

REPORT

OF

WATER WATCH: ASSESSING HARDNESS AND IRON CONTENT IN NEIGHBOURLY WELLS

An extension programme



EMEA COLLEGE OF ARTS AND SCIENCE



MANCHESTER ARTS AND SPORTS CLUB

Water Watch

Assessing Hardness
and Iron Content in
Neighbourly Wells
2023-2024



An Extension Programme of

DEPARTMENT OF BIOTECHNOLOGY
EMEA COLLEGE OF ARTS AND SCIENCE, KONDOTTI

Re-accredited with 'A' Grade by NAAC

In Collaboration With

MANCHESTER ARTS AND SPORTS CLUB
KUMMINIPARAMBA

COORDINATORS

Dr. Mashhoor K

Head, Dept. of Biotechnology,
EMEA College of Arts and Science

Mr. Mansoor

President
Manchester Arts & Sports Club

WATER WATCH: ASSESSING HARDNESS AND IRON CONTENT IN NEIGHBOURLY WELLS (2023-2024)

An Extension Programme of the Department of Biotechnology, EMEA College of Arts and Science (Reaccredited with 'A' grade by NAAC), Kondotti, Malappuram (Dt) Kerala, Pin-673638

In Collaboration With Manchester Arts and Sports Club, Kumminiparamba

Co-ordinators:

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- Mr. Mansoor, President, Manchester Arts & Sports Club

EMEAS COLLEGE OF ARTS AND SCIENCE MANCHESTER ARTS AND SPORTS CLUB

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Flyer

Preamble

The "Water Watch: Assessing Hardness and Iron Content in Neighbourly Wells" programme was initiated as a collaborative effort to address the crucial issue of water quality in local communities. With the increasing concerns regarding the safety and potability of well water, this programme was designed to provide a scientific assessment of the hardness and iron content of water from wells in Kondotti and Kumminiparamba. This report details the findings and recommendations based on the water samples collected and tested by students of EMEA College of Arts and Science.

Aim

The primary aim of the "Water Watch" programme is to evaluate the hardness and iron content in the well water of neighbouring homes and to raise awareness about water quality issues among the community members.

Objectives

1. **Assess Water Quality:** To measure the hardness and iron content in well water samples collected from neighbouring homes.
2. **Raise Awareness:** To educate the local population about the importance of water quality and its impact on health and the environment.
3. **Data Collection and Analysis:** To systematically collect data to understand the extent of water quality issues in the area.
4. **Provide Recommendations:** To offer practical solutions and recommendations based on the findings to improve water quality.

Methodology

Sample Collection:

- **Date:** 07.03.2024

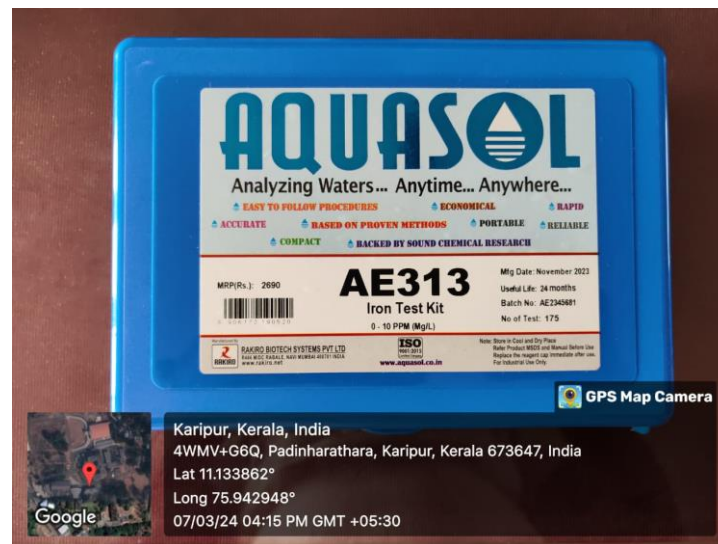
- **Procedure:** Students collected water samples from various wells in neighbouring homes, ensuring a diverse and representative sample of the community's water sources.



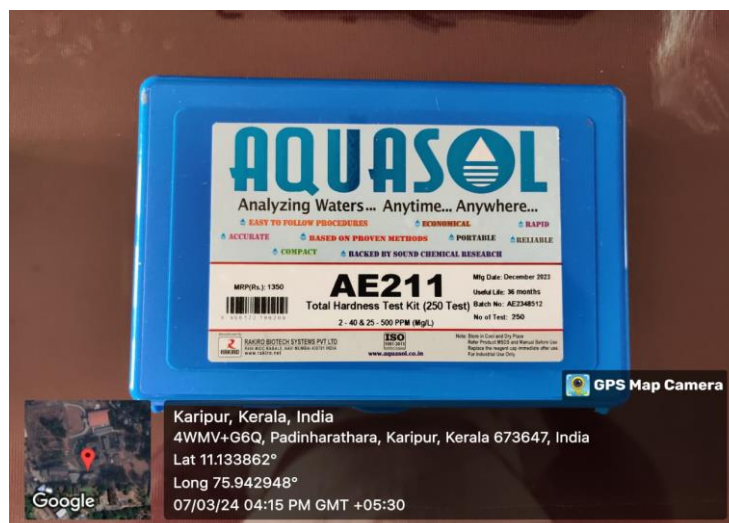
Sample collection

Analysis:

- **Laboratory Testing:** The collected samples were analyzed in the laboratory of the Department of Biotechnology. Tests for water hardness and iron content were conducted using standardized procedures to ensure accuracy and reliability.
- **Parameters:** Water hardness was measured by titration methods to determine the concentration of calcium and magnesium ions. Iron content was measured using spectrophotometric methods.



Iron test kit used for the analysis



Total hardness test kit used for the analysis

Findings

Water Hardness:

- The hardness levels varied significantly among the samples. Several samples exhibited high hardness levels, which could lead to scaling in pipes and appliances and pose potential health risks.

Iron Content:

- Iron content also varied considerably. Elevated iron levels were detected in some wells, which could cause undesirable taste, staining of laundry and fixtures, and potential health hazards.



Students analysing the sample

Recommendations

1. **Regular Monitoring:** Establish a routine monitoring programme for continuous assessment of well water quality to detect changes and address issues promptly.
2. **Water Treatment Solutions:** Implement cost-effective water treatment options such as ion exchange or reverse osmosis systems to reduce hardness and iron content.
3. **Public Awareness Campaigns:** Continue educational efforts to inform the community about the importance of water quality and practical steps they can take to improve it.
4. **Policy Advocacy:** Collaborate with local authorities to develop and enforce regulations that support water quality improvement initiatives, providing necessary resources and support to affected households.

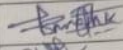



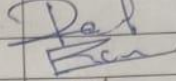
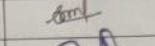


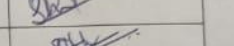



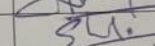
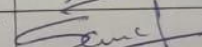

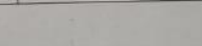
Conclusion

The "Water Watch" programme has successfully brought to light the significant variations in water hardness and iron content in the wells of Kondotti and Kumminiparamba. Through the collaborative efforts of EMEA College of Arts and Science and the Manchester Arts and Sports Club, the programme has provided valuable insights and actionable recommendations for ensuring safe and clean water. Continued monitoring, education, and implementation of treatment solutions are essential to safeguard public health and maintain water quality.

The coordinators express their gratitude to the community members for their cooperation and participation, and to all volunteers and staff who contributed to the successful execution of this programme.

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