



# RECREATIONAL WATER QUALITY REPORT JULY 2020 – JUNE 2021

**ANDREW WARDLAW  
ACTING GENERAL MANAGER**



## **1.0 STATUTORY CONTEXT**

Municipal areas offer natural recreational waters including beaches and rivers which are used for activities including swimming and fishing. Other recreational waters include public pool facilities available to the community.

In accordance with section 130 (1) of the *Public Health Act 1997*, a Council is to monitor the quality of water within its municipal area in accordance with any relevant guidelines, with this referring to '*Recreational Water Quality Guidelines 2007*' issued by the Director of Public Health. The primary aim of the Guidelines is to protect human health and prevent the transfer of disease-causing organisms during contact with recreational waters with the Guidelines providing for the sampling and monitoring of popular recreational waterways and swimming pools.

Under the Guidelines it is a mandatory requirement from the Director that samples for primary recreational waters, other than swimming pools, must be taken at the beginning of the swimming season, which covers the months of December, January, February and March. The samples must be taken weekly during the duration of the season from each site, unless other arrangements are approved by the Director. The samples are to comply with the microbial levels as stipulated under section 8 of the Guidelines. The Guidelines also state that controlling authorities are required to erect signs and conduct monitoring of popular recreational water areas where there are identified sources of pollution that may affect human health.

The public pools within Huon Valley municipal area are monitored and sampled during the duration of their opening times of the year. Under the Guidelines, it is a mandatory requirement that all public swimming pools must be tested for microbiological quality and chemical parameters on a monthly basis or, if directed in writing by an Authorised Officer, more frequently. The microbiological water quality of all public swimming pools and public spa pools must be maintained in accordance with the Microbiological Water Quality criteria set out in the Guidelines.

It is a mandatory requirement that at the end of each swimming season, the controlling authority shall prepare a report for presentation to the Director by 30 September each year.

## **2.0 MONITORING OF RECREATIONAL WATERS**

In order for Council to provide a more proactive means of communicating public health advisories to the public and community regarding the quality of the water at identified swimming beaches within the municipal area, warning signs advising persons not to swim in these waters during and up to three days after rainfall events are placed at Dover Beach, Randalls Bay and Verona Sands.

In December to March in 2020/2021 Council's Environmental Health Unit conducted weekly water quality sampling at the above-mentioned recreational beaches. The sampling results demonstrated that the water quality at these beaches complied with the Guidelines at all times except after significant rain events. The 5 non-compliant results were all within 3 days of significant rain events, demonstrating that Council's advisory signage warning people against swimming up to 3 days after rainfall events is accurate and an appropriate measure.



### **3.0 MONITORING OF SWIMMING POOLS**

#### **3.1 MICROBIAL LEVELS FOR INVESTIGATION**

Swimming pool water is tested for the organisms listed in Table 3.1 below.

<b>Type of Organism</b>	<b>Maximum Count Allowable</b>
Heterotrophic Colony Count (HCC)	100 Colony Forming Units (cfu) per ml
<i>E.coli</i>	<1 per 100ml
<i>Pseudomonas aeruginosa</i>	<1 per 100ml

Table 3.1 Testing parameters for microbiological testing of swimming pool water.

The total heterotrophic colony count (HCC) is considered to represent the general cleanliness of the water. As the HCC is not considered indicative of a potential health risk, these bacteria are not generally considered as a compliance measure, rather their numbers are monitored to understand changes in water over time and to alert operators to increases in general bacterial numbers. An HCC greater than 100cfu/ml is a warning sign that the conditions in the pool or spa are ideal for the multiplication of coliforms, *Pseudomonas aeruginosa* and other bacteria that pose a potential health risk. An HCC greater than 100cfu/ml may indicate there is a problem with the pool disinfection system. If a result reveals an HCC greater than 100cfu/ml a resample must be taken within 48 hours of becoming aware of this result.

*E. coli* can be used to indicate the presence of faecal contamination based on the premise that they are present in high numbers in the faeces of humans and other warm-blooded animals. Their presence indicates that faecal pollution may have occurred and pathogens might be present as a result.

*Pseudomonas aeruginosa* is the most common disease causing agent associated with waterborne disease outbreaks. It is an opportunistic pathogen and has been identified as the causative agent of eye, ear and skin infections. Its normal habitats are water, soil and vegetation but may also be of human origin. Although relatively resistant to a range of disinfectants, chlorination of normal swimming pools should be sufficient to kill bacteria.

If a result reveals the presence of *E.coli* or *Pseudomonas aeruginosa*, a resample must be taken within 48 hours of becoming aware of this result.

#### **3.2 SAMPLING AND RESULTS**

There are three swimming pools with the Huon Valley municipal area that are offered for public use. These include the Huonville Pool, Port Huon Pool (owned by Council) and the Hastings Caves Pool (owned by Department of Primary Industry Parks, Water and Environment).

Note: Results that revealed Nil per 100ml will be shown as <1.



### 3.2.2 Hastings Caves Swimming Pool

Samples were taken monthly and results are presented in Table 3.2.2 below.

HASTINGS CAVES		Pool operates all year round		
Sample No	Date	HCC (max=100 per ml)	E. coli/100mL (max <1)	<i>P. aeruginosa</i> 100mL (max <1)
1	02/12/2020	<1	<1	<1
2	03/12/2020	<1	<1	<1
3	08/12/2020	<1	<1	<1
4	04/01/2021	150	<1	<1
5	07/01/2021	110	<1	<1
6	13/01/2021	28	<1	<1
7	13/01/2021	14	<1	<1
8	20/01/2021	1	<1	<1
9	28/01/2021	60	1	<1
10	20/02/2021	1	<1	<1
11	04/03/2021	<1	<1	<1
12	04/04/2021	6	<1	<1
13	03/05/2021	<1	<1	<1
14	31/05/2021	10	<1	<1

Table 3.2.2 Swimming pool sample results for Hastings Caves Swimming Pool 2020-2021

#### Interpretation of results and any appropriate action taken

The Hastings Pool was closed during the first 5 months of the 2020/2021 financial year due to issues relating to Covid-19 pandemic restrictions. The pool reopened in December after receiving 2 consecutive compliant sampling results as required by the Guidelines.

The pool was then closed for 2 weeks due to 2 consecutive non-compliant results in the first week of January. It reopened again mid-January after 2 consecutive compliant results were achieved. During this period Council's Environmental Health Unit provided advice to Parks and Wildlife and provided updates to the Public Health Services.

An elevated E.coli detection on a sample taken on the 28th of January 2021 prompted a resample after conducting additional disinfection measures. The resample results did not exceed the maximum allowable microbiological limits, therefore the pool was not required to close.

Other results for Hastings pool were within the Guidelines acceptable range.



### 3.2.3 Port Huon Swimming Pool

Samples were taken monthly and results are presented in Table 3.2.3 below.

PORT HUON		Pool operates all year round		
Sample No	Date	HCC (max=100 per ml)	E. coli/100mL (max <1)	<i>P. aeruginosa</i> 100mL (max <1)
1	30/06/2020	<1	<1	<1
2	01/07/2020	<1	<1	<1
3	21/07/2020	<1	<1	<1
4	17/08/2020	<1	<1	<1
5	14/09/2020	88	<1	<1
6	09/10/2020	<1	<1	<1
7	27/10/2020	99	<1	<1
8	02/12/2020	18	<1	<1
9	06/01/2021	<1	<1	<1
10	02/02/2021	<1	<1	<1
11	11/03/2021	5	<1	<1
12	08/04/2021	1	<1	<1
13	11/05/2021	60	<1	<1
14	02/06/2021	<1	<1	<1

Table 3.2.3 Swimming pool sample results for Port Huon Swimming Pool 2019-2020

#### Interpretation of results and any appropriate action taken

The Port Huon Pool reopened in July 07 2020 after being closed since March 20 2020 due to Covid-19 restrictions. Two consecutive compliant results were achieved prior to reopening.

All water quality sample results for the Port Huon Pool were compliant with the Guidelines during the 2020/2021 financial year.

### 3.2.4 Huonville Swimming Pool

Samples were taken monthly and results are presented in Table 3.2.3 below.

HUONVILLE		Pool operates during Summer months (Dec – Mar)		
Sample No	Date	HCC (max=100 per ml)	E. coli/100mL (max <1)	<i>P. aeruginosa</i> 100mL (max <1)
1	26/10/2020	<1	<1	<1
2	27/10/2020	<1	<1	<1
3	02/12/2020	1	<1	<1
4	06/01/2021	<1	<1	<1
5	03/02/2021	<1	<1	<1
6	11/03/2021	<1	<1	<1

Table 3.2.4 Swimming pool sample results for Huonville Swimming Pool 2019-2020



### **Interpretation of results and any appropriate action taken**

All water quality sample results for the Huonville Pool were compliant with the Guidelines during the 2020/2021 financial year.

### **3.3 SUMMARY OF THE POOL WATER SAMPLING**

Generally, results collected revealed that the water quality of all three swimming pools falls within the safety limits of the Guidelines. The issue which caused Hastings Pool to be closed has been identified and measures are now in place to prevent it from occurring again.

### **4.0 RECREATIONAL WATER SAMPLING CONCLUSIONS**

Swimming advisory signs at identified swimming beaches provide a proactive means of advising the public and community of potential contamination of these waters due to outfalls from nearby lagoons and stormwater following rainfall events.

This advisory information was validated by the recreational beach water sampling program undertaken by the Environmental Health Unit during the summer months of the 2020/2021 financial year. There were 5 results that did not comply with the microbiological limits set out in the guidelines and all were from samples taken within 3 days of significant rainfall events.

Council will continue to monitor these beaches for any changes in conditions that may effect recreational water quality and will conduct sampling programs as required to demonstrate that the information on the advisory warning signage is accurate and an appropriate measure.

No ongoing public health issues were identified with the swimming pools.

2020 – 2021 Recreational Water Report completed July 2021 by:

**AMIGO HUBER  
SENIOR ENVIRONMENTAL HEALTH OFFICER  
HUON VALLEY COUNCIL**





## HUON VALLEY COUNCIL RECREATIONAL BEACH WATER SAMPLING PROGRAM - 2020/2021



Randalls Bay

## SUMMARY AND DISCUSSION OF SAMPLING RESULTS

<b>SAMPLING RESULTS SUMMARY TABLE</b>			
<b>DATE</b>	<b>Dover (Enterococci MPN/100mL)</b>	<b>Verona Sands (Enterococci MPN/100mL)</b>	<b>Randalls Bay (Enterococci MPN/100mL)</b>
2/12/2020	<b>201</b>	20	41
4/12/2020	3 samples: <10 / 10 / 10		
8/12/2020	10	0	<10
15/12/2020	<10	0	20
13/01/2021	10	0	20
19/01/2021	10	<b>565</b>	<b>4884</b>
28/01/2021	<10	0	41
2/02/2021	<10	0	<10
10/02/2021	<10	0	<10
16/02/2021	<10	0	<10
25/02/2021	10	10	<10
2/03/2021	<10	<b>158</b>	<b>345</b>

### DISCUSSION:

The 2020/2021 Sampling program began on December 02 2020 and finished on March 03 2021. The sampling was conducted weekly except for the period between December 15 2020 and January 13 2021. This absence of sampling was due to staff annual leave around the end of the year holiday period.

4 of the 5 non-compliant results all correlated with significant rain occurring in the 24 hours preceding the samples being, after number of days with little to no rain. This can result in contaminated organic matter building up along the shoreline and in stormwater lines being washed into the sea via drainage lines.

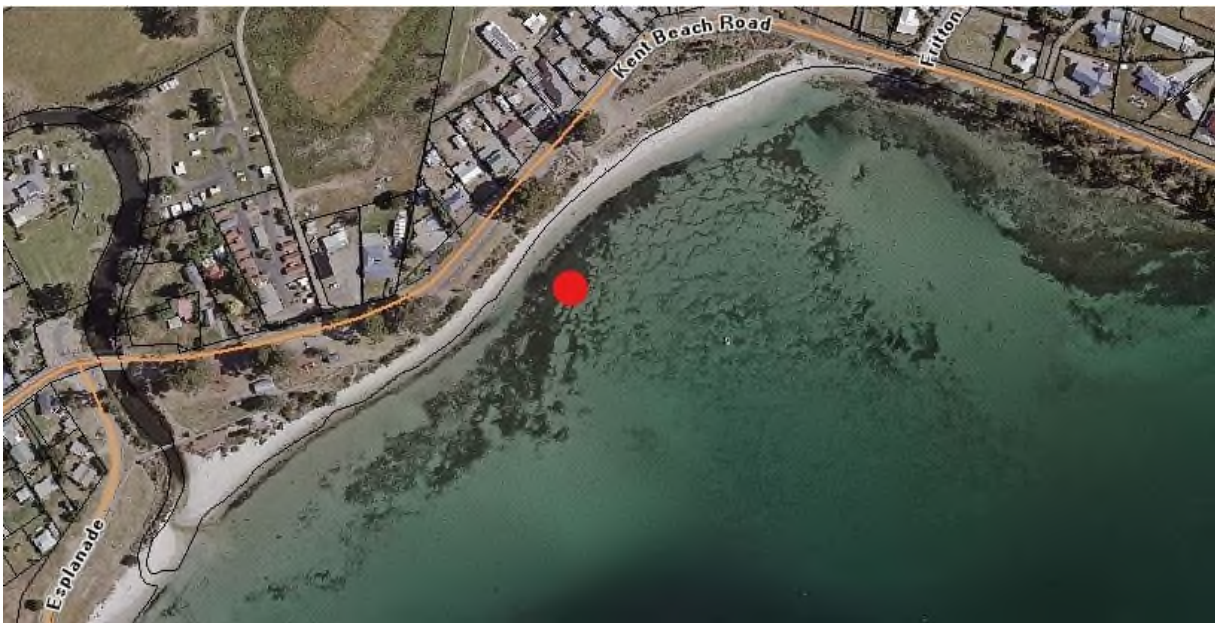
The 5<sup>th</sup> non-compliant result correlated with rain on the second and third day prior to sampling and an extreme swell creating turbulent sea waters which were heavy with suspended solids stirred up from the sea floor on the day of sampling. These conditions created the extreme non-compliant result for Verona Sands and Randalls Bay on 19/01/2021, likely due to bacteria present in the sea floor sediment be stirred up and suspended in the water.

All other results were compliant with limits set out in the Recreational Water Quality Guidelines, demonstrating that Council's advisory signage warning people against swimming up to 3 days after rainfall events is accurate and an appropriate measure.



### RECREATIONAL WATER SAMPLE SUMMARY - DOVER

Dover beach is situated near a caravan park and a number of residences. Given that it is far south of other major towns, it likely does not get as much recreational use as Verona Sands and Randalls Bay. It has a public toilet connected to TasWater sewer mains. The outfall pipe from the sewerage treatment plant is about 550m north of the sample site and discharges treated effluent 120m off shore. It also has a rivulet that feeds into the sea and is land locked at times. The TasWater sewerage treatment plant is quite close to the rivulet upstream.



DOVER - DATE SAMPLED	RESULT (Enterococci CFU/100ml)	EST # REC WATER USERS PRESENT	TEMPERATURE (°C) at 9am	RAINFALL (mm) on date of sample
02/12/2020	201	0	13	6.4

DATE (Previous 3 days)	MIN TEMPERATURE (°C)	MAX TEMPERATURE (°C)	RAINFALL (mm)
29/11/2020	11.5	20	0
30/11/2020	5.8	21.3	0
01/12/2020	11.5	24.6	0

#### COMMENTS

Non-compliant sample result (Enterococci < 140 CFU/100ml). Proposing to resample 04/12/2020 in 3 separate locations along the beach and also conduct a sanitary survey.

There was no rainfall at the time of taking the sample but it was apparent that it had been raining earlier that morning. Water slightly choppy. Water colour appeared as a dull green / blue. Overcast but not raining at time of sampling.

### RESAMPLE AFTER NON-COMPLIANT RESULT - DOVER

3 samples were taken along the beach. The original sample site(Dover2), south of the original sample site(Dover1) and north of the original sample site(Dover3).



DOVER - DATE SAMPLED	RESULT (Enterococci CFU/100ml)	EST # REC WATER USERS PRESENT	TEMPERATURE (°C) at 9am	RAINFALL (mm) on date of sample
04/12/2020	Dover1 = <10 Dover2 = 10 Dover3 = 10	0	12.1	2.0

DATE (Previous 3 days)	MIN TEMPERATURE (°C)	MAX TEMPERATURE (°C)	RAINFALL (mm)
01/12/2020	11.5	24.6	0
02/12/2020	6.8	15.1	6.4
03/12/2020	8.4	18.2	0.2

#### COMMENTS

The sample results indicate no particular issues south or north of the original sample site. The rivulet is about 50m south of the Dover1 sample site and the TasWater treated sewerage outfall pipe is about 500m north of the original sample site. A sanitary survey did not discover anything not already known regarding possible sources of contamination in the area.

It is possible that the non-compliant result from the sample taken of 02/12/2020 was caused by a flush of contaminated stormwater from the 6.4mm of rainfall that occurred in the 24 hours preceding the sample being taken. No rain had occurred in the previous 11 days, which would have allowed contaminated organic matter to build up along the shoreline and in stormwater lines.

DOVER - DATE SAMPLED	RESULT (Enterococci CFU/100ml)	EST # REC WATER USERS PRESENT	TEMPERATURE (°C) at 9am	RAINFALL (mm) on date of sample
08/12/2020	10	0	9	3.4
DATE (Previous 3 days)	MIN TEMPERATURE (°C)	MAX TEMPERATURE (°C)	RAINFALL (mm)	
05/12/2020	7.3	17.7	0.4	
06/12/2020	9	14	5.8	
07/12/2020	5.3	14.5	6.0	
COMMENTS				
Compliant sample result. Water slightly choppy. Water colour appeared as a dull green / blue. Overcast but not raining at time of sampling.				

DOVER - DATE SAMPLED	RESULT (Enterococci CFU/100ml)	EST # REC WATER USERS PRESENT	TEMPERATURE (°C) at 9am	RAINFALL (mm) on date of sample
15/12/2020	<10	0	13.4	0
DATE (Previous 3 days)	MIN TEMPERATURE (°C)	MAX TEMPERATURE (°C)	RAINFALL (mm)	
12/12/2020	15.4	27.7	1.8	
13/12/2020	13.9	20	0.4	
14/12/2020	7.3	19.7	0	
COMMENTS				
Compliant sample result. Water slightly choppy. Water colour appeared as brown, although water in sample bottle appeared clear. Overcast but not raining at time of sampling.				

DOVER - DATE SAMPLED	RESULT (Enterococci CFU/100ml)	EST # REC WATER USERS PRESENT	TEMPERATURE (°C) at 9am	RAINFALL (mm) on date of sample
13/01/2020	10	2	13.8	0
DATE (Previous 3 days)		MIN TEMPERATURE (°C)	MAX TEMPERATURE (°C)	RAINFALL (mm)
10/01/2021		9.3	23	0
11/01/2021		10.2	38	0
12/01/2021		13.3	20.2	8.2
COMMENTS				
Compliant sample result. Water calm. Water colour was blue / green in appearance. Sunny at time of sampling.				

DOVER - DATE SAMPLED	RESULT (Enterococci CFU/100ml)	EST # REC WATER USERS PRESENT	TEMPERATURE (°C) at 9am	RAINFALL (mm) on date of sample
19/01/2020	10	0	11.3	1.4
DATE (Previous 3 days)		MIN TEMPERATURE (°C)	MAX TEMPERATURE (°C)	RAINFALL (mm)
16/01/2021		8.8	17	11.8
17/01/2021		7.5	18.5	1.6
18/01/2021		11.7	19.7	0
COMMENTS				
Compliant sample result. Water choppy. Water colour was dull in appearance. Overcast and had rained recently at time of sampling.				

DOVER - DATE SAMPLED	RESULT (Enterococci CFU/100ml)	EST # REC WATER USERS PRESENT	TEMPERATURE (°C) at 9am	RAINFALL (mm) on date of sample
28/01/2021	<10	0	12.8	0
DATE (Previous 3 days)	MIN TEMPERATURE (°C)	MAX TEMPERATURE (°C)	RAINFALL (mm)	
25/01/2021	13.6	3.4	0	
26/01/2021	12.8	19.1	3.4	
27/01/2021	8.8	17	0.8	
COMMENTS				
Compliant sample result. Water very calm. Water colour was dull blue / green in appearance. Overcast at time of sampling.				

DOVER - DATE SAMPLED	RESULT (Enterococci CFU/100ml)	EST # REC WATER USERS PRESENT	TEMPERATURE (°C) at 9am	RAINFALL (mm) on date of sample
02/02/2021	<10	0	13.1	0
DATE (Previous 3 days)	MIN TEMPERATURE (°C)	MAX TEMPERATURE (°C)	RAINFALL (mm)	
01/02/2021	9.8	21.9	0	
31/02/2021	8.9	20.2	0	
30/02/2021	12.8	21.7	6.6	
COMMENTS				
Compliant sample result. Water calm. Bit windy. Water colour was blue / green in appearance. sunny at time of sampling.				

DOVER - DATE SAMPLED	RESULT (Enterococci CFU/100ml)	EST # REC WATER USERS PRESENT	TEMPERATURE (°C) at 9am	RAINFALL (mm) on date of sample
10/02/2021	<10	0	9.7	0
DATE (Previous 3 days)	MIN TEMPERATURE (°C)	MAX TEMPERATURE (°C)	RAINFALL (mm)	
07/02/2021	10.8	16.5	8.0	
08/02/2021	8.9	17.3	0	
09/02/2021	9.1	21.7	0.2	
COMMENTS				
Compliant sample result. Water slightly choppy. Bit windy. Water colour was blue / green in appearance. sunny at time of sampling. It can be noted that there was 48mm of rain on the 06/02/2021.				

DOVER - DATE SAMPLED	RESULT (Enterococci CFU/100ml)	EST # REC WATER USERS PRESENT	TEMPERATURE (°C) at 9am	RAINFALL (mm) on date of sample
16/02/2021	<10	2	13.6	0
DATE (Previous 3 days)	MIN TEMPERATURE (°C)	MAX TEMPERATURE (°C)	RAINFALL (mm)	
13/02/2021	13.8	21.7	0	
14/02/2021	6.8	23.6	0.2	
15/02/2021	11.7	18.7	0.8	
COMMENTS				
Compliant sample result. Water calm. Bit windy. Water colour was blue / green in appearance. sunny at time of sampling.				



DOVER - DATE SAMPLED	RESULT (Enterococci CFU/100ml)	EST # REC WATER USERS PRESENT	TEMPERATURE (°C) at 9am	RAINFALL (mm) on date of sample
25/02/2021	10	0	14.9	0.2
DATE (Previous 3 days)	MIN TEMPERATURE (°C)	MAX TEMPERATURE (°C)	RAINFALL (mm)	
22/02/2021	12.8	19.4	0	
23/02/2021	5.2	18.3	3.2	
24/02/2021	4	20.8	0.8	
COMMENTS				
Compliant sample result. Water calm. Water colour was blue / green in appearance. Sunny at time of sampling.				

DOVER - DATE SAMPLED	RESULT (Enterococci CFU/100ml)	EST # REC WATER USERS PRESENT	TEMPERATURE (°C) at 9am	RAINFALL (mm) on date of sample
02/03/2021	<10	0	13.7	12.6
DATE (Previous 3 days)	MIN TEMPERATURE (°C)	MAX TEMPERATURE (°C)	RAINFALL (mm)	
01/03/2021	9.5	19.8	0.4	
28/02/2021	11.4	19.4	0.2	
27/02/2021	7.2	22.5	0	
COMMENTS				
Compliant sample result. Water choppy with small waves. Water colour was a dull green in appearance. Overcast and windy at time of sampling. Appeared have rained heavily during the previous night.				

## RECREATIONAL WATER SAMPLE SUMMARY – RANDALLS BAY

Randalls Bay beach is one of the more popular swimming beaches in the Huon Valley area. On a hot summer day it will usually have some where between 20 and 50 recreational beach users. It has a public toilet managed by Council that uses an aerated wastewater treatment system(AWTS) with dripper lines in the scrub to treat and dispose of the wastewater.



Samples taken in location indicated by red dot

RANDALLS BAY - DATE SAMPLED	RESULT(Enterococci CFU/100ml)	EST # REC WATER USERS PRESENT	TEMPERATURE (°C) at 9am	RAINFALL (mm) on date of sample
<b>02/12/2020</b>	41	0	13	6.4
DATE (Previous 3 days)	MIN TEMPERATURE (°C)	MAX TEMPERATURE (°C)	RAINFALL (mm)	
29/11/2020	11.5	20	0	
30/11/2020	5.8	21.3	0	
01/12/2020	11.5	24.6	0	

### COMMENTS

Compliant sample result. Water very choppy with small waves. Water colour appeared as a dull green / blue. Overcast but not raining at time of sampling.

RANDALLS BAY - DATE SAMPLED	RESULT(Enterococci CFU/100ml)	EST # REC WATER USERS PRESENT	TEMPERATURE (°C) at 9am	RAINFALL (mm) on date of sample
08/12/2020	<10	0	9	3.4
DATE (Previous 3 days)	MIN TEMPERATURE (°C)	MAX TEMPERATURE (°C)	RAINFALL (mm)	
05/11/2020	7.3	17.7	0.4	
06/11/2020	9	14	5.8	
07/12/2020	5.3	15.7	6.0	
COMMENTS				
Compliant sample result. Water slightly choppy. Water colour appeared as a dull green / blue. Overcast but not raining at time of sampling.				

RANDALLS BAY - DATE SAMPLED	RESULT(Enterococci CFU/100ml)	EST # REC WATER USERS PRESENT	TEMPERATURE (°C) at 9am	RAINFALL (mm) on date of sample
15/12/2020	20	100	18.3	0
DATE (Previous 3 days)	MIN TEMPERATURE (°C)	MAX TEMPERATURE (°C)	RAINFALL (mm)	
12/11/2020	10	20.8	0	
13/11/2020	8.5	24.8	0	
14/12/2020	12	30.8	0	
COMMENTS				
Compliant sample result. Water slightly choppy. Water colour appeared as brown, although water in sample bottle appeared clear. Overcast but not raining at time of sampling. There was a end of year school beach picnic happening at the time of sampling with about 100 children and teachers present and bout 30 children in the water at the time				

RANDALLS BAY - DATE SAMPLED	RESULT(Enterococci CFU/100ml)	EST # REC WATER USERS PRESENT	TEMPERATURE (°C) at 9am	RAINFALL (mm) on date of sample
13/01/2020	20	12	13.8	0
DATE (Previous 3 days)	MIN TEMPERATURE (°C)	MAX TEMPERATURE (°C)	RAINFALL (mm)	
10/01/2021	9.3	23	0	
11/01/2021	10.2	38	0	
12/01/2021	13.3	20.2	8.2	
COMMENTS				
Compliant sample result. Water calm. Water colour was blue / green in appearance. Sunny at time of sampling.				

RANDALLS BAY - DATE SAMPLED	RESULT(Enterococci CFU/100ml)	EST # REC WATER USERS PRESENT	TEMPERATURE (°C) at 9am	RAINFALL (mm) on date of sample
19/01/2020	4,884.0	0	11.3	1.4
DATE (Previous 3 days)	MIN TEMPERATURE (°C)	MAX TEMPERATURE (°C)	RAINFALL (mm)	
16/01/2021	8.8	17	11.8	
17/01/2021	7.5	18.5	1.6	
18/01/2021	11.7	19.7	0	
COMMENTS				
Non-compliant sample result. Water choppy. Water was extremely choppy with large amounts of suspended solids and seaweed. Significantly more seaweed than Verona Sands on the day. Overcast, windy and had rained recently at time of sampling. No resampling undertaken, as signage already present advising against swimming 3 days after significant rain. This was endorsed by DoH.				

RANDALLS BAY - DATE SAMPLED	RESULT(Enterococci CFU/100ml)	EST # REC WATER USERS PRESENT	TEMPERATURE (°C) at 9am	RAINFALL (mm) on date of sample
28/01/2021	41	0	12.8	0
DATE (Previous 3 days)	MIN TEMPERATURE (°C)	MAX TEMPERATURE (°C)	RAINFALL (mm)	
25/01/2021	13.6	3.4	0	
26/01/2021	12.8	19.1	3.4	
27/01/2021	8.8	17	0.8	
COMMENTS				
Compliant sample result. Water very calm. Water colour was dull blue / green in appearance. Overcast at time of sampling.				

RANDALLS BAY - DATE SAMPLED	RESULT(Enterococci CFU/100ml)	EST # REC WATER USERS PRESENT	TEMPERATURE (°C) at 9am	RAINFALL (mm) on date of sample
02/02/2021	<10	0	13.1	0
DATE (Previous 3 days)	MIN TEMPERATURE (°C)	MAX TEMPERATURE (°C)	RAINFALL (mm)	
01/02/2021	9.8	21.9	0	
31/01/2021	8.9	20.2	0	
30/01/2021	12.8	21.7	6.6	
COMMENTS				
Compliant sample result. Water calm. Bit windy. Water colour was blue / green in appearance. sunny at time of sampling.				

RANDALLS BAY - DATE SAMPLED	RESULT(Enterococci CFU/100ml)	EST # REC WATER USERS PRESENT	TEMPERATURE (°C) at 9am	RAINFALL (mm) on date of sample
10/02/2021	<10	0	9.7	0
DATE (Previous 3 days)	MIN TEMPERATURE (°C)	MAX TEMPERATURE (°C)	RAINFALL (mm)	
07/02/2021	10.8	16.5	8.0	
08/02/2021	8.9	17.3	0	
09/02/2021	9.1	21.7	0.2	
COMMENTS				
Compliant sample result. Water calm. Water colour was blue / green in appearance. sunny at time of sampling. It can be noted that there was 48mm of rain on the 06/02/2021.				

RANDALLS BAY - DATE SAMPLED	RESULT(Enterococci CFU/100ml)	EST # REC WATER USERS PRESENT	TEMPERATURE (°C) at 9am	RAINFALL (mm) on date of sample
16/02/2021	<10	2	13.6	0
DATE (Previous 3 days)	MIN TEMPERATURE (°C)	MAX TEMPERATURE (°C)	RAINFALL (mm)	
13/02/2021	13.8	21.7	0	
14/02/2021	6.8	23.6	0.2	
15/02/2021	11.7	18.7	0.8	
COMMENTS				
Compliant sample result. Water calm. Bit windy. Water colour was blue / green in appearance. sunny at time of sampling.				

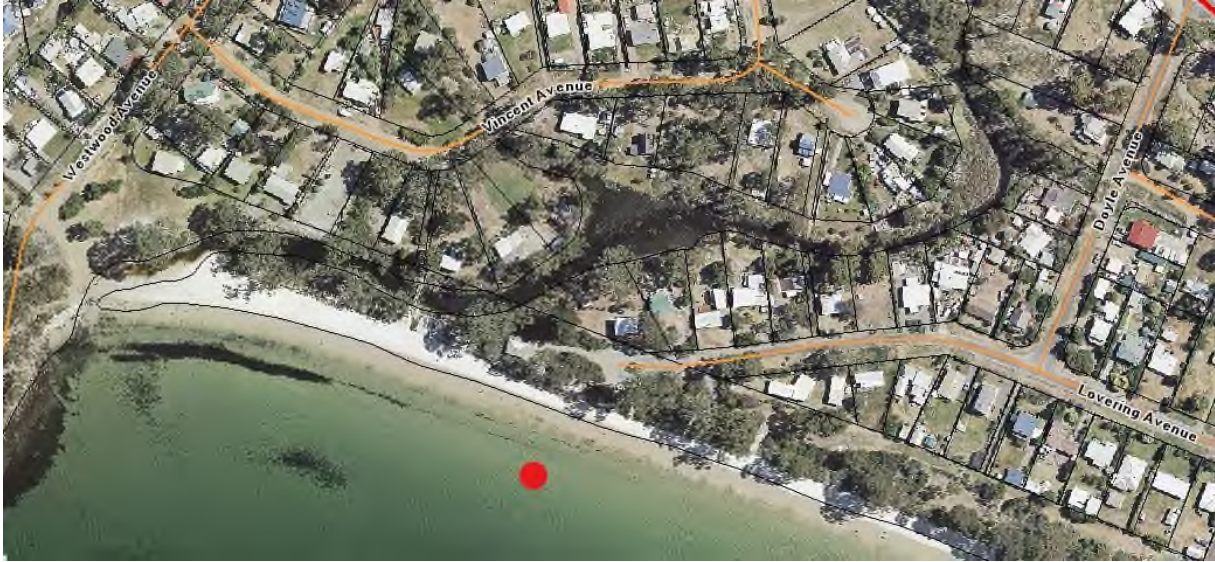


RANDALLS BAY - DATE SAMPLED	RESULT(Enterococci CFU/100ml)	EST # REC WATER USERS PRESENT	TEMPERATURE (°C) at 9am	RAINFALL (mm) on date of sample
25/02/2021	<10	0	14.9	0.2
DATE (Previous 3 days)	MIN TEMPERATURE (°C)	MAX TEMPERATURE (°C)	RAINFALL (mm)	
22/02/2021	12.8	19.4	0	
23/02/2021	5.2	18.3	3.2	
24/02/2021	4	20.8	0.8	
COMMENTS				
Compliant sample result. Water calm. Water colour was blue / green in appearance. Overcast at time of sampling.				

RANDALLS BAY - DATE SAMPLED	RESULT(Enterococci CFU/100ml)	EST # REC WATER USERS PRESENT	TEMPERATURE (°C) at 9am	RAINFALL (mm) on date of sample
02/03/2021	345	0	13.7	12.6
DATE (Previous 3 days)	MIN TEMPERATURE (°C)	MAX TEMPERATURE (°C)	RAINFALL (mm)	
01/03/2021	9.5	19.8	0.4	
28/02/2021	11.4	19.4	0.2	
27/02/2021	7.2	22.5	0	
COMMENTS				
Non-compliant sample result. Water choppy with small waves. Water colour was a dull green in appearance. Seaweed suspended in the water near the shore. Overcast and windy at time of sampling. Appeared have rained heavily during the previous night. No resampling undertaken, as signage already present advising against swimming 3 days after significant rain.				

### RECREATIONAL WATER SAMPLE SUMMARY – VERONA SANDS

Verona Sand Beach is situated near a number residences and holiday shacks. On a hot summer day during the summer holiday period it will usually have some where between 20 and 50 recreational beach users. It has a public toilet managed by Council that uses an aerated wastewater treatment system(AWTS) with dripper lines in the scrub to treat and dispose of the wastewater. It also has a rivulet that feeds into the sea but spends much of its time land locked. Quite often the water will stagnate during summer and produce an odour.



Samples taken in location indicated by red dot

VERONA SANDS - DATE SAMPLED	RESULT(Enterococci CFU/100ml)	EST # REC WATER USERS PRESENT	TEMPERATURE (°C) at 9am	RAINFALL (mm) on date of sample
02/12/2020	20	0	13	6.4

DATE (Previous 3 days)	MIN TEMPERATURE (°C)	MAX TEMPERATURE (°C)	RAINFALL (mm)
29/11/2020	11.5	20	0
30/11/2020	5.8	21.3	0
01/12/2020	11.5	24.6	0

#### COMMENTS

Compliant sample result. Water very choppy with small waves. Water colour appeared as a dull green / blue. Overcast but not raining at time of sampling.

VERONA SANDS - DATE SAMPLED	RESULT(Enterococci CFU/100ml)	EST # REC WATER USERS PRESENT	TEMPERATURE (°C) at 9am	RAINFALL (mm) on date of sample
08/12/2020	<10	0	9	3.4
DATE (Previous 3 days)	MIN TEMPERATURE (°C)	MAX TEMPERATURE (°C)	RAINFALL (mm)	
05/11/2020	7.3	17.7	0.4	
06/11/2020	9	14	5.8	
07/12/2020	5.3	15.7	6.0	
COMMENTS				
Compliant sample result. Water slightly choppy. Water colour appeared as a dull green / blue. Overcast but not raining at time of sampling.				

VERONA SANDS - DATE SAMPLED	RESULT(Enterococci CFU/100ml)	EST # REC WATER USERS PRESENT	TEMPERATURE (°C) at 9am	RAINFALL (mm) on date of sample
15/12/2020	<10	4	18.3	0
DATE (Previous 3 days)	MIN TEMPERATURE (°C)	MAX TEMPERATURE (°C)	RAINFALL (mm)	
12/11/2020	10	20.8	0	
13/11/2020	8.5	24.8	0	
14/12/2020	12	30.8	0	
COMMENTS				
Compliant sample result. Water slightly choppy. Water colour appeared as brown, although water in sample bottle appeared clear. Overcast but not raining at time of sampling.				

VERONA SANDS - DATE SAMPLED	RESULT(Enterococci CFU/100ml)	EST # REC WATER USERS PRESENT	TEMPERATURE (°C) at 9am	RAINFALL (mm) on date of sample
13/01/2021	<10	8	13.8	0
DATE (Previous 3 days)	MIN TEMPERATURE (°C)	MAX TEMPERATURE (°C)	RAINFALL (mm)	
10/01/2021	9.3	23	0	
11/01/2021	10.2	38	0	
12/01/2021	13.3	20.2	8.2	
COMMENTS				
Compliant sample result. Water calm. Water colour was blue / green in appearance. Sunny at time of sampling.				

VERONA SANDS – DATE SAMPLED	RESULT(Enterococci CFU/100ml)	EST # REC WATER USERS PRESENT	TEMPERATURE (°C) at 9am	RAINFALL (mm) on date of sample
19/01/2020	565	0	11.3	1.4
DATE (Previous 3 days)	MIN TEMPERATURE (°C)	MAX TEMPERATURE (°C)	RAINFALL (mm)	
16/01/2021	8.8	17	11.8	
17/01/2021	7.5	18.5	1.6	
18/01/2021	11.7	19.7	0	
COMMENTS				
Non-compliant sample result. Water choppy. Water was extremely choppy with large amounts of suspended solids and seaweed. Significantly less seaweed than Randalls Bay on the day. Overcast, windy and had rained recently at time of sampling. No resampling undertaken, as signage already present advising against swimming 3 days after significant rain. This was endorsed by DoH.				

VERONA SANDS - DATE SAMPLED	RESULT(Enterococci CFU/100ml)	EST # REC WATER USERS PRESENT	TEMPERATURE (°C) at 9am	RAINFALL (mm) on date of sample
28/01/2021	<10	0	12.8	0
DATE (Previous 3 days)	MIN TEMPERATURE (°C)	MAX TEMPERATURE (°C)	RAINFALL (mm)	
25/01/2021	13.6	3.4	0	
26/01/2021	12.8	19.1	3.4	
27/01/2021	8.8	17	0.8	
COMMENTS				
Compliant sample result. Water very calm. Water colour was dull blue / green in appearance. Overcast at time of sampling.				

VERONA SANDS - DATE SAMPLED	RESULT(Enterococci CFU/100ml)	EST # REC WATER USERS PRESENT	TEMPERATURE (°C) at 9am	RAINFALL (mm) on date of sample
02/02/2021	<10	0	13.1	0
DATE (Previous 3 days)	MIN TEMPERATURE (°C)	MAX TEMPERATURE (°C)	RAINFALL (mm)	
01/02/2021	9.8	21.9	0	
31/01/2021	8.9	20.2	0	
30/01/2021	12.8	21.7	6.6	
COMMENTS				
Compliant sample result. Water choppy with small waves. Very windy. Water colour was blue / green in appearance. sunny at time of sampling.				

VERONA SANDS - DATE SAMPLED	RESULT(Enterococci CFU/100ml)	EST # REC WATER USERS PRESENT	TEMPERATURE (°C) at 9am	RAINFALL (mm) on date of sample
10/02/2021	<10	0	9.7	0
DATE (Previous 3 days)	MIN TEMPERATURE (°C)	MAX TEMPERATURE (°C)	RAINFALL (mm)	
07/02/2021	10.8	16.5	8.0	
08/02/2021	8.9	17.3	0	
09/02/2021	9.1	21.7	0.2	
COMMENTS				
Compliant sample result. Water slightly choppy. Bit windy. Water colour was blue / green in appearance. sunny at time of sampling. It can be noted that there was 48mm of rain on the 06/02/2021.				

VERONA SANDS - DATE SAMPLED	RESULT(Enterococci CFU/100ml)	EST # REC WATER USERS PRESENT	TEMPERATURE (°C) at 9am	RAINFALL (mm) on date of sample
16/02/2021	<10	2	13.6	0
DATE (Previous 3 days)	MIN TEMPERATURE (°C)	MAX TEMPERATURE (°C)	RAINFALL (mm)	
13/02/2021	13.8	21.7	0	
14/02/2021	6.8	23.6	0.2	
15/02/2021	11.7	18.7	0.8	
COMMENTS				
Compliant sample result. Water calm. Bit windy. Water colour was blue / green in appearance. sunny at time of sampling.				



VERONA SANDS - DATE SAMPLED	RESULT(Enterococci CFU/100ml)	EST # REC WATER USERS PRESENT	TEMPERATURE (°C) at 9am	RAINFALL (mm) on date of sample
25/02/2021	10	0	14.9	0.2
DATE (Previous 3 days)	MIN TEMPERATURE (°C)	MAX TEMPERATURE (°C)	RAINFALL (mm)	
22/02/2021	12.8	19.4	0	
23/02/2021	5.2	18.3	3.2	
24/02/2021	4	20.8	0.8	
COMMENTS				
Compliant sample result. Water choppy with small to medium waves. Water colour was a dull green in appearance. Overcast and windy at time of sampling.				

VERONA SANDS - DATE SAMPLED	RESULT(Enterococci CFU/100ml)	EST # REC WATER USERS PRESENT	TEMPERATURE (°C) at 9am	RAINFALL (mm) on date of sample
02/03/2021	158	0	13.7	12.6
DATE (Previous 3 days)	MIN TEMPERATURE (°C)	MAX TEMPERATURE (°C)	RAINFALL (mm)	
01/03/2021	9.5	19.8	0.4	
28/02/2021	11.4	19.4	0.2	
27/02/2021	7.2	22.5	0	
COMMENTS				
Non-compliant sample result. Water choppy with medium waves. Water colour was a dull green in appearance. Seaweed suspended in the water near the shore. Overcast and very windy at time of sampling. Appeared have rained heavily during the previous night. No resampling undertaken, as signage already present advising against swimming 3 days after significant rain.				