2022
Water Quality Report

The Jersey New Waterworks Company Limited

Jersey Water
for Island life

Contents

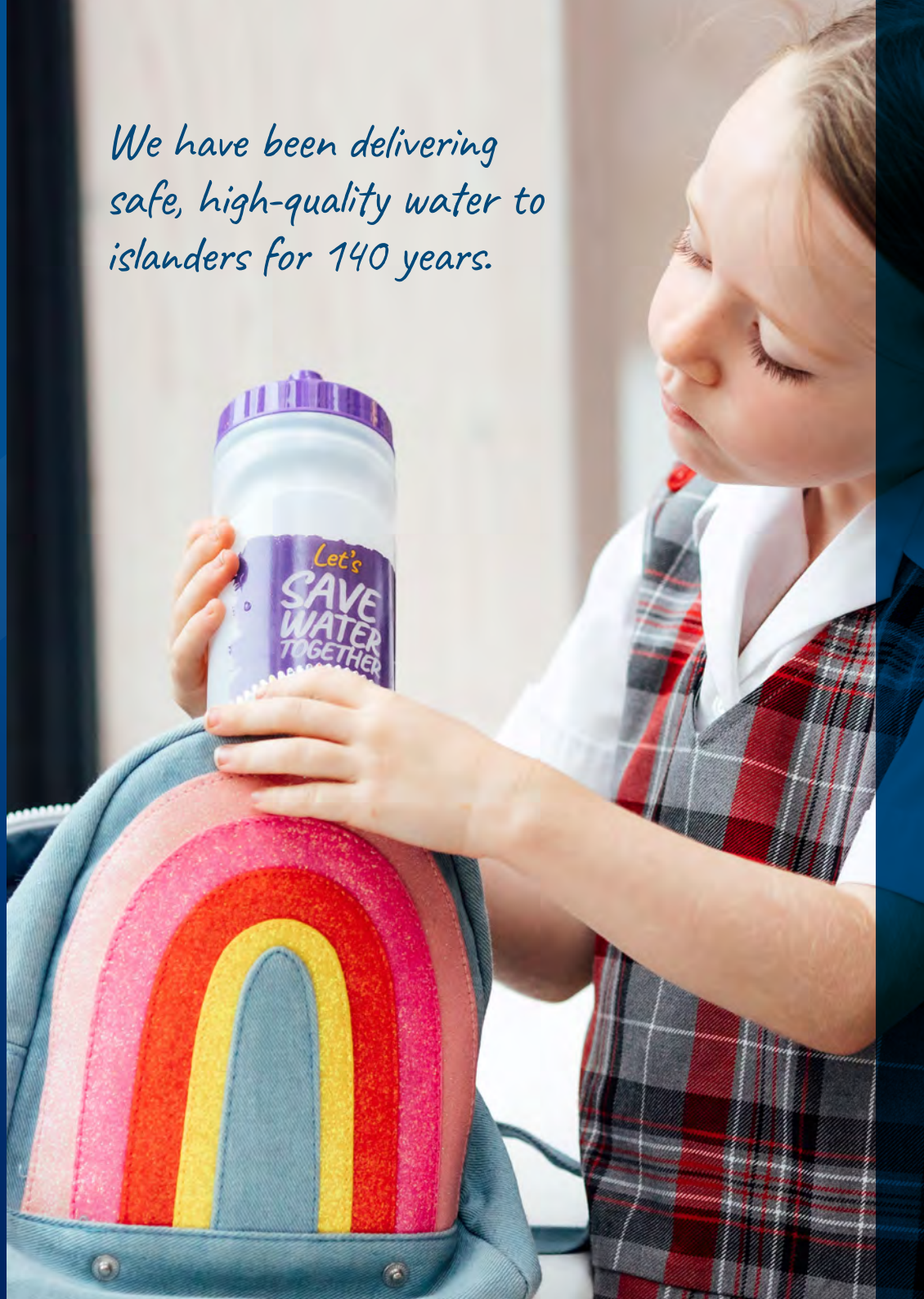
Executive Summary

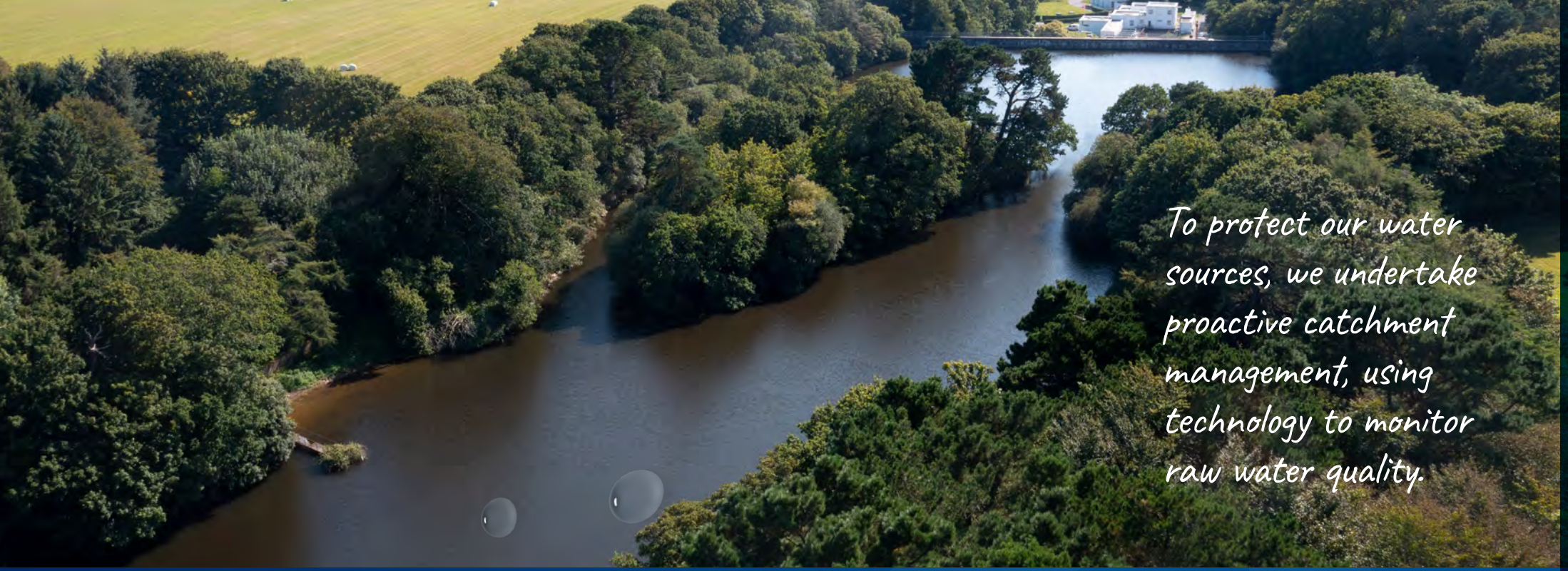
We have been delivering safe, high quality water to islanders for 140 years. This year, our supply continued to be of excellent quality, with 99.99% of samples meeting the requirements of the Water (Jersey) Law 1972. To monitor this performance, we completed over 16,956 sampling tests on untreated water from streams, storage reservoirs, and the inlet to our treatment works. In addition, 14,867 laboratory tests were taken on treated water from our water treatment works or in the mains network. Of these, just two samples were outside the respective regulatory parameters but they posed no significant risk to health.

For the fourth consecutive year, significantly fewer customers contacted Jersey Water regarding the acceptability of their drinking water. We received just 65 contacts in 2022, nearly half the number (122) received in 2020. The majority of these concerns related to the colour, taste and odour of the drinking water. The number of contacts remains significantly below the industry average for England and Wales.

Jersey Water's Water Quality Team is part of the wider Water Supply Team and comprises specialists in chemistry, microbiology, data analysis and sampling. The team works out of the Millbrook Laboratory, where a range of microbiological and chemical analyses are carried out seven days a week. The team is responsible for the sampling, analysis and reporting required to ensure our customers receive safe, clean drinking water whenever they want it. The team works very closely with Jersey Water colleagues responsible for all aspects of the water supply chain, providing support and advice on issues affecting water quality. The team also work closely with other stakeholders and organisations, as described below.

In 2022, Jersey Water commenced a collaborative research project with Cardiff University and the University of Bath. The goal of this project is to better understand how to manage algae blooms in our raw water storage reservoirs. The project, which includes the innovative use of eDNA sampling to identify and monitor algae species in the water, will help to further minimise the risks of adverse taste and odour, which algae can cause.





As part of the Action for Cleaner Water Group (ACWG), we continue to work closely with the Government of Jersey and the farming community, delivering water quality improvements and protecting the catchment from pollution risks. To protect our water sources, we undertake proactive catchment management, using technology to monitor raw water quality.

For the ninth consecutive year, we have successfully treated and maintained nitrate concentrations below the regulatory limit in drinking water. Drinking water quality was also fully compliant with limits for pesticides for the sixth year in a row.

We are collaborating with the Government of Jersey Technical Officer Group investigating the issue of poly- and perfluoroalkyl substance (PFAS) pollution in the vicinity of the airport within the St. Ouen's Bay aquifer and Pont Marquet catchment – two important water sources for Jersey.

Their pollution with PFAS presents a significant raw water quality challenge which restricts their use their use and our ability to extract water from them. Although the PFAS levels are effectively managed through raw water blending, a holistic solution must be found for this pollution issue so that the island may address the current and future water quality risks presented by PFAS.

To manage the current water quality risk, we monitor the level of PFAS at the treatment works and in the affected water sources through an extensive sampling and analysis programme. The results of our testing provide assurance that the drinking water supply in Jersey remains fully compliant with water quality limits for PFAS set by the EU Drinking Water Directive and UK Regulations. To find a potential solution to the PFAS problem, our Production and Technical teams continue to work with a leading remediation specialist. These studies assess the effectiveness of an up and coming treatment technology known as SAFF (Surface Active Foam Fractionation). Our teams undertook treatment trials using a benchtop pilot plant to quantify the percentage removal of PFAS substances from the raw water sources. Jersey Water will continue to work closely with the Government of Jersey Technical Officer Group to develop a robust solution to meet the anticipated introduction of a standard of the PFAS regulatory standard for drinking water.

Supply Points and Supply Zone Regulatory Results

Jersey Water adopts a risk based water quality monitoring programme consistent with other water suppliers in Europe and elsewhere. In line with our Water Safety Plan, this approach involves evaluating potential risks and designing water quality testing to help manage those risks.

For compliance purposes, at regular intervals throughout the year, we examined samples from various supply points, including our two treatment works at Handois and Augrés, service reservoirs at Westmount and Les Platons, and the supply zone (also known as the distribution network).

Jersey Water is required to undertake two kinds of regulatory water quality monitoring – check and audit monitoring.

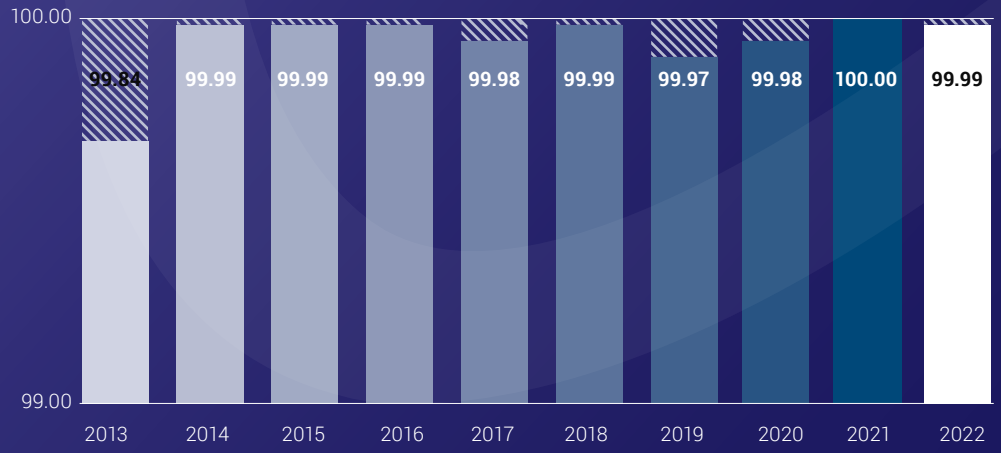
Check monitoring occurs most frequently. It is designed to ensure that the treatment works are operating as expected and the water in distribution is suitable for supply. Audit monitoring is performed less frequently. It is designed to test the quality of the water supplied against the full requirements of the Water (Jersey) Law 1972 (as amended).

Overall Compliance

The 2022 report is based on the twelve-month period from 1 October 2021 to 30 September 2022. Water quality in 2022 was very high, with only two non-compliant regulatory analyses identified out of 14,867 analyses taken for compliance purposes. Overall water quality compliance for 2022 was 99.99%, slightly down from the 2021 rate of 100%. Further details are provided below.

Water quality in 2022 was very high

Percentage Compliance



Treatment Works Performance (Supply Points)

Jersey Water samples water leaving the treatment works to ensure that it complies with regulatory parameters before it enters the mains network. During the 2022 reporting period, we completed 418 sampling events, resulting in 11,942 analyses covering 137 physical, bacteriological and chemical parameters. Only one non-compliant analysis was identified in regulatory samples taken during 2022. This resulted from the identification of a single coliform found in a sample taken at Augrés Treatment Works. Further samples were taken from the Treatment Works and the area supplied by Augrés, with no further instances identified. The detection of a single coliform posed no risk to health.

Detailed supply point results are set out in Appendix 1, 2, 3 and 4.

Service Reservoir Performance

To comply with Regulations, we take weekly microbiological and residual disinfectant samples from the service reservoirs to ensure there has been no deterioration in water quality during storage. During the 2022 reporting period, we undertook 780 analyses on 156 samples, all of which were compliant.

Detailed service reservoir results are set out in Appendix 5.

Water Quality in the Distribution System (Supply Zone)

We took 244 water samples at fixed points and customer premises within the distribution system. All but one of the 2,145 analyses were compliant with regulatory limits in the 2022 reporting period.

The one non-compliant sample was for a first draw lead analysis taken at a random consumer premises. Further investigation attributed the result to the property's internal plumbing and the customer was provided with suitable advice.

Detailed supply zone results are set out in Appendix 6 and 7.

Consumer Contacts and Enquiries

Every contact and enquiry we receive at Jersey Water is recorded and categorised, whether or not a visit is required to investigate the issue. All contacts for the 2022 reporting period are noted in the tables below.

Informing Consumers

		Consumer enquiries - sub categories				
		Fluoride	Water hardness	Water quality report	Other information	
Total consumer enquiries (3.1.1.)	1	0	0	1	0	
		Consumer contact (dw quality concern) - sub categories				
		Pets & other animals	Lead & other analysis	Incident related	Campaigns	Lifestyle
Total contacts Drinking water quality concern (3.1.5.1)	7	0	4	3	0	0
Zone Total	8					
Zone rate (contact per 1,000 population)	0.08	E&W Industry average 2021: 4.2				

We care about our customers, and supplying water for our Island to thrive, today and every day.

Acceptability of water to consumers

		Consumer contact (appearance) - sub categories						
Total contacts appearance (3.1.2.)	32	Discoloured black, brown, orange	Discoloured blue/green	Particles	White - air	White - chalk	Animalcules	General condition
		17	0	5	3	2	0	5
		Consumer contact (taste and odour) - sub categories						
Total contacts taste/odour (3.1.3.)	21	Chlorine	Earthy / musty	Petrol/diesel	Other taste or odour			
		1	3	2	15			
		Consumer contact (illness) - sub categories						
Total contacts illness (3.1.4.)	12	Gastroenteritis	Oral	Skin	Medical opinion			
		3	1	5	3			
Zone Total	65							
Zone rate (contact per 1,000 population)	0.65	E&W Industry average 2021: 1.22						

In 2022, fewer consumers contacted Jersey Water with enquiries and water quality concerns than they did in 2021. The number of contacts was also significantly lower than the England and Wales (E&W) industry average for 2021.

As in previous years, water appearance was the most common concern prompting consumers to contact us, accounting for 49% of all contacts. This is slightly lower than in 2021, when 53% of contacts related to appearance.

The number of contacts regarding the taste or odour of the water supplied by Jersey Water increased slightly from 17 in 2021 to 21 in the 2022 reporting period.

There were eight contacts for water quality information in the 2022 reporting period, fewer than in previous years. They covered a range of topics including requests for analysis and access to the water quality report.

We took bacteriological and chemical samples at 12 properties where the consumer suspected the water supply to be causing illness. These samples were 100% compliant with the Regulations. We took a further 49 bacteriological samples while investigating other consumer contacts – all were compliant.

2022 is the first time no detection of pesticides over 0.1 µg/l in the water abstracted for treatment has been achieved in Jersey since electronic records began.

Raw Water Quality

For operational and monitoring purposes, Jersey Water takes samples of water from streams, reservoirs and the inlet to the treatment works. This enables our operational employees to select the most suitable waters to be taken for treatment.

Nitrates

Nitrates in treated water reached a peak of 38.4 mg/l in March 2022, well below the regulatory limit of 50mg/l. This was achieved through the careful selection and blending of raw water during the potato growing season, and due to the availability of low nitrate water collected in the reservoirs before the growing season began.

Nitrates in raw water peaked at 103.6 mg/l in January 2022 in the Queen's Valley Side Stream catchment and averaged 38.1 mg/l throughout the island in 2022, down from 43.9 mg/l in 2021.

Further information on the concentrations of nitrates in raw water is available at our Stream Nitrate Map.

Pesticides

Throughout 2021 and 2022, we carefully managed the raw water taken from reservoirs for treatment to optimise water quality and minimise pesticide concentrations.

We continued monitoring for pesticides weekly in the 2022 reporting period, using an analytical method which scans for 450 substances. This enabled us to quickly identify any issues.

During 2022, there was no occasion on which we detected pesticides at 0.1 µg/l or greater in the raw water extracted for treatment.

This compares with one instance of detection in 2021, and is the first time no detection of pesticides over 0.1 µg/l has been achieved on in the raw water since our electronic records commenced over 20 years ago.

PFAS

Drinking water supplied by Jersey Water has been tested for poly- and perfluoroalkyl substances (PFAS) since 1989. Based on the results of this testing, the drinking water supply in Jersey has been fully compliant with the water quality requirements of the Water (Jersey) Law 1972 and meets the definition of wholesomeness against which drinking water quality is assessed. Results of drinking water testing for 2022 (Appendix 4) show either no detections for PFAS or detections well within the UK DWI guidance.

Understanding Test Results

Regulatory Analyses

The Water (Jersey) Law 1972 (as amended) requires two types of monitoring at the treatment works and service reservoir outlets and in the distribution system:

(i) Check monitoring

Testing performed frequently to ensure that the treatment works and the water in distribution is suitable for supply.

(ii) Audit monitoring

Testing performed less frequently than check monitoring and which is designed to test the quality of the water supplied against the full requirements of the Water (Jersey) Law 1972.

Term	Description
Substances and parameters	The item we are testing for.
Specific concentration or value (maximum) or state	The maximum or range of values allowed by law in the water supply (regulatory limit).
mg/l	Milligrams per litre or parts per million, equivalent to 1p in £10,000.
µg/l	Micrograms per litre or parts per billion, equivalent to 1p in £10,000,000.
µS/cm	The unit of measure commonly used for electrical conductivity in water, microSiemens/cm.
Sample Point	The location where the sample was taken.
Min	The minimum or lowest result produced for that test.
Mean	The average value of all the results produced for that test.
Max	The maximum or highest result produced for that test.
% Compliance	The percentage of the results that comply with the regulatory limit.
MPN	Most probable number – a statistical method used to estimate the viable numbers of bacteria in a sample.
CFU	Colony forming units – a physical count of the number of colonies of bacteria visible on a membrane or an agar plate.
LoD	Limit of Detection for the analysis.

Appendix 1: 2022 Treatment Works Performance – Check Monitoring

Substances and parameters	Specific concentration or value (maximum) or state	Sample Point	Min	Mean	Max	% Compliance	What it means
E.coli	0 MPN per 100ml	Augrés Final Water	0	0	0	100	Primary indicator of faecal contamination of treated water. Immediate action is taken if these organisms are detected in drinking water.
		Handois Final Water	0	0	0	100	
Coliform bacteria	0 MPN per 100ml	Augrés Final Water	0	0	1	99.5	These bacteria are widely distributed in the environment and provide a sensitive measure of the microbiological quality of the water supply.
		Handois Final Water	0	0	0	100	
Colony counts	No abnormal change	Augrés Final Water	No abnormal change			100	Monitoring water supplies for colony count bacteria can be useful for monitoring trends or detecting sudden changes in water quality. Tests are completed at 22°C and 37°C.
		Handois Final Water				100	
Nitrite	0.1 mg NO_2/l	Augrés Final Water	<0.003	<0.003	0.018	100	Nitrite may be associated with nitrate or the use of ammonia in water disinfection.
		Handois Final Water	<0.003	<0.003	0.021	100	
Residual disinfectant	No value mg Cl_2/l	Augrés Final Water	0.41	0.53	0.73		Sufficient chlorine is added to all supplies to ensure the absence of harmful microorganisms. The concentration of chlorine is carefully controlled to maintain water quality while minimising taste and odour issues for customers.
		Handois Final Water	0.33	0.50	0.70		
Turbidity	1 NTU	Augrés Final Water	0.05	0.10	0.26	100	The standard requires that there should be no haziness caused by fine particles. Small air bubbles in the water can produce a milky appearance, which clears if the water is left to stand for a few minutes.
		Handois Final Water	0.04	0.09	0.19	100	
Conductivity	2500 µS/cm at 20°C	Augrés Final Water	450	502	580	100	A measure of the water's ability to conduct an electric current and therefore a measure of the mineral salts dissolved in the water.
		Handois Final Water	471	523	627	100	

Appendix 2: 2022 Treatment Works Performance – Audit Monitoring

Substances and parameters	Specific concentration or value (maximum) or state	Sample Point	Min	Mean	Max	% Compliance	What it means
Clostridium perfringens	0 CFU per 100 ml	Augrés Final Water	0	0	0	100	The presence of *Clostridium perfringens* in filtered water and/or final water may indicate deficiencies in the filtration or disinfection processes. If these organisms are detected, action is always taken.
		Handois Final Water	0	0	0	100	
Benzene **Bromate** **1,2 dichloroethane** **Trichloroethene &}** **Tetrachloroethene}**	1.0 µg/l 10 µg BrO_3/l 3.0 µg/l 10 µg/l	Augrés Final Water	All results were below limit of detection from both sample points.			100 100 100 100	Benzene may be introduced into source water by industrial effluents or atmospheric pollution. Bromate may be associated with industrial pollution, or may occur as a byproduct of the disinfection process. The other compounds are all organic solvents; their presence indicates industrial pollution.
		Handois Final Water					
Tetrachloromethane	3 µg/l	Augrés Final Water		<0.11		100	The presence of this organic solvent indicates industrial pollution.
		Handois Final Water		<0.11		100	
Boron	1.0 mg B/l	Augrés Final Water	0.059	0.107	0.205	100	Levels have been influenced by the prolonged running of the desalination plant this year. Although higher than normal, the amount found is well within the standards, which have a large built-in safety factor.
		Handois Final Water	0.066	0.194	0.517	100	
Cyanide	50 µg CN/l	Augrés Final Water	<4.1	<4.1	<4.1	100	Very low levels may occur naturally, but higher amounts could be associated with industrial pollution. The standards are health related but have a large built-in safety factor.
		Handois Final Water	<4.1	<4.1	<4.1	100	

Appendix 2: 2022 Treatment Works Performance – Audit Monitoring (continued)

Substances and parameters	Specific concentration or value (maximum) or state	Sample Point	Min	Mean	Max	% Compliance	What it means
Fluoride	1.5 mg F/l	Augrés Final Water	<0.03	<0.03	0.06	100	Occurs naturally in many water sources. The standard is set to ensure no adverse effects. Jersey Water does not artificially fluoridate the water supplies.
		Handois Final Water	<0.03	0.03	0.09	100	
Chloride	250 mg Cl/l	Augrés Final Water	59	65	67	100	Occurs naturally in most water sources. Levels above the standard could cause taste issues and contribute to corrosion.
		Handois Final Water	97	101	106	100	
Sulfate	250 mg SO_4/l	Augrés Final Water	86	87	88	100	Dissolves in water after contact with certain mineral deposits. Excess levels can contribute to corrosion.
		Handois Final Water	69	74	79	100	
Total Organic Carbon	No abnormal change	Augrés Final Water	1.4	1.6	1.9	100	This parameter assesses the organic content of the water.
		Handois Final Water	1.5	1.7	2.0	100	
Gross Alpha	0.1 Bq/l	Augrés Final Water	<0.020	<0.020	<0.020	100	These parameters are measured as part of screening for radioactivity.
		Handois Final Water	<0.020	<0.020	<0.020	100	
Gross Beta	1.0 Bq/l	Augrés Final Water	<0.28	<0.28	<0.28	100	
		Handois Final Water	<0.28	<0.28	<0.28	100	

Appendix 3: 2022 Treatment Works Pesticide Analysis– Audit Monitoring

In 2022, 83 pesticides were analysed at the treatment works outlets. The following table shows pesticides detected above the limit of detection. The majority of pesticides (66) were not found in concentrations above the limit of detection.

Substances and parameters	Specific concentration or value (maximum) or state	Sample Point	Min	Mean	Max	% compliance
2,4-D	0.1 µg/l	Augrés Final Water	<0.007	<0.007	0.044	100
		Handois Final Water	<0.007	<0.007	0.007	100
Atrazine	0.1 µg/l	Augrés Final Water	<0.002	<0.002	0.002	100
		Handois Final Water	<0.002	<0.002	0.004	100
Atrazine Deisopropyl	0.1 µg/l	Augrés Final Water	<0.004	<0.004	0.007	100
		Handois Final Water	<0.004	<0.004	0.008	100
Atrazine Desethyl	0.1 µg/l	Augrés Final Water	<0.002	<0.002	<0.002	100
		Handois Final Water	<0.002	<0.002	0.003	100
Azoxystrobin	0.1 µg/l	Augrés Final Water	<0.002	<0.002	<0.002	100
		Handois Final Water	<0.002	<0.002	0.002	100
Boscalid	0.1 µg/l	Augrés Final Water	<0.004	<0.004	0.005	100
		Handois Final Water	<0.004	<0.004	<0.004	100
Bromacil	0.1 µg/l	Augrés Final Water	<0.003	<0.003	0.004	100
		Handois Final Water	<0.003	<0.003	0.005	100
Clopyralid	0.1 µg/l	Augrés Final Water	<0.007	<0.007	0.010	100
		Handois Final Water	<0.007	<0.007	0.008	100
Diuron	0.1 µg/l	Augrés Final Water	<0.004	<0.004	<0.004	100
		Handois Final Water	<0.004	<0.004	0.007	100
Fluopicolide	0.1 µg/l	Augrés Final Water	<0.003	<0.003	0.006	100
		Handois Final Water	<0.003	<0.003	<0.003	100

Appendix 3: 2022 Treatment Works Pesticide Analysis– Audit Monitoring (continued)

Substances and parameters	Specific concentration or value (maximum) or state	Sample Point	Min	Mean	Max	% Compliance
Mecoprop	0.1 µg/l	Augrés Final Water	<0.005	<0.005	<0.005	100
		Handois Final Water	<0.005	<0.005	0.005	100
Metobromuron	0.1 µg/l	Augrés Final Water	<0.003	<0.003	0.003	100
		Handois Final Water	<0.003	<0.003	0.006	100
Nicosulfuron	0.1 µg/l	Augrés Final Water	<0.003	<0.003	0.018	100
		Handois Final Water	<0.003	<0.003	0.010	100
Oxadixyl	0.1 µg/l	Augrés Final Water	0.007	0.015	0.022	100
		Handois Final Water	0.013	0.027	0.068	100
PCP (Pentachlorophenol)	0.1 µg/l	Augrés Final Water	<0.005	<0.005	0.006	100
		Handois Final Water	<0.005	<0.005	0.007	100
Simazine	0.1 µg/l	Augrés Final Water	<0.003	<0.003	<0.003	100
		Handois Final Water	<0.003	<0.003	0.004	100
Tebuconazole	0.1 µg/l	Augrés Final Water	<0.002	<0.002	<0.002	100
		Handois Final Water	<0.002	<0.002	0.004	100
Total Pesticides	0.5 µg/l	Augrés Final Water	0.007	0.022	0.077	100
		Handois Final Water	0.004	0.032	0.093	100

Appendix 4: 2022 Treatment Works PFAS Analysis – Audit Monitoring

In 2022, 17 poly- and perfluoroalkyl substances were analysed at the treatment works outlets. All results reported as µg/l.

Per- and polyfluoroalkyl substances	Sample Point	Min	Mean	Max	% Compliance
6:2PTS (27619-97-2) Perfluoro-octane sulfonate 6:2	Augrés Final Water	<LoD	<LoD	0.016	100
	Handois Final Water	<LoD	<LoD	<LoD	100
PFBA (357-22-4) Perfluoro-n-butanoic acid	Augrés Final Water	<LoD	<LoD	0.005	100
	Handois Final Water	<LoD	<LoD	0.006	100
PFBS (375-73-5) Perfluoro-1-butanesulfonate	Augrés Final Water	<LoD	0.003	0.005	100
	Handois Final Water	0.003	0.004	0.006	100
PFDA (335-76-2) Perfluoro-n-decanoic acid	Augrés Final Water	<LoD	<LoD	<LoD	100
	Handois Final Water	<LoD	<LoD	<LoD	100
PFDoA (307-55-1) Perfluoro-n-dodecanoic acid	Augrés Final Water	<LoD	<LoD	<LoD	100
	Handois Final Water	<LoD	<LoD	<LoD	100
PFDS (335-73-3) Perfluoro-1-decanesulfonate	Augrés Final Water	<LoD	<LoD	<LoD	100
	Handois Final Water	<LoD	<LoD	<LoD	100
PFHpA (375-85-9) Perfluoro-n-heptanoic acid	Augrés Final Water	0.002	0.004	0.009	100
	Handois Final Water	0.002	0.004	0.006	100
PFHpS (375-92-8) Perfluoro-1-heptanesulfonate	Augrés Final Water	<LoD	<LoD	<LoD	100
	Handois Final Water	<LoD	<LoD	<LoD	100
PFHxA (307-24-4) Perfluoro-n-hexanoic acid	Augrés Final Water	0.003	0.005	0.007	100
	Handois Final Water	0.004	0.006	0.008	100
PFHxS (355-46-4) Perfluoro-1-hexanesulfonate	Augrés Final Water	0.003	0.004	0.005	100
	Handois Final Water	0.003	0.007	0.010	100
PFNA (375-95-1) Perfluoro-n-nonanoic acid	Augrés Final Water	<LoD	<LoD	<LoD	100
	Handois Final Water	<LoD	<LoD	<LoD	100

Appendix 4: 2022 Treatment Works PFAS Analysis – Audit Monitoring (continued)

In 2022, 17 poly- and perfluoroalkyl substances were analysed at the treatment works outlets. All results reported as µg/l.

Per- and polyfluoroalkyl substances	Sample Point	Min	Mean	Max	% compliance
PFOA (335-67-1) Perfluoro-n-octanoic acid	Augrés Final Water	0.003	0.006	0.026	100
	Handois Final Water	0.003	0.006	0.008	100
PFPA (2706-90-3) Perfluoro-n-pentanoic acid	Augrés Final Water	0.002	0.004	0.005	100
	Handois Final Water	0.003	0.005	0.008	100
PFOSA (754-91-6) Perfluoro-octanesulfonamide	Augrés Final Water	<LoD	<LoD	<LoD	100
	Handois Final Water	<LoD	<LoD	<LoD	100
PFPeS (2706-91-4) Perfluoro-1-pentanesulfonate	Augrés Final Water	<LoD	<LoD	<LoD	100
	Handois Final Water	<LoD	<LoD	<LoD	100
PFUnA (2058-94-8) Perfluoro-n-undecanoic acid	Augrés Final Water	<LoD	<LoD	<LoD	100
	Handois Final Water	<LoD	<LoD	<LoD	100
Total PFOS (sum of linear and branched PFOS)	Augrés Final Water	0.005	0.010	0.030	100
	Handois Final Water	0.004	0.012	0.023	100
Total PFAS (sum of all substances listed above)	Augrés Final Water	0.022	0.038	0.083	100
	Handois Final Water	0.024	0.045	0.062	100

Appendix 5: 2022 Service Reservoir Performance – Check Monitoring

Substances and parameters	Specific concentration or value (maximum) or state	Sample Point	Min	Mean	Max	% Compliance	What it means
E.coli	0 MPN per 100ml	Les Platons East SR	0	0	0	100	Primary indicator of faecal contamination of treated water. If these organisms are detected in drinking water, immediate action is taken.
		Les Platons West SR	0	0	0	100	
		Westmount SR	0	0	0	100	
Coliform bacteria	0 MPN per 100ml (95% of samples)	Les Platons East SR	0	0	0	100	These bacteria are widely distributed in the environment and provide a sensitive measure of the microbiological quality of the water supply. For water to be deemed wholesome leaving a service reservoir, compliance with the coliform bacteria regulatory limit must be 95% or greater.
		Les Platons West SR	0	0	0	100	
		Westmount SR	0	0	0	100	
Colony counts	No abnormal change	Les Platons East SR	No abnormal change			100	Monitoring water supplies for colony count bacteria can be useful for monitoring trends and detecting sudden changes in water quality. Tests are completed at 22°C and 37°C.
		Les Platons West SR				100	
		Westmount SR				100	
Residual disinfectant	No value mg Cl_2/l	Les Platons East SR	0.04	0.16	0.35	100	Sufficient chlorine is added to all supplies to ensure the absence of harmful microorganisms. The concentration of chlorine is carefully controlled at the treatment works to maintain water quality while minimising taste and odour issues for customers.
		Les Platons West SR	0.03	0.16	0.39	100	
		Westmount SR	0.03	0.14	0.36	100	

Appendix 6: Water Quality in the Supply Zone – Check Monitoring

Substances and parameters	Specific concentration or value (maximum) or state	Min	Mean	Max	% Compliance	What it means
E.coli	0 MPN per 100ml	0	0	0	100	Primary indicator of faecal contamination of treated water. If these organisms are detected in drinking water, immediate action is taken.
Coliform bacteria	0 MPN per 100ml	0	0	0	100	These bacteria are widely distributed in the environment and provide a sensitive measure of the microbiological quality of the water supply.
Residual disinfectant	No value mg Cl_2/l	0.01	0.15	0.55		To ensure no harmful bacteria in the water we supply, chlorine is added to our water along with ammonia to form a stable chloramine disinfectant compound. The concentration of chlorine is carefully controlled at the treatment works to maintain water quality while minimising taste and odour issues for customers.
Aluminium	200 µg Al/l	<6.0	11.1	37.1	100	Occurs naturally in many water resources. Aluminium compounds are also used at some water treatment works to remove impurities. These compounds are removed in the process.
Ammonium	0.50 mg NH_4/l	<0.01	0.03	0.12	100	May be naturally present in some waters and is not harmful.
Colony counts	No abnormal change	No abnormal change			100	Monitoring water supplies for colony count bacteria can be useful for monitoring trends or detecting sudden changes in water quality. Tests are completed at 22°C and 37°C.
Colour	20 mg/l Pt/Co	<0.99	<0.99	3.42	100	Water should be clear and bright but natural organic matter or pipework corrosion products may occasionally impart a slight tint.
Conductivity	2500 µS/cm at 20°C	449	525	719	100	A measure of the ability of the water to conduct an electric current and therefore a measure of the mineral salts dissolved in the water.
Clostridium perfringens	0 CFU per 100ml	0	0	0	100	The presence of *Clostridium perfringens* in filtered water and/or final water may indicate deficiencies in the filtration or disinfection processes. If these organisms are detected, action is always taken.

Appendix 6: Water Quality in the Supply Zone – Check Monitoring (continued)

Substances and parameters	Specific concentration or value (maximum) or state	Min	Mean	Max	% Compliance	What it means
Hydrogen ion	10.0 pH value 6.5 (min)	6.6	7.6	8.00	100	A measure of acidity or alkalinity. Excessively acidic or alkaline water can contribute to corrosion of pipes and fittings.
Iron	200 µg Fe/l	<7.3	<7.3	44.3	100	May be associated with the corrosion of old iron mains.The standard has been set for aesthetic reasons as levels persistently above the standard can give rise to discoloured water.
Manganese	50 µg Mn/l	<1.7	5.1	15.5	100	Occurs naturally in many water sources. The standard is set for aesthetic reasons as black deposits of manganese dioxide can give rise to discoloured water.
Nitrate	50 mg NO_3/l	13.2	26.0	38.4	100	Arises from the use of fertilisers in agriculture and may be minimised by good practices and appropriate controls. We carefully monitor concentrations of nitrate and, where necessary, blend raw water sources to comply with the standards.
Nitrite	0.5 mg NO_2/l	<0.003	0.007	0.096	100	May be associated with nitrate or with the use of ammonia in water disinfection.
Nitrate/Nitrite ratio	1.000	0.264	0.521	0.768	100	The regulations specify that the ratio must not exceed 1, according to the following formula: [nitrate]/50 + [nitrite]/3, where the square brackets signify the concentrations in mg/l for nitrate (NO_3) and nitrite (NO_2) respectively.
Taste and Odour	3 at 25^{0}C Dilution number	0	0	2	100	The water is examined the water for unpleasant taste or odour. These standards are set for aesthetic reasons.
Turbidity	4 NTU	0.059	0.125	0.381	100	The standard requires that there should be no haziness caused by fine particles. Small air bubbles in the water can produce a milky appearance, which clears if the water is left to stand for a few minutes.
Cyanide	50 µg CN/l	<4.1	<4.1	4.2	100	Very low levels may occur naturally, but higher amounts could be associated with industrial pollution. The standards are health related but have a large built-in safety factor.

Appendix 7: Water Quality in the Supply Zone – Audit Monitoring

Substances and parameters	Specific concentration or value (maximum) or state	Min	Mean	Max	% Compliance	What it means
Antimony	5.0 µg Sb/l		0.20		100	Very low levels may occur naturally, but higher amounts could be associated with industrial pollution. The standards are health related but have a large built-in safety factor.
Arsenic	10 µg As/l		<1.0		100	
Benzene	1.0 µg/l	<0.02	<0.02	<0.02	100	May be introduced into source water by industrial effluents or atmospheric pollution.
Boron	1.0 mg B/l	0.063	0.163	0.501	100	Levels have been influenced by the prolonged running of the desalination plant this year. Although higher than normal, the amount found is well within the standards, which have a large built-in safety factor.
Cadmium	5.0 µg Cd/l		<0.10		100	Very low levels may occur naturally, but higher amounts could be associated with industrial pollution. The standards are health related but have a large built-in safety factor.
Chromium	50 µg Cr/l		<0.50		100	
Copper	2000 µg Cu/l	<9	<9	13	100	Any significant amount is likely to come from corrosion of customers' pipes or fittings. Excessive amounts can cause a metallic taste.
1,2 Dichloroethane	3.0 µg/l	<0.12	<0.12	<0.12	100	The presence of this organic solvent indicates industrial pollution.
Enterococci	0 MPN per 100 ml	0	0	0	100	Indicates faecal contamination of treated water. If these organisms are detected in drinking water, immediate action is taken.
Fluoride	1.5 mg F/l	<0.02	<0.02	0.05	100	Occurs naturally in many water sources. The standard is set to ensure no adverse effects. Jersey Water does not artificially fluoridate the water supplies.
Gross Alpha	0.1 Bq/l	<0.020	<0.020	<0.020	100	These parameters are measured as part of screening for radioactivity.
Gross Beta	1.0 Bq/l	<0.28	<0.28	<0.28	100	
Lead	10 µg Pb/l	<0.9	<0.9	11.0	88	Though absent in water entering supply, variable concentrations of lead may be found in water at the customer's tap in older properties built at a time when lead was commonly used in domestic plumbing systems. The standard recognises that the intake of lead should be minimised for health reasons. We dose phosphate to the water supplies to minimise lead leaching from the pipework; for a permanent solution, householders must replace any lead pipework.

Appendix 7: Water Quality in the Supply Zone – Audit Monitoring (continued)

Substances and parameters	Specific concentration or value (maximum) or state	Min	Mean	Max	% Compliance	What it means
Nickel	20 µg Ni/l	0.7	1.1	2.3	100	Very low levels may occur naturally; higher amounts could be associated with industrial pollution. A more common source of nickel in drinking water is the coatings on modern taps and other plumbing fittings.
Selenium	10 µg Se/l		<0.8		100	Low levels may occur naturally in water after it has passed through various mineral deposits and rock strata. Selenium is an essential element and a required part of a healthy diet.
Sodium	200 mg Na/l		53.5		100	Occurs naturally in water after passing through certain mineral deposits and rock strata or in brackish groundwater. Sodium salts are used extensively in the home and in industrial processes. Domestic water softeners regenerated with brine produce water containing an increased concentration of sodium. Always use unsoftened mains water for drinking, cooking and preparing babies' feeds.
Sum of Trichloroethene & Tetrachloroethene	10 µg/l	<0.25	<0.25	<0.25	100	Organic solvents whose presence indicates industrial pollution.
Tetrachloromethane	3 µg/l		<0.11		100	
Total Trihalomethanes (THM's)	100 µg/l	6.45	14.53	18.53	100	Formed by the reaction of chlorine added as a disinfectant with naturally occurring organic compounds in the water.
Chloride	250 mg Cl/l	53	56	58	100	Can occur naturally in source water and is a component of common salt. The standard is not health-related but set to avoid taste and corrosion potential.
Sulfate	250 mg SO_4/l	76	84	91	100	Occurs naturally in many source waters after contact with particular mineral deposits and rock strata. The concentrations normally found in drinking water do not represent a risk to health.
Total organic carbon	No abnormal change mg/l	0.5	1.1	1.5	100	This parameter provides a measure of the total amount of organic matter in water.