

Office of the Principal

GOVERNMENT GENERAL DEGREE COLLEGE, KESHIARY

At.-Telipukur : P.O.- Tilaboni Mahisamura : P.S.- Keshiary Dist- Paschim Medinipur : PIN-721135

Criterion 7: Institutional Values and Social responsibilities

- 7.1.3 Quality audit on environment and energy regularly undertaken by the institution
- 1. Green Audit/Environmental Audit
- 2. Energy Audit
- 3. Clean and green campus initiatives
- 4. Beyond the campus environmental promotion and sustainability activities

[A. All of the above]

Awards and recognitions



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1. Green Audit/Environmental Audit



Figure 1: Certificate of Accreditation from Mahatma Gandhi National Council of Rural Education, Department of Higher Education, Ministry of Education, Government of India on green-environment

Officer-in-Charge Govt. Gen. Degree College Keshiary



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VERNMEN	NT GENERAL DEGREE COLLEGE, KESHIAR	Y: GREEN AUDIT & ENERGY AUDIT REPO	DRT, 2022-2023
The Gre collecte itmost Report	d from Government General l care considering every deta	Degree College, Keshiary. Thi il as far as practicable. The	ort on the basis of primary d e report has been prepared w Green Audit and Energy Au le Academic Year 2022-2023
SL. NO.	NAME	DESIGNATION& AFFILIATION	Signature with Seal
1.	DR. SAJAL RAY	Professor in Zoology, Department of Zoology, University of Calcutta, Kolkata, West Bengal	Sajat Tay 30/61/3 Dr. Sajal Ray Professor Zoology Department Calcutta University
2.	DR. SAGAR ACHARYA	Assistant Professor in Zoology, Department of Zoology, Vidyasagar University, Paschim Medinipur, West Bengal	DR. SAGAR ACMARKA Assistant Professor Department of Zeology VIDWASAGAR UNIVERSITY Midnagore - 721102
3.	DR. SUJIT KUMAR BHOWAL	Associate Professor in Zoology, Department of Zoology, Maulana Azad College, Kolkata, West Bengal	Dr. Sujit Kurnar Blowwal Witter Amedian Polacurer of Zoology Higher Education Dept. Gove of West Bergal Madars Aland College, No. 1-13
4.	DR. MADHUMITA MAITRA	Assistant Professor in Microbiology, Department of Microbiology, St. Xavier's College (Autonomous), Kolkata, West Bengal	Hamilton, 22 (20)
5.	DR. RAJENDRA PRASAD DE	Assistant Professor in Botany, Department of Botany, Government General Degree College, Mohanpur, Paschim Medinipur, West Bengal	Dr. Rajendra Prasad De Assistant Protessor (WRES) Dept. of Botany Mohanpur Govt. College Govt. of West Bengal
6.	ARNAB KUMAR MONDAL	Lecturer in Electrical Engineering, Sidhu Kanhu Birsa Polytechnic, Keshiary, Paschim Medinipur, West Bengal	N.O.O.Electrica Energ S.K.B. Putyleservic, Asstrany Psychian Alforthysis - 721133 Govi of West Bengal

Figure 2: Certificate on conduction of Green audit and Energy Audit for the AY 2022-2023 at Government General Degree College Keshiary



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Dist- Paschim Medinipur : PIN-721135

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Madhumita Maitra

M. Sc. Ph.D

Assistant Professor

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email: madhumitamaitra@sxccal.edu

Date: 26th June 2023

To

The Officer-in-charge Govt. General Degree College, Keshiary Keshiary

Subject: Water analysis report of the Govt, General Degree College, Keshiary (WB).

Dear Sir,

With regard to the letter no.98/GGDCK/2023 dated 27.03.2023, I hereby accept the invitation for conducting the water analysis report of the Govt. Gen. Degree College, Keshiary with reference to its Green audit and Energy audit related survey. The analysis of the three water samples were carried out collected from three different sources inside college premises. Various analytical tests awere carried out and it was found that the filtered water is the potable water that is fit for consumption. The detailed analysis report is attached herewith for reference.

Thanking you,

Dr. Madhumita Maitra

Assistant Professor

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Residence: SONARTORI, 79- DUM DUM PARK, KOLKATA - 700055

Figure 3: Certificate on the fitness of water for consumption: A Report of Water Quality Analysis conducted by Dr. Madhumita Maitra, St. Xavier's College (Autonomous), Kolkata

Officer-in-Charge Govt. Gen. Degree College Keshiary

4



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Report on the Water Quality Analysis in Elaboration (03 pages)

Water Quality Assessment Report Government General Degree College, Keshiary

Paschim Medinipore [West Bengal]

Prepared By: Dr. Madhumita Maitra

Assistant Professor

Department of Microbiology St. Xavier's College, 30 Mother Teresa Sarani.

Kolkata - 700016 9831337928

Date: 26th June 2023

The objective of water quality monitoring is to obtain qualitative and quantitative information on the physical, chemical, and biological characteristics of water via statistical sampling methods. Though there are many methods of analysis we have focussed on the biological characterisation of the provided water samples from the above mentioned college premises.

* - Three water samples were provided namely - 2 Tap water samples (Student section & Main building) and 1 filtered water sample (Main building). Test Performed -

- 1. pH of the water samples.
- 2. Most Probable Number [MPN] of enteric lactose fermenting bacteria.
- 3. Pathogenecity of bacterial growth.
- 4. Determination of Chlorine content.

Results of the Test performed -

pH of the water samples were found to be

- Tapwater I Student section [T1] 6.2
- Tapwater 2 Main building [Γ2] 6.3
- 3. Filtered water Main building $[\Gamma W] 6.6$

MPN Analysis -

The MPN index per 100ml for different water samples were found to be:

- I. Tapwater 1 [T1] 2
- 2. Tapwater 2 [T2] 2
- 3. Filtered water [FW] Less than 2

Bacterial growth was found in Tapwater water 1 and Tapwater water 2 but no gas production in Durham's tubes. Hence, lactose fermenting bacteria were found to be absent.



GOVERNMENT GENERAL DEGREE COLLEGE, KESHIARY

At.-Telipukur : P.O.- Tilaboni Mahisamura : P.S.- Keshiary Dist- Paschim Medinipur : PIN-721135

Pathogenecity of bacterial growth:

Since bacterial growth was found in MPN test in sample T1 and T2 but no gas production, it was further analysed to check pathogeneously of the bacteria. The samples were inoculated on the Blood Agar media and allowed to incubate for 48 hrs.

The bacterial growth does not produce a hemolytic zone, hence no change to the RBCs, and the medium remain opaque red. This lack of hemolysis infers that the **bacteria are not** pathogenic and harmful.

Chlorine content:

The amount of chlorine was determined in three water samples and found to be as follows -

- 1. Tapwater 1 [T1] 0.6mg/l
- 2. Tapwater 2 [T2] 0.5mg/l
- 3. Filtered water [FW]- 0.2mg/l

Analysis of the results -

Routine surveillance of drinking water supplies should be carried out by the relevant authorities to understand the risk of specific pathogens and to define proper control procedures.

- 1. The pH of the water samples were found to be suitable for consumption.
- 2. The MPN analysis showed some bacterial growth in Tapwater but no growth at all in filtered water. This showed that the filtered water is most suitable for consumption. However the bacteria found in Tapwater were found to be non-pathogenic, as they do not exhibit any hemolysis on Blood Agar medium.
- 3. The chlorine content were a little higher in Tapwaters due to chlorination done in water supply. However it was reduced in filtered water making the filtered water fit for consumption. All the results therefore shows that the filtered water can be classified as the **Potable water** fit for consumption.

Suggestions:

- A regular analysis with an interval of 6-7 months should be carried out to have a routine reporting of the year.
- Few other biochemical tests like dissolve oxygen, biochemical oxygen demand, phosphate and nitrate should be analysed, if possible.

Dr. Madhumita Maitra

Assistant Professor





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References:

Following range of values are used as references for the water quality analysis of Potable water

- 1. pH of the potable water recommended pH level between 6.5 to 8.5.
- MPN analysis WHO standard for drinking water shows water sample should have an MPN value of 2.2 MPN/100 ml of water (Addo et al., 2009).
- Chlorine levels up to 4 milligrams per liter (mg/L or 4 parts per million (ppm)) are considered safe in drinking water.
- 4. Culture in Blood Agar media The water destined for human consumption should be free from all microorganisms, although in practice, this is an unattainable goal. While heterotrophic bacteria are a part of the natural flora of most surface and ground waters, no pathogens should be present.

Dr. Madhumita Maitra

Assistant Professor





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2. Energy Audit:

	claimer en Audit and Energy Audit	Team has prepared this rep	ort on the basis of primary da
utmost	care considering every deta	il as far as practicable. The	e report has been prepared wi Green Audit and Energy Aud e Academic Year 2022-2023
nereby : SL. NO.	authenticated. NAME	DESIGNATION& AFFILIATION	Signature with Seal
1.	DR. SAJAL RAY	Professor in Zoology, Department of Zoology, University of Calcutta, Kolkata, West Bengal	Sajai Ray 30/6173 Dr. Sajai Ray Professor Zoology Department Calcutta University
2.	DR. SAGAR ACHARYA	Assistant Professor in Zoology, Department of Zoology, Vidyasagar University, Paschim Medinipur, West Bengal	Sachranya 20, 86, 2013 DR. SAGAR ACHARYA Assistant Professor Department of Zeology VDYASAGAR UNIVERSITY Midragore - 721102
3.	DR. SUJIT KUMAR BHOWAL	Associate Professor in Zoology, Department of Zoology, Maulana Azad College, Kolkata, West Bengal	Dr. Seijh Yuman Bitowal Willes Amochia Professor of Zodogo Higher Edocation Dept Gost of West Bergal Madray Asan Codogo, Kol-13
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5.	DR. RAJENDRA PRASAD DE	Assistant Professor in Botany, Department of Botany, Government General Degree College, Mohanpur, Paschim Medinipur, West Bengal	Dr. Rajendra Prasad De Assistant Professor (WEES) Dept. of Botany Mohanpur Govt. College Govt. of West Bengal
6.	ARNAB KUMAR MONDAL	Lecturer in Electrical Engineering, Sidhu Kanhu Birsa Polytechnic, Keshiary, Paschim Medinipur, West Bengal	FLO.D. Electrical Engo S.K.B. Polytier (vic. Kestrany Paschian Medinjur - 721133 Gova of West Bengal

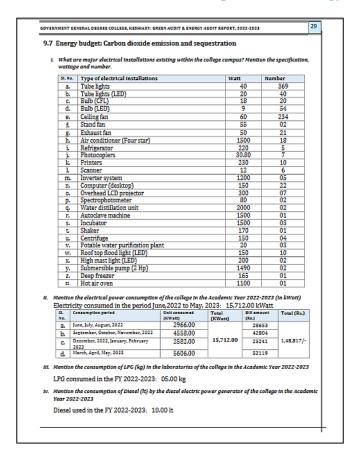
Figure 4: Certificate on conduction of Green audit and Energy Audit for the AY 2022-2023 at Government General Degree College Keshiary

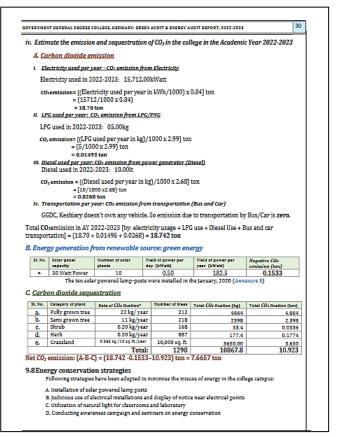


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Report on the Energy Audit in Elaboration







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3. Clean and green campus initiatives



Figure 5. Certificate of Accreditation from Mahatma Gandhi National Council of Rural Education, Department of Higher Education, Ministry of Education, Government of India on the clean and green initiatives undertaken by Government General Degree College, Keshiary in AY 2022-2023

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4. Beyond the campus environmental promotion and sustainability activities









Figure 6: Certificate of appreciation for securing 1st and 2nd position by Disha Barman and Bidisha Giri respectively, students of GGDC, Keshiary in the Online Poster Making Competition organised by the District Tobacco Control Cell, District Health and Family Welfare Samity, Paschim Medinipur on the occasion of World No Tobacco Day, 31.05.2022. Moreover, Disha Barman secured 3rd position in the Slogan Competition on the same issue.



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At.-Telipukur : P.O.- Tilaboni Mahisamura : P.S.- Keshiary Dist- Paschim Medinipur : PIN-721135



Figure 7: Recipients of 1st prize by Tanima Pal, a student of third semester,2023 from the Government General Degree College, Keshiary in debate and oration competition of the Yuva Samvad: India @ 2047 organised by Government General Degree College, Narayangarh on 09.02.2024



Figure 8: Participation and recipient of 1st position by the student of Government General Degree College, Keshiary in debate and oration competition in the Yuva Samvad : India @ 2047 organised by Government General Degree College, Narayangarh on 09.02.2024



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At.-Telipukur : P.O.- Tilaboni Mahisamura : P.S.- Keshiary Dist- Paschim Medinipur : PIN-721135



Figure 9: Recipients of 1st prize by Labani Maity, a student of fourth semester, 2024 of the Government General Degree College, Keshiary in debate and oration competition of Yuva Samvad: India @ 2047 organised by Hijli College on 09.02.2024



Figure 10: Team Government General Degree College, Keshiary comprising Labani Maity and Tanima Pal secured 5th position in the Inter College Debate Competition organised by the Department of Consumer Affairs, Govt. of West Bengal and the Consumer Affairs and Fair Business Practices, Paschim Medinipur on 21.01.2024.



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At.-Telipukur : P.O.- Tilaboni Mahisamura : P.S.- Keshiary Dist- Paschim Medinipur : PIN-721135





Figure 11: Certificates of achievements of Labani Maity and Tanima Pal from Government General Degree College, Keshiary for securing 5th position in the Inter College Debate Competition organised by the Department of Consumer Affairs, Govt. of West Bengal and the Consumer Affairs and Fair Business Practices, Paschim Medinipur on 21.01.2024.



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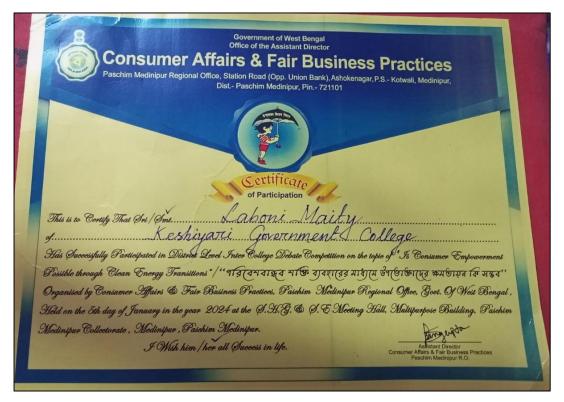


Figure 12: Certificates of achievements of Labani Maity from Government General Degree College, Keshiary for securing 5th position in the Inter College Debate Competition organised by the office of the Consumer Affairs and Fair Business Practices, Paschim Medinipur, Government of West Bengal on 05.01.2024 on the issue of "Is it possible to Empower the Consumers by Promoting Use of Environment-Friendly Power".