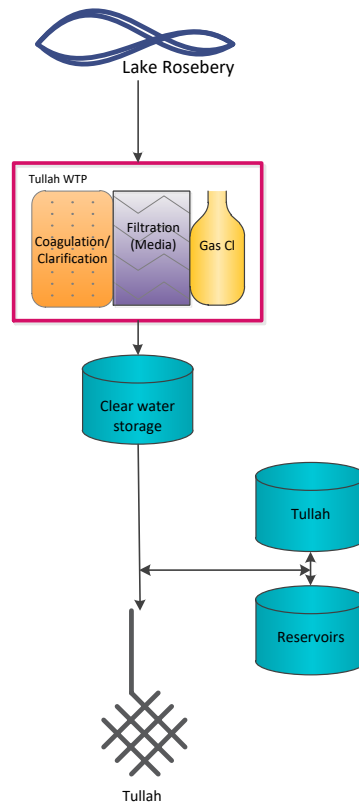


Figure 53.1-a Tullah system schematic

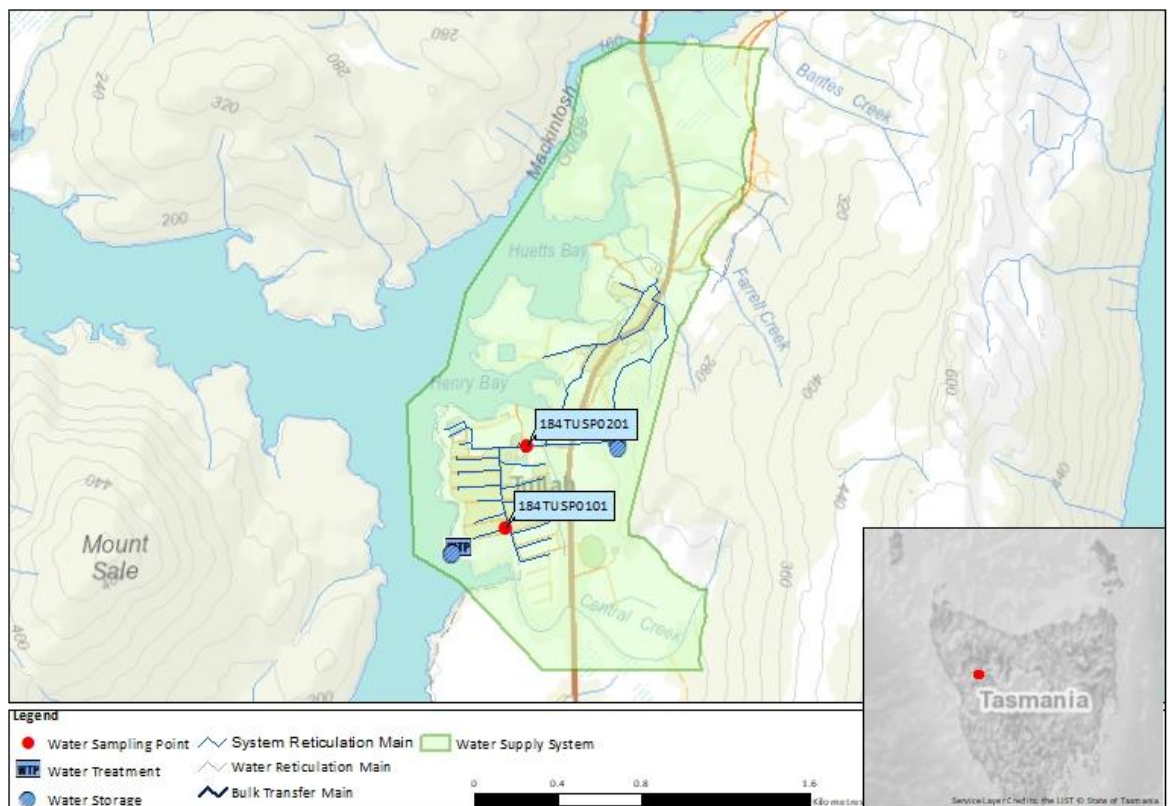


Figure 53.1-b Map of Tullah monitoring system

## 53.2. Summary of annual reticulation compliance (2020–21)

Table 53.2-a Sampling program

| Planned sampling program (2020–21) |             |        |        |     |                |                  |                   |
|------------------------------------|-------------|--------|--------|-----|----------------|------------------|-------------------|
| Site name                          | Site Code   | Micros | Metals | DBP | Fluoride (Lab) | Chemical Profile | Process Chemicals |
| Tullah/Bluff St Sample Point 1     | 184TUSP0101 | W      | Q      | n/a | n/a            | Q                | n/a               |
| Tullah/Farrell Sample Point 2      | 184TUSP0201 | W      | n/a    | M   | n/a            | n/a              | n/a               |
| Number Planned Samples             |             | 104    | 4      | 12  | n/a            | 4                | n/a               |
| Number Samples Tested              |             | 104    | 4      | 12  | n/a            | 4                | n/a               |

## 53.3. Summary of current and historic performance (2016–21)

Table 53.3-a Historical health performance overview (5 year comparison)

| Historical health performance overview (5 year comparison)   |         |                      |         |         |         |
|--|---------|----------------------|---------|---------|---------|
| Indicator  | 2016–17 | 2017–18              | 2018–19 | 2019–20 | 2020–21 |
| Microbiological  | 100.0%  | 100.0%               | 100.0%  | 100.0%  | 100.0%  |
| Fluoride   | n/a     | n/a                  | n/a     | n/a     | n/a     |
| Metals   | 100.0%  | 100.0%               | 100.0%  | 100.0%  | 100.0%  |
| Disinfection by products   | 100.0%  | 100.0% <sup>34</sup> | 100.0%  | 100.0%  | 100.0%  |
| <div> <span style="color: green;">■</span> Compliant           <span style="color: red;">■</span> Non-compliant         </div> |         |                      |         |         |         |

## 53.4. Analysis of current health performance (2020–21)

Table 53.4-a Summary of health guideline exceedances

| Summary of health guideline exceedances |      |         |           |
|---|------|---------|-----------|
| Parameter Exceeding                     | Date | Details | Resampled |
| No ADWG exceedances                     |      |         |           |

<sup>34</sup> Sampling requirements not met (sample missed in May 2018 for DBPs)

**Table 53.4-b Metals performance**

| Metals – health regulated parameters |       |      |         |             |               |         |          |         |
|--------------------------------------|-------|------|---------|-------------|---------------|---------|----------|---------|
| Parameter                            | Limit | Unit | Samples | Exceedances | Performance % | Mean    | Min.     | Max.    |
| Antimony                             | 0.003 | mg/L | 4       | 0           | 100           | <0.0005 | <0.0005  | <0.0005 |
| Arsenic                              | 0.01  | mg/L | 4       | 0           | 100           | <0.0003 | <0.0003  | <0.0003 |
| Barium                               | 2     | mg/L | 4       | 0           | 100           | 0.0038  | 0.0033   | 0.0045  |
| Cadmium                              | 0.002 | mg/L | 4       | 0           | 100           | <0.0001 | <0.0001  | <0.0001 |
| Chromium                             | 0.05  | mg/L | 4       | 0           | 100           | <0.0001 | <0.0001  | <0.0001 |
| Copper                               | 2     | mg/L | 4       | 0           | 100           | 0.0007  | 0.0004   | 0.0013  |
| Lead                                 | 0.01  | mg/L | 4       | 0           | 100           | <0.0001 | <0.0001  | <0.0001 |
| Manganese                            | 0.5   | mg/L | 4       | 0           | 100           | 0.0068  | 0.0051   | 0.0103  |
| Mercury                              | 0.001 | mg/L | 4       | 0           | 100           | 0.00007 | <0.00003 | 0.00012 |
| Molybdenum                           | 0.05  | mg/L | 4       | 0           | 100           | <0.0001 | <0.0001  | <0.0001 |
| Nickel                               | 0.02  | mg/L | 4       | 0           | 100           | 0.0001  | <0.0001  | 0.0002  |
| Selenium                             | 0.01  | mg/L | 4       | 0           | 100           | <0.0001 | <0.0001  | <0.0001 |

**Table 53.4-c Disinfection by product performance**

| Disinfection by products – health regulated parameters |       |      |         |             |               |      |      |      |
|--|-------|------|---------|-------------|---------------|------|------|------|
| Parameter  | Limit | Unit | Samples | Exceedances | Performance % | Mean | Min. | Max. |
| Dichloroacetic acid                                    | 100   | µg/L | 12      | 0           | 100           | 10   | 2    | 29   |
| Monochloroacetic acid                                  | 150   | µg/L | 12      | 0           | 100           | <3   | <3   | 3    |
| Trichloroacetic acid                                   | 100   | µg/L | 12      | 0           | 100           | 47   | 32   | 68   |
| Total trihalomethanes                                  | 250   | µg/L | 12      | 0           | 100           | 108  | 81   | 136  |

**Table 53.4-d General physical performance**

| General physical parameters |       |                 |      |      |      |
|-----------------------------|-------|-----------------|------|------|------|
| Parameter                   | Unit  | Guideline Value | Mean | Min  | Max  |
| Chlorine residual           | mg/L  | 0.1 – <0.8      | 0.65 | 0.00 | 2.70 |
| Colour True                 | HU    | 15              | 3.25 | 2    | 5    |
| pH                          | Units | 6.5 – 8.5       | 7.79 | 6.79 | 8.35 |
| Turbidity                   | NTU   | 1               | 0.34 | 0.17 | 0.65 |

## 53.5. Analysis of overall system performance (2020–21)

Table 53.5-a Summary of system issues/public health warnings

| Summary of system issues                          |             |                           |                           |
|---|-------------|---------------------------|---------------------------|
| Date  | Description | DoH notification required | DoH notification complete |
| No system issues or public health warnings issued |             |                           |                           |

## 54. Tunbridge drinking water system

### 54.1. System summary (2020–21)

| Tunbridge drinking water system    |         |
|------------------------------------|---------|
| System status (as at 30 June 2021) | Potable |
| Total number of connections        | 118     |
| Population serviced                | 201     |
| Fluoride                           | n/a     |

| Performance overview against health targets (2020–21)      |         |            |        |                 |             |
|--|---------|------------|--------|-----------------|-------------|
| Indicator  | Outcome | Compliance | Target | Sampling Events | Exceedances |
| Microbiological  | 100.0%  | ☑          | 98.0%  | 52              | 0           |
| Fluoride   | n/a     | n/a        | n/a    | n/a             | n/a         |
| Metals   | 100.0%  | ☑          | 100.0% | 4               | 0           |
| DBPs   | 100.0%  | ☑          | 100.0% | 4               | 0           |
| <div><div></div> Compliant <div></div> Non-compliant</div> |         |            |        |                 |             |

| Overall system performance (2020–21) |             |  |
|--------------------------------------|-------------|--|
| Indicator                            | Occurrences | Details                                |
| System issues                        | 1           | Lead exceedance in an operational site |
| Public health warnings issued        | 0           |  |
| Notifications made to DoH            | 1           | Lead exceedance in an operational site |
| Customer complaints                  | 0           |  |

| Current and future planned capital investment |                   |             |               |             |
|---|-------------------|-------------|---------------|-------------|
| Project                                       | Overview          | Progress    | Est. Delivery | Est. Spend  |
| WTP Upgrade                                   | Reservoir Upgrade | In Progress | 2021/2022     | \$3,000,000 |

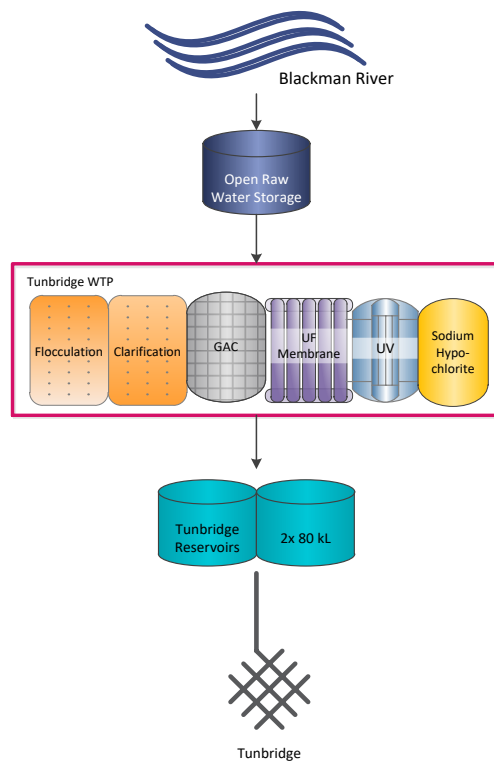


Figure 54.1-a Tunbridge system schematic

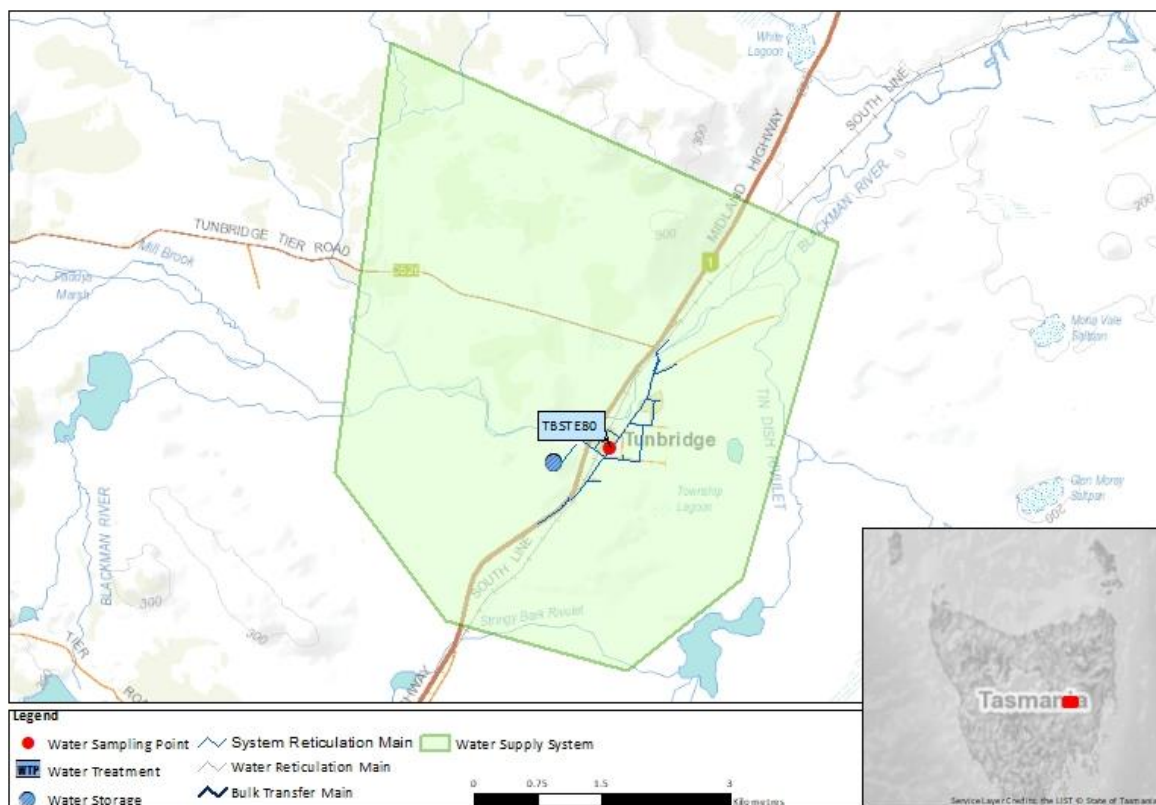


Figure 54.1-b Map of Tunbridge monitoring system



## 54.2. Summary of annual reticulation compliance (2020–21)

Table 54.2-a Sampling program

| Planned sampling program (2020–21) |           |        |        |     |                |                  |                   |
|------------------------------------|-----------|--------|--------|-----|----------------|------------------|-------------------|
| Site name                          | Site Code | Micros | Metals | DBP | Fluoride (Lab) | Chemical Profile | Process Chemicals |
| Tunbridge/Tunbridge St Sample Post | TBSTE80   | W      | Q      | Q   | n/a            | Q                | n/a               |
| Number Planned Samples             |           | 52     | 4      | 4   | n/a            | 4                | n/a               |
| Number Samples Tested              |           | 52     | 4      | 4   | n/a            | 4                | n/a               |

## 54.3. Summary of current and historic performance (2016–21)

Table 54.3-a Historical health performance overview (5 year comparison)

| Historical health performance overview (5 year comparison)   |         |         |         |         |         |
|--|---------|---------|---------|---------|---------|
| Indicator  | 2016–17 | 2017–18 | 2018–19 | 2019–20 | 2020–21 |
| Microbiological  | 100.0%  | 100.0%  | 100.0%  | 100.0%  | 100.0%  |
| Fluoride   | n/a     | n/a     | n/a     | n/a     | n/a     |
| Metals   | 100.0%  | 100.0%  | 100.0%  | 100.0%  | 100.0%  |
| Disinfection by products   | 100.0%  | 100.0%  | 100.0%  | 100.0%  | 100.0%  |
| <div> <span style="color: green;">■</span> Compliant           <span style="color: red;">■</span> Non-compliant         </div> |         |         |         |         |         |

## 54.4. Analysis of current health performance (2020–21)

Table 54.4-a Summary of health guideline exceedances

| Summary of health guideline exceedances |            |   |           |
|---|------------|---|-----------|
| Parameter Exceeding                     | Date       | Details   | Resampled |
| Lead                                    | 20/08/2020 | Lead of 0.0117 mg/L in a sample at an operational site. | ✓         |
| Lead                                    | 17/03/2021 | Lead of 0.0489 mg/L in a sample at an operational site. | ✓         |

**Table 54.4-b Metals performance**

| Metals – health regulated parameters |       |      |         |             |               |         |          |         |
|--------------------------------------|-------|------|---------|-------------|---------------|---------|----------|---------|
| Parameter                            | Limit | Unit | Samples | Exceedances | Performance % | Mean    | Min.     | Max.    |
| Antimony                             | 0.003 | mg/L | 4       | 0           | 100           | <0.0005 | <0.0005  | <0.0005 |
| Arsenic                              | 0.01  | mg/L | 4       | 0           | 100           | <0.0003 | <0.0003  | <0.0003 |
| Barium                               | 2     | mg/L | 4       | 0           | 100           | 0.0118  | 0.0066   | 0.0179  |
| Cadmium                              | 0.002 | mg/L | 4       | 0           | 100           | <0.0001 | <0.0001  | <0.0001 |
| Chromium                             | 0.05  | mg/L | 4       | 0           | 100           | <0.0001 | <0.0001  | 0.0001  |
| Copper                               | 2     | mg/L | 4       | 0           | 100           | 0.0097  | 0.0057   | 0.0190  |
| Lead                                 | 0.01  | mg/L | 4       | 0           | 100           | 0.0006  | 0.0002   | 0.0014  |
| Manganese                            | 0.5   | mg/L | 4       | 0           | 100           | 0.0005  | 0.0001   | 0.0009  |
| Mercury                              | 0.001 | mg/L | 4       | 0           | 100           | 0.00011 | <0.00003 | 0.00024 |
| Molybdenum                           | 0.05  | mg/L | 4       | 0           | 100           | <0.0001 | <0.0001  | <0.0001 |
| Nickel                               | 0.02  | mg/L | 4       | 0           | 100           | 0.0002  | 0.0001   | 0.0003  |
| Selenium                             | 0.01  | mg/L | 4       | 0           | 100           | 0.0002  | <0.0001  | 0.0004  |

**Table 54.4-c Disinfection by product performance**

| Disinfection by products – health regulated parameters |       |      |         |             |               |      |      |      |
|--|-------|------|---------|-------------|---------------|------|------|------|
| Parameter  | Limit | Unit | Samples | Exceedances | Performance % | Mean | Min. | Max. |
| Dichloroacetic acid                                    | 100   | µg/L | 4       | 0           | 100           | 3    | <1   | 4    |
| Monochloroacetic acid                                  | 150   | µg/L | 4       | 0           | 100           | <3   | <3   | <3   |
| Trichloroacetic acid                                   | 100   | µg/L | 4       | 0           | 100           | <1   | <1   | 2    |
| Total trihalomethanes                                  | 250   | µg/L | 4       | 0           | 100           | 34   | 8    | 55   |

**Table 54.4-d General physical performance**

| General physical parameters |       |                 |      |      |      |
|-----------------------------|-------|-----------------|------|------|------|
| Parameter                   | Unit  | Guideline Value | Mean | Min  | Max  |
| Chlorine residual           | mg/L  | 0.1 – <0.8      | 0.64 | 0.26 | 1.02 |
| Colour True                 | HU    | 15              | <1   | <1   | <1   |
| pH                          | Units | 6.5 – 8.5       | 7.39 | 6.58 | 7.88 |
| Turbidity                   | NTU   | 1               | 0.27 | 0.05 | 0.61 |

## 54.5. Analysis of overall system performance (2020–21)

Table 54.5-a Summary of system issues/public health warnings

| Summary of system issues |                 |                           |                           |
|--------------------------|-----------------|---------------------------|---------------------------|
| Date                     | Description     | DoH notification required | DoH notification complete |
| 20/8/2020                | Lead exceedance | ✓                         | ✓                         |
| 17/3/2021                | Lead exceedance | ✓                         | ✓                         |

## 55. Waratah drinking water system

### 55.1. System summary (2020–21)

| Waratah drinking water system      |                 |
|------------------------------------|-----------------|
| System status (as at 30 June 2021) | Potable         |
| Total number of connections        | 134             |
| Population serviced                | 184             |
| Fluoride                           | Sodium fluoride |

| Performance overview against health targets (2020–21)      |         |            |        |                 |             |
|--|---------|------------|--------|-----------------|-------------|
| Indicator  | Outcome | Compliance | Target | Sampling Events | Exceedances |
| Microbiological  | 100.0%  | ☑          | 98.0%  | 52              | 0           |
| Fluoride   | 100.0%  | ☑          | 100.0% | 24              | 0           |
| Metals   | 100.0%  | ☑          | 100.0% | 4               | 0           |
| DBPs   | 100.0%  | ☑          | 100.0% | 4               | 0           |
| <div><div></div> Compliant <div></div> Non-compliant</div> |         |            |        |                 |             |

| Overall system performance (2020–21) |             |                |
|--------------------------------------|-------------|----------------|
| Indicator                            | Occurrences | Details        |
| System issues                        | 0           |                |
| Public health warnings issued        | 0           |                |
| Notifications made to DoH            | 0           |                |
| Customer complaints                  | 1           | Discolouration |

| Current and future planned capital investment |          |          |               |            |
|---|----------|----------|---------------|------------|
| Project                                       | Overview | Progress | Est. Delivery | Est. Spend |
| No projected capital investment               |          |          |               |            |

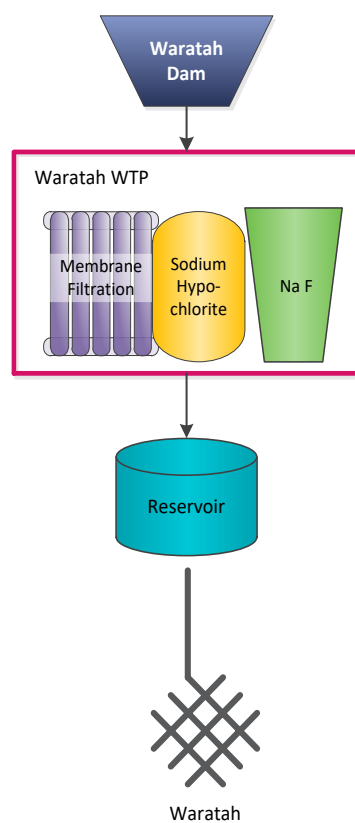


Figure 55.1-a Waratah system schematic

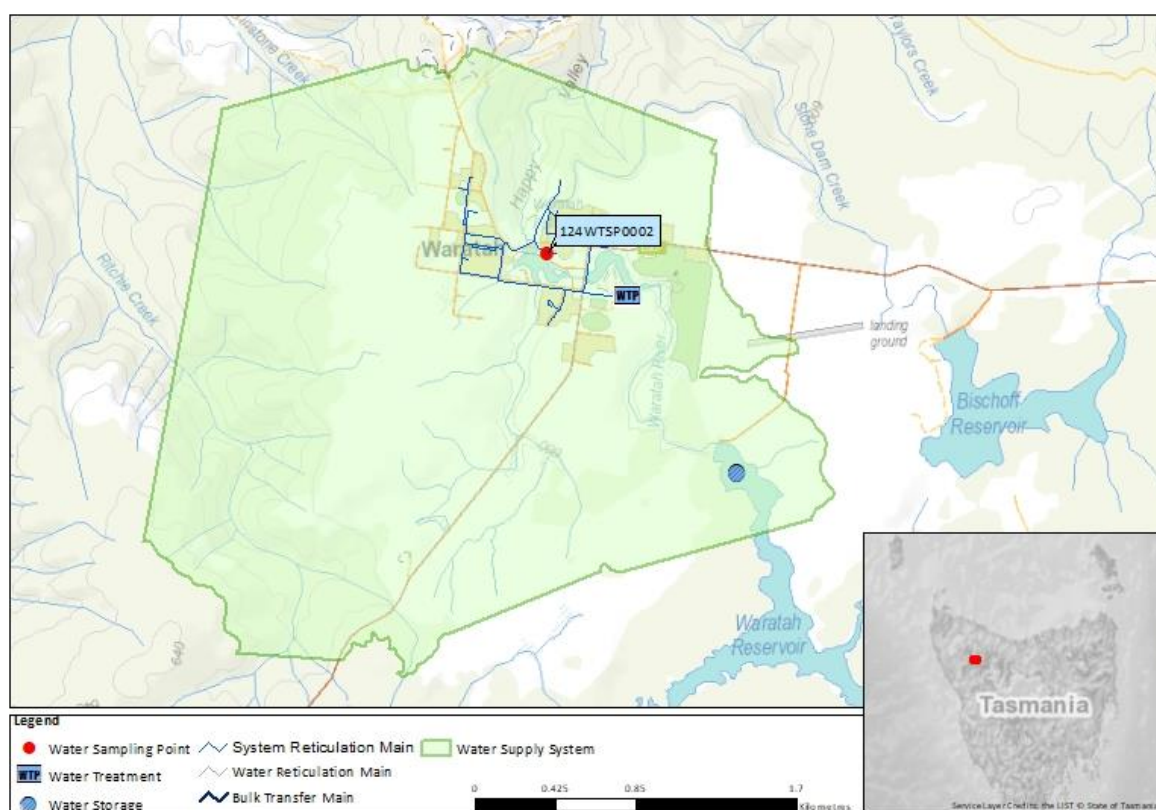


Figure 55.1-b Map of Waratah monitoring system

## 55.2. Summary of annual reticulation compliance (2020–21)

Table 55.2-a Sampling program

| Planned sampling program (2020–21) |             |        |        |     |                |                  |                   |
|------------------------------------|-------------|--------|--------|-----|----------------|------------------|-------------------|
| Site name                          | Site Code   | Micros | Metals | DBP | Fluoride (Lab) | Chemical Profile | Process Chemicals |
| Waratah/Caravan Park Sample Point  | 124WTSP0002 | W      | Q      | Q   | 2M             | Q                | n/a               |
| Number Planned Samples             |             | 52     | 4      | 4   | 24             | 4                | n/a               |
| Number Samples Tested              |             | 52     | 4      | 4   | 24             | 4                | n/a               |

## 55.3. Summary of current and historic performance (2016–21)

Table 55.3-a Historical health performance overview (5 year comparison)

| Historical health performance overview (5 year comparison)   |         |         |         |         |         |
|--|---------|---------|---------|---------|---------|
| Indicator  | 2016–17 | 2017–18 | 2018–19 | 2019–20 | 2020–21 |
| Microbiological  | 100.0%  | 100.0%  | 100.0%  | 100.0%  | 100.0%  |
| Fluoride   | 100.0%  | 100.0%  | 100.0%  | 100.0%  | 100.0%  |
| Metals   | 100.0%  | 100.0%  | 100.0%  | 100.0%  | 100.0%  |
| Disinfection by products   | 100.0%  | 100.0%  | 100.0%  | 100.0%  | 100.0%  |
| <div> <span style="color: green;">■</span> Compliant           <span style="color: red;">■</span> Non-compliant         </div> |         |         |         |         |         |

## 55.4. Analysis of current health performance (2020–21)

Table 55.4-a Summary of health guideline exceedances

| Summary of health guideline exceedances |      |         |           |
|---|------|---------|-----------|
| Parameter Exceeding                     | Date | Details | Resampled |
| No ADWG exceedances                     |      |         |           |

**Table 55.4-b Fluoride distribution performance**

| Distribution fluoride performance  |         |
|--|---------|
| Indicator  | 2020–21 |
| F exceeding 1.5 mg/L   | 0       |
| Average F concentration range (0.8 mg/L – 1.1 mg/L)  | 0.9     |
| 90% of F results are equal to or less than 1.1 mg/L  | 100%    |
| <div> <span style="color: green;">■</span> Compliant           <span style="color: red;">■</span> Non-compliant         </div> |         |

**Table 55.4-c Metals performance**

| Metals – health regulated parameters |       |      |         |             |               |         |          |         |
|--------------------------------------|-------|------|---------|-------------|---------------|---------|----------|---------|
| Parameter                            | Limit | Unit | Samples | Exceedances | Performance % | Mean    | Min.     | Max.    |
| Antimony                             | 0.003 | mg/L | 4       | 0           | 100           | <0.0005 | <0.0005  | <0.0005 |
| Arsenic                              | 0.01  | mg/L | 4       | 0           | 100           | <0.0003 | <0.0003  | 0.0003  |
| Barium                               | 2     | mg/L | 4       | 0           | 100           | 0.0020  | 0.0018   | 0.0022  |
| Cadmium                              | 0.002 | mg/L | 4       | 0           | 100           | <0.0001 | <0.0001  | <0.0001 |
| Chromium                             | 0.05  | mg/L | 4       | 0           | 100           | 0.0003  | 0.0002   | 0.0004  |
| Copper                               | 2     | mg/L | 4       | 0           | 100           | 0.0328  | 0.0230   | 0.0385  |
| Lead                                 | 0.01  | mg/L | 4       | 0           | 100           | 0.0011  | 0.0006   | 0.0015  |
| Manganese                            | 0.5   | mg/L | 4       | 0           | 100           | 0.0085  | 0.0005   | 0.0251  |
| Mercury                              | 0.001 | mg/L | 4       | 0           | 100           | 0.00005 | <0.00003 | 0.00008 |
| Molybdenum                           | 0.05  | mg/L | 4       | 0           | 100           | <0.0001 | <0.0001  | <0.0001 |
| Nickel                               | 0.02  | mg/L | 4       | 0           | 100           | 0.0002  | 0.0001   | 0.0003  |
| Selenium                             | 0.01  | mg/L | 4       | 0           | 100           | <0.0001 | <0.0001  | <0.0001 |

**Table 55.4-d Disinfection by product performance**

| Disinfection by products – health regulated parameters |       |      |         |             |               |      |      |      |
|--|-------|------|---------|-------------|---------------|------|------|------|
| Parameter  | Limit | Unit | Samples | Exceedances | Performance % | Mean | Min. | Max. |
| Dichloroacetic acid                                    | 100   | µg/L | 4       | 0           | 100           | 29   | 24   | 34   |
| Monochloroacetic acid                                  | 150   | µg/L | 4       | 0           | 100           | <3   | <3   | <3   |
| Trichloroacetic acid                                   | 100   | µg/L | 4       | 0           | 100           | 35   | 32   | 40   |
| Total trihalomethanes                                  | 250   | µg/L | 4       | 0           | 100           | 56   | 44   | 80   |

Table 55.4-e General physical performance

| General physical parameters |       |                 |      |      |      |
|-----------------------------|-------|-----------------|------|------|------|
| Parameter                   | Unit  | Guideline Value | Mean | Min  | Max  |
| Chlorine residual           | mg/L  | 0.1 – <0.8      | 0.46 | 0.05 | 0.88 |
| Colour True                 | HU    | 15              | 1.75 | <1   | 4    |
| pH                          | Units | 6.5 – 8.5       | 7.34 | 6.82 | 8.11 |
| Turbidity                   | NTU   | 1               | 0.15 | 0.06 | 0.57 |

## 55.5. Analysis of overall system performance (2020–21)

Table 55.5-a Summary of system issues/public health warnings

| Summary of system issues                          |             |                           |                           |
|---|-------------|---------------------------|---------------------------|
| Date  | Description | DoH notification required | DoH notification complete |
| No system issues or public health warnings issued |             |                           |                           |

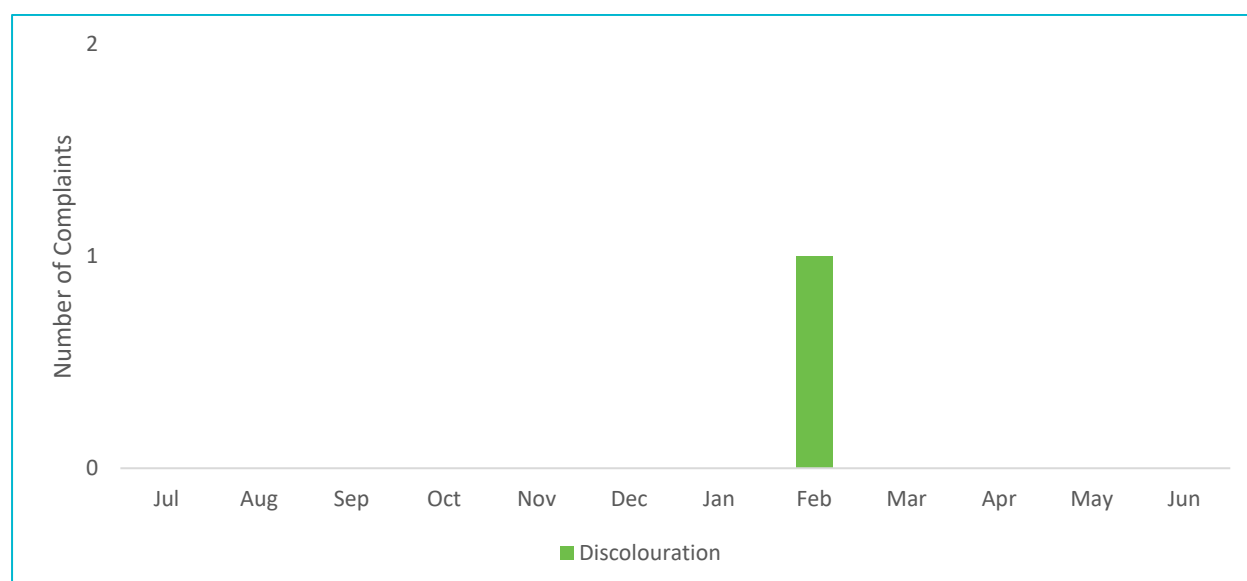


Figure 55.5-b Water quality customer complaints by month and type



## 56. Wayatinah drinking water system

### 56.1. System summary (2020–21)

| Wayatinah drinking water system    |         |
|------------------------------------|---------|
| System status (as at 30 June 2021) | Potable |
| Total number of connections        | 63      |
| Population serviced                | 39      |
| Fluoride                           | n/a     |

| Performance overview against health targets (2020–21)      |         |            |        |                 |             |
|--|---------|------------|--------|-----------------|-------------|
| Indicator  | Outcome | Compliance | Target | Sampling Events | Exceedances |
| Microbiological  | 100.0%  | ☑          | 98.0%  | 52              | 0           |
| Fluoride   | n/a     | n/a        | n/a    | n/a             | n/a         |
| Metals   | 100.0%  | ☑          | 100.0% | 4               | 0           |
| DBPs   | 100.0%  | ☑          | 100.0% | 4               | 0           |
| <div><div></div> Compliant <div></div> Non-compliant</div> |         |            |        |                 |             |

| Overall system performance (2020–21) |             |  |
|--------------------------------------|-------------|--|
| Indicator                            | Occurrences | Details  |
| System issues                        | 0           |  |
| Public health warnings issued        | 0           |  |
| Notifications made to DoH            | 2           | DBP exceedances in sampling program (under rounding limit) |
| Customer complaints                  | 0           |  |

| Current and future planned capital investment |          |          |               |                     |
|---|----------|----------|---------------|---------------------|
| Project                                       | Overview | Progress | Est. Delivery | Est. Spend (\$'000) |
| No projected capital investment               |          |          |               |                     |

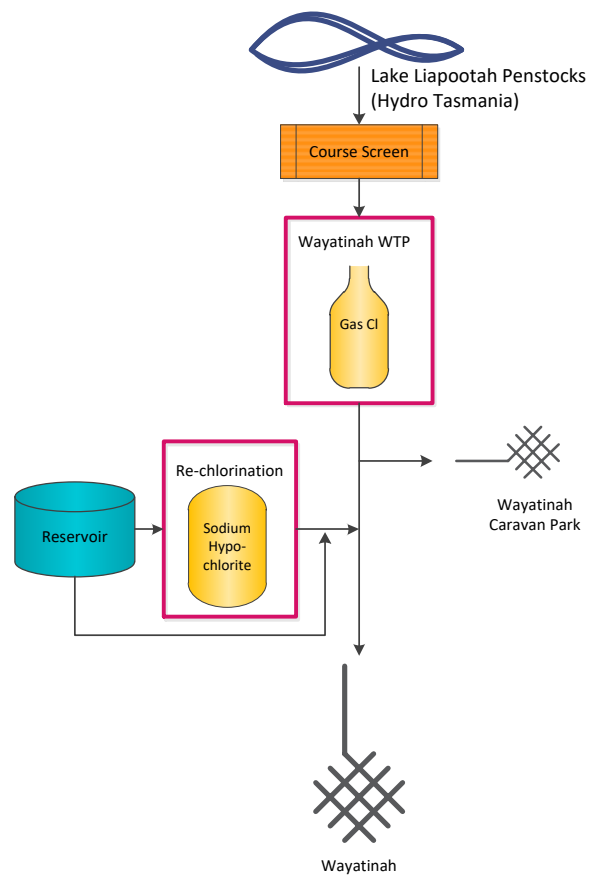


Figure 56.1-a Wayatinah system schematic

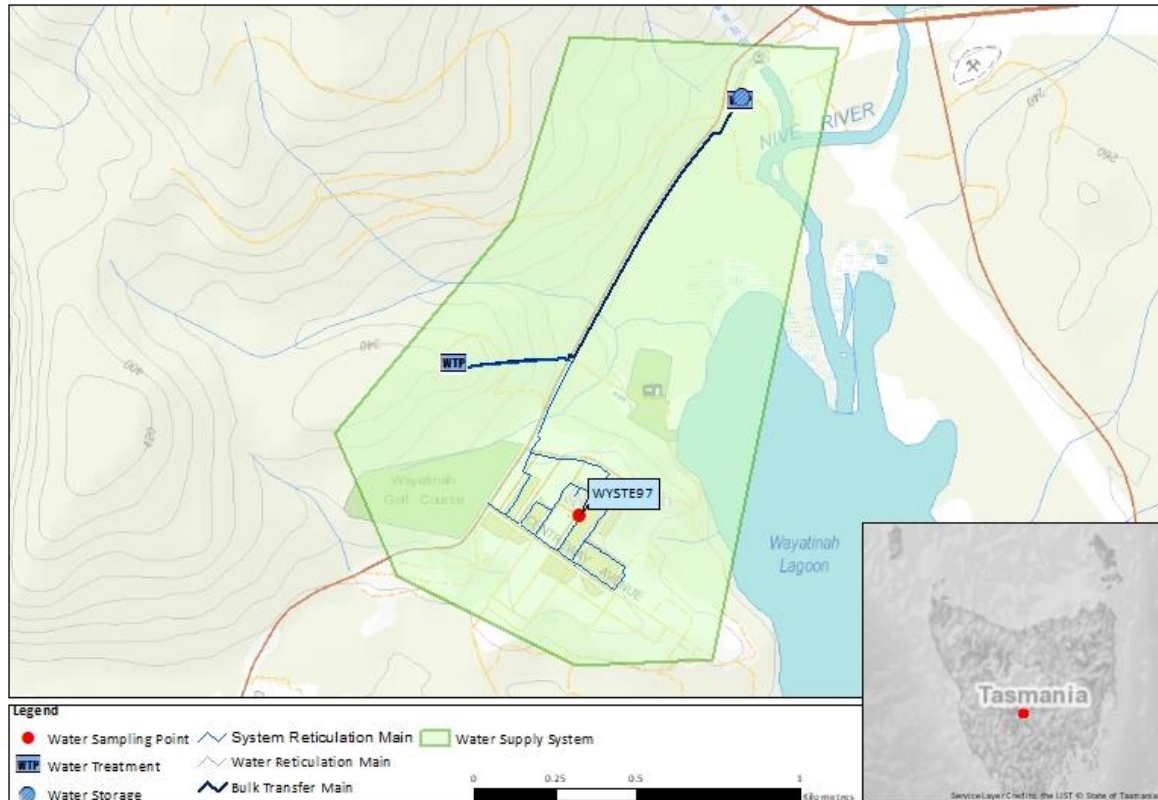


Figure 56.1-b Map of Wayatinah monitoring system

## 56.2. Summary of annual reticulation compliance (2020–21)

Table 56.2-a Sampling program

| Planned compliance sampling program (2020–21) |           |        |        |     |                |                  |                   |
|---|-----------|--------|--------|-----|----------------|------------------|-------------------|
| Site name                                     | Site Code | Micros | Metals | DBP | Fluoride (Lab) | Chemical Profile | Process Chemicals |
| Wayatinah/Crn 3rd Street and Bronte Ave       | WYSTE97   | W      | Q      | Q   | n/a            | Q                | n/a               |
| Number Planned Samples                        |           | 52     | 4      | 4   | n/a            | 4                | n/a               |
| Number Samples Tested                         |           | 52     | 4      | 4   | n/a            | 4                | n/a               |

## 56.3. Summary of current and historic performance (2016–21)

Table 56.3-a Historical health performance overview (5 year comparison)

| Historical health performance overview (5 year comparison)   |         |         |         |         |         |
|--|---------|---------|---------|---------|---------|
| Indicator  | 2016–17 | 2017–18 | 2018–19 | 2019–20 | 2020–21 |
| Microbiological  | 98.1%   | 100.0%  | 100.0%  | 100.0%  | 100.0%  |
| Fluoride   | n/a     | n/a     | n/a     | n/a     | n/a     |
| Metals   | 100.0%  | 100.0%  | 100.0%  | 100.0%  | 100.0%  |
| Disinfection by products   | 95.8%   | 100.0%  | 100.0%  | 100.0%  | 100.0%  |
| <div> <span style="color: green;">■</span> Compliant           <span style="color: red;">■</span> Non-compliant         </div> |         |         |         |         |         |

## 56.4. Analysis of current health performance (2020–21)

Table 56.4-a Summary of health guideline exceedances

| Summary of health guideline exceedances |      |         |           |
|---|------|---------|-----------|
| Parameter Exceeding                     | Date | Details | Resampled |
| No ADWG exceedances                     |      |         |           |

Table 56.4-b Metals performance

| Metals – health regulated parameters |       |      |         |             |               |         |          |         |
|--------------------------------------|-------|------|---------|-------------|---------------|---------|----------|---------|
| Parameter                            | Limit | Unit | Samples | Exceedances | Performance % | Mean    | Min.     | Max.    |
| Antimony                             | 0.003 | mg/L | 4       | 0           | 100           | <0.0005 | <0.0005  | <0.0005 |
| Arsenic                              | 0.01  | mg/L | 4       | 0           | 100           | <0.0003 | <0.0003  | <0.0003 |
| Barium                               | 2     | mg/L | 4       | 0           | 100           | 0.0031  | 0.0014   | 0.0056  |
| Cadmium                              | 0.002 | mg/L | 4       | 0           | 100           | <0.0001 | <0.0001  | <0.0001 |
| Chromium                             | 0.05  | mg/L | 4       | 0           | 100           | 0.0001  | <0.0001  | 0.0002  |
| Copper                               | 2     | mg/L | 4       | 0           | 100           | 0.0030  | 0.0020   | 0.0040  |
| Lead                                 | 0.01  | mg/L | 4       | 0           | 100           | 0.0003  | 0.0002   | 0.0005  |
| Manganese                            | 0.5   | mg/L | 4       | 0           | 100           | 0.0005  | 0.0004   | 0.0007  |
| Mercury                              | 0.001 | mg/L | 4       | 0           | 100           | 0.00005 | <0.00003 | 0.00010 |
| Molybdenum                           | 0.05  | mg/L | 4       | 0           | 100           | <0.0001 | <0.0001  | <0.0001 |
| Nickel                               | 0.02  | mg/L | 4       | 0           | 100           | 0.0001  | <0.0001  | 0.0002  |
| Selenium                             | 0.01  | mg/L | 4       | 0           | 100           | <0.0001 | <0.0001  | <0.0001 |

Table 56.4-c Disinfection by product performance

| Disinfection by products – health regulated parameters |       |      |         |             |               |      |      |                   |
|--|-------|------|---------|-------------|---------------|------|------|-------------------|
| Parameter  | Limit | Unit | Samples | Exceedances | Performance % | Mean | Min. | Max.              |
| Dichloroacetic acid                                    | 100   | µg/L | 12      | 0           | 100           | 30   | 3    | 60                |
| Monochloroacetic acid                                  | 150   | µg/L | 12      | 0           | 100           | <3   | <3   | 4                 |
| Trichloroacetic acid                                   | 100   | µg/L | 12      | 0           | 100           | 75   | 36   | 118 <sup>35</sup> |
| Total trihalomethanes                                  | 250   | µg/L | 12      | 0           | 100           | 76   | 54   | 98                |

Table 56.4-d General physical performance

| General physical parameters |       |                 |      |      |      |
|-----------------------------|-------|-----------------|------|------|------|
| Parameter                   | Unit  | Guideline Value | Mean | Min  | Max  |
| Chlorine residual           | mg/L  | 0.1 – <0.8      | 0.40 | 0.06 | 0.71 |
| Colour True                 | HU    | 15              | 1.63 | <1   | 2    |
| pH                          | Units | 6.5 – 8.5       | 7.80 | 7.40 | 8.11 |
| Turbidity                   | NTU   | 1               | 0.15 | 0.07 | 0.32 |

<sup>35</sup> Maximum result, when rounded, does not exceed limit.

## 56.5. Analysis of overall system performance (2020–21)

Table 56.5-a Summary of system issues/public health warnings

| Summary of system issues/public health warnings |  |                           |                           |
|---|--|---------------------------|---------------------------|
| Date  | Description  | DoH notification required | DoH notification complete |
| 2/7/2020  | Trichloroacetic acid exceedance of 118 µg/L. Does not exceed rounding limit. | ✓                         | ✓                         |
| 19/10/2020                                      | Trichloroacetic acid exceedance of 110 µg/L. Does not exceed rounding limit. | ✓                         | ✓                         |

## 57. West Tamar drinking water system

### 57.1. System summary (2020–21)

| West Tamar drinking water system   |                    |
|------------------------------------|--------------------|
| System status (as at 30 June 2021) | Potable            |
| Total number of connections        | 9,811              |
| Population serviced                | 20,974             |
| Fluoride                           | Fluorosilicic acid |

| Performance overview against health targets (2020–21)      |         |            |        |                 |             |
|--|---------|------------|--------|-----------------|-------------|
| Indicator  | Outcome | Compliance | Target | Sampling Events | Exceedances |
| Microbiological  | 100.0%  | ☑          | 98.0%  | 573             | 0           |
| Fluoride   | 100.0%  | ☑          | 100.0% | 48              | 0           |
| Metals   | 100.0%  | ☑          | 100.0% | 4               | 0           |
| DBPs   | 100.0%  | ☑          | 100.0% | 4               | 0           |
| <div><div></div> Compliant <div></div> Non-compliant</div> |         |            |        |                 |             |

| Overall system performance (2020–21) |             |         |
|--------------------------------------|-------------|---------|
| Indicator                            | Occurrences | Details |
| System issues                        | 0           |         |
| Public health warnings issued        | 0           |         |
| Notifications made to DoH            | 0           |         |
| Customer complaints                  | 0           |         |

| Current and future planned capital investment |                             |             |               |            |
|---|-----------------------------|-------------|---------------|------------|
| Project                                       | Overview                    | Progress    | Est. Delivery | Est. Spend |
| Fluoride Upgrade                              | Replacement of Storage Tank | In Progress | 2021/2022     | \$130,000  |
| WTP Upgrade                                   | UV Installation             | In Progress | 2022/2023     | TBD        |

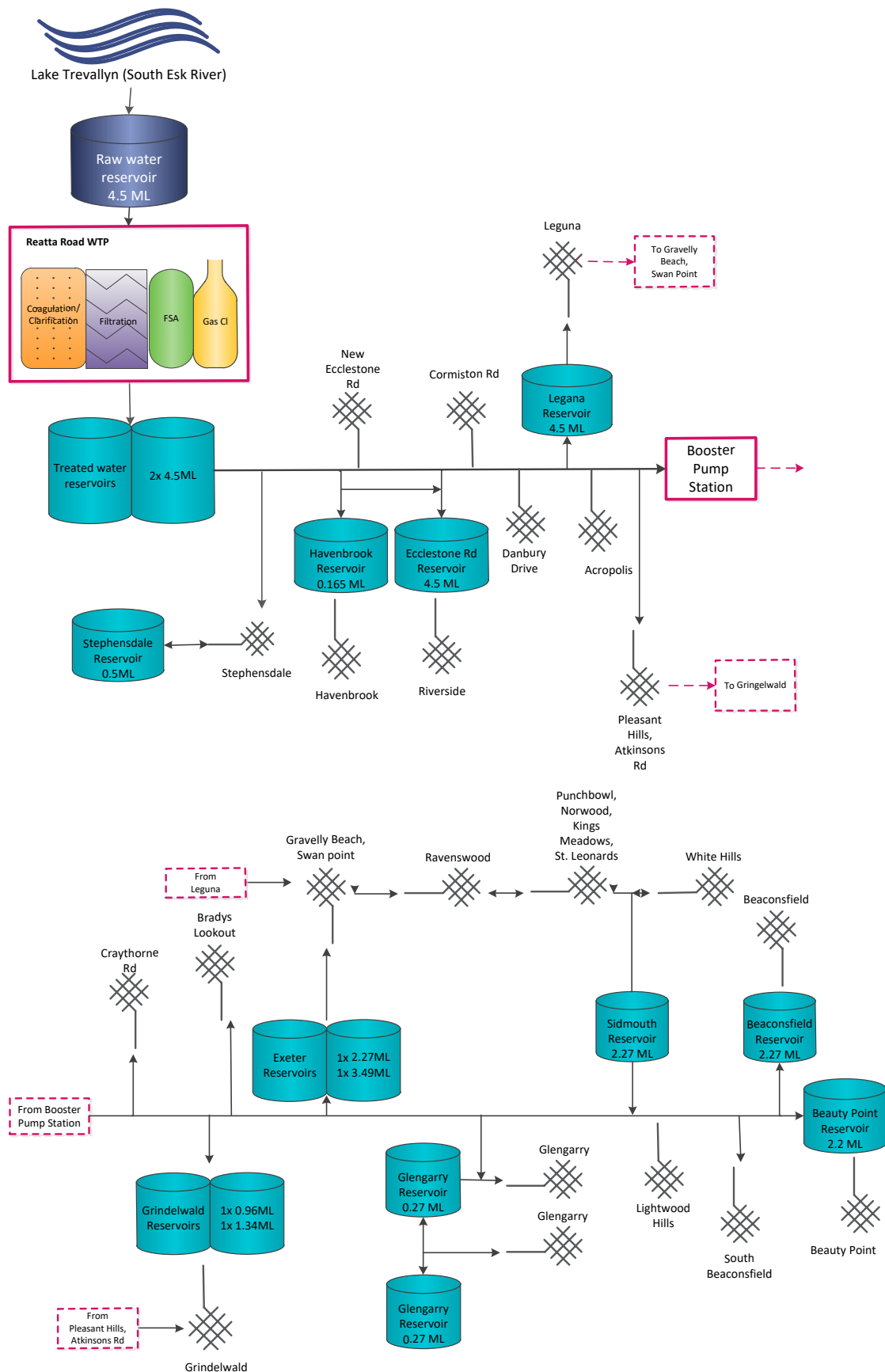


Figure 57.1-a West Tamar system schematic

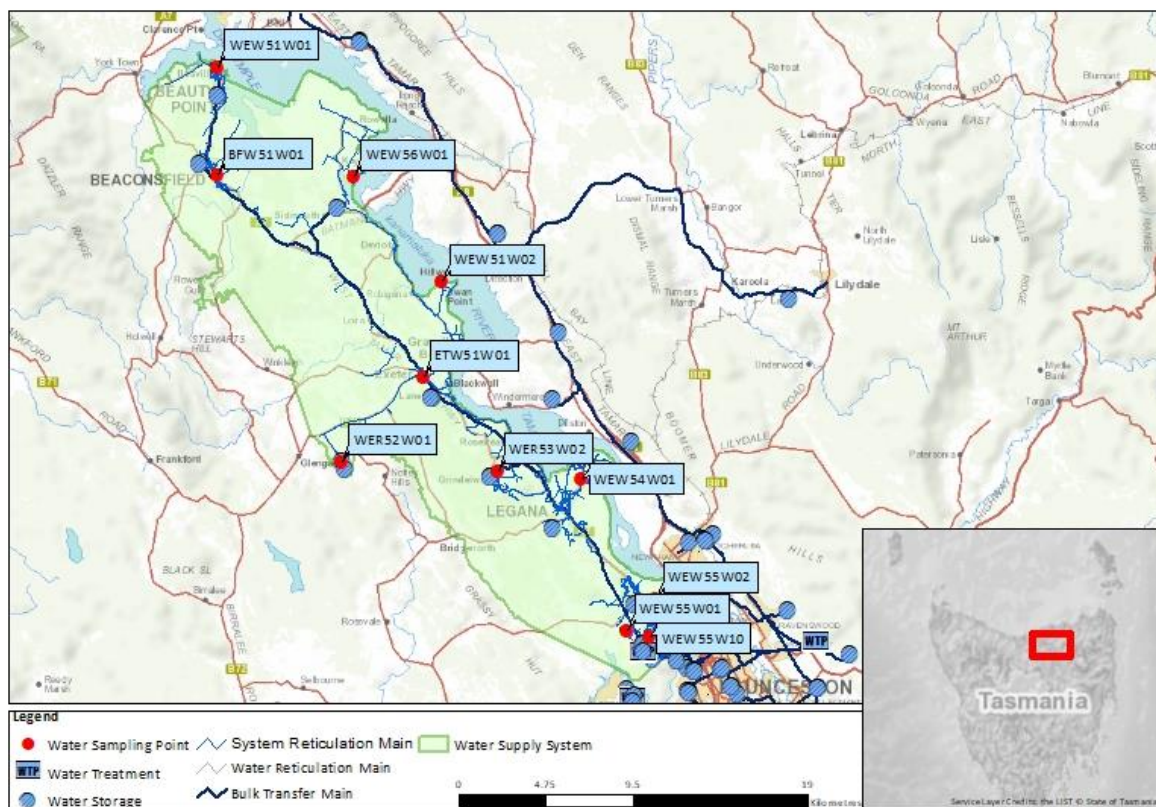


Figure 57.1-b Map of West Tamar monitoring system



## 57.2. Summary of annual reticulation compliance (2020–21)

Table 57.2-a Sampling program

| Planned sampling program (2020–21)      |                        |            |          |          |                |                  |                   |
|---|------------------------|------------|----------|----------|----------------|------------------|-------------------|
| Site name                               | Site Code              | Micros     | Metals   | DBP      | Fluoride (Lab) | Chemical Profile | Process Chemicals |
| Exeter, Biloo St                        | ETW51W01 <sup>36</sup> | W          | Q        | Q        | 2M             | Q                | n/a               |
| 22 Frankford Road - Exeter              | WTST01                 | W          | Q        | Q        | 2M             | Q                | n/a               |
| Stephensdale, 14 Marlou Crt             | WEW55W01               | W          | n/a      | n/a      | n/a            | n/a              | n/a               |
| Riverside, 32 Gray St                   | WEW55W10 <sup>37</sup> | W          | n/a      | n/a      | n/a            | n/a              | n/a               |
| Cnr Cherry Rd & Glencoe Ave - Trevallyn | WTST06                 | W          | n/a      | n/a      | n/a            | n/a              | n/a               |
| 29A Cleghorn Ave - Riverside            | WEW55W02               | W          | n/a      | n/a      | n/a            | n/a              | n/a               |
| Legana Freshwater Point Rd              | WEW54W01 <sup>38</sup> | W          | n/a      | n/a      | n/a            | n/a              | n/a               |
| 18 Tanner Drive                         | WTST04                 | W          | n/a      | n/a      | n/a            | n/a              | n/a               |
| 3 Alpine Cres - Grindelwald             | WER53W02               | W          | n/a      | n/a      | n/a            | n/a              | n/a               |
| 205 Paper Beach Road                    | WEW51W02 <sup>39</sup> | W          | n/a      | n/a      | n/a            | n/a              | n/a               |
| 175 Paper Beach Rd                      | WTST03                 | W          | n/a      | n/a      | n/a            | n/a              | n/a               |
| Glengarry Res, Reservoir                | WER52W01               | W          | n/a      | n/a      | n/a            | n/a              | n/a               |
| Kayena, Bonnie Beach                    | WEW56W01 <sup>40</sup> | W          | n/a      | n/a      | n/a            | n/a              | n/a               |
| 89 Kayena Rd - Bonnie Beach             | WTST08                 | W          | n/a      | n/a      | n/a            | n/a              | n/a               |
| Beauty Point, Esplanade Toilets         | WEW51W01 <sup>41</sup> | W          | n/a      | n/a      | n/a            | n/a              | n/a               |
| 207 Mainwaring St                       | WTST07                 | W          | n/a      | n/a      | n/a            | n/a              | n/a               |
| Beaconsfield, John St Near Fire Station | BFW51W01               | W          | n/a      | n/a      | 2M             | n/a              | n/a               |
| 1 Doncaster Court                       | WTST11 <sup>42</sup>   | W          | n/a      | n/a      | n/a            | n/a              | n/a               |
| <b>Number Planned Samples</b>           |                        | <b>573</b> | <b>4</b> | <b>4</b> | <b>48</b>      | <b>4</b>         | <b>n/a</b>        |
| <b>Number Samples Tested</b>            |                        | <b>573</b> | <b>4</b> | <b>4</b> | <b>48</b>      | <b>4</b>         | <b>n/a</b>        |

<sup>36</sup> Replaced by WTST01 31<sup>st</sup> May 2021

<sup>37</sup> Replaced by WTST06 1<sup>st</sup> April 2021

<sup>38</sup> Replaced by WTST04 23<sup>rd</sup> February 2021

<sup>39</sup> Replaced by WTST03 1<sup>st</sup> November 2020

<sup>40</sup> Replaced by WTST08 31<sup>st</sup> May 2021

<sup>41</sup> Replaced by WTST07 1<sup>st</sup> November 2020

<sup>42</sup> New installation from 31<sup>st</sup> May 2021. Zone was not being sampled.

### 57.3. Summary of current and historic performance (2016–21)

Table 57.3-a Historical health performance overview (5 year comparison)

| Historical health performance overview (5 year comparison)   |         |         |         |         |         |
|--|---------|---------|---------|---------|---------|
| Indicator  | 2016–17 | 2017–18 | 2018–19 | 2019–20 | 2020–21 |
| Microbiological  | 100.0%  | 100.0%  | 100.0%  | 100.0%  | 100.0%  |
| Fluoride   | 100.0%  | 100.0%  | 100.0%  | 100.0%  | 100.0%  |
| Metals   | 100.0%  | 100.0%  | 100.0%  | 100.0%  | 100.0%  |
| Disinfection by products   | 100.0%  | 100.0%  | 100.0%  | 100.0%  | 100.0%  |
| <div> <span style="color: green;">■</span> Compliant           <span style="color: red;">■</span> Non-compliant         </div> |         |         |         |         |         |

### 57.4. Analysis of current health performance (2020–21)

Table 57.4-a Summary of health guideline exceedances

| Summary of health guideline exceedances |      |         |           |
|---|------|---------|-----------|
| Parameter Exceeding                     | Date | Details | Resampled |
| No ADWG exceedances                     |      |         |           |

Table 57.4-b Fluoride distribution performance

| Distribution fluoride performance  |         |
|--|---------|
| Indicator  | 2020–21 |
| F exceeding 1.5 mg/L   | 0       |
| Average F concentration range (0.8 mg/L – 1.1 mg/L)  | 0.9     |
| 90% of F results are equal to or less than 1.1 mg/L  | 100%    |
| <div> <span style="color: green;">■</span> Compliant           <span style="color: red;">■</span> Non-compliant         </div> |         |

**Table 57.4-c Metals performance**

| Metals – health regulated parameters |       |      |         |             |               |         |          |         |
|--------------------------------------|-------|------|---------|-------------|---------------|---------|----------|---------|
| Parameter                            | Limit | Unit | Samples | Exceedances | Performance % | Mean    | Min.     | Max.    |
| Antimony                             | 0.003 | mg/L | 4       | 0           | 100           | <0.0005 | <0.0005  | <0.0005 |
| Arsenic                              | 0.01  | mg/L | 4       | 0           | 100           | <0.0003 | <0.0003  | <0.0003 |
| Barium                               | 2     | mg/L | 4       | 0           | 100           | 0.0085  | 0.0051   | 0.0129  |
| Cadmium                              | 0.002 | mg/L | 4       | 0           | 100           | <0.0001 | <0.0001  | <0.0001 |
| Chromium                             | 0.05  | mg/L | 4       | 0           | 100           | <0.0001 | <0.0001  | 0.0001  |
| Copper                               | 2     | mg/L | 4       | 0           | 100           | 0.0008  | 0.0002   | 0.0012  |
| Lead                                 | 0.01  | mg/L | 4       | 0           | 100           | 0.0001  | <0.0001  | 0.0002  |
| Manganese                            | 0.5   | mg/L | 4       | 0           | 100           | 0.0025  | 0.0010   | 0.0048  |
| Mercury                              | 0.001 | mg/L | 4       | 0           | 100           | 0.00010 | <0.00003 | 0.00026 |
| Molybdenum                           | 0.05  | mg/L | 4       | 0           | 100           | <0.0001 | <0.0001  | 0.0001  |
| Nickel                               | 0.02  | mg/L | 4       | 0           | 100           | 0.0002  | 0.0001   | 0.0004  |
| Selenium                             | 0.01  | mg/L | 4       | 0           | 100           | <0.0001 | <0.0001  | <0.0001 |

**Table 57.4-d Disinfection by product performance**

| Disinfection by products – health regulated parameters |       |      |         |             |               |      |      |      |
|--|-------|------|---------|-------------|---------------|------|------|------|
| Parameter  | Limit | Unit | Samples | Exceedances | Performance % | Mean | Min. | Max. |
| Dichloroacetic acid                                    | 100   | µg/L | 4       | 0           | 100           | 11   | 5    | 18   |
| Monochloroacetic acid                                  | 150   | µg/L | 4       | 0           | 100           | <3   | <3   | <3   |
| Trichloroacetic acid                                   | 100   | µg/L | 4       | 0           | 100           | 13   | 3    | 22   |
| Total trihalomethanes                                  | 250   | µg/L | 4       | 0           | 100           | 44   | 21   | 68   |

**Table 57.4-e General physical performance**

| General physical parameters |       |                 |      |      |       |
|-----------------------------|-------|-----------------|------|------|-------|
| Parameter                   | Unit  | Guideline Value | Mean | Min  | Max   |
| Chlorine residual           | mg/L  | 0.1 – <0.8      | 0.56 | 0.00 | 2.40  |
| Colour True                 | HU    | 15              | <1   | <1   | 1     |
| pH                          | Units | 6.5 – 8.5       | 7.30 | 6.01 | 9.01  |
| Turbidity                   | NTU   | 1               | 0.41 | 0.00 | 13.60 |

## 57.5. Analysis of overall system performance (2020–21)

Table 57.5-a Summary of system issues/public health warnings

| Summary of system issues                          |             |                           |                           |
|---|-------------|---------------------------|---------------------------|
| Date  | Description | DoH notification required | DoH notification complete |
| No system issues or public health warnings issued |             |                           |                           |

## 58. Westbury drinking water system

### 58.1. System summary (2020–21)

| Westbury drinking water system     |                 |
|------------------------------------|-----------------|
| System status (as at 30 June 2021) | Potable         |
| Total number of connections        | 1,188           |
| Population serviced                | 2,370           |
| Fluoride                           | Sodium fluoride |

| Performance overview against health targets (2020–21)  |         |            |        |                 |             |
|--|---------|------------|--------|-----------------|-------------|
| Indicator  | Outcome | Compliance | Target | Sampling Events | Exceedances |
| Microbiological  | 100.0%  | ☑          | 98.0%  | 104             | 0           |
| Fluoride   | 100.0%  | ☑          | 100.0% | 48              | 0           |
| Metals   | 100.0%  | ☑          | 100.0% | 4               | 0           |
| DBPs   | 100.0%  | ☑          | 100.0% | 4               | 0           |
| <div><span style="color: green;">■</span> Compliant <span style="color: red;">■</span> Non-compliant</div> |         |            |        |                 |             |

| Overall system performance (2020–21) |             |                |
|--------------------------------------|-------------|----------------|
| Indicator                            | Occurrences | Details        |
| System issues                        | 0           |                |
| Public health warnings issued        | 0           |                |
| Notifications made to DoH            | 0           |                |
| Customer complaints                  | 3           | Discolouration |

| Current and future planned capital investment |                 |          |               |            |
|---|-----------------|----------|---------------|------------|
| Project                                       | Overview        | Progress | Est. Delivery | Est. Spend |
| WTP Upgrade                                   | UV Installation | Planning | 2022/2023     | \$600,000  |

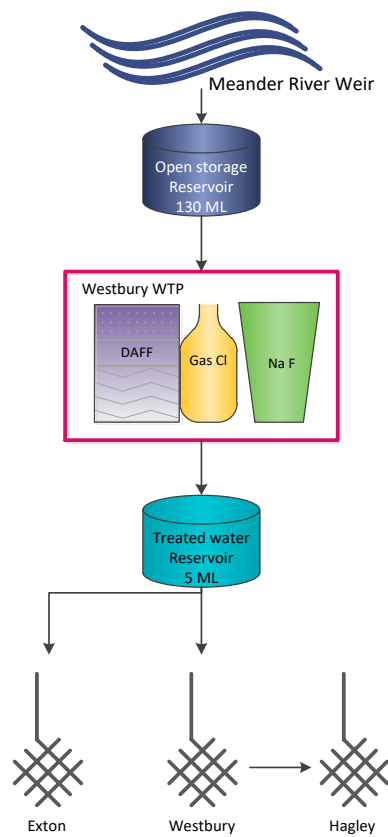


Figure 58.1-a Westbury system schematic

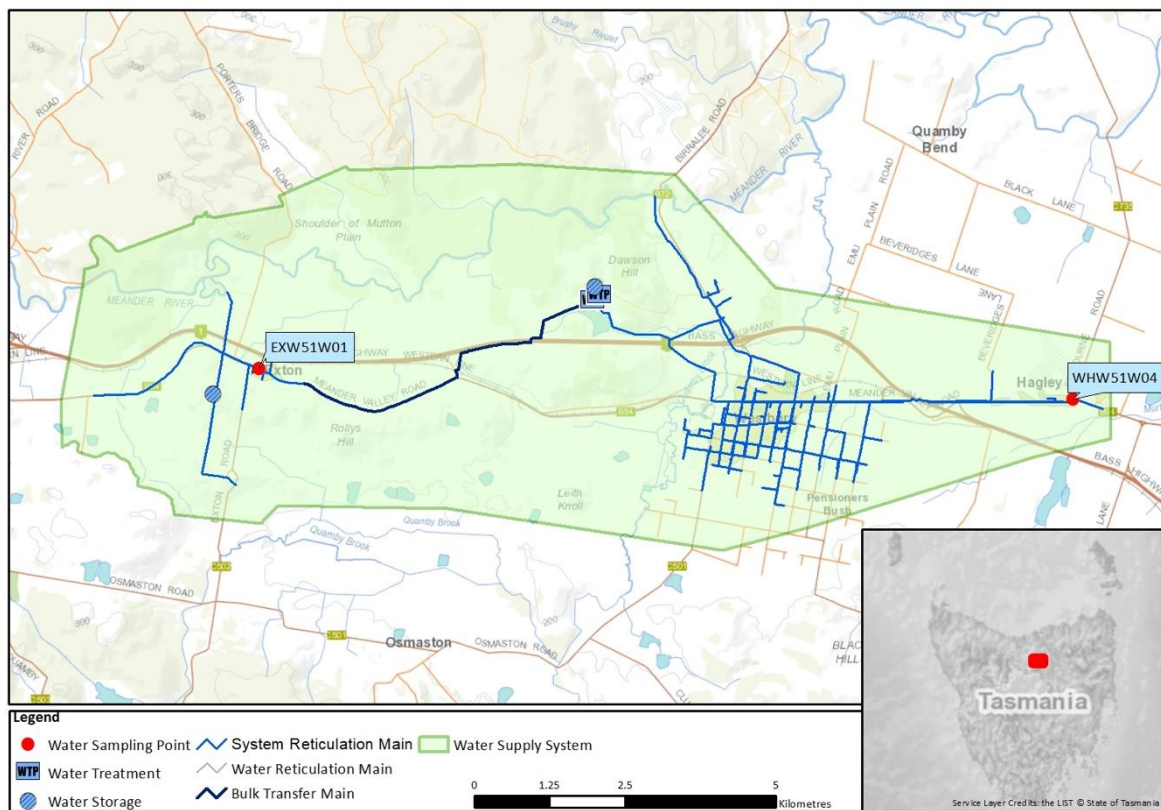


Figure 58.1-b Map of Westbury monitoring system

## 58.2. Summary of annual reticulation compliance (2020–21)

Table 58.2-a Sampling program

| Planned sampling program (2020–21)                  |           |        |        |     |                |                  |                   |
|---|-----------|--------|--------|-----|----------------|------------------|-------------------|
| Site name   | Site Code | Micros | Metals | DBP | Fluoride (Lab) | Chemical Profile | Process Chemicals |
| Westbury/Exton, Main Road                           | EXW51W01  | W      | n/a    | n/a | 2M             | n/a              | n/a               |
| Westbury/Hagley - Crn Selbourne & Meander Valley Rd | WHW51W04  | W      | Q      | Q   | 2M             | Q                | n/a               |
| Number Planned Samples                              |           | 104    | 4      | 4   | 48             | 4                | n/a               |
| Number Samples Tested                               |           | 104    | 4      | 4   | 48             | 4                | n/a               |

## 58.3. Summary of current and historic performance (2016–21)

Table 58.3-a Historical health performance overview (5 year comparison)

| Historical health performance overview (5 year comparison)   |         |         |         |         |         |
|--|---------|---------|---------|---------|---------|
| Indicator  | 2016–17 | 2017–18 | 2018–19 | 2019–20 | 2020–21 |
| Microbiological  | 100.0%  | 100.0%  | 99.0%   | 100.0%  | 100.0%  |
| Fluoride   | 100.0%  | 100.0%  | 100.0%  | 100.0%  | 100.0%  |
| Metals   | 100.0%  | 100.0%  | 100.0%  | 100.0%  | 100.0%  |
| Disinfection by products   | 100.0%  | 100.0%  | 100.0%  | 100.0%  | 100.0%  |
| <div> <span style="color: green;">■</span> Compliant           <span style="color: red;">■</span> Non-compliant         </div> |         |         |         |         |         |

## 58.4. Analysis of current health performance (2020–21)

Table 58.4-a Summary of health guideline exceedances

| Summary of health guideline exceedances |      |         |           |
|---|------|---------|-----------|
| Parameter Exceeding                     | Date | Details | Resampled |
| No ADWG exceedances                     |      |         |           |

**Table 58.4-b Fluoride distribution performance**

| Distribution fluoride performance  |         |
|--|---------|
| Indicator  | 2020–21 |
| F exceeding 1.5 mg/L   | 0       |
| Average F concentration range (0.8 mg/L – 1.1 mg/L)  | 0.9     |
| 90% of F results are equal to or less than 1.1 mg/L  | 100%    |
| <div> <span style="color: green;">■</span> Compliant           <span style="color: red;">■</span> Non-compliant         </div> |         |

**Table 58.4-c Metals performance**

| Metals – health regulated parameters |       |      |         |             |               |         |          |         |
|--------------------------------------|-------|------|---------|-------------|---------------|---------|----------|---------|
| Parameter                            | Limit | Unit | Samples | Exceedances | Performance % | Mean    | Min.     | Max.    |
| Antimony                             | 0.003 | mg/L | 4       | 0           | 100           | <0.0005 | <0.0005  | <0.0005 |
| Arsenic                              | 0.01  | mg/L | 4       | 0           | 100           | <0.0003 | <0.0003  | <0.0003 |
| Barium                               | 2     | mg/L | 4       | 0           | 100           | 0.0078  | 0.0068   | 0.0085  |
| Cadmium                              | 0.002 | mg/L | 4       | 0           | 100           | <0.0001 | <0.0001  | <0.0001 |
| Chromium                             | 0.05  | mg/L | 4       | 0           | 100           | 0.0001  | <0.0001  | 0.0002  |
| Copper                               | 2     | mg/L | 4       | 0           | 100           | 0.0029  | 0.0015   | 0.0047  |
| Lead                                 | 0.01  | mg/L | 4       | 0           | 100           | 0.0003  | 0.0002   | 0.0005  |
| Manganese                            | 0.5   | mg/L | 4       | 0           | 100           | 0.0013  | 0.0012   | 0.0015  |
| Mercury                              | 0.001 | mg/L | 4       | 0           | 100           | 0.00007 | <0.00003 | 0.00017 |
| Molybdenum                           | 0.05  | mg/L | 4       | 0           | 100           | <0.0001 | <0.0001  | <0.0001 |
| Nickel                               | 0.02  | mg/L | 4       | 0           | 100           | <0.0001 | <0.0001  | <0.0001 |
| Selenium                             | 0.01  | mg/L | 4       | 0           | 100           | 0.0001  | <0.0001  | 0.0002  |

**Table 58.4-d Disinfection by product performance**

| Disinfection by products – health regulated parameters |       |      |         |             |               |      |      |      |
|--|-------|------|---------|-------------|---------------|------|------|------|
| Parameter  | Limit | Unit | Samples | Exceedances | Performance % | Mean | Min. | Max. |
| Dichloroacetic acid                                    | 100   | µg/L | 4       | 0           | 100           | 8    | 4    | 10   |
| Monochloroacetic acid                                  | 150   | µg/L | 4       | 0           | 100           | <3   | <3   | <3   |
| Trichloroacetic acid                                   | 100   | µg/L | 4       | 0           | 100           | 10   | 8    | 13   |
| Total trihalomethanes                                  | 250   | µg/L | 4       | 0           | 100           | 30   | 28   | 33   |



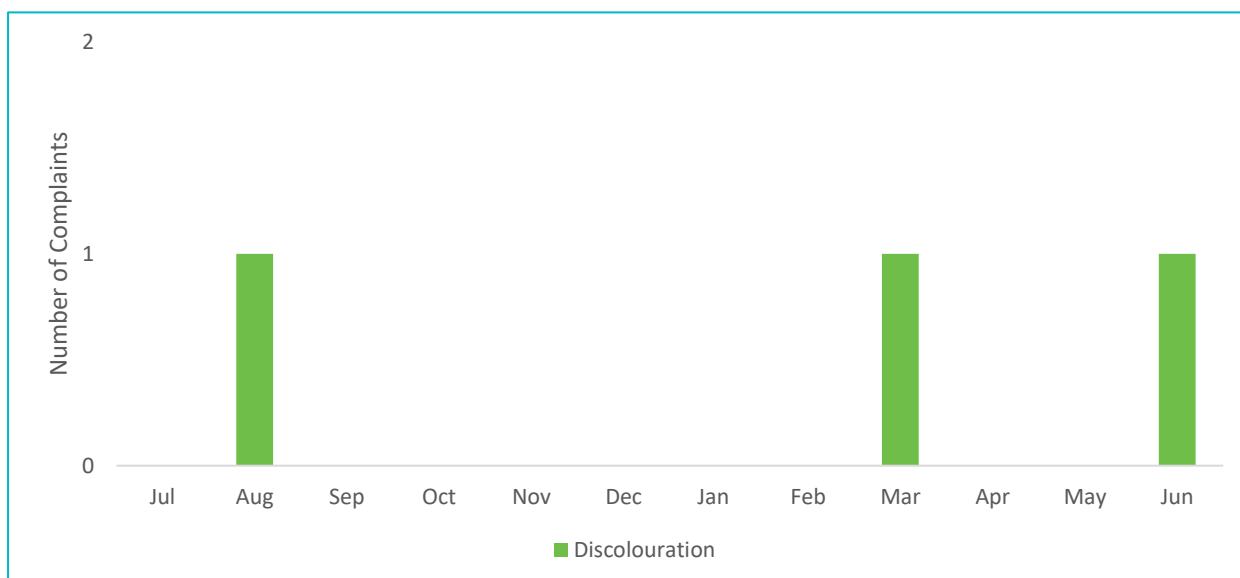
**Table 58.4-e General physical performance**

| General physical parameters |       |                 |      |      |      |
|-----------------------------|-------|-----------------|------|------|------|
| Parameter                   | Unit  | Guideline Value | Mean | Min  | Max  |
| Chlorine residual           | mg/L  | 0.1 – <0.8      | 0.74 | 0.21 | 1.09 |
| Colour True                 | HU    | 15              | <1   | <1   | <1   |
| pH                          | Units | 6.5 – 8.5       | 7.32 | 6.49 | 8.10 |
| Turbidity                   | NTU   | 1               | 0.39 | 0.11 | 5.59 |

## 58.5. Analysis of overall system performance (2020–21)

**Table 58.5-a Summary of system issues/public health warnings**

| Summary of system issues                          |             |                           |                           |
|---|-------------|---------------------------|---------------------------|
| Date  | Description | DoH notification required | DoH notification complete |
| No system issues or public health warnings issued |             |                           |                           |



**Figure 58.5-b Water quality customer complaints by month and type**

## 59. Whitemark drinking water system

### 59.1. System summary (2020–21)

| Whitemark drinking water system    |         |
|------------------------------------|---------|
| System status (as at 30 June 2021) | Potable |
| Total number of connections        | 178     |
| Population serviced                | 261     |
| Fluoride                           | n/a     |

| Performance overview against health targets (2020–21)      |         |            |        |                 |             |
|--|---------|------------|--------|-----------------|-------------|
| Indicator  | Outcome | Compliance | Target | Sampling Events | Exceedances |
| Microbiological  | 100.0%  | ☑          | 98.0%  | 52              | 0           |
| Fluoride   | n/a     | n/a        | n/a    | n/a             | n/a         |
| Metals   | 100.0%  | ☑          | 100.0% | 4               | 0           |
| DBPs   | 100.0%  | ☑          | 100.0% | 4               | 0           |
| <div><div></div> Compliant <div></div> Non-compliant</div> |         |            |        |                 |             |

| Overall system performance (2020–21) |             |         |
|--------------------------------------|-------------|---------|
| Indicator                            | Occurrences | Details |
| System issues                        | 0           |         |
| Public health warnings issued        | 0           |         |
| Notifications made to DoH            | 0           |         |
| Customer complaints                  | 0           |         |

| Current and future planned capital investment |          |          |               |            |
|---|----------|----------|---------------|------------|
| Project                                       | Overview | Progress | Est. Delivery | Est. Spend |
| No projected capital investment               |          |          |               |            |

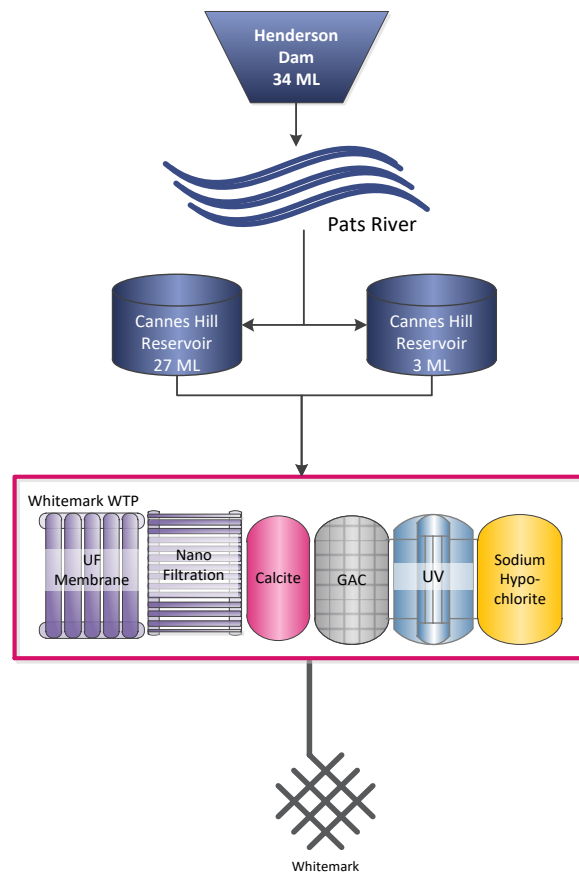


Figure 59.1-a Whitemark system schematic

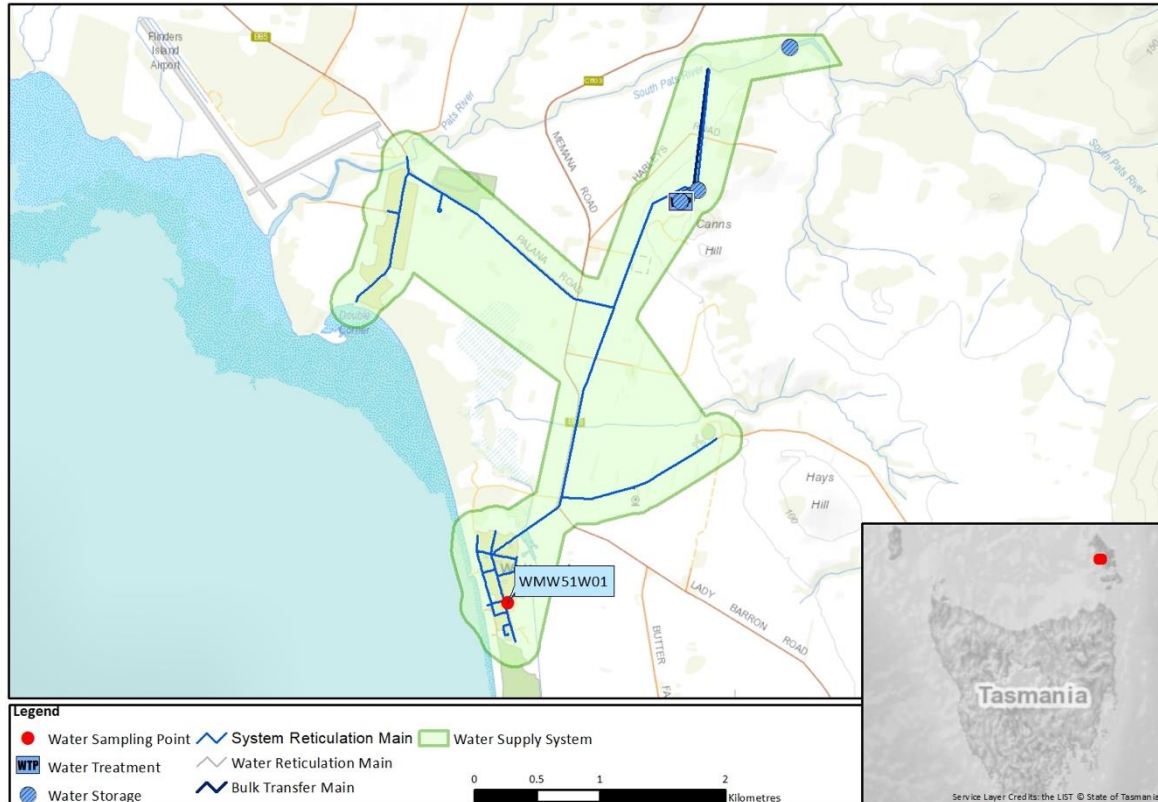


Figure 59.1-b Map of Whitemark monitoring system

## 59.2. Summary of annual reticulation compliance (2020–21)

Table 59.2-a Sampling program

| Planned sampling program (2020–21) |           |        |        |     |                |                  |                   |
|------------------------------------|-----------|--------|--------|-----|----------------|------------------|-------------------|
| Site name                          | Site Code | Micros | Metals | DBP | Fluoride (Lab) | Chemical Profile | Process Chemicals |
| Whitemark/Council Depot            | WMW51W01  | W      | Q      | Q   | n/a            | Q                | n/a               |
| Number Planned Samples             |           | 52     | 4      | 4   | n/a            | 4                | n/a               |
| Number Samples Tested              |           | 52     | 4      | 4   | n/a            | 4                | n/a               |

## 59.3. Summary of current and historic performance (2016–21)

Table 59.3-a Historical health performance overview (5 year comparison)

| Historical health performance overview (5 year comparison)   |         |         |         |         |         |
|--|---------|---------|---------|---------|---------|
| Indicator  | 2016–17 | 2017–18 | 2018–19 | 2019–20 | 2020–21 |
| Microbiological  | 99.1%   | 100.0%  | 100.0%  | 100.0%  | 100.0%  |
| Fluoride   | n/a     | n/a     | n/a     | n/a     | n/a     |
| Metals   | 100.0%  | 100.0%  | 100.0%  | 100.0%  | 100.0%  |
| Disinfection by products   | 100.0%  | 100.0%  | 100.0%  | 100.0%  | 100.0%  |
| <div> <span style="color: green;">■</span> Compliant           <span style="color: red;">■</span> Non-compliant         </div> |         |         |         |         |         |

## 59.4. Analysis of current health performance (2020–21)

Table 59.4-a Summary of health guideline exceedances

| Summary of health guideline exceedances |      |         |           |
|---|------|---------|-----------|
| Parameter Exceeding                     | Date | Details | Resampled |
| No ADWG exceedances                     |      |         |           |

**Table 59.4-b Metals performance**

| Metals – health regulated parameters |       |      |         |             |               |         |          |         |
|--------------------------------------|-------|------|---------|-------------|---------------|---------|----------|---------|
| Parameter                            | Limit | Unit | Samples | Exceedances | Performance % | Mean    | Min.     | Max.    |
| Antimony                             | 0.003 | mg/L | 4       | 0           | 100           | <0.0005 | <0.0005  | <0.0005 |
| Arsenic                              | 0.01  | mg/L | 4       | 0           | 100           | <0.0003 | <0.0003  | <0.0003 |
| Barium                               | 2     | mg/L | 4       | 0           | 100           | 0.0015  | <0.0005  | 0.0032  |
| Cadmium                              | 0.002 | mg/L | 4       | 0           | 100           | <0.0001 | <0.0001  | <0.0001 |
| Chromium                             | 0.05  | mg/L | 4       | 0           | 100           | 0.0002  | <0.0001  | 0.0003  |
| Copper                               | 2     | mg/L | 4       | 0           | 100           | 0.0003  | 0.0002   | 0.0003  |
| Lead                                 | 0.01  | mg/L | 4       | 0           | 100           | 0.0001  | <0.0001  | 0.0002  |
| Manganese                            | 0.5   | mg/L | 4       | 0           | 100           | 0.0004  | 0.0003   | 0.0005  |
| Mercury                              | 0.001 | mg/L | 4       | 0           | 100           | 0.00006 | <0.00003 | 0.00012 |
| Molybdenum                           | 0.05  | mg/L | 4       | 0           | 100           | <0.0001 | <0.0001  | <0.0001 |
| Nickel                               | 0.02  | mg/L | 4       | 0           | 100           | 0.0001  | <0.0001  | 0.0004  |
| Selenium                             | 0.01  | mg/L | 4       | 0           | 100           | 0.0001  | <0.0001  | 0.0003  |

**Table 59.4-c Disinfection by product performance**

| Disinfection by products – health regulated parameters |       |      |         |             |               |      |      |      |
|--|-------|------|---------|-------------|---------------|------|------|------|
| Parameter  | Limit | Unit | Samples | Exceedances | Performance % | Mean | Min. | Max. |
| Dichloroacetic acid                                    | 100   | µg/L | 4       | 0           | 100           | <1   | <1   | <1   |
| Monochloroacetic acid                                  | 150   | µg/L | 4       | 0           | 100           | <3   | <3   | <3   |
| Trichloroacetic acid                                   | 100   | µg/L | 4       | 0           | 100           | <1   | <1   | <1   |
| Total trihalomethanes                                  | 250   | µg/L | 4       | 0           | 100           | 10   | <4   | 15   |

**Table 59.4-d General physical performance**

| General physical parameters |       |                 |      |      |       |
|-----------------------------|-------|-----------------|------|------|-------|
| Parameter                   | Unit  | Guideline Value | Mean | Min  | Max   |
| Chlorine residual           | mg/L  | 0.1 – <0.8      | 0.85 | 0.54 | 1.240 |
| Colour True                 | HU    | 15              | <1   | <1   | 2     |
| pH                          | Units | 6.5 – 8.5       | 8.65 | 7.66 | 9.45  |
| Turbidity                   | NTU   | 1               | 0.44 | 0.10 | 1.05  |

## 59.5. Analysis of overall system performance (2020–21)

Table 59.5-a Summary of system issues/public health warnings

| Summary of system issues                          |             |                           |                           |
|---|-------------|---------------------------|---------------------------|
| Date  | Description | DoH notification required | DoH notification complete |
| No system issues or public health warnings issued |             |                           |                           |

## 60. Zeehan drinking water system

### 60.1. System summary (2020–21)

| Zeehan drinking water system       |                 |
|------------------------------------|-----------------|
| System status (as at 30 June 2021) | Potable         |
| Total number of connections        | 625             |
| Population serviced                | 905             |
| Fluoride                           | Sodium fluoride |

| Performance overview against health targets (2020–21)      |         |            |        |                 |             |
|--|---------|------------|--------|-----------------|-------------|
| Indicator  | Outcome | Compliance | Target | Sampling Events | Exceedances |
| Microbiological  | 100.0%  | ☑          | 98.0%  | 106             | 0           |
| Fluoride   | 100.0%  | ☑          | 100.0% | 48              | 0           |
| Metals   | 100.0%  | ☑          | 100.0% | 4               | 0           |
| DBPs   | 100.0%  | ☑          | 100.0% | 4               | 0           |
| <div><div></div> Compliant <div></div> Non-compliant</div> |         |            |        |                 |             |

| Overall system performance (2020–21) |             |                 |
|--------------------------------------|-------------|-----------------|
| Indicator                            | Occurrences | Details         |
| System issues                        | 0           |                 |
| Public health warnings issued        | 0           |                 |
| Notifications made to DoH            | 0           |                 |
| Customer complaints                  | 1           | Other (illness) |

| Current and future planned capital investment |                 |          |               |             |
|---|-----------------|----------|---------------|-------------|
| Project                                       | Overview        | Progress | Est. Delivery | Est. Spend  |
| WTP Upgrade                                   | UV Installation | Planning | 2022/2023     | \$1,000,000 |

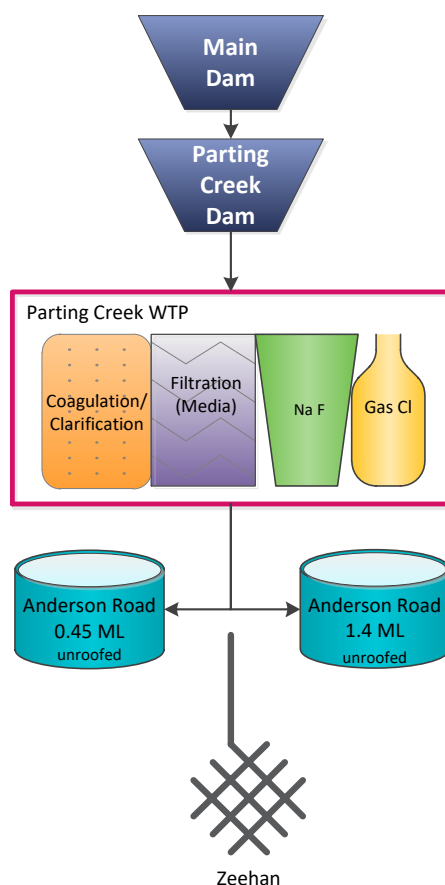


Figure 60.1-a Zeehan system schematic

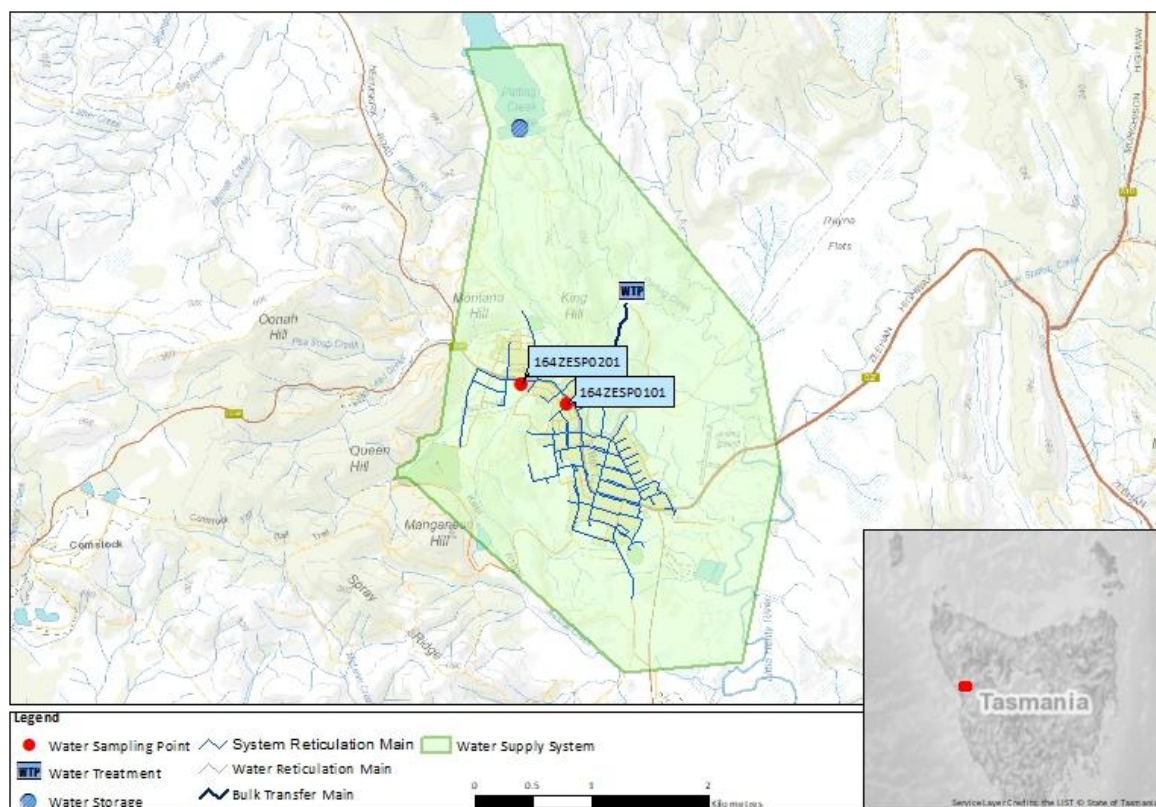


Figure 60.1-b Map of Zeehan monitoring system



## 60.2. Summary of annual reticulation compliance (2020–21)

Table 60.2-a Sampling program

| Planned sampling program (2020–21) |             |        |        |     |                |                  |                   |
|------------------------------------|-------------|--------|--------|-----|----------------|------------------|-------------------|
| Site name                          | Site Code   | Micros | Metals | DBP | Fluoride (Lab) | Chemical Profile | Process Chemicals |
| Zeehan/Main Street Sample Point    | 164ZESP0101 | W      | n/a    | n/a | 2M             | n/a              | n/a               |
| Zeehan/CMW Depot Sample Point      | 164ZESP0201 | W      | Q      | Q   | 2M             | Q                | n/a               |
| Number Planned Samples             |             | 106    | 4      | 4   | 48             | 4                | n/a               |
| Number Samples Tested              |             | 106    | 4      | 4   | 48             | 4                | n/a               |

## 60.3. Summary of current and historic performance (2016–21)

Table 60.3-a Historical health performance overview (5 year comparison)

| Historical health performance overview (5 year comparison)                     |         |                     |         |         |         |
|--|---------|---------------------|---------|---------|---------|
| Indicator  | 2016–17 | 2017–18             | 2018–19 | 2019–20 | 2020–21 |
| Microbiological  | 100.0%  | 100.0%              | 100.0%  | 100.0%  | 100.0%  |
| Fluoride   | 100.0%  | 100.0%              | 100.0%  | 100.0%  | 100.0%  |
| Metals   | 100.0%  | 97.9% <sup>43</sup> | 100.0%  | 100.0%  | 100.0%  |
| Disinfection by products   | 100.0%  | 100.0%              | 100.0%  | 100.0%  | 100.0%  |
| <div> <div></div> Compliant           <div></div> Non-compliant         </div> |         |                     |         |         |         |

## 60.4. Analysis of current health performance (2020–21)

Table 60.4-a Summary of health guideline exceedances

| Summary of health guideline exceedances |      |         |           |
|---|------|---------|-----------|
| Parameter Exceeding                     | Date | Details | Resampled |
| No ADWG exceedances                     |      |         |           |

<sup>43</sup> Retesting of metals showed no further issues

**Table 60.4-b Fluoride distribution performance**

| Distribution fluoride performance  |         |
|--|---------|
| Indicator  | 2020–21 |
| F exceeding 1.5 mg/L   | 0       |
| Average F concentration range (0.8 mg/L – 1.1 mg/L)  | 0.8     |
| 90% of F results are equal to or less than 1.1 mg/L  | 100%    |
| <div> <span style="color: green;">■</span> Compliant           <span style="color: red;">■</span> Non-compliant         </div> |         |

**Table 60.4-c Metals performance**

| Metals – health regulated parameters |       |      |         |             |               |         |          |         |
|--------------------------------------|-------|------|---------|-------------|---------------|---------|----------|---------|
| Parameter                            | Limit | Unit | Samples | Exceedances | Performance % | Mean    | Min.     | Max.    |
| Antimony                             | 0.003 | mg/L | 4       | 0           | 100           | <0.0005 | <0.0005  | <0.0005 |
| Arsenic                              | 0.01  | mg/L | 4       | 0           | 100           | <0.0003 | <0.0003  | <0.0003 |
| Barium                               | 2     | mg/L | 4       | 0           | 100           | 0.0036  | 0.0030   | 0.0043  |
| Cadmium                              | 0.002 | mg/L | 4       | 0           | 100           | <0.0001 | <0.0001  | <0.0001 |
| Chromium                             | 0.05  | mg/L | 4       | 0           | 100           | 0.0001  | <0.0001  | 0.0003  |
| Copper                               | 2     | mg/L | 4       | 0           | 100           | 0.0041  | 0.0030   | 0.0058  |
| Lead                                 | 0.01  | mg/L | 4       | 0           | 100           | 0.0002  | 0.0001   | 0.0003  |
| Manganese                            | 0.5   | mg/L | 4       | 0           | 100           | 0.0068  | 0.0047   | 0.0118  |
| Mercury                              | 0.001 | mg/L | 4       | 0           | 100           | 0.00011 | <0.00003 | 0.00021 |
| Molybdenum                           | 0.05  | mg/L | 4       | 0           | 100           | <0.0001 | <0.0001  | <0.0001 |
| Nickel                               | 0.02  | mg/L | 4       | 0           | 100           | 0.0011  | 0.0009   | 0.0014  |
| Selenium                             | 0.01  | mg/L | 4       | 0           | 100           | <0.0001 | <0.0001  | <0.0001 |

**Table 60.4-d Disinfection by product performance**

| Disinfection by products – health regulated parameters |       |      |         |             |               |      |      |      |
|--|-------|------|---------|-------------|---------------|------|------|------|
| Parameter  | Limit | Unit | Samples | Exceedances | Performance % | Mean | Min. | Max. |
| Dichloroacetic acid                                    | 100   | µg/L | 4       | 0           | 100           | 23   | 10   | 36   |
| Monochloroacetic acid                                  | 150   | µg/L | 4       | 0           | 100           | <3   | <3   | 4    |
| Trichloroacetic acid                                   | 100   | µg/L | 4       | 0           | 100           | 39   | 30   | 46   |
| Total trihalomethanes                                  | 250   | µg/L | 4       | 0           | 100           | 84   | 60   | 100  |

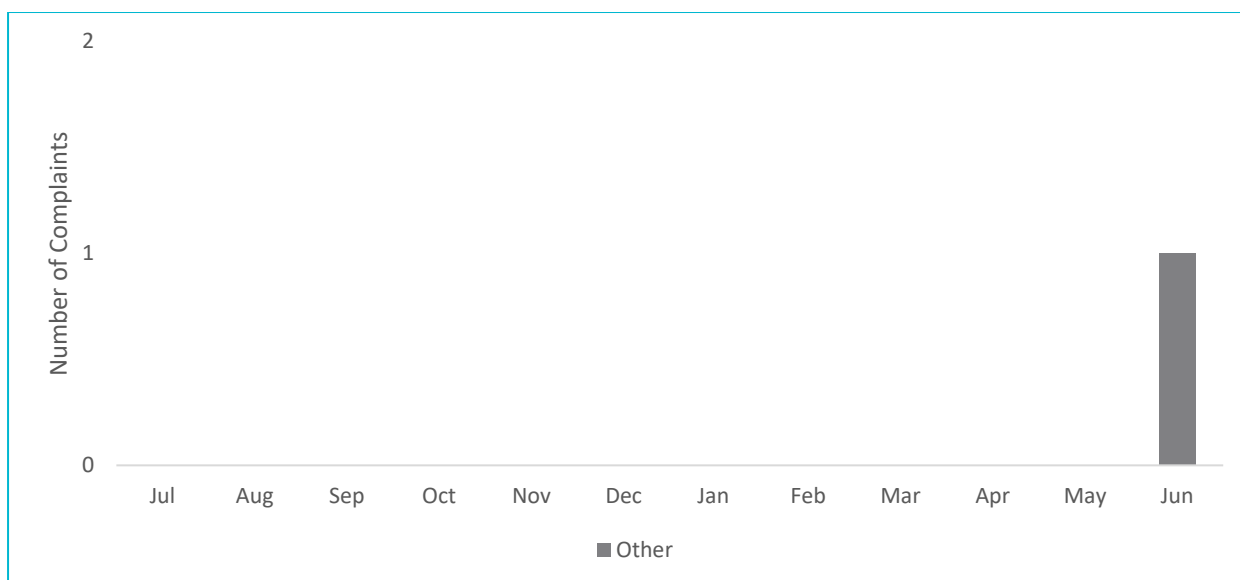
**Table 60.4-e General physical performance**

| General physical parameters |       |                 |      |      |      |
|-----------------------------|-------|-----------------|------|------|------|
| Parameter                   | Unit  | Guideline Value | Mean | Min  | Max  |
| Chlorine residual           | mg/L  | 0.1 – <0.8      | 0.75 | 0.09 | 1.71 |
| Colour True                 | HU    | 15              | 1.25 | <1   | 2    |
| pH                          | Units | 6.5 – 8.5       | 7.60 | 6.98 | 8.08 |
| Turbidity                   | NTU   | 1               | 0.20 | 0.09 | 0.69 |

## 60.5. Analysis of overall system performance (2020–21)

**Table 60.5-a Summary of system issues/public health warnings**

| Summary of system issues                          |             |                           |                           |
|---|-------------|---------------------------|---------------------------|
| Date  | Description | DoH notification required | DoH notification complete |
| No system issues or public health warnings issued |             |                           |                           |



**Figure 60.5-b Water quality customer complaints by month and type**

