GREEN AUDIT REPORT

CONSULTATION

Jeypore College of Pharmacy
Rondapalli, Jeypore, Dist. Koraput, Odisha
Year 2021-22

PREPARED BY

EMPIRICAL EXERGY PRIVATE LIMITED

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(2021-22)

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ACKNOWLEDGEMENT

Empirical Exergy Private Limited (EEPL), Indore (M.P.) takes this opportunity to appreciate & thank the **Jeypore College of Pharmacy Rondapalli, Jeypore Dist. Koraput Odisha** for giving us an opportunity to conduct green audit for the college.

We are indeed touched by the helpful attitude and co-operation of all faculties and technical staff, who rendered their valuable assistance and co-operation the course of study.

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(Director)

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Charted Engineer [M-1699118],The Instution of Engineers(India)
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Audit Team

The study team constituted of the following senior technical executives from **Empirical Exergy Private Limited,**

- **Mr. Rakesh Pathak**, [Director& Electrical Expert]
- **Mr. Rajesh Kumar Singadiya** [Director & Accredited Energy Auditor AEA-0284]
- **Mr. Sachin Kumawat** [Sr. Project Engineer]
- **Mrs. Laxmi Raikwar Singadiya** [Chemical Engineer]
- **Mr. Charchit Pathak** [Mechanical Engineer]
- **Mr. Akash Kumawat** [Jr. Engineer]
- **Mr. Ajay Nahra**[Accountant & admin]

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Green Monitoring Committee

JEYPORE COLLEGE OF PHARMACY
(Under the patronage of Banagiri Development Trust)
Approved by Government of Odisha & All India Council for Technical Education, New Delhi
Affiliated to Biju Pattnaik University of Technology & Pharmacy Council of India, New Delhi

Ref. No. : JCP/ 2211/7860 Date : 21/11/22

Constitution of Committee for Energy / Environment/ Green

In view of Environmental impact assessment& procedure for situation requiring urgent action regarding regular assessment of pollution, soil degradation & waste management following Committee are required to be constituted for saving the Environment w.e.f. date of issue, for the period of three years.

Name of the Committee	Proposed Name of the Members.
1.Green Audit	1. Dr.Sangram Keshari Panda 2. Mr.Manasi Khadanga 3. Miss.subhasree Sahu 4. Mr.Manoj Kumar Dhanphul
2.Environment Audit	1. Mr.Soubhgya Ranjan Sahu 2. Mrs.Gitanjali Dash 3. Mr.Rama Krushna Gouda 4. Mr.Ranjit Kumar Satapathy
3.Energy Audit	1. Mr.Sujit Kumar Martha 2. Mr.Saswat Kumar Rath 3. Mr. Dhana Paika

Committee shal submit audit reports to the undersigned. In addition to above Mrs.Manasi Khadanga, Asst.Professor and Dr.Sangram Keshari Panda, Principal shall be responsible to provide all the required details and documents to the audit committee as and when required.

21/11/2022
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EXECUTIVE SUMMARY

Green Initiatives Taken by College

- **CAMPAIGN OF PLANTATION AND GREEN CAMPUS**

College has around **582** trees in the campus. It is good initiative taken by management for green campus under the campaign of plantation. **It is APPRECIABLE.**

AUDIT RECOMMENDATION

- **5 Dust bin system**

It is observed that college has adopted single dust bin system for all kind of waste generated in college campus. It is recommended to 5 dust bin system for segregation of all type of waste

- **Vermi Compose Pit or Organic convertor**

There is good potential for installation of organic convertor to treat organic waste generated from kitchen, canteen, trees and lawn area of the college campus. The output of above organic convertor is good manual for garden and plants.

- **QR code system on tree**

While the world seems to be going digital, people lack the time to read books and process the information they contain. Hence, college can provide QR codes on the trees for its information and to exploit the rapidly growing platform for a unique purpose.

- **Vehicle pooling**

Vehicle pooling should be promoted both among students and faculty and use of bicycles should be promoted as a policy of college.

- **Eco-restoration programmes**

Frame a holistic campus development plan with long-term eco-restoration programmes for replacing exotic acacia plantations with indigenous trees.

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OTHER SUGGESTIONS & RECOMMNEDATION

Some of the very important suggestions.

- Adopt the proposed Environmentally Responsible Purchasing Policy, and work towards creating and implementing a strategy to reduce the environmental impact of its purchasing decisions.
- Increase recycling education on campus.
- Increase Awareness of Environmentally Sustainable Development in College campus.
- Practice Institutional Ecology- Set an example of environmental responsibility by establishing institutional ecology policies and practices of resource conservation, recycling, waste reduction, and environmentally sound operations.
- Involve All Stakeholders- Encourage involvement of government, foundations, and industry in supporting interdisciplinary research, education, policy formation, and information exchange in environmentally sustainable development.
- Collaborate for interdisciplinary approaches- To develop interdisciplinary approaches to curricula, research initiatives, operations, and outreach activities that support an environmentally sustainable future.
- Increase reduce, reuse, and recycle education on campus.
- Develop a butterfly garden that arouses appreciation towards flora and fauna diversity.
- Name all the trees and plants (Plant DNA barcodes) with its common name and scientific name.
- Arrange training programmes on environmental management system and nature conservation.
- Ensure participation of students and teachers in local environmental issues.
- Renovation of cooking system in the canteen to save gas by installation solar water heater system with heat pump.
- Avoid plastic/thermocole plates and cups in the College level or department level functions.

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CHAPTER-1
INTRODUCTION

1.1 About College

The Jeypore College of Pharmacy founded in the year 2000, has today grown to become one of the forefront educational Colleges in KBK District. Jeypore College of Pharmacy started in the year 2001. The College is managed by Banagiri Development Trust. It is teeming with academic research, medicinal garden, canteen, play ground and personal development activities.Jeypore College of Pharmacy is one among the 33 plus Pharmacy College in Orissa, securing a place among the top ten private institutions. The College offers D. Pharm, (2 years) B. Pharm (4 years) and M. Pharm (Pharmceutical Technology, Pharmaceutical Analysis & Quality Assurance, Pharmacognosy and Pharmacology) (2 years) complying with the norms of AICTE & PCI. The institution is approved by All India Council for Technical Education (AICTE), Pharmacy Council of India (PCI), Ministry of Health & Family Welfare, Government of Orissa and affiliated to Biju Patnaik University of Technology, Odisha & Orissa State Board of Pharmacy, Odisha.

Figure 1.1: - Satellite Image of JCP, Jeypore from Google map

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Vision

To provide affordable quality education in pharmacy, with the goal of equipping students with knowledge and skills relevant to their particular domain of interest to undertake research & innovations, realize their full potential, instill values, and identify hidden talents and become future professional leaders, entrepreneurs, and responsible citizens.

Mission

The college is dedicated for academic development along with outreach and community engagement through collaborations and linkages to achieve national level of recognition. The college is committed to a supportive teaching, learning and research environment that instills cultural competence, ethics, critical thinking in the students preparing them for leadership roles as healthcare providers, practitioners, innovators, researchers and lifelong learners.

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Quality Policy

- ✓ It is our goal to provide students with the opportunity to develop their full potential so that they can meet the high demands of industry and society.
- ✓ To instil innovative thinking in the next generation of pharmacists.
- ✓ It is our mission to provide knowledge through experienced academicians and the creation of an ideal environment for research, skill and innovation for our students.
- ✓ Provide rural youths with high levels of proficiency and skill as pharmacists in the pharmaceutical industry.
- ✓ Our goal is to instil social responsibility and discipline in our students, not only to make them better technocrats but also to make them better individuals.

Objectives

- Provide a comprehensive, value-based approach to teaching and learning that is based on traditional and innovative methodologies to impart the highest standard of education.
- Establish a platform that allows students to explore their creative potential and cultivate the spirit of entrepreneurship and critical thinking in the classroom
- To make them socially responsible citizens, it is paramount to develop in them a sense of honesty, a strong belief in human rights, gender equality, and an understanding of the environment.
- Provide students with a multitude of career options in the field of pharmacy after graduation according to the constantly changing global scenario and prepare them for an ever-changing global scenario
- By making pharmacy education accessible to all, all sections of society should be included. Ensure that quality, transparency, compliance, and sustainability are maintained and promoted throughout the governance process

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College build-up area

Total build up area –5263.6 sq. mt.

Sr.no.	Description	Total area Sq.mt.
1	UG building	1547.4
2	UG ground floor + PG building	1728.8
3	Office + library	776.8
4	D Pharma HOD	264
5	Store + house keeping	311.6
6	D Pharma practical room	300
7	Canteen	225
8	Animal house	100
9	Security room	10

COLLEGE POPULATION

There are 480 students with 44 Teaching staff and 36 non-teaching staff

Sr. No.	Location	(Nos)
1	No. of students	480
2	No. of teaching faculty	44
3	No. of non-teaching staff	36
	Total	560

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Layout of the College

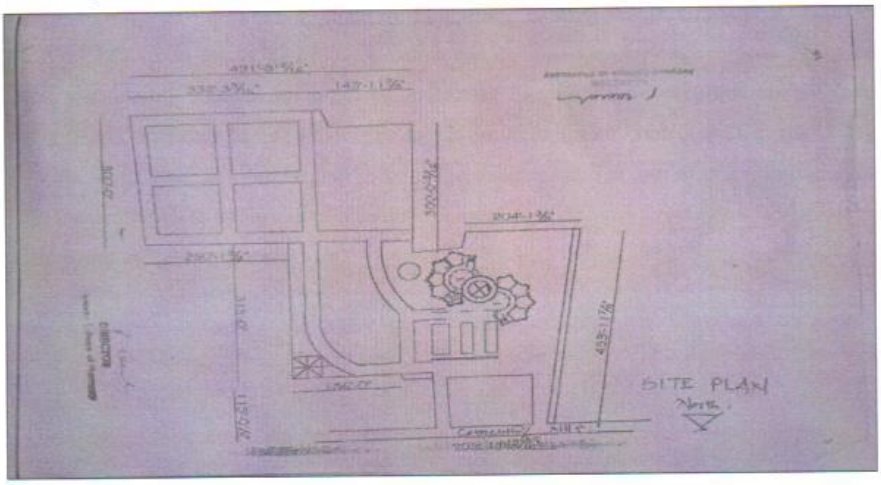

Fig:- 1.2 Layout of the college campus

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1.2 About green auditing

Eco campus is concepts implemented in many educational institutions, all over the world to make them sustainable because of their mass resource utilization and waste discharge in to the environment.

Green audit means to identify opportunities to sustainable development practices, enhance environmental quality, improve health, hygiene and safety, reduce liabilities achieve values of virtue. Green audit also provides a basis for calculating the economic benefits of resource conservation projects by establishing the current rates of resource use and their associated costs.

Green auditing of **"Jeypore College of Pharmacy Rondapalli ,Jeypore Dist. Koraput Odisha"** enables to assess the life style, action and its impact on the environment. This green audit was mainly focused on greening indicators like utilisation of green energy (solar energy) and optimum use of secondary energy sources (petrol and diesel) in the college campus, vegetation, and carbon foot print of the campus etc. The aim of green auditing is to help the institution to apply sustainable development practices and to set examples before the community and young learners.

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1.3 Objectives of Green Auditing

The general objective of green audit is to prepare a baseline report on "Green campus" and alternative energy sources (solar energy), measures to mitigate resource wastage and improve sustainable practices.

The specific objectives are:

- To inculcate values of sustainable development practices through green audit mechanism.
- Providing a database for corrective actions and future plans.
- To identify the gap areas and suggest recommendations to improve the green campus status of the Colleges

1.4 Audit of Green Energy

According to the **Environmental Protection Agency (EPA)**, green energy provides the highest environmental benefit and includes power produced by solar, wind, geothermal, biogas, low-impact hydroelectric, and certain eligible biomass sources. Green energy can also reduce your carbon footprint and achieve a sustainable lifestyle.

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CHAPTER- 2
GREEN CAMPUS

2.1 Green Audit

In the survey, focus has been given on assessment of present status of diversity in form of plants, in college campus and efforts made by the college authorities for nature conservation. Campus is located in the vicinity of approximately more than **582 Trees** medicinal herbs ornamental plants. The detail is given below

2.2 List of plants in college campus

Sr. No.	Common Name	Botanical Name	Quantity
1	Salon	Shorea robusta	235
2	X-Mas Tree	Araucaria columnaris	5
3	Boulos	Sonchus gomerensis	14
4	Simuli	Stimulus	2
5	Salaparni	Desmodium gangeticum	1
6	Sahada	Vernonia cinerea	3
7	Imli	Tamarindus indica	2
8	Bixa	Achiote	14
9	Champa	Magnolia champaca	6
10	Chandan	Santalum album	2
11	Dalchini	Cinnamomum verum	2
12	Jatropa	Euphorbiaceae	2
13	Mohannimbu	Bacopa monnieri	16
14	Pilui	Aerva lanata	3
15	Mango	Mangifera indica	6
16	Karangi	Millettia pinnata	93
17	Neem	Azadirachta indica	2
18	Sisu	Dalbergia sissoo	52
19	Bargad	Ficus benghalensis	2
20	Aswatha	Ficus religiosa L	2
21	Jhaun	Casuarina	18
22	Nilgiri	Eucalyptus	2
23	Bair	Ziziphus mauritiana	4
24	Amla	Phyllanthus emblica	2
25	Kendu	Diospyros melanoxylon Roxb	2
26	Shankuda	sage-leaved alangium	58

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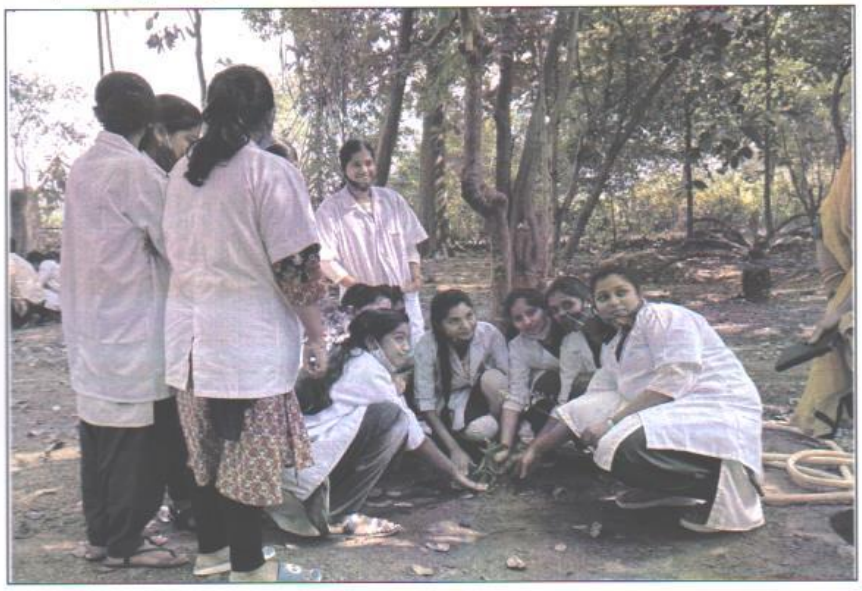
Sr. No.	Common Name	Botanical Name	Quantity
27	Babul	Acacia	12
28	Guava	Psidium guajava	3
29	Kia	Pandanus odoratissimus	1
30	Rudraksha	Elaeocarpus ganitrus	1
31	Muchakunda	Pterospermum acerifolium	2
32	Bel Patra	Aegle marmelos	2
33	Jamun	Syzygium cumini	4
34	Loong	Syzygium aromaticum	1
35	Nageshwer	Mesua ferrea L	2
36	Coconut	Cocos nucifera	2
37	Rubber	Hevea brasiliensis	2
	Total		**582**

College has **582 Trees** in the campus. This is good initiative taken by management for green campus under the campaign of plantation. **It's APPRECIABLE.**

Some photographs of green campus & plantation



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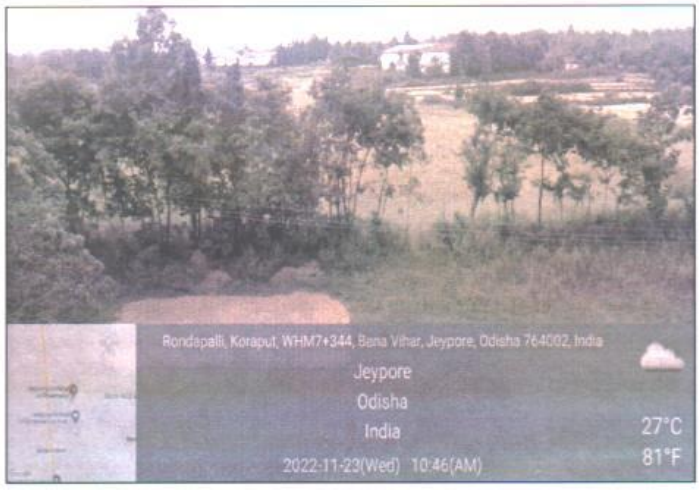

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Chapter-03
Carbon Foot print

3.1 About Carbon Foot Print.

Climate change is one of the greatest challenges facing nations, governments, institutions, business and mankind today.

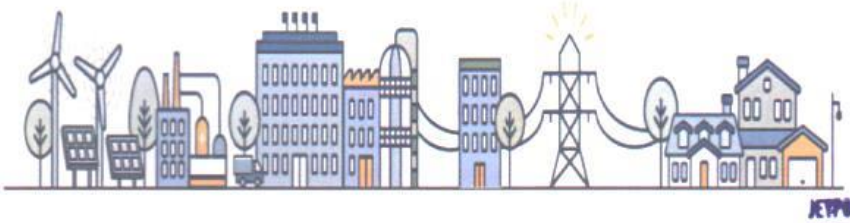
Carbon footprint is a measure of the impact your activities have on the amount of carbon dioxide (CO_2) produced through the burning of fossil fuels and is expressed as a weight of CO_2emissions produced in tonnes.

We focus on consumption in each of our five major categories: housing, travel, food, products and services. In addition to these we also estimate the share of national emissions over which we have little control, government purchases and capital investment.

For simplicity and clarity all our calculations follow one basic method. We multiply a use input by an emissions factor to calculate each footprint. All use inputs are per individual and include things like fuel use, distance, calorie consumption and expenditure. Working out your inputs is a matter of estimating them from your home, travel, diet and spending behaviour.

Although working out our inputs can take some investigation on your part the much more challenging aspect of carbon calculations is estimating the appropriate emissions factor to use in your calculation. Where possible you want this emissions factor to account for as much of the relevant life cycle as possible.

We all have a carbon footprint...



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3.2 Methodology and Scope

The carbon footprint gives a general overview of the college greenhouse gas emissions, converted into CO_2 -equivalents and it is based on reported data from internal and external systems. The purposes of the carbon indicators are to measure the carbon intensity per unit of product, in addition to showing environmental transparency towards external stakeholders. The carbon footprint reporting approach undertaken in this study follows the guidelines and principles set out in the "Greenhouse Gas Protocol Corporate Accounting and Reporting Standard" (hereafter referred to as the GHG Protocol) developed by the Greenhouse Gas Protocol Initiative and international standard for the quantification and reporting of greenhouse gas emissions -ISO 14064. This is the most widely used and accepted methodology for conducting corporate carbon footprints. The study has assessed carbon emissions from the College Campus. This involves accounting for, and reporting on, the GHG emissions from all those activities for which the company is directly responsible. The items quantified in this study are as classified under the ISO 14064 standards: The report calculates the greenhouse gas emissions from the College. This includes electricity, as well as emission associated with diesel consumption in the College vehicle. The emission associated with air travel, waste generation, administration, and marketing related activities has been excluded from the current study. Emissions from business activities are generally classified as scope 1, 2 or 3 areas classified under the ISO 14064 standards.

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3.3 Carbon emission from Electricity

Direct emissions factors are widely published and show the amount of emissions produced by power stations in order to produce an average kilowatt-hour within that grid region

Unlike with other energy sources the carbon intensity of electricity varies greatly depending on how it is produced and transmitted. For most of us, the electricity we use comes from the grid and is produced from a wide variety of sources. Although working out the carbon intensity of this mix is difficult, most of the work is generally done for us.

Electricity used in the site is the significant contributors towards GHGs emission from the unit. Electricity used onsite is the most direct, and typically the most significant, a contributor to a unit's carbon footprint. Thus, using an average fuel mix of generating electricity, carbon dioxide intensity of electricity for national grid is assumed to be 0.9613 KgCO2/Kwh

Sr.No.	Year	Total unit consumption	Unit	Emission Factor kg CO2e/kWh	Emission ton CO2e/ year
1	2021-22	18104	kVAh	0.9613	17.40

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3.4 Carbon emission from DG sets: -

College has one no DG sets installed on the campus.

Total diesel consumption in a year in the table.

Sr.no.	Month & Year	Total Diesel Consumption (Litre)
1	Jul-21	19
2	Aug-21	57
3	Sep-21	67
4	Oct-21	18
5	Nov-21	49
6	Dec-21	39
7	Jan-22	6
8	Feb-22	22
9	Mar-22	29
10	Apr-22	46
11	May-22	109
12	Jun-22	64
	Total	**524**

Every litter of diesel fuel contains 720 grams of pure carbon. In an average liquid hydrocarbon burning engine. It can be assumed that about 99 % of the fuel is Oxidized (It is assumed that somewhat less than 01 % will fail to fully oxidize and will be emitted as a particulate of unburned hydrocarbons instead of CO_2.

Calculation of Total CO_2

- CO_2 Emissions from a Littre of diesel: 2689.56 grams CO_2/ litter.
- Diesel consumption Jul-2021 to Jun -2022 = 524 Litter
- 524 x 2689 =1409036 gram. or 1.40 Ton/year

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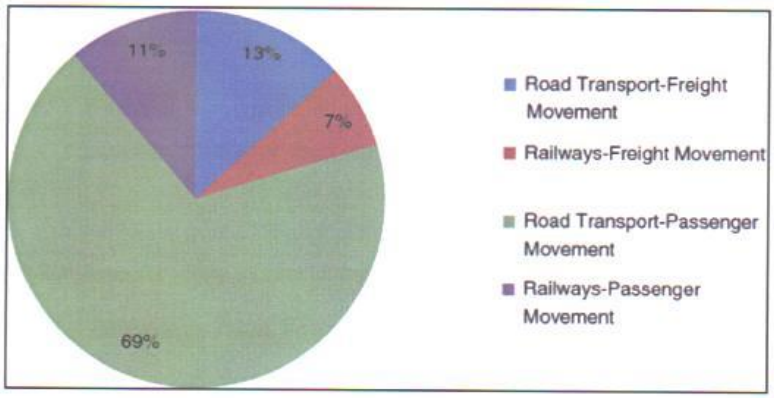
3.5 Carbon emission from vehicles.

In India, it is the third most CO^2 emitting sector, and within the transport sector, road transport contributed more than 90% of total CO^2 emissions (IEA, 2020; Ministry of Environment Forest and Climate Change, 2018)



Transportation (29 percent of 2019 greenhouse gas emissions) – The transportation sector generates the largest share of greenhouse gas emissions. Greenhouse gas emissions from transportation primarily come from burning fossil fuel for our cars, trucks, ships, trains, and planes.

we have also considered the total GHGs emission done by transportation facilities available in campus like Cars, Ambulance, Buses etc. We consider the different type of vehicles which are operated on petrol and diesel fuels

Energy team was analysed following vehicles are movement for campus.

Table :- Total four wheeler vehicle and diesel consumption college campus .

Sr.no.	Vehicle no's	Total distance (KM) Covered in a year 2021-22	Total Diesel Consumption (Liter) in a year 2021-22	Mode of Travelling
1	OD10E7808	15,660	4,500	Four-Wheeler
2	OD10G9474	11,688	4,500	Four-Wheeler
3	OD10K7090	23,652	4,500	Four-Wheeler
4	OD10G8283	21,468	4,500	Four-Wheeler
5	OR10H2543	8,088	3,780	Four-Wheeler
6	OR10H2542	4,668	3,360	Four-Wheeler
	Total	**85,224**	**25,140**	

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Calculation of Carbon foot print analysis: -

As per above calculation total four-wheeler vehicle travelling is **85,224** KM /year

Following details are given in table: -

Sr. No	Vehicle Type	Fuel type	Average Mileage (Per Litter)	Total (KM /year)
1	Four-Wheeler	Diesel	15	85,224

- CO^2 Emissions from a gallon of gasoline: 8,887 grams CO^2/ gallon
- CO^2 Emissions from a gallon of diesel: 10,180 grams CO^2/ gallon

(1 US Gallon = 3.7854 litters)

- CO^2 Emissions from a Littre of gasoline: 2347.95 grams CO^2/ Litter.
- CO^2 Emissions from a Littre of diesel: 2689.56 grams CO^2/ litter.

Total CO^2 Emissions from Four -Wheeler.

$$\text{Total } CO^2 \text{ Emissions} = \frac{\text{Co2 Per litter}}{\text{Average Mileage (Km/Litre)}} \times \text{Distance (in km)}$$

$$\text{Total } CO^2 \text{ Emissions} = \frac{2689.56}{15} \times 85224 = 15.28 \text{ ton/year}$$

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3.6 Biomass Calculation and CO^2 Sequestration of the Trees: -

1. Estimation of above-ground biomass (AGB)

$$K = 34.4703 - 8.0671D + 0.6589 D^2$$

Where = K is above-ground biomass.

D is Breast height diameter in (cm)

1 Estimation of below ground biomass (BGD)

$$BGB = AGB \times 0.15$$

2 Total Biomass (TB)

$$TB = AGB + BGB$$

3 Calculation of carbon dioxide Weight sequestered in the tree in Kg.

$$C = W \times 0.50$$

4 Calculate the weight of CO_2 sequestered in the tree per year in Kg.

$$CO_2 = C \times 3.666$$

Where: -

AGB = Above ground biomass.

D = Diameter of tree breast height.

BGB = Below Ground Biomass.

C = Carbon

TB = Total Biomass.

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Biomass Calculation of tree

Sr. No.	Common Name	Average Diameter CM (25 to 100)	AGB	BGB	Total	Carbon Storage	Amount of Co2 Sequestered	No of Tree	Total Amount of Co2 Sequestered	Annually Co2 Sequestered amount ton/year
1	Salon	40	798.030	119.70	917.73	458.867	1682.207	235	395318.72	5.39
2	X-Mas Tree	45	1046.228	156.93	1203.16	601.581	2205.395	5	11026.98	0.15
3	Boulos	50	1328.370	199.26	1527.63	763.813	2800.138	14	39201.93	0.53
4	Simuli	50	1328.370	199.26	1527.63	763.813	2800.138	2	5600.28	0.08
5	Salaparni	35	583.778	87.57	671.34	335.672	1230.574	1	1230.57	0.02
6	Sahada	45	1046.228	156.93	1203.16	601.581	2205.395	3	6616.19	0.09
7	Imli	40	798.030	119.70	917.73	458.867	1682.207	2	3364.41	0.05
8	Bixa	40	798.030	119.70	917.73	458.867	1682.207	14	23550.90	0.32
9	Champa	35	583.778	87.57	671.34	335.672	1230.574	6	7383.44	0.10
10	Chandan	30	403.470	60.52	463.99	231.995	850.495	2	1700.99	0.02
11	Dalchini	30	403.470	60.52	463.99	231.995	850.495	2	1700.99	0.02
12	Jatropa	30	403.470	60.52	463.99	231.995	850.495	2	1700.99	0.02
13	Mohannimbu	35	583.778	87.57	671.34	335.672	1230.574	16	19689.18	0.27
14	Pilui	30	403.470	60.52	463.99	231.995	850.495	3	2551.48	0.03
15	Mango	50	1328.370	199.26	1527.63	763.813	2800.138	6	16800.83	0.23
16	Karangi	30	403.470	60.52	463.99	231.995	850.495	93	79096.00	1.08
17	Neem	40	798.030	119.70	917.73	458.867	1682.207	2	3364.41	0.05
18	Sisu	30	403.470	60.52	463.99	231.995	850.495	52	44225.72	0.60
19	Bargad	60	1994.490	299.17	2293.66	1146.832	4204.285	2	8408.57	0.11

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Sr. No.	Common Name	Average Diameter CM (25 to 100)	AGB	BGB	Total	Carbon Storage	Amount of Co2 Sequestered	No of Tree	Total Amount of Co2 Sequestered	Annually Co2 Sequestered amount (in ton)
20	Aswatha	40	798.030	119.70	917.73	458.867	1682.207	2	3364.41	0.05
21	Jhaun	30	403.470	60.52	463.99	231.995	850.495	18	15308.90	0.21
22	Nilgiri	50	1328.370	199.26	1527.63	763.813	2800.138	2	5600.28	0.08
23	Bair	45	1046.228	156.93	1203.16	601.581	2205.395	4	8821.58	0.12
24	Amla	25	257.108	38.57	295.67	147.837	541.970	2	1083.94	0.01
25	Kendu	35	583.778	87.57	671.34	335.672	1230.574	2	2461.15	0.03
26	Shankuda	36	623.912	93.59	717.50	358.750	1315.176	58	76280.22	1.04
27	Babul	30	403.470	60.52	463.99	231.995	850.495	12	10205.94	0.14
28	Guava	27	311.579	46.74	358.32	179.158	656.793	3	1970.38	0.03
29	Kia	20	144.690	21.70	166.39	83.197	304.999	1	305.00	0.00
30	Rudraksha	30	403.470	60.52	463.99	231.995	850.495	1	850.49	0.01
31	Muchakunda	50	1328.370	199.26	1527.63	763.813	2800.138	2	5600.28	0.08
32	Bel Patra	35	583.778	87.57	671.34	335.672	1230.574	2	2461.15	0.03
33	Jamun	35	583.778	87.57	671.34	335.672	1230.574	4	4922.30	0.07
34	Loong	45	1046.228	156.93	1203.16	601.581	2205.395	1	2205.40	0.03
35	Nageshwer	20	144.690	21.70	166.39	83.197	304.999	2	610.00	0.01
36	Coconut	30	403.470	60.52	463.99	231.995	850.495	2	1700.99	0.02
37	Rubber	50	1328.370	199.26	1527.63	763.813	2800.138	2	5600.28	0.08
										11.21

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College has **582 trees** in the campus. This is good initiative taken by management for green campus under the campaign of plantation. **It's APPRECIABLE.**

There is total CO_2 sequestered **11.2 Tons /Year.** There are requirements of more plantations to reduce carbon emission share by college

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Total CO_2 Emission by the college

Sr.no.	CO_2 Emission by	Total CO2 Emission (ton/year)
1	Electricity	17.4
2	DG sets	1.4
3	Vehicle	15.28
Total CO_2 Emission		34.08
CO_2 Emission Neutralized by		
1	Trees	11.2
Total CO_2 Emission		22.88

College management has recently purchased 15KWp solar grid connected photovoltaic rooftop system in the college campus. Expected energy generation will be 21900 units per year. These renewable energy generation units will optimize total CO_2 emission factor of the college.

3.7 Other Emissions Excluded

This study did not evaluate the carbon sequestration potential of existing from the staff commuting, food supply, official flights, paper products, water supply, and waste disposal and recycling due to limited data availability. The current study identifies areas where data monitoring, recording and archiving need to be developed for enlarging the scope of mapping of GHGs emission in the future years. Accordingly, a set of tools and record keeping procedure will be developed for improving the quality of data collection for the next year carbon footprint studies.

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CHAPTER- 4
WASTE MANAGEMENT

4.1 About Waste:

Human activities create waste, and it is the way these wastes are handled, stored, collected and disposed of, which can pose risks to the environment and to public health waste management is important for an eco-friendly campus. In College different types of wastes are generated, its collection and management are very challenging.

Solid waste can be divided into three categories: bio-degradable, non-biodegradable and hazardous waste. A bio-degradable waste includes food wastes, canteen waste, wastes from toilets etc. Non-biodegradable wastes include what is usually thrown away in homes and schools such as plastic, tins and glass bottles etc. Hazardous waste is waste that is likely to be a threat to health or the environment like cleaning chemicals, acids and petrol.

Unscientific management of these wastes such as dumping in pits or burning them may cause harmful discharge of contaminants into soil and water supplies, and produce greenhouse gases contributing to global climate change respectively. Special attention should be given to the handling and management of hazardous waste generated in the College. Bio-degradable waste can be effectively utilized for energy generation purposes through anaerobic digestion or can be converted to fertilizer by composting technology. Non-biodegradable waste can be utilized through recycling and reuse. Thus, the minimization of solid waste is essential to a sustainable College. The auditor diagnoses the prevailing waste disposal policies and suggests the best way to combat the problems.

Table 4.1 Different types of waste generated in the college Campus.

Sr.No.	Types of Waste	Particulars
1	Solid wastes	Damaged furniture, paper waste, paper plates, food wastes etc.
2	Plastic waste	Pen, Refill, Plastic water bottles and other plastic containers, wrappers etc.
3	E-Waste	Computers, electrical and electronic parts etc.
4	Glass waste	Broken glass wares from the labs etc.
5	Chemical wastes	Laboratory waste etc.
6	Bio-medical Waste	Sanitary Napkin etc.

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4.2 Waste management practices adopted by the college

College has a different type of waste generated like paper, Plastic, dust and wet waste. The college provided dust bin near classroom office, laboratories staffroom and collect the waste material at the end of the day. The waste (Especially dry material) is collected in a big dustbin which is provided at every floor and the next day collected Municipal Corporation for further processing.

Figure 4.1 Dust Bin system use by college

Recommendation

It is recommended adopted 5 dust bin waste collection system for collect different type of waste generated in college premises.

Recommended 5 Dust bin waste collection system

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4.3 Waste Collection Points

Audit team also visited various departments, canteen, to find out waste generation area and waste collection points for further improvement. Details are given in the table

Table 4.3 Detailed of waste collection dust bin system

Sr.No.	Location	Quantity
1	PG block	4
2	UG block	4
3	Office	2
4	Canteen	2
5	Others in cabin	45
	Total	**57**

Fig :- 4.2 Waste collection point

Recommendation:

At present college management has single dustbin waste collection system for collect different type of waste generated in college campus. It is recommended to upgrade single dustbin system to five dustbin system which will help to treat the different type of waste under waste management program of the college.

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CHAPTER- 5
Air Quality Measurement

5.1 Air Quality Measurement

Green audit team was conducted air monitoring survey in college campus. Details are given in table

Sr. No.	Location	PM2.5 $\mu g/m^3$	PM10 $\mu g/m^3$	CO2 ppm
1	Analysis Lab	93.2	150.5	622
2	Pharma Chemistry Lab	93.5	150.3	526
3	Pharma Cog nosy Lab	82.4	134.6	534
4	Store	74.2	131.5	559
5	D Pharma Lab	74.2	131.5	533
6	Machine Room	88.6	142.1	549
7	Office	77.9	125.4	797
8	Principle Room	121.3	134.1	648

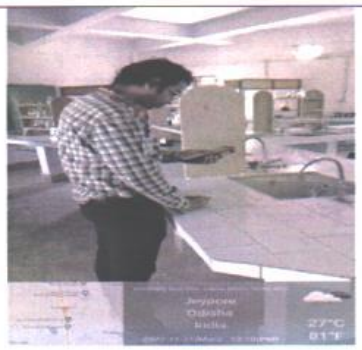

Fig:- 5.1 Measuring CO_2 Level

Observation: -

- $PM_{2.5}$ value is higher side. The 24 hours concentration of $PM_{2.5}$ is considered unhealthy when it rises above 35.4 $\mu g/m^3$. It is recommended to open the window system for cross ventilation during the lab activity and keep indoor air purifier plant in office and principle room.
- PM 10 Value is acceptable range. It should be below 155 $\mu g/m^3$
- CO^2 Value is acceptable range. It should be below 1000 ppm.

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CHAPTER- 6
RECOMMENDATIONS AND SUGGESTIONS

6.1 QR Code system

While the world seems to be going digital, people lack the time to read books and process the information they contain. Hence, College can be provided QR codes on the trees for its information and to exploit the rapidly growing platform for a unique purpose.

Fig: 6.1 QR code system for plants

These codes can give students all the information they need to know about the tree — from its scientific name to its medicinal value. They only need to put their smart-phones to use. QR codes to them, making it easier for everybody to learn about a plant or a tree at the tip of their fingers," If any app generating a QR code, which is available for free on the online stores, can be used to avail the information of the trees.

- **Eco-restoration programmes**
  - Frame long-term eco-restoration programmes for replacing exotic Acacia plantations with indigenous trees and need of the hour is to frame a holistic campus development plan.

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6.2 Other Suggestions

Some of the very important suggestions are: -

- Adopt the proposed Environmentally Responsible Purchasing Policy, and work towards creating and implementing a strategy to reduce the environmental impact of its purchasing decisions.
- Increase recycling education on campus.
- Increase Awareness of Environmentally Sustainable Development in College campus.
- Practice Institutional Ecology- Set an example of environmental responsibility by establishing institutional ecology policies and practices of resource conservation, recycling, waste reduction, and environmentally sound operations.
- Involve All Stakeholders- Encourage involvement of government, foundations, and industry in supporting interdisciplinary research, education, policy formation, and information exchange in environmentally sustainable development.
- Collaborate for Interdisciplinary Approaches- To develop interdisciplinary approaches to curricula, research initiatives, operations, and outreach activities that support an environmentally sustainable future.
- Increase reduces, reuse, and recycle education on campus.
- Develop a butterfly garden that arouses appreciation towards flora and fauna diversity.
- Name all the trees and plants (Plant DNA barcodes) with its common name and scientific name.
- Arrange training programmes on environmental management system and nature conservation.
- Renovation of cooking system in the canteen to save gas by installation solar water heater system with heat pump.
- Establish a procurement policy that is energy saving and eco-friendly.

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END OF THE REPORT

THANKS

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Environment Audit Report
CONSULTATION

Jeypore College of Pharmacy
Rondapalli, Jeypore, Dist. Koraput, Odisha

Year 2021-22

PREPARED BY

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(2021-22)

CONTENT

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ACKNOWLEDGEMENT

Empirical Exergy Private Limited (EEPL), Indore takes this opportunity to appreciate & thank the management of **Jeypore College of Pharmacy Rondapalli ,Jeypore Dist. Koraput Odisha** for giving us an opportunity to conduct environment audit for the college

We are indeed touched by the helpful attitude and co-operation of all faculties and technical staff, who rendered their valuable assistance and co-operation the course of study.

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M.P.LeadAuditorISO50001:2011[EnMS) from FICCI,
Delhi Certified Water Auditor(NPC, Govt of India)
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Member of ISHRAE [5815]

Green Monitoring Committee

JEYPORE COLLEGE OF PHARMACY

(Under the patronage of Banagiri Development Trust)
Approved by Government of Odisha & All India Council for Technical Education, New Delhi
Affiliated to Biju Pattnaik University of Technology & Pharmacy Council of India, New Delhi

Ref. No. : JCP/ 2211/7861 Date : 21/11/22

Constitution of Committee for Energy / Environment/ Green

In view of Environmental impact assessment& procedure for situation requiring urgent action regarding regular assessment of pollution, soil degradation & waste management following Committee are required to be constituted for saving the Environment w.e.f. date of issue, for the period of three years.

Name of the Committee	Proposed Name of the Members.
1.Green Audit	1. Dr.Sangram Keshari Panda 2. Mr.Manasi Khadanga 3. Miss.subhasree Sahu 4. Mr.Manoj Kumar Dhanphul
2.Environment Audit	1. Mr.Soubhgya Ranjan Sahu 2. Mrs.Gitanjali Dash 3. Mr.Rama Krushna Gouda 4. Mr.Ranjit Kumar Satapathy
3.Energy Audit	1. Mr.Sujit Kumar Martha 2. Mr.Saswat Kumar Rath 3. Mr. Dhana Paika

Committee shal submit audit reports to the undersigned. In addition to above Mrs.Manasi Khadanga, Asst.Professor and Dr.Sangram Keshari Panda, Principal shall be responsible to provide all the required details and documents to the audit committee as and when required.

21/11/2022

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Audit Team

The study team constituted of the following senior technical executives from **Empirical Exergy Private Limited,**

- **Mr. Rakesh Pathak**, [Director& Electrical Expert]
- **Mr. Rajesh Kumar Singadiya**[Director & Accredited Energy Auditor AEA-0284]
- **Mrs. Laxmi Raikwar Singadiya** [Chemical Engineer]
- **Mr. Sachin Kumawat** [Sr. Project Engineer]
- **Mr. Charchit Pathak** [Mechanical Engineer]
- **Mr. Aakash Kumawat** [Jr. Engineer]
- **Mr. Ajay Nahra** [Sr. Accountant & admin]

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EXECUTIVE SUMMARY

The executive summary of the environment audit report furnished in this section briefly gives the identified water conservation measures that can be implemented in a phased manner to water conservation and increase the productivity of the college

AUDIT RECOMMENDATION

RAINWATER HARVESTING SYSTEM:

- There is a good potential for rain water harvesting system in college. During the environmental audit it was founded expected potential for Rain Water harvesting is 14498m^3/year with reference total rooftop area 10983m^2.

FRESH WATER MONITORING SYSTEM:

- Install of **"Cloud based (IoT based) ground water extraction monitoring system"** for borewell and open well system to quantify fresh water consumption per day in the college campus.
- Install water flow meters (Mechanical or Electronics) on fresh water distribution network, for quantity per day water consumption in the college campus .

Waste Water Treatment Plant

- There is requirement to install sewerage treatment plant (STP) for waste water generated from different activities in college campus. All waste water generated from above activity should be collect in separate tank and treated in proposed STP.
- The output of above STP(treated waste water) reuse for toilet and washroom area as well as watering for garden.

DRIP WATER IRRIGATION SYSTEM FOR GARDENING.

- It was observed that at present water is supply in garden open tap and pipping system. It is recommended use of drip water irrigation system for gardening.

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USE EFFICIENT WATER TAPS : -

- Water saving taps either reduce water flow or automatically switch off to help save water. So, it is highly recommended to install efficient water taps in college campus to reduce water consumption.

USE EFFICIENT URINAL TAPS: -

- Replacing these inefficient fixtures with water sense labelled flushing urinal can save between 0.5 to 04 litter per flush without sacrificing performance. Installing water saving flushing urinal will not only reduce water use in facilities but also save pumping energy on water bills.

INSTALLATION OF WATER OVERFLOW SENSOR IN TANKS: -

- It was observed that water overflow in overhead tanks after tank filling. So, it is recommended installation of water overflow sensor to avoid water overflow.

WATER SPRINKLER SYSTEM

- There are good potential to install drip irrigation and sprinkler system for lawn area in college. It will be reduced water consumption of college campus

COLLECT RO REJECTED WASTE WATER

- It is recommended to collect RO rejected waste water in separate tank. These water can be utilized for dishwash in mesh area and wash room and toilet activity

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CHAPTER-1
INTRODUCTION

1.1 About College

The Jeypore College of Pharmacy founded in the year 2000, has today grown to become one of the forefront educational Colleges in KBK District. Jeypore College of Pharmacy started in the year 2001. The College is managed by Banagiri Development Trust. It is teeming with academic research, medicinal garden, canteen, playground and personal development activities.Jeypore College of Pharmacy is one among the 33 plus Pharmacy College in Orissa, securing a place among the top ten private institutions. The College offers D. Pharm, (2 years) B. Pharm (4 years) and M. Pharm (Pharmceutical Technology, Pharmaceutical Analysis & Quality Assurance, Pharmacognosy and Pharmacology) (2 years) complying with the norms of AICTE & PCI. The institution is approved by All India Council for Technical Education (AICTE), Pharmacy Council of India (PCI), Ministry of Health & Family Welfare, Government of Orissa and affiliated to Biju Patnaik University of Technology, Odisha & Orissa State Board of Pharmacy, Odisha.

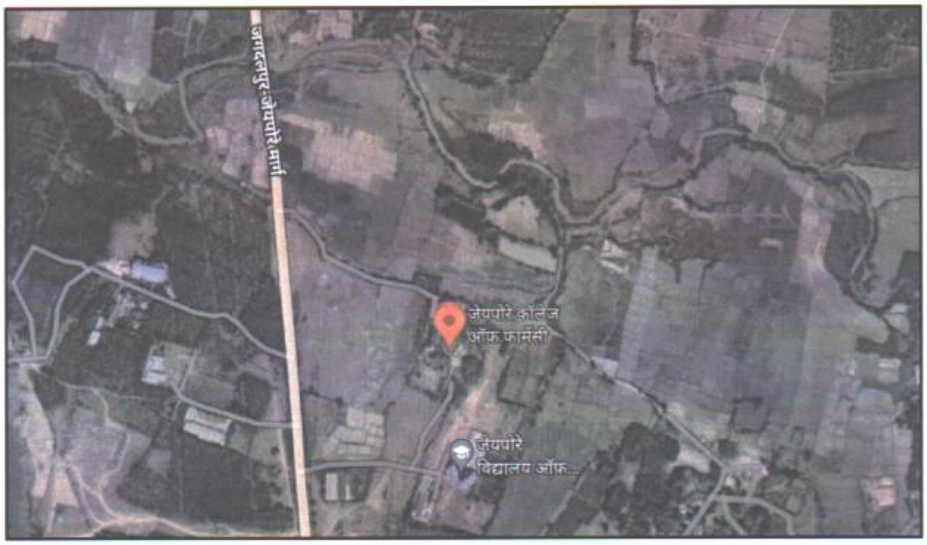

Figure 1.1: - Satellite Image of JCP, Jeypore from Google map

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Vision

To provide affordable quality education in pharmacy, with the goal of equipping students with knowledge and skills relevant to their particular domain of interest to undertake research & innovations, realize their full potential, instill values, and identify hidden talents and become future professional leaders, entrepreneurs, and responsible citizens.

Mission

The college is dedicated for academic development along with outreach and community engagement through collaborations and linkages to achieve national level of recognition. The college is committed to a supportive teaching, learning and research environment that instills cultural competence, ethics, critical thinking in the students preparing them for leadership roles as healthcare providers, practitioners, innovators, researchers and lifelong learners.

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Quality Policy

- ✓ It is our goal to provide students with the opportunity to develop their full potential so that they can meet the high demands of industry and society.
- ✓ To instil innovative thinking in the next generation of pharmacists.
- ✓ It is our mission to provide knowledge through experienced academicians and the creation of an ideal environment for research, skill and innovation for our students.
- ✓ Provide rural youths with high levels of proficiency and skill as pharmacists in the pharmaceutical industry.
- ✓ Our goal is to instil social responsibility and discipline in our students, not only to make them better technocrats but also to make them better individuals.

Objectives

- Provide a comprehensive, value-based approach to teaching and learning that is based on traditional and innovative methodologies to impart the highest standard of education.
- Establish a platform that allows students to explore their creative potential and cultivate the spirit of entrepreneurship and critical thinking in the classroom
- To make them socially responsible citizens, it is paramount to develop in them a sense of honesty, a strong belief in human rights, gender equality, and an understanding of the environment.
- Provide students with a multitude of career options in the field of pharmacy after graduation according to the constantly changing global scenario and prepare them for an ever-changing global scenario
- By making pharmacy education accessible to all, all sections of society should be included. Ensure that quality, transparency, compliance, and sustainability are maintained and promoted throughout the governance process

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College Build-up area

Total Build up area –5263.6 sq. mt.

Sr.no.	Description	Total Area Sq.mt.
1	UG Building	1547.4
2	UG Ground Floor + PG Building	1728.8
3	Office + Library	776.8
4	D Pharma HOD	264
5	Store + House Keeping	311.6
6	D Pharma Practical Room	300
7	Canteen	225
8	Animal House	100
9	Security Room	10

COLLEGE POPULATION

There are 480 students with 44 Teaching staff and 36 non-teaching staff

Sr.No.	College Population	Quantity (Nos)
1	No. of student	480
2	No. of teaching faculty	36
3	No. of non-teaching faculty	44
	Total	560

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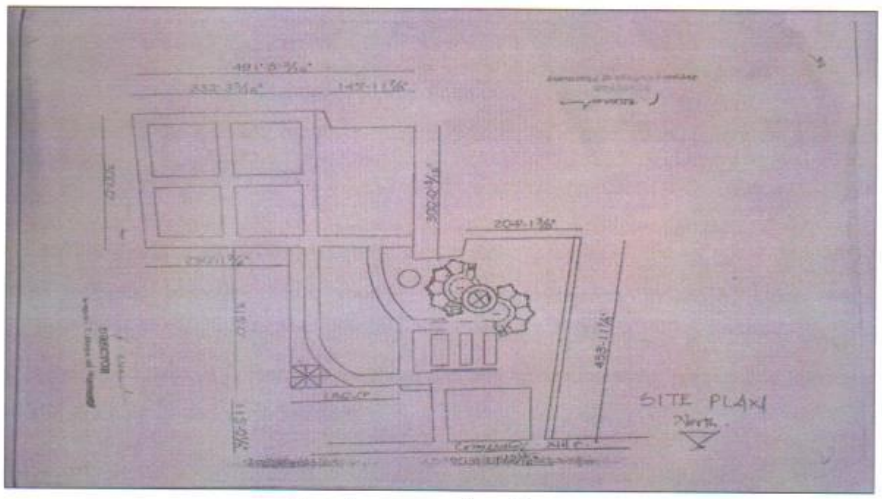
Layout of the College



Master plan of jeypore college of pharmacy

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1.2 About Environment Auditing

Water audits can be a highly valuable tool for college in a wide range of ways to improve their energy, environment and economic performance. While reducing wastages and operating costs. Water audits provide a basis for calculating the economic benefits of water conservation projects by establishing the current rates of water use and their associated cost.

1.3 Objectives of Environment Audit

The general objective of water audit is to prepare a baseline report on water conservation measures to mitigate consumption, improve quality and sustainable practices.

The specific objectives are:

- To monitor the water consumption and water conservation practices.
- To assess the quantity of water, usage, quantity of waste water generation and their reduction within the college.

1.4 Target Areas of Environment audit

This indicator addresses water sources, water consumption, irrigation, storm water, appliances and fixtures aquifer depletion and water contamination are taking place at unprecedented rates. It is therefore essential that any environmentally responsible institution should examine its water use practices.

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1.5 Methodology followed for conducting Environment audit

Step 1: Walk through survey

- Understanding of existing water sourcing, storage and distribution facility.
- Assessing the water demand and water consumption areas/processes.
- Preparation of detailed water circuit diagram.

Step 2: Secondary Data Collection

- Analyse historic water use and wastewater generation
- Field measurements for estimating current water use
- Metered & unmetered supplies.
- Understanding of "base" flow and usage trend at site
- Past water bills
- Wastewater treatment scheme & costs etc.

Step 3: Site Environment Audit Planning (based on site operations and practices)

- Preparation of water flow diagram to quantify water use at various locations
- Wastewater flow measurement and sampling plan

Step 4: Conduction of Detailed EnvironmentAudit & Measurements

- Conduction of field measurements to quantify water/wastewater streams
- Power measurement of pumps/motors
- Preparation of water balance diagram
- Establishing water consumption pattern
- Detection of potential leaks & water losses in the system
- Assessment of productive and unproductive usage of water
- Determine key opportunities for water consumption reduction, reuse & recycle.

Step 5: Preparation of Environment Audit Report

- Documentation of collected &analysed water balancing and measurement details
- Projects and procedures to maximize water savings and minimize water losses.
- Opportunities for water conservation based on reduce/recycle/reuse and recharge option

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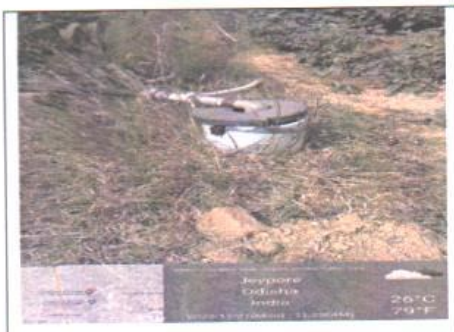
CHAPTER- 2
WATER CONSUMPTION AND WASTE WATER SOURCES

2.1 Details of Source of Fresh Water and Use Areas:

The main source of freshwater is bore well & open well for the college. The freshwater is mainly used for drinking, housekeeping, gardening, domestic activity and new construction project. Details of the bore well are given in table2.1

Table: 2.1 Details of Fresh water sources

Sr.No.	Location	Capacity (HP)	Phase	Running Hour
1	Bore well -1 Near Boys Hostel	3	Single	3 - 4 hour
2	Bore well -2 Near Volly Ball Court	3	Single	3 – 4 hour
3	Open Well Near Garden	2	Single	1 – 2 hour



Bore well – 01 Near boys hostel

Bore well – 02 Near volley court

Fig:- 2.1 Bore well in college campus

Open well Near Garden

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2.2 Bore well Power Measurement

Sr. No.	Fresh Water Sources	Location	Motor Power (HP)	Voltage (v)	Current (A)	PF	Input power (KW)	Working (Hr./day)
1	Bore well -01	Near Boys Hostel	3	411	6.3	0.86	3.86	3 - 4 hour
2	Bore well -02	Near Volley Ball Court	3	414	6.1	0.87	3.81	3 – 4 hour
3	Open well	Near Garden	2	409	4.2	0.86	2.56	1 – 2 hour

Power Measurement on open well of the college campus

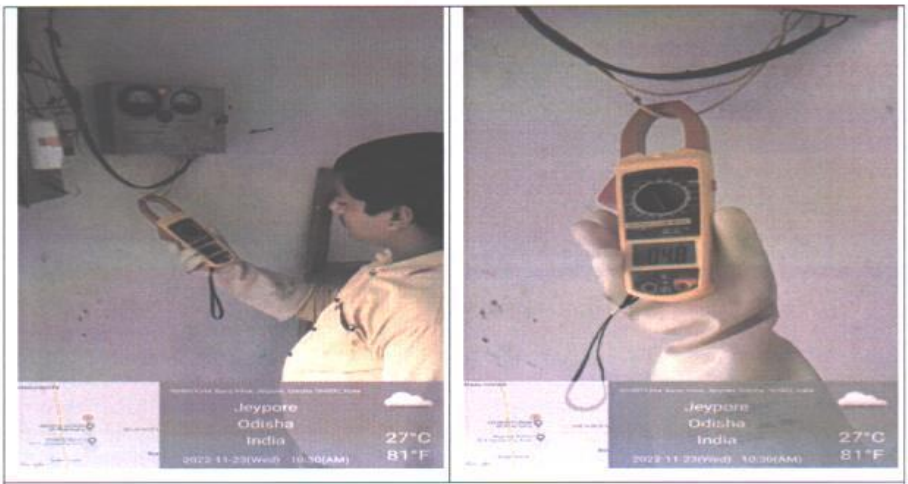

Fig:- 2.2 Power Measurement

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2.3 Water Accounting & Metering system

There are two number of borewell and one open well system, which is cater which is full fill the requirement of fresh water consumption of the campus.

Fig:- 2.3 Requirement of water meter on bore well

Observation:-

Environment audit team observe that there are required water meter on bore well system. So it is recommended to install water meter on bore wells to quantify of fresh water per day.

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2.4 Water Storage Capacity in College Campus

There are different type of tank available in college for water storage like, RCC tank and PVC tanks.

Table2.4: - Water storage tank in college campus

Sr. No.	Location	No. of Tank	Tank Capacity	Type of tank
1	UG block	1	2,000 litre Each	Syntax
2	UG block	2	1,000 litre Each	Syntax
3	PG Block	1	2,000 litre Each	Syntax
4	Admin Block	2	500 litre Each	Syntax
	Total	**6**	**5,500 litre**	

Photographs of water storage tanks.

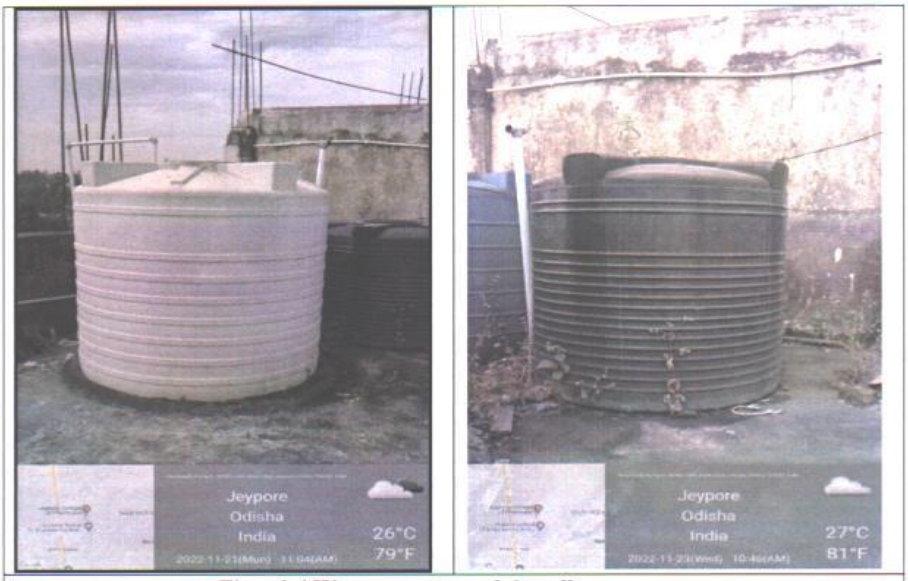

Fig: - 2.4 Water storage tank in college campus

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2.5 Fresh Water distribution layout of college

Audit team study the water sources and prepared water distribution flow system in college campus.

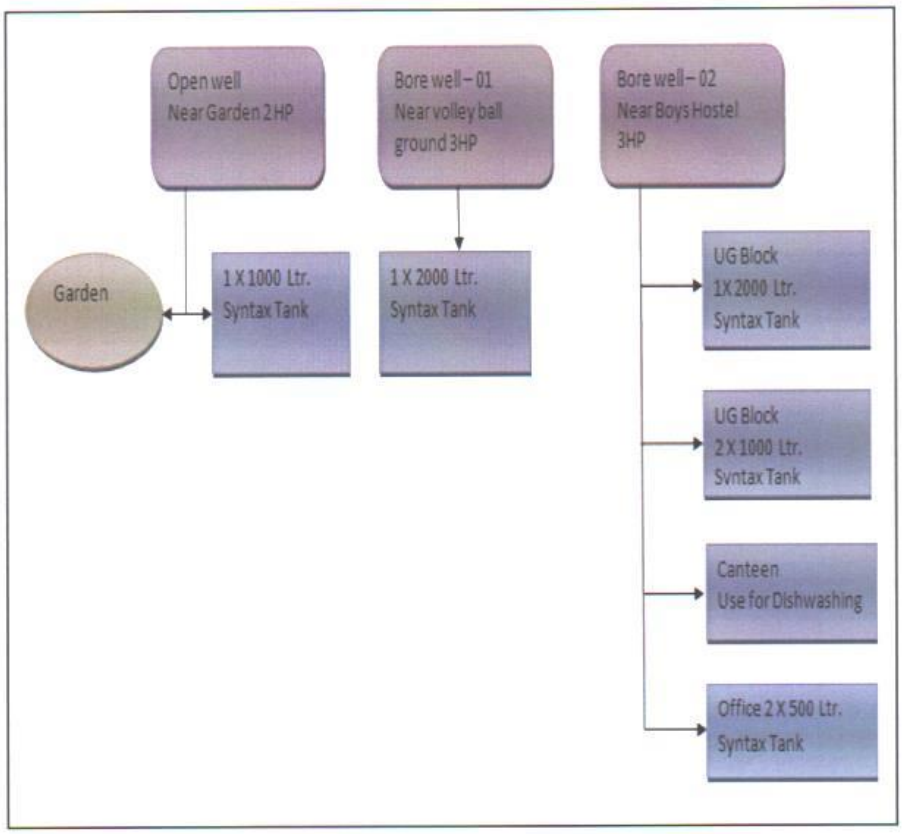

Fig: - 2.5 Layout of college water distribution

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2.6 Water use areas in college campus

Water is preliminary used for drinking, domestic, gardening and lab activity. Audit team visited various departments and buildings to determine appliances. The details of washroom, toilet and taps are given in table

Table: 2.6 Details of washroom and uses taps in various areas

Sr. No.	Location	Urinals	Taps	Toilets	Hand wash
1	UG block	4	12	12	3
2	PG block	7	6	6	5
3	Admin Office	1	4	4	3
	Total	**12**	**22**	**22**	**11**

Urinals | **Wash basin**

Fig:- 2.6 Urinal & washbasin in college campus

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2.7 Details of water cooler & RO

Table: 2.7 Details of water cooler in college campus

Sr.no.	Location	No of water cooler	RO
1	Near canteen	1	0
2	UG block	0	1
3	PG block	0	1
	Total	**1**	**2**

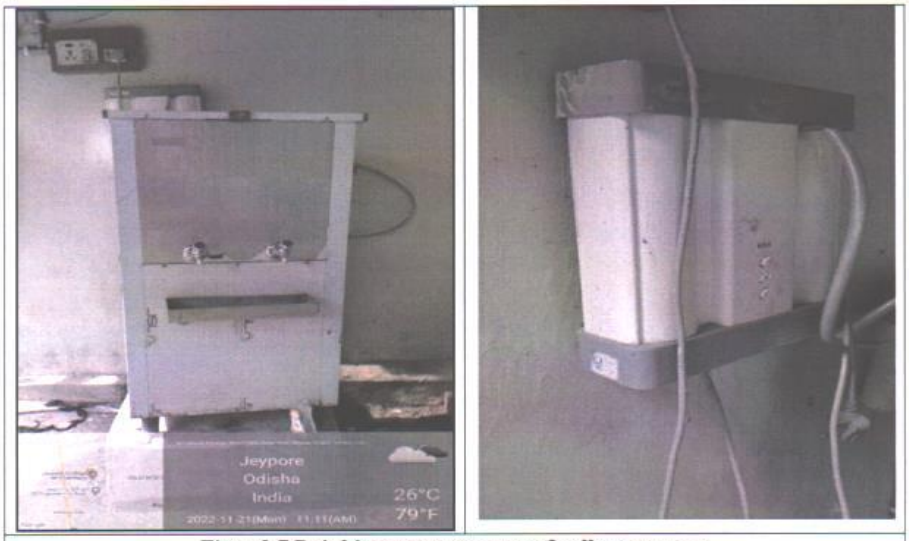

Fig :- 2.7 Drinking water sources of college campus

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2.8 Fresh water uses for gardening:

The one of major contribution from fresh water consumption is watering for other plants in college campus. There is good potential for water saving by adopt "Automatic Watering 360 adjustable misting nozzle irrigation dripper's system" for plants. Adjustable drip irrigation tools to provide different amounts of water depending on the water requirements of different plants. The drip speed can be set as for indoor and outdoor plants.

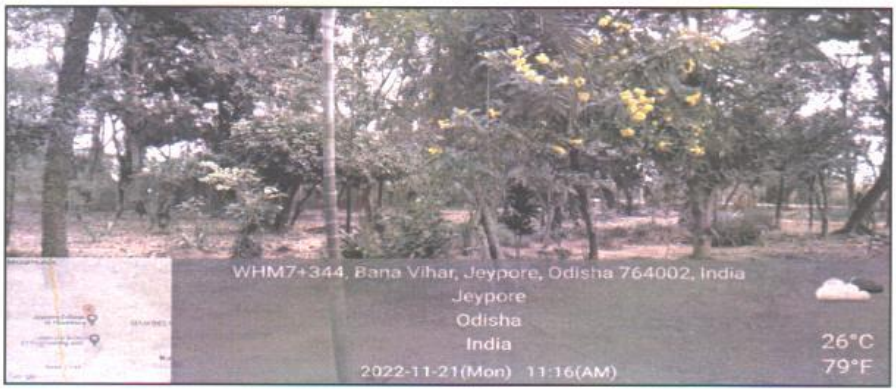

Fig :- 2.8 Water uses for gardening in college campus

Proposed Adjustable Misting Nozzle Irrigation Drippers Proposed water timer

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2.9 Waste water generation sources: -

At present waste water generated from various departments canteen, & other activity like washrooms, hand wash and RO rejected etc.

Sr. No.	Location	Type of water used	Water consuming activities
1	Admin block	Fresh water	Drinking and other uses
2	PG block	Fresh water	Drinking and other uses
3	UG block	Fresh water	Drinking and other uses
5	Canteen	Fresh water	Drinking, domestic and other activities
6	Ground + other	Fresh water	For gardening purpose

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CHAPTER- 3
RAIN WATER HARVESTING SYSTEM

3.1. Rain water harvesting systems

The rainwater harvesting is a technique to capture the rainwater when it precipitates, store that water for direct use or charge the groundwater and use it later.

There are typically four components in a rainwater harvesting system:

- Roof Catchment.
- Collection.
- Transport.
- Infiltration or storage tank and use.

If rainwater is not harvested and channelized its runoffs quickly and flow out through storm-water drains. For storm-water management the recharge pits, percolation pits and porous trenches are constructed to allow storm water to infiltrate inside the soil.

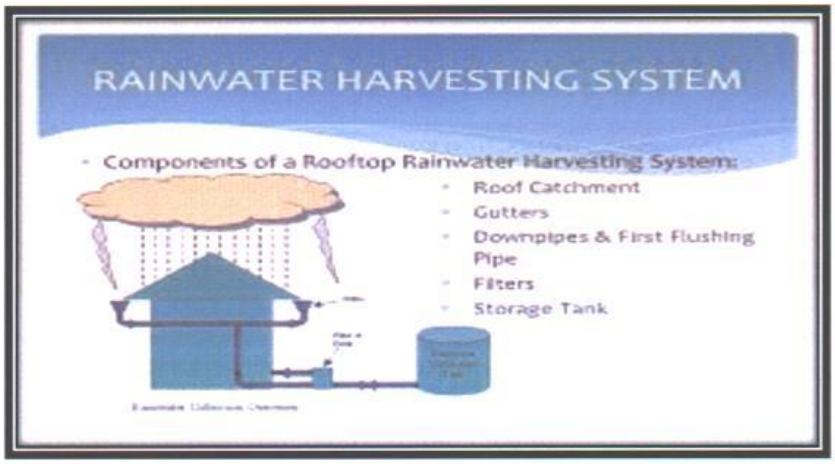

Fig: - 3.1 Components of a rooftop rainwater harvesting system

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3.2 Potential of Rain Water Harvesting

College has good potential for install Rain Water Harvesting System in various building like UG block, PG block & Office building etc.

Sr. No.	Name of the building	Rooftop Area (m2)	Average rain fall (m)	Runoff coefficient	Rainwater Harvesting potential (m3/year)
1	UG Building	1547.4	1.5	0.88	2,043
2	UG Ground Floor + PG Building	1728.8	1.5	0.88	2,282
3	Office + Library	7706.8	1.5	0.88	10,173

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Annexure-01

Water Test Report

Water test report by college and **It is Appriciable**

RURAL WATER SUPPLY & SANITATION SUB – DIVISION, JEYPORE
SUB – DIVISION WATER TESTING LABORATORY, JEYPORE

LETTER NO - 227 DATE - 27.04.2022

Ref :- JCP/2204/246D Dtd : 25.04.2022

TEST REPORT

LABORATORY REFERENCE NO- 02/SDLL/PVT/2022-23	DATE OF RECEIPT - 26/04/2022
ISSUED TO: THE PRINCIPAL JEYPORE COLLEGE OF PHARMACY , RONDAPALLI , JEYPORE DIST - KORAPUT	DATE OF REPORTING – 27/04/2022 SAMPLE COLLECTED BY – Not Known SOURCE – BORE WELL LOCATION – INSIDE COLLEGE

SL. NO	TEST PARAMETERS	RESULTS	COMPLETE TEST AS PER IS 10500-2012	
			ACCEPTABLE LIMIT	PERMISSIBLE LIMIT
1	PH	7.15	6.5 to 8.5	6.5 to 8.5
2	Electrical Conductivity	116.9	----	----
3	Turbidity as NTU	3.89	1.0	5.0
4	Total Dissolved Solids, mg/Ltr	76	500	2000
5	Total Alkalinity, mg/Ltr	64	200	600
6	Total Hardness, mg/Ltr	60	200	600
7	Chloride, mg/Ltr	11	250	1000
8	Fluoride, mg/Ltr	0.29	1.0	1.5
9	Iron, mg/Ltr	0.58	1.0	No Relaxation

THE SAMPLE WAS NOT DRAWN BY US
THE SAMPLE IS UNDER PERMISIBLE LIMIT TO THE ABOVE PARAMETERS

27-04-2022
Laboratory Chemist
RWS&S Sub-Divn,Jeypore

27.04.22
Assistant Executive Engineer
RWS&S Sub-Divn. Jeypore

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END OF THE REPORT

THANKS

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