ROTTNEST ISLAND AUTHORITY

PROGRAMMED

# Quarterly Drinking Water Report to the Department of Health

## 1 January – 30 March 2026

ROTTNEST ISLAND AUTHORITY

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# Contents

# 1. Water Provider Information

| Rottnest Island Authority Contact Details | |
|---|---|
| **Name of Company** | Rottnest Island Authority |
| **Company Address** | 1 Mews Road, Fremantle WA 6160 |
| **Company Phone** | **Ph.** (08) 9432 9300 |
| **Company Website** | www.rottnestisland.com |
| **Company Email** | enquiries@rottnestisland.com |
| **Executive Director** | Jason Banks |
| **Director Environment Heritage and Parks** | Arvid Hogstrom |
| **Director Infrastructure** | Martin Marerwa |
| **Manager Approvals and Compliance** | Tim Macknay |
| **Environmental Compliance Officer (PFM)** | Jay Petterwood |

## 1.1 System Information

### 1.1.1 Consumers

Water demand on Wadjemup / Rottnest Island is highly seasonal, reflecting fluctuations in visitor numbers and accommodation occupancy. Peak demand occurs during the summer months, with lower consumption during winter. In January 2026, ferry arrivals reached 124,519, with 90,482 in February and 88,794 in March.

The Island offers approximately 4,362 guest beds, with an average visitor stay of two nights. The Island also maintains a fluctuating population of around 150 permanent residents, which varies in response to seasonal demand. This population is supplemented by additional workforce accommodation (e.g. Mt Herschel Camp), with approximately 99 beds currently available to support operational personnel on the Island. Further accommodation expansion is anticipated by mid-2026 to support additional workforce capacity, with additional works planned outside the current reporting period.

### 1.1.2 Distribution System & Water Supply

The Rottnest Island water distribution system is a relatively small network comprising approximately 22 km of mains. Water supply for the island is sourced from seven saline bores within the Longreach Borefield. The abstracted seawater is directed to the desalination plant, where it undergoes reverse osmosis (RO) treatment. Following desalination, the water is disinfected through a dual chlorination system, ensuring the provision of safe drinking water to consumers on the island.

The water demand on Rottnest Island is becoming more consistent throughout the year with reduced seasonal variability. Monthly consumption can range from approximately 12,000 kL in July to 25,000 kL in December. Consumption levels for January 2026 were 24,525 kL, with 17,346 kL in February 2026 and 17,647 kL in March 2026

Rottnest Island has a combined potable water storage capacity of approximately 14,000 kL, providing approximately 16 days of supply under peak demand conditions. Water security is managed to maintain a minimum of twelve days storage during peak periods. Trains 1 and 2 within the existing desalination plant are nearing end-of-life but have recently had major refurbishment. The desalination plant has a theoretical maximum production capacity of 936 kL per day with Trains 1, 2, and 4 operational which has been supported by integration of bore 7 into the abstraction system.

The RIA has appointed a contractor to deliver two new 1,000 kL/day seawater reverse osmosis desalination trains as part of a major plant upgrade. The new plant will be up to the equivalent of Water Corporation water quality standard were practicable and will include Multi Media Filtration as well as a second pass train.

Remote locations outside the main settlement, such as the outer island ablutions, Wadjemup Lighthouse and surrounding area, are supplied with water via a tanker. The supplied water in these areas is deemed not suitable for drinking and warning signs are posted accordingly.


*Figure 1 Example of Public Signage*

### 1.1.3 Sampling Schedule & Procedure

Potable water quality monitoring on Rottnest Island is conducted in line with the Australian Drinking Water Guidelines (ADWG) and follows the sampling schedule outlined in the Rottnest Island Drinking Water Quality Risk Management Plan (November 2022).

All sampling, reporting, and compliance assessments are based on the ADWG Version 3.7 as per direction from Department of Health (DoH).

The monitoring program is adaptable and may be revised in response to:

- Updated risk assessments;
- Emerging industry trends or best practice;
- Guidance or specialist recommendations from Government Departments; and
- Incident investigations or post incident reviews.

In addition to routine sampling under the 2022 risk management plan, RIA also undertakes targeted monitoring of:

- Tanks 4 and 7, however, the data does not form part of the statistical data required for analysis in this quarterly report.
- Drinking water fountains, as recommended by the DoH in 2017.
- Bromate, following testing for additional minerals and metals in 2017. Bromate was identified, and weekly sampling occurs to monitor the results.

## 2. Performance Summary

| Summary of Water Quality results compared to the ADWG<br>January – March 2026 | | | |
|---|---|---|---|
| **Parameters** | **No. of Analyses** | **No. of Analyses Complying with ADWG** | **No. of ADWG exceedance events** |
| **Microbial** | | | |
| Bacterial (*E.coli*) | 65[1] | 65 | 0 |
| Amoeba (Thermophilic *Naegleria)* | 27[2] | 27 | 0 |
| **Chemical & Physical** | | | |
| Health | 346[3] | 346 | 0 |
| Aesthetic | 410[4] | 293 | 117 |
| **Radiological[5]** | | | |
| Gross Alpha | 0 | NA | NA |
| Gross Beta | 0 | NA | NA |
| **PFAS** | | | |
| PFOS & PFHxS | 2 | 2 | 0 |
| PFOA | 2 | 2 | 0 |

[1] This number does not include Tank 4 & 7

[2] Ibid

[3] Ibid

[4] Ibid

[5] Samples were not scheduled within this quarter

# 3. Microbial Performance

During the January – March 2026 reporting period, there were no reported exceedances of microbiological parameters compared against the ADWG in the potable water distribution system.

Section 3.1 presents an overall compliance summary for all microbial-related sample analyses.

## 3.1 Microbial – Compliance Summary

| Rottnest Island Distribution System<br>January – March 2026 | | | | |
|---|---|---|---|---|
| **Microbial Characteristic** | **Memorandum of Understanding Compliance Criteria** | **No. of Analyses** | **No. of Analyses Complying with Memorandum of Understanding** | **% Compliance** |
| **Bacterial** | | | | |
| *E.coli* | Non-Detect | 65 | 65 | 100% |
| **Amoeba** | | | | |
| Thermophilic *Naegleria* | Non-Detect | 27 | 27 | 100% |

# 4. Chemical: Health Related Performance

During the January – March 2026 reporting period, no exceedances of the chemical health parameters outlined in the ADWG were recorded for the potable water distribution system.

Section 4.1 presents an overall compliance summary for all chemical health-related sample analyses.

## 4.1 Chemical: Health Related – Compliance Summary

| Rottnest Island Distribution System<br>January – March 2026 | | | | | |
|---|---|---|---|---|---|
| **Health Parameter** | **ADWG Compliance Criteria (mg/L)** | **No. of Analyses** | **No. of Analyses Complying with ADWG** | **% Compliance with ADWG** | **Max Value of Analysis (mg/L)** |
| Antimony (Sb) | 0.003 | 27 | 27 | 100% | < 0.001 |
| Bromate ($BrO3^-$) | 0.02 | 117 | 117 | 100% | 0.009 |
| Chlorine Total (Cl2) *(in house testing Total Residual)* | 5 | 117 | 117 | 100% | 1.62 |
| Copper (Cu) | 2 | 4 | 4 | 100% | 0.071 |
| Fluoride (F) | 1.5 | 27 | 27 | 100% | 0.03 |
| Lead (Pb) | 0.01 | 4 | 4 | 100% | < 0.001 |
| Nickel (Ni) | 0.02 | 4 | 4 | 100% | < 0.001 |
| Nitrate ($NO3^-$) | 50 | 4 | 4 | 100% | < 0.001 |
| Nitrite ($NO2^-$) | 3 | 12 | 12 | 100% | < 0.01 |
| Trihalomethanes (THMs) | 0.25 | 12 | 12 | 100% | 0.0089 |

# 5. Chemical: Aesthetic Performance

During the January – March 2026 reporting period, there were 117 sample exceedances of chemical aesthetic parameters in the potable water distribution system, the details of which are outlined in Section 5.2.

## 5.1 Chemical: Aesthetic - Compliance Summary

| Rottnest Island Distribution System January – March 2026 | | | | | |
|---|---|---|---|---|---|
| **Aesthetic Parameter** | **ADWG (mg/L unless stated)** | **No. of Analyses** | **No. of Analyses Complying with ADWG** | **% Compliance with ADWG** | **Max Value of Analysis (mg/L)** |
| Aluminium (Al) | 0.2 | 3 | 3 | 100% | < 0.05 |
| Ammonia (NH3) | 0.5 | 8 | 8 | 100% | < 0.02 |
| Chloride ($Cl^-$) | 250 | 1 | 1 | 100% | 85 |
| Free Chlorine (Cl) *(in house testing)* | 0.6 | 117 | 0 | 0% | 1.49 |
| Colour | 15 (HU) | 2 | 2 | 100% | < 5 |
| Hardness (CaCO3) | 200 | 1 | 1 | 100% | 14 |
| Hydrogen Sulphide | 0.05 | 5 | 5 | 100% | < 0.05 |
| Iron (Fe) | 0.3 | 27 | 27 | 100% | 0.23 |
| pH | 6.5 – 8.5 | 117 | 117 | 100% | 7.19, 7.79[6] |
| Sodium (Na) | 180 | 117 | 117 | 100% | 81 |
| Sulphate | 250 | 1 | 1 | 100% | 1.5 |
| TDS | 600 | 1 | 1 | 100% | 170 |
| Turbidity | 5 (NTU) | 7 | 7 | 100% | 0.50 (NTU) |
| Zinc (Zn) | 3 | 4 | 4 | 100% | 0.047 |

[6] The two numbers represent the lowest and the highest pH values measured respectively.

## 5.2 Chemical: Aesthetic – Incident Specific Information

- **Chlorine (free):** During this reporting period, 117 recorded samples exceeded the ADWG aesthetic limit of 0.6 mg/L for chlorine.

  The ADWG establishes an aesthetic odour threshold of 0.6 mg/L, however, these exceedances do not pose any health risks, as all values remained well below the health guideline limit of 5.0 mg/L.

  Aesthetic exceedances were observed across multiple distribution sampling points over the three-month period, with a maximum recorded concentration of 1.49 mg/L at R12/008 on 11 February 2026.

  While higher chlorine concentrations may affect the aesthetic quality of drinking water, maintaining adequate disinfection is essential to ensuring its safety.

## 6. Radiological Performance

No radiological water quality samples were collected during this reporting period (Q3 FY2025/26). Radiological sampling was last undertaken in October 2025 (Q2 FY2025/26) in accordance with the monitoring program.

# 7. PFAS Performance

During the January – March 2026 reporting period, no exceedances of radiological parameters outlined in the ADWG were recorded for the potable water distribution system.

## 6.1 PFAS - Compliance Summary

| Rottnest Island Distribution System January – March 2026 | | | | | |
|---|---|---|---|---|---|
| **Radiological Parameter** | **ADWG (mg/L unless stated)** | **No. of Analyses** | **No. of Analyses Complying with ADWG** | **% Compliance with ADWG** | **Max Value of Analysis (Bq/L)** |
| PFOS & PFHxS | 0.07 | 2 | 2 | 100% | < 0.001 |
| PFOA | 0.56 | 2 | 2 | 100% | < 0.001 |

# 8. Planned Sample Summary

During the January – March 2026 reporting period, routine monitoring was conducted in accordance with the planned sampling schedule for microbial, chemical, and radiological parameters, with a total of 537 samples collected. A summary of sample numbers and compliance with the sampling program is provided in Section 8.1.

## 8.1 Planned Sample – Compliance Summary

| Planned Samples January – March 2026 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Microbial | | | Chemical | | | PFAS | | |
| Planned[7] | Taken[8] | % Taken | Planned | Taken | % Taken | Planned | Taken | % Taken |
| 187 | 187 | 100% | 346 | 346 | 100% | 4 | 4 | 100% |

[7] A planned sample is defined as being included in the sampling schedule for this reporting period.

[8] A taken sample is the physical sample taken for this reporting period.

## 9. Customer Complaints

There were no customer complaints relating to drinking water quality performance during this reporting period. RIA has a Utilities Customer Complaint Procedure, which outlines how complaints can be submitted.

# 10. Special Investigations

## 10.1 Bromate Management

The RIA continues to actively monitor and manage bromate formation across the distribution network, in line with the decisions made during the Quarterly Meeting held on 26 September 2019 between the RIA, PFM, and the DoH. To ensure water quality, bromate levels are tested weekly at the following locations: R12/001 - R12/008, Fays Bay, Tank 4, and Homestead. Additionally, bromide levels are monitored weekly at Tank 7 to support effective management of bromate formation.

## 10.2 Drinking Fountain Monitoring Initiative

The RIA initiated a drinking fountain monitoring program in December 2017, following a recommendation from the DoH. The findings from this sampling program played a key role in supporting the island's drinking fountain replacement project, which involved the replacement of all existing drinking fountains and the installation of new facilities throughout the settlement.

The drinking fountain monitoring program and its sampling results are reported separately from the broader distribution system or network. The results for the January – March 2026 quarter are provided in the table below. Sampling of the drinking fountains occurs on a four-week cycle. During this reporting period, there were no exceedances.

| Rottnest Island Drinking Fountain<br>January – March 2026 | | | | | |
|---|---|---|---|---|---|
| **Health Characteristic** | **ADWG (mg/L)** | **No. of Analyses** | **No. of Analyses Complying with ADWG** | **% Compliance with ADWG** | **Max Value of Analysis (mg/L)** |
| Antimony (Sb) | 0.003 | 96 | 96 | 100% | < 0.001 |
| Cadmium (Cd) | 0.002 | 96 | 96 | 100% | < 0.0001 |
| Copper (Cu) | 2 | 96 | 96 | 100% | 0.63 |
| Lead (Pb) | 0.010 | 96 | 96 | 100% | 0.001 |
| Nickel (Ni) | 0.020 | 96 | 96 | 100% | 0.009 |
| **Aesthetic Characteristic** | **ADWG (mg/L)** | **No. of Analyses** | **No. of Analyses Complying with ADWG** | **% Compliance with ADWG** | **Max Value of Analysis (mg/L)** |
| Zinc (Zn) | 3 | 96 | 96 | 100% | 0.12 |

## 10.3 Other Sampling

### 10.3.1 Central Thompson and Utility Maintenance Area

Sampling was undertaken across a range of representative internal plumbing locations within worker accommodation and operational area drinking fountains in the Central Thomson area. A total of three results exceeded the ADWG health guideline for bromate, which were reported to DoH.

A water quality specialist was engaged to investigate and provide recommendations that are currently under review by the RIA.

Immediate corrective actions taken:

1. Increased flushing at the affected properties.
2. Prioritisation of the transition of properties within the investigation area to the pressurised main.

Alternative drinking water has been supplied to the residence during the investigation period.

In addition, RIA has completed several investigations across the network, which have significantly improved RIA's understanding of its operation. As a result, RIA will commence a project to decommission the affected gravity main to the point of isolation, with the installation of additional flushing points to support a regular flushing programme. As part of the broader water network replacement, works being undertaken by RIA separately from this investigation, it has been agreed that the affected properties will be connected to the pressure main network.

### 10.3.2 Homestead

PFM initiated monthly sampling of a 3 kL potable water storage tank at the Rottnest Island Homestead shortly after its installation in November 2022. In February 2024, this tank was replaced with a larger 50 kL tank, which is directly supplied by the pressurised water main. The new tank is now sampled weekly for bromate levels and monthly for microbiological indicators to ensure water quality is maintained.

During the reporting period, three bromate exceedance events were recorded above the ADWG chemical guideline value of 0.02 mg/L. These occurred on the following dates:

- 28 January 2026: Bromate level of 0.030 mg/L
- 17 February 2026: Bromate level of 0.028 mg/L
- 17 March 2026: Bromate level of 0.025 mg/L

In accordance with Protocol 10 – Chemical Exceedances, PFM implemented the required response actions, including immediate stakeholder notification, increased sampling frequency, and targeted flushing of the Homestead's internal system. While these actions were partially effective in reducing bromate concentrations, they did not fully prevent subsequent exceedances during the same period.

The pattern of results and timing of the exceedances suggest a correlation with periods of low water turnover and stagnation within the Homestead tank. Preventative measures have since been incorporated into the operational regime, including periodic high-volume flushing, continued weekly bromate monitoring, and the installation of an

outdoor sprinkler system connected to a timer to promote turnover and maintain more consistent flow through the tank. These controls aim to minimise stagnation, stabilise disinfectant residuals, and reduce bromate formation risk during future low-demand periods.