



Owners of wastewater treatment plants have a responsibility to:

- Document and keep records on effluent quality and maintenance activities.
- Ensure that only effluent of good quality is disposed.
- Ensure proper maintenance and upkeep of the treatment plants.
- Ensure that effluent is not discharged directly to the marine environment.
- Ensure proper functioning of wastewater plants by ensuring personnel are adequately trained.

WHAT ARE THE RELEVANT GUIDELINES, STANDARDS AND LEGISLATION USE TO MANAGE WATER QUALITY?

- Health Services Act, CAP. 44
- Marine Pollution Control Act CAP. 392A
- Ground Water Protection Policy, 1973 – Improvement of Amenities in Zone I Areas
- World Health Organization Drinking Water Guidelines



ENVIRONMENTAL PROTECTION DEPARTMENT

MINISTRY OF ENVIRONMENT & DRAINAGE

L.V. HARCOURT LEWIS BUILDING

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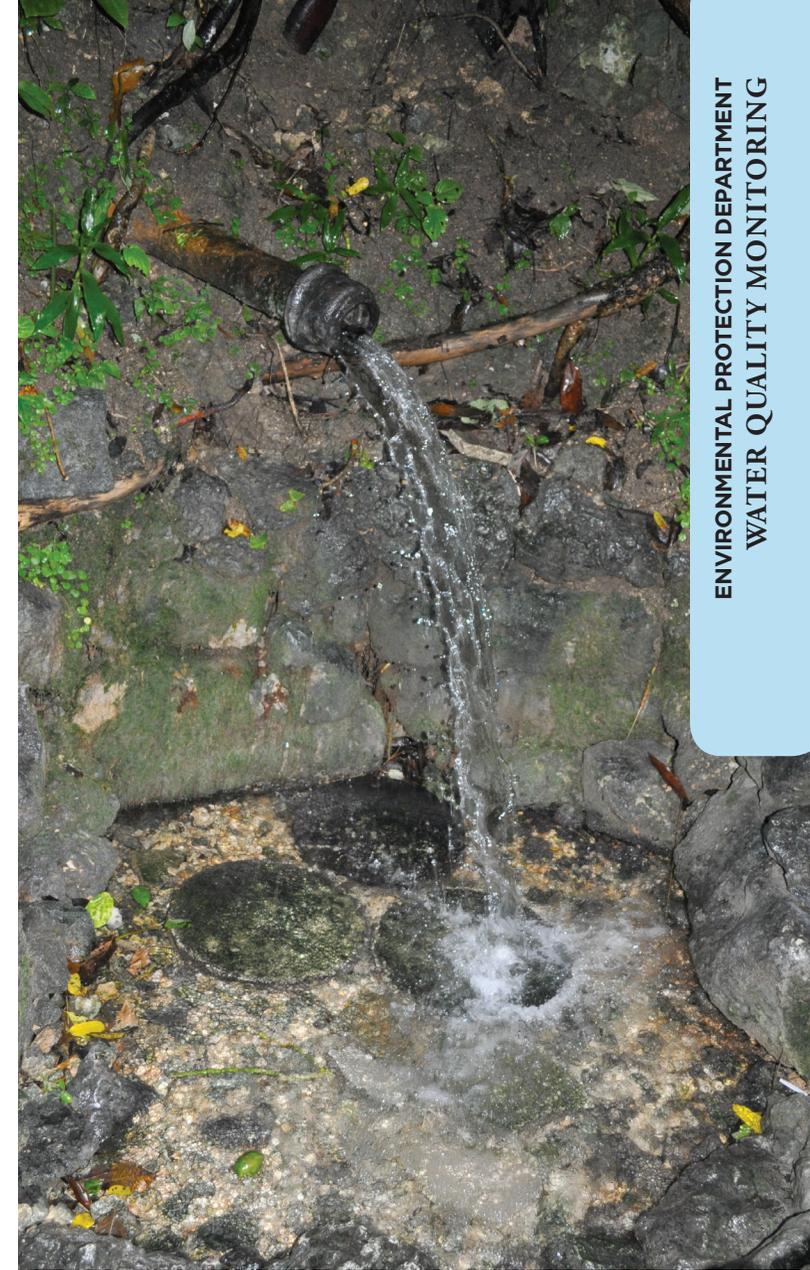
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ENVIRONMENTAL PROTECTION DEPARTMENT
WATER QUALITY MONITORING



ENVIRONMENTAL PROTECTION DEPARTMENT

**WATER
QUALITY
MONITORING**

MINISTRY OF ENVIRONMENT AND DRAINAGE



WHAT ARE THE EFFECTS OF POOR WATER QUALITY?

Poor water quality is caused by contaminants entering the water body and causing negative impacts. Below are some examples:

CONTAMINANTS	POSSIBLE SOURCES	EFFECTS
Nutrients	Agricultural runoff	Algal blooms, acidification of freshwater ecosystems
Chemicals	Pesticide application	Cancer, immune system disruption
Pathogenic organisms e.g. bacteria and viruses.	Sewage, agricultural waste	Intestinal infections, amoebic encephalitis

WHAT IS THE ROLE OF THE WATER QUALITY SECTION?

The role of the Water Quality Section of the Environmental Protection Department (EPD) is to protect the water resources of Barbados. This is achieved through the evaluation of land-based activities and their associated risks and recommending appropriate control measures. The Water Quality Section has four main monitoring programmes:

1. **The Ground Water Monitoring Programme** ensures that drinking water is of good quality for public consumption. The EPD, along with the Barbados Water Authority, collects samples from twenty one (21) drinking water wells, eleven (11) agricultural wells and seven (7) public springs.
2. **The Widescreen Ground Water Monitoring Programme** is intensive in that it assesses parameters not normally analysed within the regular ground water monitoring programme. It involves the biannual collection of water samples from potable wells. Some of the approximately one hundred and twenty (120) parameters analysed under this programme include persistent organic pollutants and heavy metals.

Water Quality Monitoring

WHAT IS WATER QUALITY MONITORING?

Water quality describes the physical, chemical, biological and aesthetic characteristics of a water resource.

Water quality monitoring is a process that involves the collection of water samples, laboratory analysis, data validation and verification and statistical analysis of the results to derive meaningful information for resource management purposes. This is done to determine the quality of the water and whether it is appropriate for its intended use e.g. drinking. Some parameters that are analyzed include:

PARAMETERS	EXAMPLES
Physical	pH, temperature
Chemical	nitrates, phosphates
Microbiological	faecal coliforms, faecal streptococci
Metals	copper, lead, iron
Pesticides	atrazine

What can I do to protect our groundwater?

In Barbados, since most of our drinking water is derived from groundwater sources, to keep our drinking water safe we should:

- Ensure that all effluent from wastewater treatment plants is regularly monitored and within the appropriate standards.
- Adhere to the laws and rules governing the activities specified for the zone where you live.
- Stop disposing of waste in watercourses.

3. **The Nearshore Recreational Water Monitoring Programme** involves the collection of samples from eighteen (18) west and south coast bathing beaches. The results of sample analysis give an indication of the impact of land-based activities on the near shore environment and thereby determines if the beach is safe for recreational activities.

What can I do to protect our near shore water quality?

In order to ensure that our beaches continue to be safe for swimming and to protect the marine environment we should:

- Treat wastewater adequately prior to discharge to the environment.
- Dispose of hazardous waste in an approved manner and ensure that storm water drains are kept clean.

4. **The Wastewater Monitoring Programme** involves the monitoring of discharges from wastewater treatment plants across the island to determine compliance with the Marine Pollution Control Act CAP. 392A and conditions of approval.