



BEACH WATER QUALITY REPORT

FOR NELSON MANDELA BAY METRO MUNICIPALITY

GQEBERHA (PORT ELIZABETH)

By: ASC Public Health | Food Safety
21 September 2023 – 15 November 2023



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INTRODUCTION



Gqebera, previously known as Port Elizabeth, is a major seaport and the most populous city in the Eastern Cape province of South Africa. With an estimated population of 1,295,928 in 2023, Gqebera has experienced steady growth over the years. It is located on the southeastern coast of South Africa, specifically on Algoa Bay of the Indian Ocean.

Gqebera is renowned for its stunning beaches, cultural landmarks, and wildlife attractions. The city offers a diverse range of activities and attractions for tourists, making it a popular destination for both local and international travelers. Its beautiful beaches provide opportunities for swimming, surfing, and sunbathing, while its cultural landmarks showcase the rich history and heritage of the region. Additionally, Gqebera is known for its wildlife attractions, including game reserves and sanctuaries that offer unique opportunities to observe and interact with a variety of animal species.

As the festive season approaches, it is crucial for beachgoers to be aware of the water quality at the beaches they plan to visit. Swimming in contaminated seawater can pose serious health risks due to high levels of bacteria from sewage spills and chemicals from various sources. It is important to prioritize personal safety and well-being by staying informed about the water quality conditions at the beaches in Gqebera. To this extent, ASC Public Health – Food Safety conducted a comprehensive study to determine the quality of our most popular swimming beaches.

Study Objective

ASC Public Health - Safety consulting firm conducted a comprehensive study on beach water quality safety at five beaches within the Nelson Mandela Bay Metropolitan Municipality (NMBM). The aim was to assess the safety of these beaches and provide valuable information to swimmers and visitors during this festive season.

The study focused on two key microbiological water parameters, both of which serve as indicators of faecal contamination:

1. *Faecal Streptococcus* bacteria
2. *Escherichia Coli (E. coli)* bacteria

Why are the Parameters Tested Harmful?

1. ****Faecal streptococcus****: High levels of *Faecal streptococcus* bacteria indicate faecal contamination, which can cause gastrointestinal illnesses and other health issues.
2. ****Escherichia coli (E. coli)****: *E. coli* bacteria in seawater indicate faecal contamination and can lead to severe gastrointestinal illnesses, urinary tract infections, and other health problems.

Blue Flag Status Compliance

The study utilized the compliance limits for *Faecal streptococcus* and *E. coli* bacteria as specified by the Blue Flag status requirements.

The Blue Flag status compliance is a set of criteria and guidelines established by the Foundation for Environmental Education (FEE) for swimming beaches. The purpose of the Blue Flag status is to promote and acknowledge beaches that meet high standards in terms of water quality, environmental management, safety, and services. Beaches that meet the Blue Flag status compliance demonstrate their commitment to providing clean and safe bathing water for visitors. By adhering to the criteria, these beaches ensure that they meet international standards for water quality and environmental sustainability. The Blue Flag status serves as a recognizable symbol for beachgoers, indicating that the beach has been assessed and meets the stringent requirements set forth by the FEE.

The Blue Flag status compliance helps to protect public health by ensuring that beaches maintain high water quality standards. It also encourages sustainable practices in beach management, such as waste management, environmental education, and the preservation of natural resources. By promoting clean and safe beaches, the Blue Flag status enhances the overall beach experience for visitors while protecting the environment. The study included five beaches within the **Nelson Mandela Bay Municipality**.

Blue Flag Compliance Limits

PARAMETERS	AREA	CRITERIA LIMIT
<i>Faecal Streptococci</i>	Coastal & Transitional waters	100 cfu/100ml
	Inland waters	200 cfu/100ml
<i>E.coli</i>	Coastal & Transitional waters	250 cfu/100ml
	Inland waters	500 cfu/100ml

Beaches Examined

The study focused on the following beaches within the NMBM:

1	Hobie (Summerstrand) beach
2	Humewood beach
3	New Brighton beach
4	St. George's beach
5	Maitland beach



Methodology

Marine samples were collected from each beach from September 2023 until November 2023 following international guidelines on marine water sampling. Sampling locations were selected after considering the proximity to potential pollution sources, depth of water and representative sampling area. The samples were taken by a qualified Environmental Health Practitioner and a Public Health specialist within ASC Consultants. The following laboratory equipment was used:

- Sterile gloves
- Sterile bottles
- Temperature controlled sterile cooler boxer with laboratory issued ice packs.

The samples were carefully sealed in sterile bottles provided by an accredited SANAS laboratory and stored in temperature-controlled containers. The temperature-controlled samples were then sent for laboratory analysis within 2 hours. The samples were then analyzed, and the results were monitored during the course of three months to identify trends. Methods used for testing were Enterolert & Colilert.

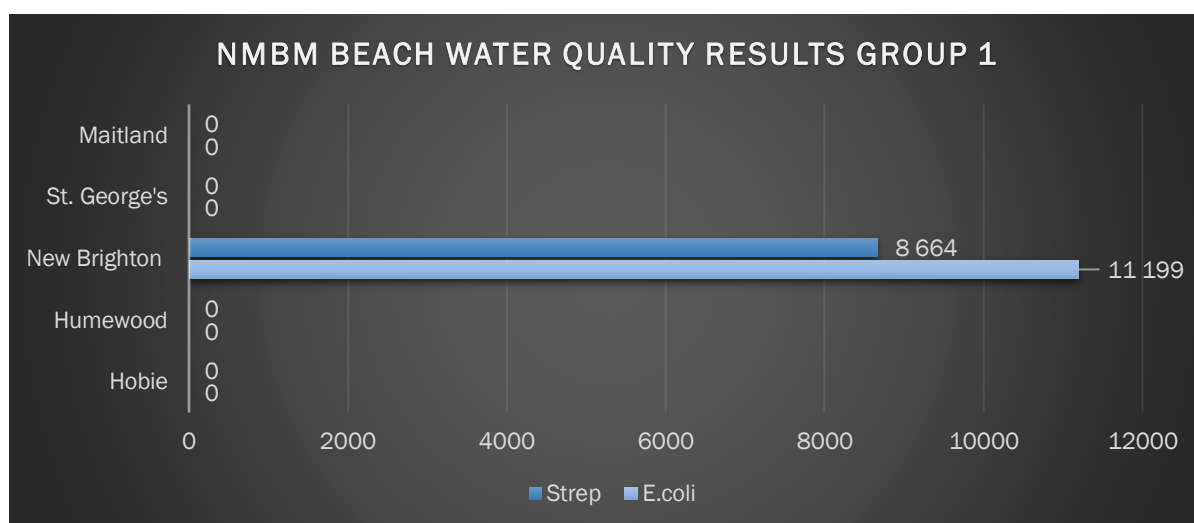
The last samples were taken in November, and results were received in November 2023.

RESULTS AND ANALYSIS



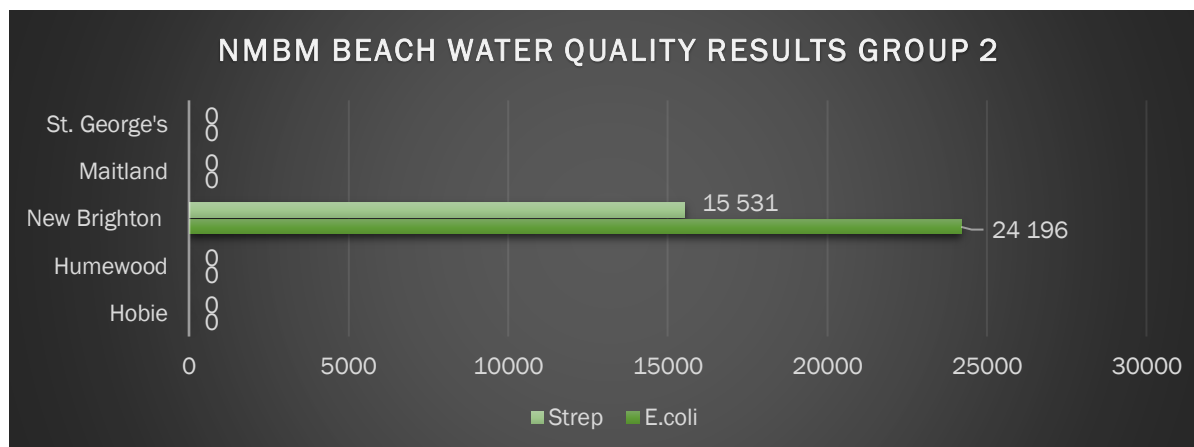
The findings of the study revealed that four out of the five examined beaches exhibited outstanding water quality, with no detected presence of pathogenic faecal indicators. These beaches demonstrated exceptional cleanliness and hygiene within their surroundings. Specifically, Hobie (Summerstrand) beach and Humewood beach, both holding Blue Flag status, demonstrated pristine water quality without any faecal indicators. These beaches, located in the tourist-rich area within the NMBM, provide an excellent bathing experience for visitors, indicating no immediate health risks.

Beach Water Quality Results - 21 September 2023



Graph 1: Beach Water Quality results from ASC 21 September 2023

Beach Water Quality Results – 15 November 2023



Graph 1: Beach Water Quality results from ASC 21 September 2023

DETAILS FOR EACH BEACH



Hobie (Summerstrand) Beach and Humewood Beach

Both Hobie beach and Humewood beach, which hold Blue Flag status, demonstrated pristine water quality without any faecal indicators. These beaches, located in the tourist rich area within the NMBM, provide an excellent bathing experience for visitors and from the results, it is clear that there are no immediate health risks.

Hobie (Summerstrand) Beach and Humewood Beach

Maitland Beach

Maitland's Beach, situated approximately 30 minutes from Port Elizabeth Central in Seaview, was also found to be free from faecal contamination. This picturesque beach is surrounded by breathtaking sand hills and natural vegetation. This beach also did not have any concerning faecal contamination under the study period.

St. George's Beach

St. Georges beach, located near Wells Estate, and servicing mostly the Motherwell township and to an extent, KwaZakhele and New Brighton, exhibited high levels of cleanliness and hygiene despite potential concerns outside the beach area during quiet seasons. This beach was also found to be free from tested faecal contamination.

New Brighton Beach

Regrettably, New Brighton Beach exhibited significant faecal contamination beyond the standards used in this study. The *E. coli* contamination level was 45 times higher than the Blue Flag standard, while the *Streptococci* contamination level was 87 times higher. The surrounding conditions were unsuitable for use, with damaged pathways littered with broken glass bottles. Additionally, offshore oil spillage further contaminated the water, and during the sampling, there was clearly oil residues in water. It is important to note that this beach remains accessible to the public and serves as the only nearby option for residents in disadvantaged communities within the Ibhayi area.

RECOMMENDATIONS



To improve the quality of beach water studied and mitigate public health risks associated with unsafe beaches, the following recommendations are suggested:

1. Water Treatment

Implement effective water treatment measures to reduce faecal contamination from sewage spills and other sources.

2. Beach Cleanup

Conduct regular beach cleanup initiatives to maintain cleanliness and remove potential sources of contamination.

3. Create Public Awareness

Launch public awareness campaigns to educate residents and visitors about the importance of beach water safety and the potential health risks associated with contaminated water.

4. Infrastructure Improvement

Invest in infrastructure improvements, such as repairing damaged pathways and providing proper waste disposal facilities, to enhance the overall beach environment and reduce pollution risks.

5. Monitoring and Reporting

Establish a robust monitoring and reporting system to regularly assess beach water quality and promptly inform the public about any potential health hazards.

Failure to inform the public about unsafe beaches like New Brighton Beach can pose significant public health risks. Visitors may unknowingly expose themselves to harmful bacteria, leading to gastrointestinal illnesses and other health complications. It is crucial to prioritize public safety by providing accurate information about beach water quality and promoting responsible beach usage.

For more information or inquiries about beach water quality, please contact ASC Public Health | Food Safety consulting firm at:

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CONCLUSION



In conclusion, the majority of beaches within the Nelson Mandela Bay Metro Municipality exhibit excellent water quality and provide safe bathing environments for visitors. However, it is crucial for beachgoers to exercise caution when visiting New Brighton Beach due to its significant faecal contamination and unsuitable surrounding conditions. In fact, the levels of faecal contamination are so high that it is not recommended for any beachgoer to swim in that beach.

By adhering to international guidelines for beach water safety and being aware of Blue Flag beach status requirements, visitors can make informed decisions about their choice of beaches during their stay in Port Elizabeth.

**Note: The graphs provided represent the beach water quality results obtained on 21 September 2023 (Graph 1) and 15 November 2023 (Graph 2)*