ENVIRONMENTAL AUDIT REPORT

Pune Vidyarthi Griha's

COLLEGE OF ENGINEERING AND TECHNOLOGY & G K PATE (WANI) INSTITUTE OF MANAGEMENT,

Vidyanagari, Parvati, Pune 411 009

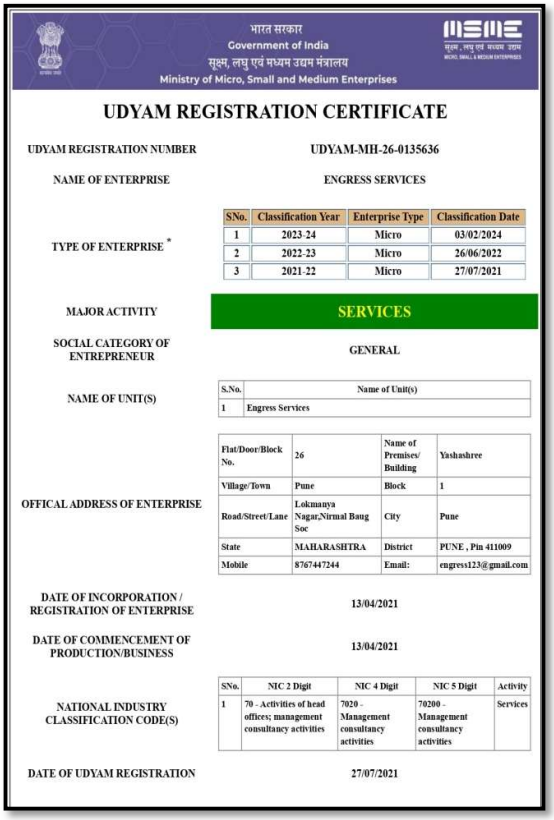
Year: 2024-25

Prepared by:

ENGRESS SERVICES

Yashashree, 26, Nirmal Bag Society
Near Muktangan English School, Parvati, Pune 411009
Phone: 09890444795 Email: engress123@gmail.com

Registration Certificates: UDYAM, MEDA, ASSOCHAM GEM-CP, ISO: 9001 & 14001:



भारत सरकार
Government of India
सूक्ष्म, लघु एवं मध्यम उद्यम मंत्रालय
Ministry of Micro, Small and Medium Enterprises

UDYAM REGISTRATION CERTIFICATE

UDYAM REGISTRATION NUMBER	UDYAM-MH-26-0135636
NAME OF ENTERPRISE	ENGRESS SERVICES

TYPE OF ENTERPRISE *

SNo.	Classification Year	Enterprise Type	Classification Date
1	2023-24	Micro	03/02/2024
2	2022-23	Micro	26/06/2022
3	2021-22	Micro	27/07/2021

MAJOR ACTIVITY: SERVICES

SOCIAL CATEGORY OF ENTREPRENEUR: GENERAL

NAME OF UNIT(S)

S.No.	Name of Unit(s)
1	Engress Services

OFFICAL ADDRESS OF ENTERPRISE

Flat/Door/Block No.	26	Name of Premises/ Building	Yashashree
Village/Town	Pune	Block	1
Road/Street/Lane	Lokmanya Nagar,Nirmal Baug Soc	City	Pune
State	MAHARASHTRA	District	PUNE , Pin 411009
Mobile	8767447244	Email:	engress123@gmail.com

DATE OF INCORPORATION / REGISTRATION OF ENTERPRISE: 13/04/2021

DATE OF COMMENCEMENT OF PRODUCTION/BUSINESS: 13/04/2021

NATIONAL INDUSTRY CLASSIFICATION CODE(S)

SNo.	NIC 2 Digit	NIC 4 Digit	NIC 5 Digit	Activity
1	70 - Activities of head offices; management consultancy activities	7020 - Management consultancy activities	70200 - Management consultancy activities	Services

DATE OF UDYAM REGISTRATION: 27/07/2021

ASSOCHAM

GEM Certificate

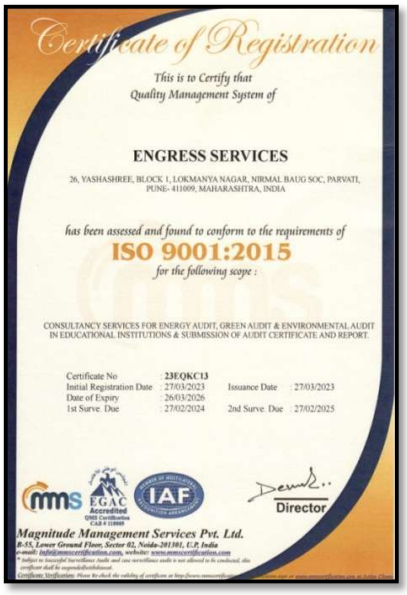
ASSOCHAM hereby certifies that

Mr. A Y Mehendale

has successfully passed the
Green and Eco-friendly Movement Certified Professional Test (GEM CP)
with
"Excellent Performance"
on
06 June, 2022

He/she is now eligible to execute the GEM Sustainability Certification Projects.
ASSOCHAM feels proud to award the GEM Certified Professional title to him/her.

Pankaj R. Dharkar, Chairman, GEM
GEM CP 22/788
Deepak Sood, Secretary General, ASSOCHAM



Certificate of Registration

This is to Certify that
Quality Management System of

ENGRESS SERVICES

26, YASHASHREE, BLOCK 1, LOKMANYA NAGAR, NIRMAL BAUG SOC, PARVATI, PUNE- 411009, MAHARASHTRA, INDIA

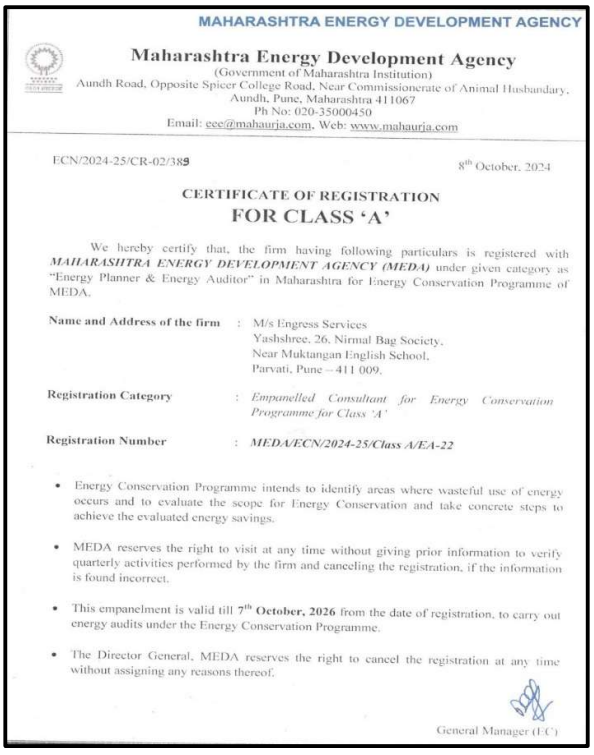
has been assessed and found to conform to the requirements of
ISO 9001:2015
for the following scope :

CONSULTANCY SERVICES FOR ENERGY AUDIT, GREEN AUDIT & ENVIRONMENTAL AUDIT IN EDUCATIONAL INSTITUTIONS & SUBMISSION OF AUDIT CERTIFICATE AND REPORT.

Certificate No : 23EQKC13
Initial Registration Date : 27/03/2023 Issuance Date : 27/03/2023
Date of Expiry : 26/03/2026
1st Surve. Due : 27/02/2024 2nd Surve. Due : 27/02/2025

Director

Magnitude Management Services Pvt. Ltd.



MAHARASHTRA ENERGY DEVELOPMENT AGENCY

Maharashtra Energy Development Agency
(Government of Maharashtra Institution)
Aundh Road, Opposite Spicer College Road, Near Commissionerate of Animal Husbandary, Aundh, Pune, Maharashtra 411067
Ph No: 020-35000450
Email: eee@mahaurja.com, Web: www.mahaurja.com

ECN/2024-25/CR-02/389 8th October, 2024

CERTIFICATE OF REGISTRATION
FOR CLASS 'A'

We hereby certify that, the firm having following particulars is registered with *MAHARASHTRA ENERGY DEVELOPMENT AGENCY (MEDA)* under given category as "Energy Planner & Energy Auditor" in Maharashtra for Energy Conservation Programme of MEDA.

Name and Address of the firm : M/s Engress Services
Yashshree, 26, Nirmal Bag Society,
Near Muktangan English School,
Parvati, Pune – 411 009.

Registration Category : *Empanelled Consultant for Energy Conservation Programme for Class 'A'*

Registration Number : *MEDA/ECN/2024-25/Class A/EA-22*

- Energy Conservation Programme intends to identify areas where wasteful use of energy occurs and to evaluate the scope for Energy Conservation and take concrete steps to achieve the evaluated energy savings.
- MEDA reserves the right to visit at any time without giving prior information to verify quarterly activities performed by the firm and canceling the registration, if the information is found incorrect.
- This empanelment is valid till **7th October, 2026** from the date of registration, to carry out energy audits under the Energy Conservation Programme.
- The Director General, MEDA reserves the right to cancel the registration at any time without assigning any reasons thereof.

General Manager (EC)

Certificate of Registration

This is to Certify that
Environmental Management System of

ENGRESS SERVICES

26, YASHASHREE, BLOCK 1, LOKMANYA NAGAR, NIRMAL BAUG SOC, PARVATI, PUNE- 411009, MAHARASHTRA, INDIA

has been assessed and found to conform to the requirements of
ISO 14001:2015
for the following scope :

CONSULTANCY SERVICES FOR ENERGY AUDIT, GREEN AUDIT & ENVIRONMENTAL AUDIT IN EDUCATIONAL INSTITUTIONS & SUBMISSION OF AUDIT CERTIFICATE AND REPORT.

Certificate No : 23EEKW20
Initial Registration Date : 29/03/2023 Issuance Date : 29/03/2023
Date of Expiry : 28/03/2026
1st Surve. Due : 29/02/2024 2nd Surve. Due : 28/02/2025

Director

Magnitude Management Services Pvt. Ltd.

INDEX

ACKNOWLEDGEMENT

We Engress Services, Pune, express our sincere gratitude to the management of Pune Vidyarthi Griha's College of Engineering and Technology & G K Pate (Wani) Institute of Management, Vidyanagari, Parvati, Pune 411 009, for awarding us the assignment of Environmental Audit of their Campus for the Year: 2024-25.

We are thankful to all the staff members for helping us during the field study.

EXECUTIVE SUMMARY

1. An Environmental Audit was conducted at Pune Vidyarthi Griha's College of Engineering and Technology & G K Pate (Wani) Institute of Management, Pune

2. Pollution due to College Activities:

No	Head	Particulars
1	Solid Waste	Paper, Plastic Waste, Food, Organic Waste
2	Liquid Waste	Human Waste, Lab Liquid Waste
3	Air Pollution	CO_2: On Account of Electrical Energy Consumption

3. Present Energy Consumption & CO_2 Emission:

No	Particulars	Value	Unit
1	Total Energy Purchased		kVAh
2	Annual CO_2 Emissions		MT

4. Usage of Renewable Energy:

- The College has installed 5 kWp Roof Top Solar PV Vehicle Charging Station.

5. Indoor Air Quality:

No	Parameter/Value	AQI	PM-2.5	PM-10
1	Maximum	**70**	**43**	**50**
2	Minimum	**64**	**38**	**41**

6. Indoor CO_2 Level:

No	Parameter/Value	CO_2, ppm
1	Maximum	**537**
2	Minimum	**532**

7. Indoor Lux & Noise Level Parameters:

No	Parameter/Value	Lux Level	Noise Level, dB
1	Maximum	**244**	**49**
2	Minimum	**231**	**45.2**

8. Water Quality Parameters:

No	Parameter	Value
1	pH Level	**7.24**
2	Total Dissolved Salts	**38**

9. Waste Management Practices:

No	Head	Particulars
1	Solid Waste	Segregation of Waste at source
2	Sanitary Waste	Provision of Sanitary Waste Incinerator
3	Paper & Plastic Waste	MoU with City Chakra for Paper Waste & TAA- Sagarmitra for Plastic Waste
4	E Waste	MoU for Disposal of E Waste

8. Environment Friendly Initiatives:

No	Head	Particulars
1	**Initiatives on National Mission on Green India**	➢ Internal Tree Plantation in the Campus. ➢ Tree Plantation Drives outside the Campus
2	**Initiatives on National Sustainability Scheme**	• Conductance on Value added Course on Sustainable Development • Conducting Visits to Study Eco- System & Environmental Awareness
3	**Initiatives on Swatch Bharat Abhiyan**	• Conductance of Cleanliness Drive Events
4	**Initiatives for CO_2 Emission Reduction**	• Usage of Roof Top Solar PV Plant • Usage of Energy Efficient Equipment: LED Tubes & STAR Rated Equipment

10. Assumptions:

1. Emission Fator of Electricity: **0.93 Kg of CO_2 / kWh**
2. CO_2 Emissions are computed For **Scope- 2**
3. CO_2 Emissions are computed based on Electrical Energy purchased

11. References:

- For CO_2 Emissions: www.ccd.gujarat.gov.in
- For Various Indoor Air Parameters: www.ishrae.com
- For AQI Quality Standards: www.cpcb.com

ABBREVIATIONS

Kg	:	Kilo Gram
MSEDCL	:	Maharashtra State Distribution Company Limited
MT	:	Metric Ton
kWh	:	kilo-Watt Hour
LPD	:	Liters per Day
LED	:	Light Emitting Diode
AQI	:	Air Quality Index
PM-2.5	:	Particulate Matter of Size 2.5 Micron
PM-10	:	Particulate Matter of Size 10 Micron
CPCB	:	Central Pollution Control Board
ISHRAE	:	The Indian Society of Heating & Refrigerating & Air Conditioning Engineers

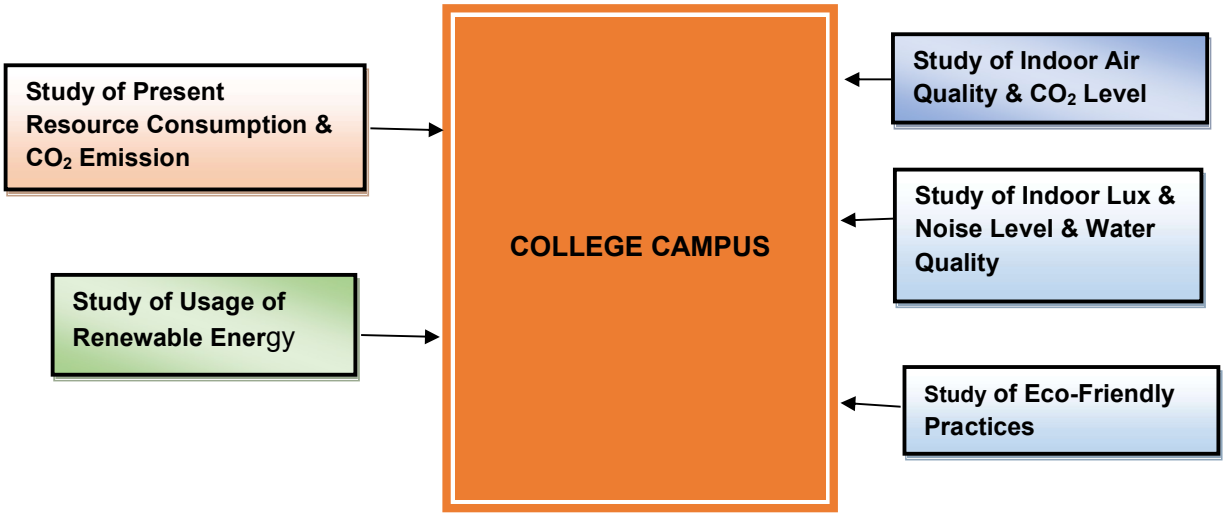
CHAPTER-I
INTRODUCTION

1. Important Definitions:

1.1.1 Environment: Definition as per environment Protection Act: 1986

Environment includes water, air and land and the inter-relationship which exists among and between Water, Air, Land and Human beings, other living creatures, plants microorganism and property

1.2 Key Study Points:



1.4 College Location Image:

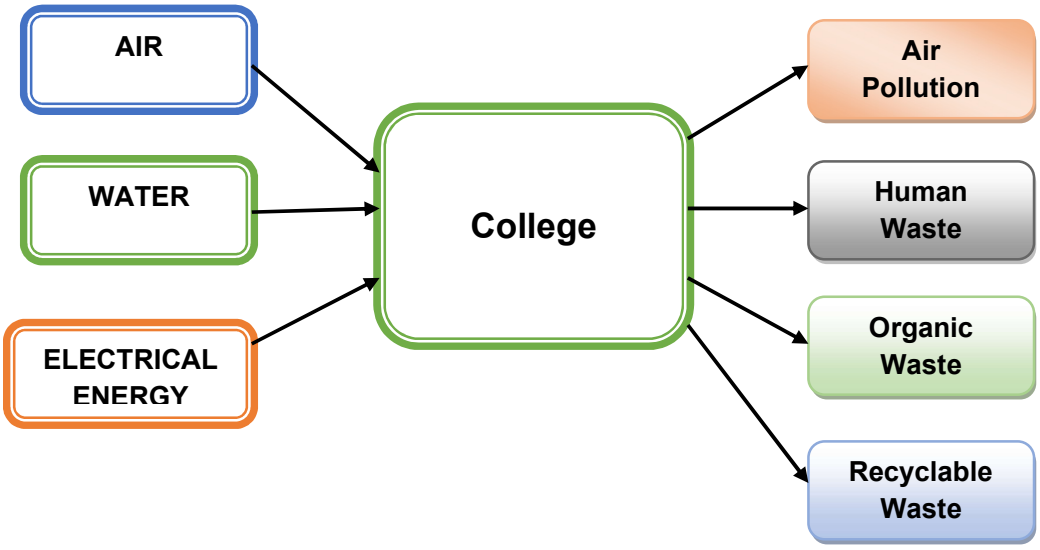
CHAPTER-II
STUDY OF RESOURCE CONSUMPTION & CO_2 EMISSION

The College consumes following basic/derived Resources:

1. Air
2. Water
3. Electrical Energy

We try to draw a schematic diagram for the College System & Environment as under.

Chart No 1: Representation of Resource Requirement & Waste of a College:



A Carbon Foot print is defined as the Total Greenhouse Gas emissions, emitted due to various activities. The CO_2 Emission is computed for **Scope-2**

Emission Factor:

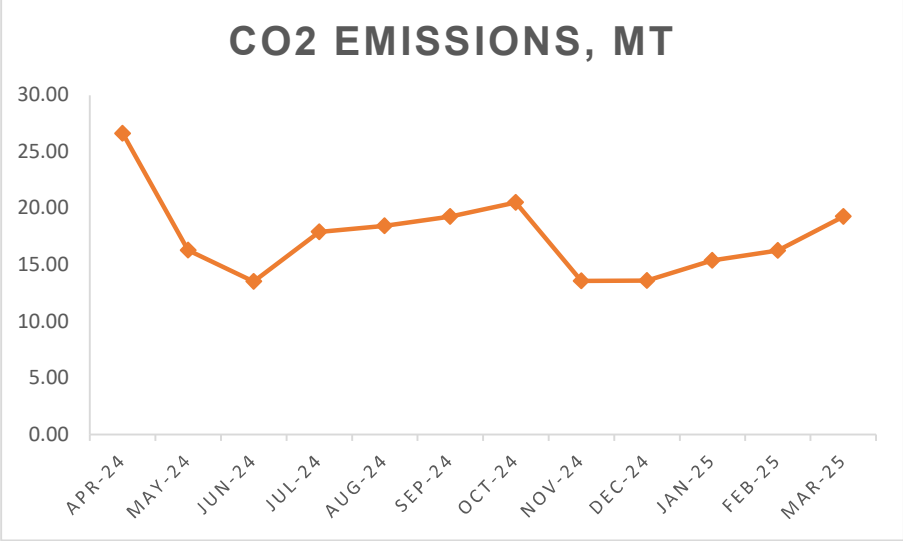
- Emission Fator of Electricity: **0.93 Kg of CO_2 / kWh**

Table No 1: Study of Purchase of Energy & CO_2 Emissions: 24-25:

No	Month	Energy Consumed, kVAh	CO2 Emissions, MT
1	Apr-24	29566	26.61
2	May-24	18096	16.29
3	Jun-24	15038	13.53
4	Jul-24	19896	17.91
5	Aug-24	20482	18.43

6	Sep-24	21398	19.26
7	Oct-24	22798	20.52
8	Nov-24	15098	13.59
9	Dec-24	15104	13.59
10	Jan-25	17106	15.40
11	Feb-25	18086	16.28
12	Mar-25	21400	19.26
13	Total	234068	210.66

Chart No 2: Month wise CO_2 Emissions:



CHAPTER III
STUDY OF USAGE OF RENEWABLE ENERGY

The College has installed Solar PV based Vehicle Charging Station of Capacity 5 kWp.

Photograph of 5 kWp Capacity Solar PV Based Vehicle Charging Station:

CHAPTER IV
STUDY OF INDOOR AIR QUALITY

1. Air: The common name given to the atmospheric gases used in breathing and photosynthesis.

2. Air quality is a measure of the suitability of air for breathing by people, plants and animals.

3. Air Quality Index: Air Quality Index (AQI) is a number used by government agencies to measure the **Air Pollution** levels and communicate it to the population.

In this Chapter, we present three important Parameters: **AQI**- Air Quality Index, **PM-2.5**- Particulate Matter of Size 2.5 micron and **PM-10**- Particulate Matter of Size 10 micron

Table No 3: Indoor Air Quality Parameters:

No	Location	AQI	PM2.5	PM10
1	Office	70	43	49
2	Computer Lab	69	44	50
3	Staff Room	66	40	41
4	Classroom	65	39	42
5	Electronics Lab	64	38	47
	Maximum	**70**	**43**	**50**
	Minimum	**64**	**38**	**41**

Table No 4: Air Quality Index Values & Concentration of PM 2.5 & PM10: (By CPCB):

No	Category	AQI Value	Concentration Range, PM 2.5	Concentration Range, PM 10
1	Good	0 to 50	0 to 30	0 to 50
2	Satisfactory	51 to 100	31 to 60	51 to 100
3	Moderately Polluted	101 to 200	61 to 90	101 to 250
4	Poor	201 to 300	91 to 120	251 to 350
5	Very Poor	301 to 400	121 to 250	351 to 430
6	Severe	401 to 500	250 +	430 +

Conclusion:

From the above measured values, we conclude that the observed values of AQI, PM-2.5 & PM-10 are in the **Satisfactory Range**, as per the guidelines given by Central Pollution Control Board.

CHAPTER V
STUDY OF INDOOR CARBON-DI-OXIDE LEVEL

In this Chapter, we present the CO_2 Level in the Campus.

Table No: Study of CO_2 Level:

No	Location	CO_2 Level in ppm
1	Office	570
2	Computer Lab	575
3	Staff Room	571
4	Classroom	575
5	Electronics Lab	567
	Maximum	**575**
	Minimum	**567**

The Acceptable Value of CO_2 Level is **1000 ppm.**

Conclusion:

From the above measured values, we conclude that the observed values of CO_2 Level are within the Limit

CHAPTER VI
STUDY OF LUX & NOISE LEVEL PARAMETERS

In this Chapter, we present the various Indoor Comfort Parameters measured during the Audit. The Parameters include: **Lux Level and Noise Level.**

Table No 5: Study of Indoor Lux Level and Noise Level Parameters:

No	Location	Lux Level	Noise Level, dB
1	Office	235	45.6
2	Computer Lab	244	47.6
3	Staff Room	236	49
4	Classroom	226	48
5	Electronics Lab	231	45.2
	Maximum	**244**	**49**
	Minimum	**231**	**45.2**

Recommended Lux & Noise Level: As per BEE & ISHRAE Guidelines:

A) Noise Level Reference:		
No	**Location**	**Noise Level Range, dB**
1	Offices	45-50
2	Occupied Class Room	40-45
3	Libraries	35-40
B) Reference Lux Level, Lumens:		
1	For Class Rooms	**200 Plus**
2	For Reading Rooms	**200 Plus**

Conclusion:

From the above measured values, we conclude that:

- The Noise Level is within the prescribed Limit
- The Lux Level at various locations is Okay

CHAPTER VII
STUDY OF WATER QUALITY

In this Chapter, we present the Water Parameters like pH and TDS.

Table No 5: Study of Water pH and TDS:

No	Parameter	Value
1	pH Level	**7.24**
2	Total Dissolved Salts	**38**

Recommended Values of Water pH & TDS, as per BIS: IS: 10500: 2012

A) Reference:		
No	**Parmeter**	**Noise Level Range, dB**
1	pH	**6.5 to 8.5**
2	TDS	**500 (Max)**

Conclusion:

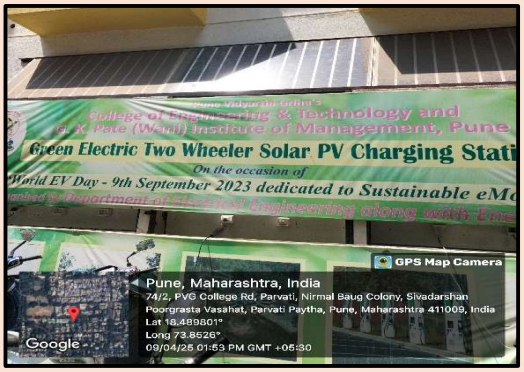
From the above measured values, we conclude that the observed Values of pH and TDS are within the prescribed Limits.

CHAPTER-VIII
STUDY OF ECO-FRIENDLY PRACTICES

In this Chapter, we present the Eco-Friendly Practices, followed by the College.

Details of Eco-Friendly Practices:

No	Head	Action Taken	Photograph
1	**Initiatives on National Mission on Green India**	Tree Plantation Drive	**Tree Plantation at the Taljai Hill:** 
2	**Initiatives on National Sustainability**	2.1 Starting Course on **Sustainable Development** 2.2 Visits to study Eco-System	**Visit for Eco-System Study:** 
3	**Initiatives on Swatch Bharat Abhiyan**	Conductance of Cleanliness Drive	**Cleanliness Drive at Parvati:**

			
4	**Actions taken for CO_2 Emission Reduction**	4.1 Installation of 5 kWp Solar PV based Vehicle Charging Station	**Solar PV Based Vehicle Charging Station:** 
		4.2 Usage of Energy Efficient Equipment: LED Tubes	**LED Light:**