CITY OF CAPE TOWN
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COASTAL WATER QUALITY INVESTIGATION

Compiled by

City of Cape Town

Coastal Management Branch

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Summary

An extensive recreational water quality monitoring programme was conducted over the past 12 months at Camps Bay beach, Cape Town. A combination of weekly and daily seawater samples were collected from 4 locations across Camps Bay beach, totalling 373 samples in one year. The results show a consistently high quality of coastal water quality for recreational use as determined against globally accepted best practices.

Introduction

Camps Bay is one of the most popular and well-known coastal recreation nodes in Cape Town. It offers the full spectrum of coastal recreation use including a popular tidal pool in the south, a seasonal Blue Flag beach as well as open water swimming and surfing in the north at Glen Beach.

Investigating coastal water quality at a key coastal node such as this provides a much better understanding to the City of Cape Town as well as the public on the state of water quality throughout the year. Camps Bay has retained Blue Flag status through peak summer periods for over 14 years, and historical calculations of water quality categories based on the National Water Quality Guidelines using bimonthly data presented a picture of water quality that varied between *SUFFICIENT* to *EXCELLENT* between 2017 and 2022.

To better understand coastal water quality status at Camps Bay beach, a case study was undertaken from October 2023 to November 2024. Intensive monitoring was undertaken across Camps Bay to answer four main questions, all of which help to inform a conclusion on the overall water quality of Camps Bay beach.

Questions:

1. **Is there a link between increased rainfall and changes in water quality at Camps Bay Beach?**

2. **Does sampling frequency affect the calculated water quality category for a given beach? Specifically, does increased sampling frequency yield different water quality outcomes at Camps Bay beach compared to the historical standard bi-monthly sampling approach used by the City?**

3. **Is there a high degree of local variation in recreational water quality amongst the different sample locations at Camps Bay?**

4. **Is there any evidence of the Camps Bay marine outfall pipeline negatively affecting recreational water quality in the nearshore area of Camps Bay beach?**

Approach

- Water samples collected at all four locations at Camps Bay beach were analysed by either the SABS Laboratory or WALAB Laboratory, both of which are SANAS accredited for intestinal enterococci enumeration in sea water.
- Samples were collected consistently between 10am and 12pm, chilled, and submitted to the relevant laboratory within required time frames.
- Intestinal enterococci were enumerated in line with SANAS standard methodologies (using accredited membrane filtration methods for quantifying *enterococci*). Intestinal enterococci were used as they are the internationally accepted Faecal Indicator Bacteria (FIB) for assessing levels of wastewater pollution and associated human health risk in coastal and marine environments. The rationale for using enterococci is provided in **Box 1.**

Further information on the rationale for using *enterococci* can be found in the CCT Know Your Coast 2023 report (page 9).

- In line with the South African Department of Environmental Affairs "South African Water Quality Guidelines for Coastal Marine Water - Volume 2: Guidelines for Recreational Use", the upper limit for the 95th percentile of results indicating pollution is 200 CFU/100ml of intestinal enterococci. As a precaution, 200 CFU/100ml has also been used in this report for a single sample limit of acceptable water quality. This is a more cautious approach than the 2012 Guidelines that recommend a single sample threshold of 240 CFU/100ml for the operational management of beaches in South African sea water.
- Recreational Water Quality categories are determined for each set of results as follows:
  - *National Recreational Water Quality Guidelines* recommend determining the 95th and 90th percentiles of intestinal *enterococci* counts to determine the recreational water quality of a given beach. The City has been using the Hazen method as it provides a more conservative estimate of water quality, while the guidelines do not specify what method to use. The guideline thresholds are laid out below:
    - 95th Percentile should be ≤ 100 CFU for Excellent water quality
    - 95th Percentile should be ≤ 200 CFU for Good water quality
    - 90th Percentile should be ≤ 185 CFU for Sufficient water quality

  - The 2021 World Health Organisation Guidelines on Recreational Water Quality use the below classification system. For this report, the rounded 95th percentile method has been used:
    - 95th Percentile for Category A: ≤ 40 CFU /100ml
    - 95th Percentile for Category B: 41-200 CFU /100ml
    - 95th Percentile for Category C: 201-500 CFU /100ml
    - 95th Percentile for Category D: >500 CFU /100ml
    - The WHO does not prescribe a specific acceptable class of water.
    - WHO Class A and B are within tolerable levels of risk according to the South African (and most other) guidelines on recreational water quality.
- Rainfall data sourced from City of Cape Town's Woodhead weather station.

Table 2. Risk Criteria for Recreational Use of Coastal Waters in South Africa

Grade	Estimated risk of illness per exposure*	Enterococci (cfu**/100 mℓ)	Escherichia coli (cfu/100 mℓ)
Excellent	<2,9% gastrointestinal (GI) illness risk	< 100 (95 percentile)	< 250 (95 percentile)
Good	<5% GI illness risk	< 200 (95 percentile)	< 500 (95 percentile)
Sufficient	<8,5% GI illness risk	< 185 (90 percentile)	< 500 (90 percentile)
Poor	> 8,5% GI illness risk	> 185 (90 percentile)	> 500 (90 percentile)

** Exposures are defined as 10 minutes of swimming with three head immersions.*
*** Colony-forming units*

Percentiles and category calculations

Hazen Method

The Hazen method is a statistical approach used to analyse enterococci levels in water quality data. It is generally a very conservative way of determining water quality (i.e., it will err on the side of worse water quality estimates):

- **Ranking the Data**: All enterococci measurements are arranged in order from the smallest to the largest value. Each measurement is assigned a rank.
- **Percentile Calculation**: The method identifies the value at which a specified percentage of the data lies below it (e.g., the 90th or 95th percentile).
- **Interpolation**: To achieve greater precision, the Hazen method uses interpolation. This means it calculates a value that might fall between two actual measurements to give a more accurate percentile estimate.

For example:

- For an excellent rating, 95% of the data points must be below 100 cfu/100 ml. The Hazen method determines this cut-off point even if it doesn't align perfectly with an actual measurement.

BOX 1: ENTEROCOCCI: GLOBAL GOLD STANDARD AS FAECAL INDICATOR BACTERIA

Faecal indicator bacteria (FIB) are measured as a surrogate for a complex suite of pathogens (bacteria, viruses, and others) present in sewage and used to estimate the risk of gastrointestinal and other health effects in humans using recreational waters.

- The WHO guidelines 2003 stated "*Escherichia coli* is intrinsically suitable for fresh waters but not marine waters" (WHO 2003). The updated WHO 2021 guidelines also support using only intestinal enterococci as a FIB in marine environments.
- No statistical relationship has been established for *E. coli* that can support a clear dose–response guideline value in marine waters.
- At the time of writing these guidelines, only enterococci had been used in epidemiology studies addressing marine and fresh waters and shown to reflect, in a dose–response manner, gastrointestinal illness in recreational water users (Wade et al., 2010).
- These FIB are not themselves the causative agents of illness.
- Monitoring of two FIB introduces avoidable complexity in analysis and interpretation of results (WHO 2021), without improving the management of human health risk.

At present, most global health and environmental authorities agree on using intestinal enterococci as the sole FIB in marine environments in their respective guidelines for recreational water quality. This includes the World Health Organisation Guidelines on Recreational Water Quality (2021), United States Environmental Protection Agency (US EPA 2012), Heath Canada (2024), New Zealand Ministry of Health (2021), and Australian National Health and Medical Research Council (2008).

- A series of five epidemiological studies conducted by the US EPA between 2003 and 2009 (Wade et al 2010) confirmed that intestinal enterococci are the appropriate faecal indicator bacteria for seawater, and found that *E. coli* did not display a clear dose-response relationship between bacterial levels and the gastrointestinal illness risk to recreational users in seawater. These studies followed numerous others conducted in the 1980's that were the basis for intestinal enterococci being widely adopted as the main FIB in marine environments (Cabelli et al., 1982; Cabelli, 1983; Dufour, 1984).
- A 2019 report compiled for the government of New Zealand reviewed over 100 published scientific papers to determine whether enterococci are still the most appropriate FIB in coastal waters. The report recommended minor updates to thresholds but found enterococci to be effective for weekly monitoring of faecal contamination risk posed to recreational users of coastal waters (McBride et al. 2019).
- Any suggestion that enterococci are monitored in an effort to provide "better" results is not supported by long term data sets. Enterococci have been found to be a more sensitive indicator bacteria in seawater than *E. coli*, having been shown to exceed single sample standards most often during all weather and environmental conditions (i.e. dry weather, wet weather, along beach's, and near stormwater inputs) (Noble et al 2003).
- Intestinal enterococci's unique resistance to salinity (and ability to grow in saline environments) is thought to contribute to their "better performance as indicators of human health risk in marine recreational waters than members of the coliform group" such as *E. coli* (Byappanahalli et al. 2012). Past studies have demonstrated that intestinal enterococci have a significantly longer survival time in marine environments than *E. coli* (Fragala and Hanes, 1967; Sieracki, 1980; Noble et al. 2001). These studies also noted *E. coli* are more sensitive to sunlight than enterococci.

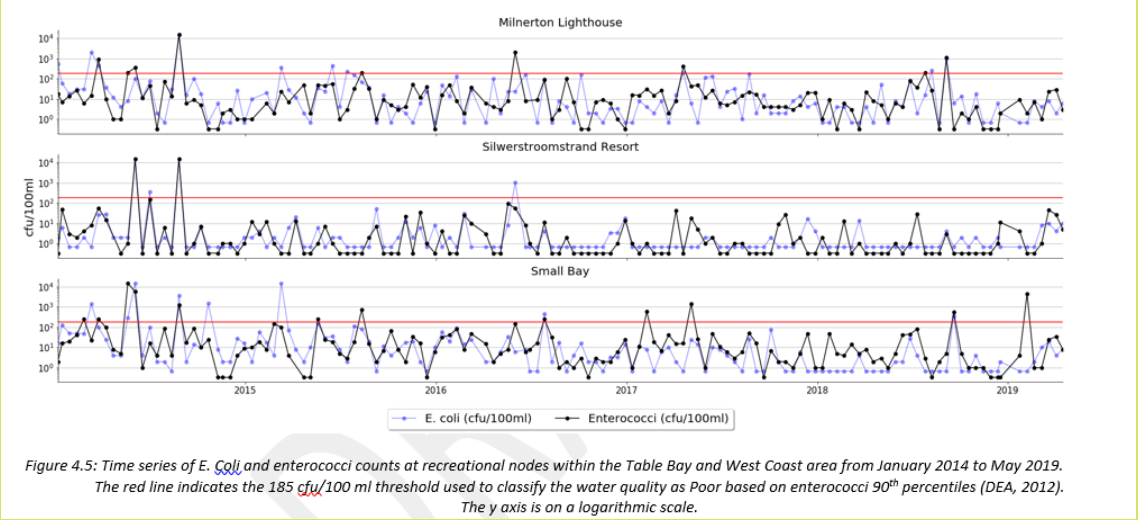

Figure 4.5: Time series of E. Coli and enterococci counts at recreational nodes within the Table Bay and West Coast area from January 2014 to May 2019. The red line indicates the 185 cfu/100 ml threshold used to classify the water quality as Poor based on enterococci 90th percentiles (DEA, 2012). The y axis is on a logarithmic scale.

Site Selection and Monitoring Frequency

Over the 13-month research period and as data was collected the following programme was rolled out:

1) Camps Bay Tidal Pool was sampled weekly beginning 3rd October 2023
2) Glen Beach was sampled weekly from 3rd October 2023
3) Camps Bay Central site was added and sampled weekly from 14th February 2024
4) Daily sampling (Monday to Friday) was started on the 3rd June 2024 in front of the lifesaving building at Camps Bay (Camps Bay South).
5) Daily sampling (Monday to Friday) was added to Glen Beach and Camps Bay Central on the 20th August 2024

Figure 1. Location of Sample Sites

Results

All data are presented in raw form in **Annexure A**. The certified laboratory datasheets are available for all data points on request.

Findings and Analysis

1. Camps Bay Tidal Pool

Over the period of 01 October 2023 to 15 November 2024 a total number of 52 weekly samples were taken. Of these 52 samples collected only two exceeded an upper limit count of 200 CFU/100ml. These exceedances occurred on the 24th October 2023 and 4th June 2024. The exceedance on the 4th June 2024 is directly related to a very large rainfall event (64 mm on Table Mountain in two days) and the discharge of the Blinkwater catchment runoff into the

tidal pool. As shown by data across the coast, water quality declined across the City on the 4th June. Light rain was recorded for the 24 October 2023 (0.4 mm). **Water quality for the tidal pool calculated over a full year including winter months resulted in an outcome of EXCELLENT.**

Method	95th Percentile	90th Percentile	Result
National Water Quality Guidelines Hazen Method	78	NA	**EXCELLENT**
WHO Guidelines on Recreational Water Quality 2021 Rounded 95th Percentile	78		**B**

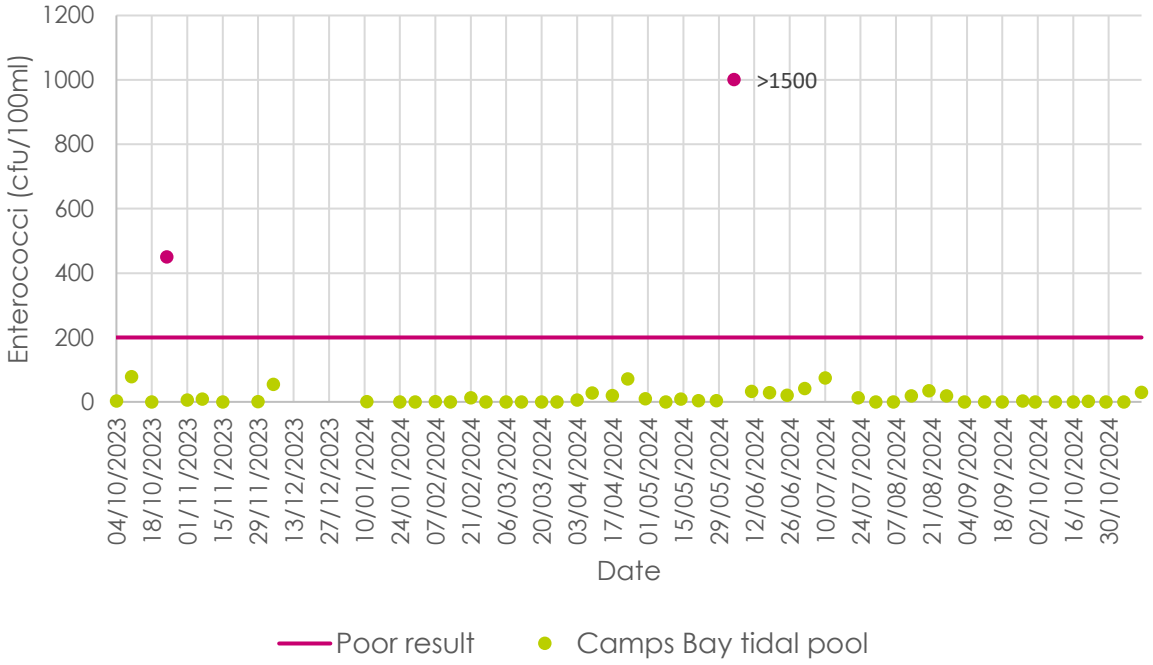

Figure 2. Weekly results of intestinal enterococci monitoring at the Camps Bay tidal pool.

2. Glen Beach

Weekly Data

Over the period 03 October 2023 to 15 November 2024 a total of 53 weekly samples were taken. Of all the weekly data only a single sample throughout the entire period exceeded an upper limit count of 200/100ml. This result was also from the 4th June 2024 and coincides with the very large rainfall event.

Method	95th Percentile	90th Percentile	Result
National Water Quality Guidelines Hazen Method	30	NA	**EXCELLENT**
WHO Guidelines on Recreational Water Quality 2021 Rounded 95th Percentile	30		**A**

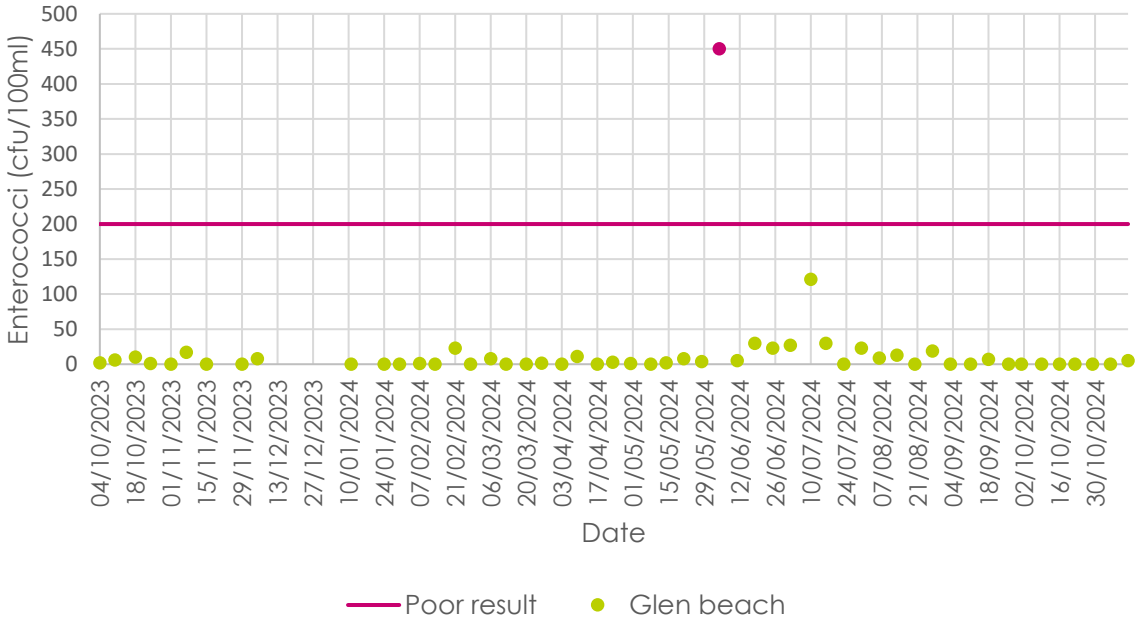

Figure 3. Weekly results of intestinal enterococci monitoring at Glen Beach

Daily Data

On the 20th August a Monday to Friday daily sampling regime was initiated. Over the period 20th August 2024 to 15 November 2024 (3 months of daily Monday to Friday samples which equates to 62 daily samples), only a single result (or 1.6%) exceeded 200/100ml.

Method	95th Percentile	90th Percentile	Result
National Water Quality Guidelines Hazen Method	70	NA	**EXCELLENT**
WHO Guidelines on Recreational Water Quality 2021 Rounded 95th Percentile	43		**B**

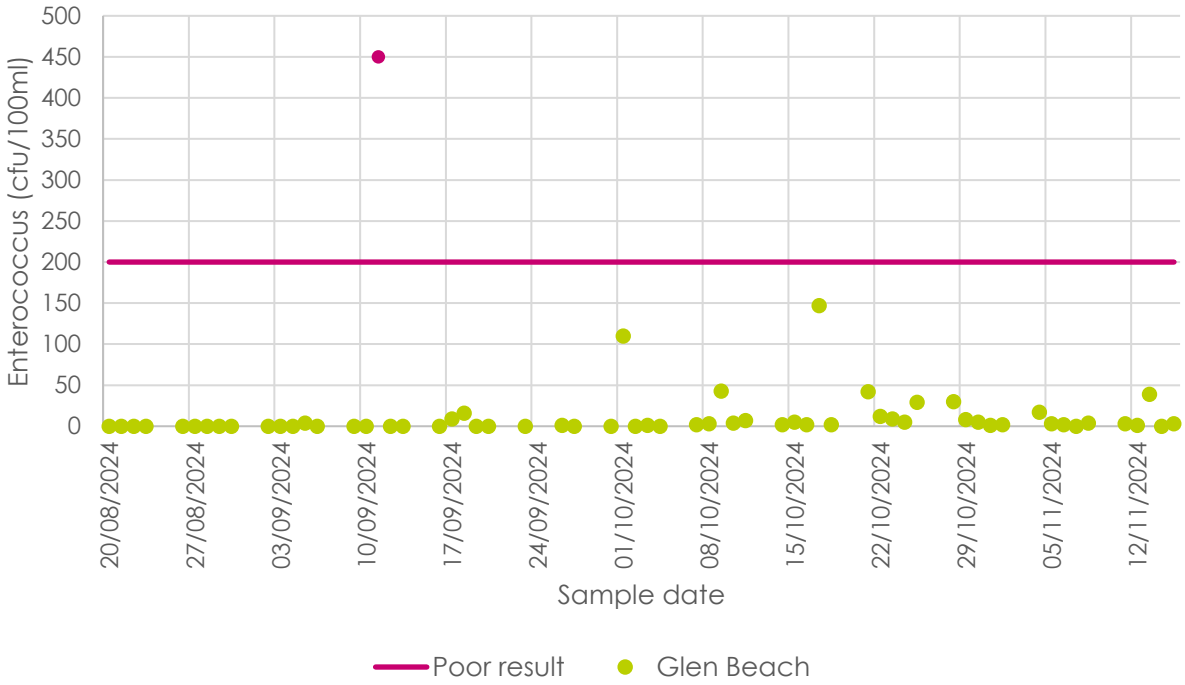

Figure 4. Daily results of intestinal enterococci monitoring at Glen Beach

Combined Data

If all data collected across the full period is analysed as a single data set of 115 samples at Glen Beach for the period October 2023 to November 2024 inclusive of the winter rainfall months the outcome is **EXCELLENT with a 95th percentile of 43**.

Method	95th Percentile	90th Percentile	Result
National Water Quality Guidelines Hazen Method	43	NA	**EXCELLENT**
WHO Guidelines on Recreational Water Quality 2021 Rounded 95th Percentile	43		**B**

High frequency sampling for Glen Beach shows EXCELLENT water quality across the entire sampling period.

3. Camps Bay Central

Weekly Data

To broaden the research and analysis, a sampling point at Central Camps Bay was added on the 13 February 2024 and sampled weekly through to 15 November 2024. 34 weekly samples were collected. Only two exceeded an upper limit count of 200/100ml. One of those was the large rainfall event of the 4th June. Light rainfall was also recorded on the 21st February 2024, however the relationship between light rainfall and elevated enterococci has not been stringently tested yet.

In this case, with the more sensitive interpolation of the Hazen method, 95 percent of the data points are below 365 cfu/100ml, and 90 percent are below 21 cfu/100ml. Weekly data for

Camps Bay central comes out as ***SUFFICIENT***. This illustrates the impact that two poor results out of 34 samples can have on the water quality calculations. The Ranked and Rounded 95th percentile however comes out as 25 which is a category A result in terms of the World Health Organisation Guidelines. This demonstrates the significant impact of a few poor results in a smaller or shorter database.

Method	95th Percentile	90th Percentile	Result
National Water Quality Guidelines Hazen Method	365	21	**SUFFICIENT**
WHO Guidelines on Recreational Water Quality 2021 Rounded 95th Percentile	25		**A**

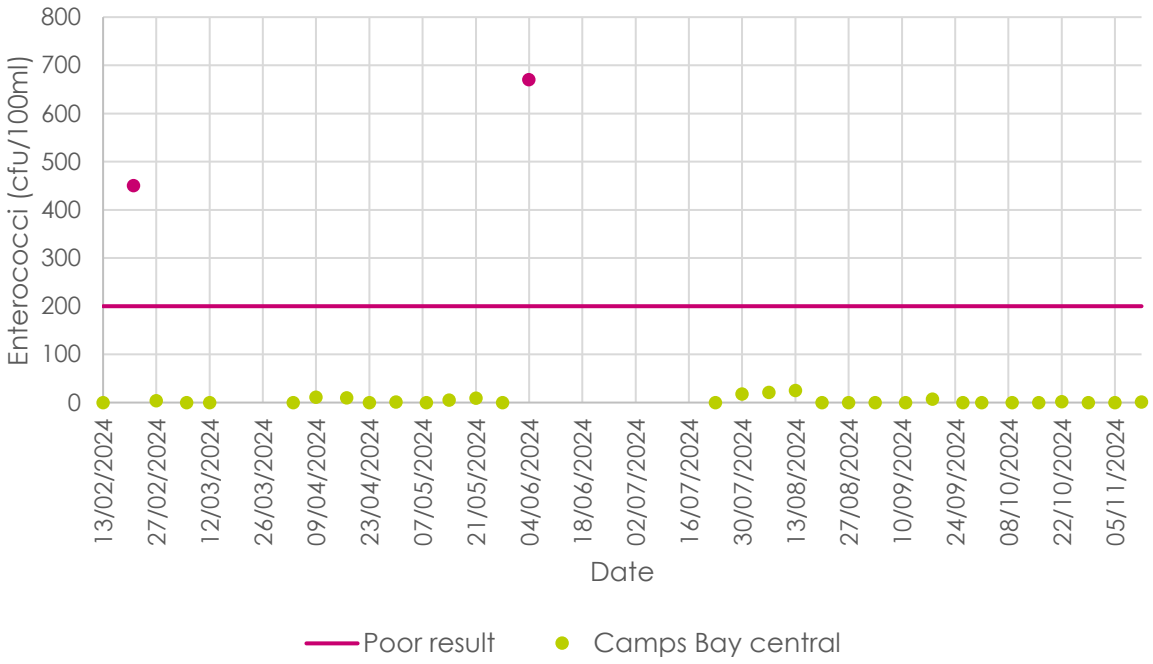

Figure 5. Weekly results of intestinal enterococci monitoring at Camps Bay Central

Daily Data

On 20 August 2024, a Monday to Friday daily sampling regime was initiated. Over the period 20 August 2024 to 15 November 2024 (3 months of daily Monday to Friday samples which equates to 61 daily samples), **not a single sample exceeded an upper limit count of 200 cfu/100ml with the highest count across the entire period being 17 cfu/100ml.**

Method	95th Percentile	90th Percentile	Result
National Water Quality Guidelines Hazen Method	15	NA	**EXCELLENT**
WHO Guidelines on Recreational Water Quality 2021 Rounded 95th Percentile	155		**A**

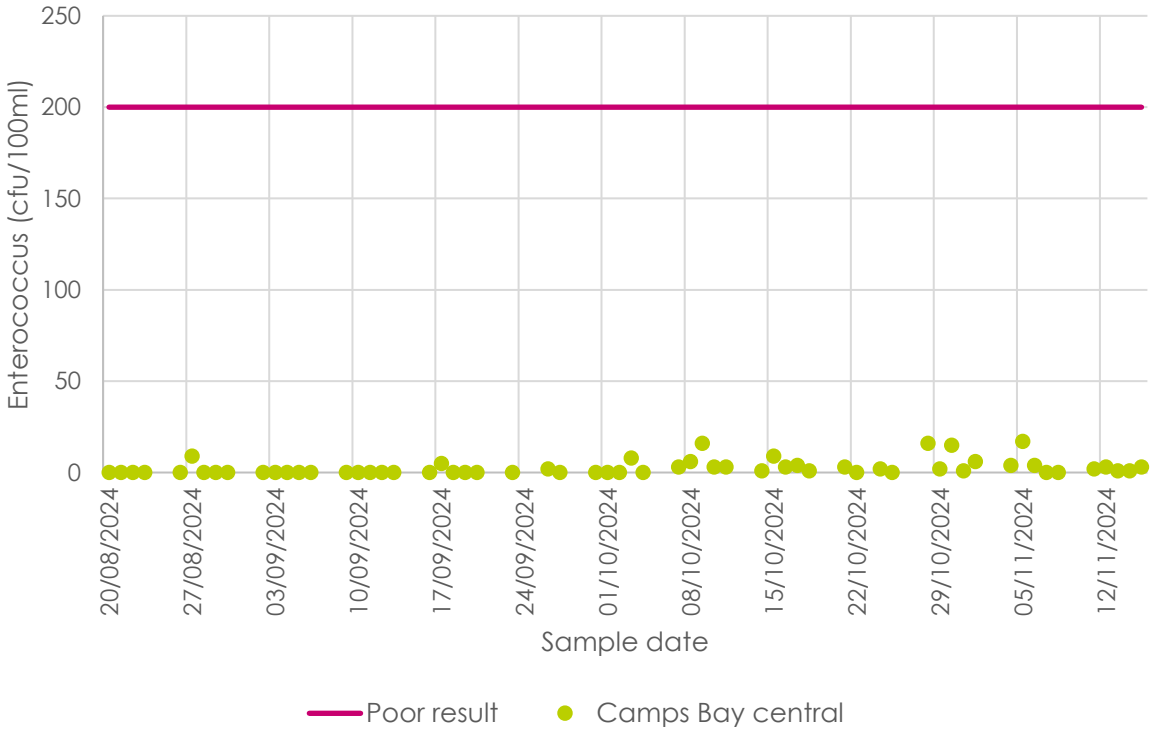

Figure 6. Daily results of intestinal enterococci monitoring at Camps Bay Central

Combined

If all research data collected across the full period is analysed as a single data set of 95 samples at Central Camps Bay for the period 14 February 2024 to 15 November 2024 inclusive of the winter rainfall months the outcome is ***EXCELLENT***.

Method	95th Percentile	90th Percentile	Result
National Water Quality Guidelines Hazen Method	18	NA	**EXCELLENT**
WHO Guidelines on Recreational Water Quality 2021 Rounded 95th Percentile	18		**A**

High frequency sampling for Central Camps Bay shows EXCELLENT water quality across the entire sampling period.

4. Camps Bay Lifeguard building (Camps Bay South)

Weekly Data

Camps Bay (south) in front of the lifeguard building is the designated bathing area and Blue Flag beach area. The research programme did not add it as a weekly sampling site as weekly samples were already being collected by SABS for Blue Flag for the period 28 November 2023 to 27 March 2024. There was one elevated result recorded on the 13th March 2024 (>150 cfu/100ml).

Daily Data

On 3 June 2024 daily (Monday to Friday) sampling was initiated at this location. Over the period 3 June 2024 to 15 November 2024, 111 samples were collected. Of these 111 samples only four exceeded an upper limit count of 200 cfu/100ml. These four exceedances were on 4 June, 28 June, 3 July, and 9 July respectively. All of these days are associated with recorded rainfall events.

Based on 111 daily samples taken between 4 June 2024 and 15 November 2024, this high frequency sampling provides the results in the table below.

Method	95th Percentile	90th Percentile	Result
National Water Quality Guidelines Hazen Method	106	NA	**GOOD**
WHO Guidelines on Recreational Water Quality 2021 Rounded 95th Percentile	88		**B**

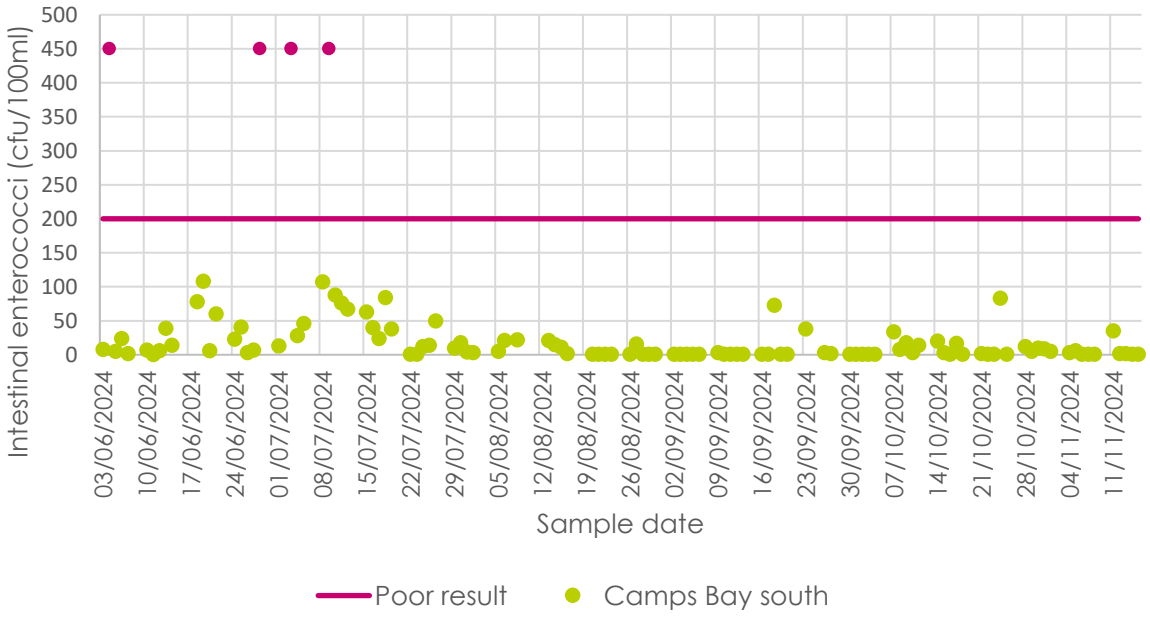

Figure 7. Daily results of intestinal enterococci monitoring at Camps Bay South

Overall Findings

1) A combination of weekly and daily monitoring of multiple sites across Camps Bay (from the tidal pool in the south to Glen beach in the north) demonstrated consistently low enterococci counts indicating very consistent coastal water quality for recreation ass per the national and WHO guidelines (using the 95th percentile method).
2) Throughout the monitoring period from 01 October 2023 to 15 November 2024 there were only 10 exceedances out of a total 373 samples taken (2.7%).
3) 80% of exceedances are associated with high rainfall events (rainfall events greater than 25 mm). Camps Bay south results and recorded daily rainfall illustrate this apparent relationship (Figure 8) below.

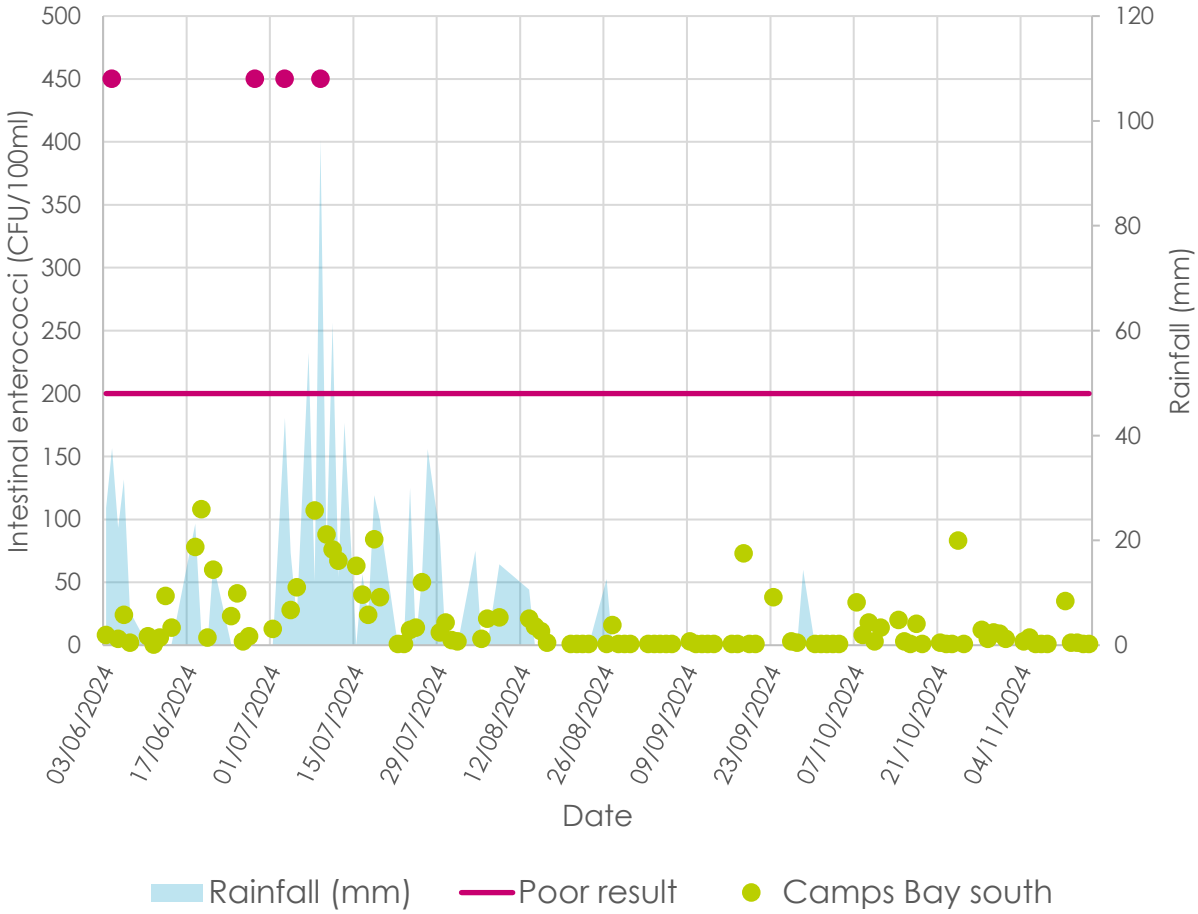

Figure 8. Daily results of intestinal enterococci monitoring at Camps Bay South and recorded rainfall

4) Increased sampling frequency appears to lead to better outcomes in terms of national water quality guideline categories.
5) Historically bimonthly sampling and the resultant calculations may have resulted in a tendency towards apparent poorer coastal water quality outcomes than if samples were done weekly or daily. A lower frequency of sampling means a single exceedance would have a greater impact on results. At present this is only an observation; statistical analyses will be required in the final report in July 2025 to quantitatively evaluate this.

6) The large stormwater drain that discharges on the southern headland nearest to the lifeguard building sampling point likely impacts on the Camps Bay south monitoring site during rainfall events.
7) Public speculation that upwelling caused by southeast winds may draw outfall effluent towards the coast or that northwest winds may blow wastewater from the outfall toward the beach is not supported by this data.
8) Significant rainfall events appear to impact negatively on coastal water quality at Camps Bay.
9) Pollution events associated with rainfall appear to clear within 24 hours of the rainfall stopping as we do not see any instances of consecutive poor results.
10) This extensive monitoring and data shows a very high and consistent standard of coastal water quality for recreational use as determined by globally accepted methods at Camps Bay beach.

Next Steps

The following recommendations are made based on the findings above:

1) Standard coastal water quality sampling frequency at recreational nodes (conducted by CCT) such as Camps Bay should be increased to weekly sampling.
2) Daily sampling comes at a very high cost and data collected as part of this project show that other than for research purposes daily sampling is not necessary a standard approach and the global standard of weekly sampling now adopted at our recreational nodes is appropriate.
3) The current daily sampling conducted every weekday as part of this research will continue to complete a full year of monitoring.
4) Detailed analyses will be conducted after this period to validate all preliminary findings in this study.
5) A report will be published in September 2025 with conclusions from the full year of monitoring. It will comment on and validate or correct the findings of this interim report.

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ANNEXURE A: RAW COASTAL WATER QUALITY ACROSS FOUR LOCATIONS OF CAMPS BAY BEACH

Table 1: Weekly data Camps Bay

Date	Camps Bay tidal pool	Camps Bay Central	Glen Beach
Wednesday, 04 October 2023	3	***	2
Tuesday, 10 October 2023	78	***	6
Wednesday, 18 October 2023	0	***	10
Tuesday, 24 October 2023	>150	***	1
Tuesday, 07 November 2023	6	***	0
Wednesday, 15 November 2023	9	***	17
Tuesday, 21 November 2023	0	***	0
Wednesday, 29 November 2023	1	***	0
Tuesday, 05 December 2023	55	***	8
Wednesday, 10 January 2024	1	***	0
Tuesday, 23 January 2024	0	***	0
Wednesday, 31 January 2024	0	***	0
Tuesday, 06 February 2024	1	***	1
Wednesday, 14 February 2024	0	0	0
Tuesday, 20 February 2024	13	>150	23
Wednesday, 28 February 2024	0	4	0
Tuesday, 05 March 2024	0	0	8
Tuesday, 12 March 2024	0	0	0
Wednesday, 20 March 2024	0	0	0
Tuesday, 26 March 2024	0	0	0
Wednesday, 03 April 2024	6	0	1
Wednesday, 10 April 2024	28	11	11
Wednesday, 17 April 2024	20	10	0
Wednesday, 24 April 2024	71	0	3
Tuesday, 30 April 2024	10	1	1
Tuesday, 07 May 2024	0	0	0
Tuesday, 14 May 2024	9	5	2
Tuesday, 21 May 2024	4	9	8
Tuesday, 28 May 2024	4	0	4
Tuesday, 04 June 2024	>1500	670	>150
Tuesday, 11 June 2024	33	**	5
Tuesday, 18 June 2024	29	**	30
Tuesday, 25 June 2024	21	**	23
Tuesday, 02 July 2024	42	**	27
Tuesday, 09 July 2024	74	**	121
Tuesday, 16 July 2024	*	**	30
Tuesday, 23 July 2024	13	0	0
Tuesday, 30 July 2024	0	18	23
Tuesday, 06 August 2024	0	21	9

Date	Camps Bay tidal pool	Camps Bay Central	Glen Beach
Monday, 12 August 2024	19	25	13
Tuesday, 20 August 2024	35	0	0
Tuesday, 27 August 2024	19	0	19
Tuesday, 03 September 2024	0	0	0
Wednesday, 11 September 2024	0	0	0
Wednesday, 18 September 2024	0	7	7
Thursday, 26 September 2024	3	0	0
Tuesday, 01 October 2024	0	0	0
Wednesday, 09 October 2024	0	0	0
Wednesday, 16 October 2024	0	0	0
Tuesday, 22 October 2024	2	2	0
Tuesday, 29 October 2024	0	0	0
Tuesday, 05 November 2024	0	0	0
Tuesday, 12 November 2024	30	1	5

**No data. **Research at this site temporarily suspended. ***Not yet monitored.*

Table 2: Daily data Camps Bay

Date	Camps Bay South	Camps Bay Central	Glen Beach
Monday, 03 June 2024	8	***	***
Tuesday, 04 June 2024	>150	***	***
Wednesday, 05 June 2024	5	***	***
Thursday, 06 June 2024	24	***	***
Friday, 07 June 2024	2	***	***
Monday, 10 June 2024	7	***	***
Tuesday, 11 June 2024	0	***	***
Wednesday, 12 June 2024	6	***	***
Thursday, 13 June 2024	39	***	***
Friday, 14 June 2024	14	***	***
Tuesday, 18 June 2024	78	***	***
Wednesday, 19 June 2024	108	***	***
Thursday, 20 June 2024	6	***	***
Friday, 21 June 2024	60	***	***
Monday, 24 June 2024	23	***	***
Tuesday, 25 June 2024	41	***	***
Wednesday, 26 June 2024	3	***	***
Thursday, 27 June 2024	7	***	***
Friday, 28 June 2024	>150	***	***
Monday, 01 July 2024	13	***	***
Wednesday, 03 July 2024	>150	***	***
Thursday, 04 July 2024	28	***	***
Friday, 05 July 2024	46	***	***

Monday, 08 July 2024	107	***	***
Tuesday, 09 July 2024	>150	***	***
Wednesday, 10 July 2024	88	***	***
Thursday, 11 July 2024	76	***	***
Friday, 12 July 2024	67	***	***
Monday, 15 July 2024	63	***	***
Tuesday, 16 July 2024	40	***	***
Wednesday, 17 July 2024	24	***	***
Thursday, 18 July 2024	84	***	***
Friday, 19 July 2024	38	***	***
Monday, 22 July 2024	0	***	***
Tuesday, 23 July 2024	0	***	***
Wednesday, 24 July 2024	12	***	***
Thursday, 25 July 2024	14	***	***
Friday, 26 July 2024	50	***	***
Monday, 29 July 2024	10	***	***
Tuesday, 30 July 2024	18	***	***
Wednesday, 31 July 2024	4	***	***
Thursday, 01 August 2024	3	***	***
Monday, 05 August 2024	5	***	***
Tuesday, 06 August 2024	21	***	***
Thursday, 08 August 2024	22	***	***
Tuesday, 13 August 2024	21	***	***
Wednesday, 14 August 2024	15	***	***
Thursday, 15 August 2024	11	***	***
Friday, 16 August 2024	2	***	***
Tuesday, 20 August 2024	0	0	0
Wednesday, 21 August 2024	0	0	0
Thursday, 22 August 2024	0	0	0
Friday, 23 August 2024	0	0	0
Monday, 26 August 2024	0	0	0
Tuesday, 27 August 2024	16	9	0
Wednesday, 28 August 2024	0	0	0
Thursday, 29 August 2024	0	0	0
Friday, 30 August 2024	0	0	0
Monday, 02 September 2024	0	0	0
Tuesday, 03 September 2024	0	0	0
Wednesday, 04 September 2024	0	0	0
Thursday, 05 September 2024	0	0	4
Friday, 06 September 2024	0	0	0
Monday, 09 September 2024	3	0	0
Tuesday, 10 September 2024	0	0	0
Wednesday, 11 September 2024	0	0	>150
Thursday, 12 September 2024	0	0	0
Friday, 13 September 2024	0	0	0
Monday, 16 September 2024	0	0	0

Tuesday, 17 September 2024	0	5	9
Wednesday, 18 September 2024	73	0	16
Thursday, 19 September 2024	0	0	0
Friday, 20 September 2024	0	0	0
Monday, 23 September 2024	38	0	0
Thursday, 26 September 2024	3	2	1
Friday, 27 September 2024	2	0	0
Monday, 30 September 2024	0	0	0
Tuesday, 01 October 2024	0	0	110
Wednesday, 02 October 2024	0	0	0
Thursday, 03 October 2024	1	8	1
Friday, 04 October 2024	1	0	0
Monday, 07 October 2024	34	3	2
Tuesday, 08 October 2024	8	6	3
Wednesday, 09 October 2024	18	16	43
Thursday, 10 October 2024	3	3	4
Friday, 11 October 2024	14	3	7
Monday, 14 October 2024	20	1	2
Tuesday, 15 October 2024	3	9	5
Wednesday, 16 October 2024	1	3	2
Thursday, 17 October 2024	17	4	147
Friday, 18 October 2024	0	1	2
Monday, 21 October 2024	2	3	42
Tuesday, 22 October 2024	1	0	12
Wednesday, 23 October 2024	0	*	9
Thursday, 24 October 2024	83	2	5
Friday, 25 October 2024	0	0	29
Monday, 28 October 2024	12	16	30
Tuesday, 29 October 2024	5	2	8
Wednesday, 30 October 2024	10	15	5
Thursday, 31 October 2024	9	1	1
Friday, 01 November 2024	5	6	2
Monday, 04 November 2024	3	4	17
Tuesday, 05 November 2024	6	17	3
Wednesday, 06 November 2024	0	4	2
Thursday, 07 November 2024	1	0	0
Friday, 08 November 2024	0	0	4
Monday, 11 November 2024	35	2	3
Tuesday, 12 November 2024	2	3	1
Wednesday, 13 November 2024	2	1	39
Thursday, 14 November 2024	0	1	0
Friday, 15 November 2024	1	3	3

**No data. **Research at this site temporarily suspended. ***Not yet monitored.*