ENVIRONMENTAL AUDIT REPORT
YEAR 2024-25

Govt. Post Graduate Khargone , Indore
Madhya Pradesh 451001, India

CONDUCTED BY:

SABS ENERGY ENVIRO PVT. LTD.

WE BUILDS A SOLID FOUNDATION FOR SAVING ENERGY

90/2 Abhinav Nagar, Teen Imli Square, Behind Vishesh Hospital
Indore, Madhya Pradesh -452001 India
Email Address: sabsindia2018@yahoo.co.in ,
Contact number: 8236088801, 9826012991

GIRIJENDRA SINGH CHAUHAN

Digitally signed by GIRIJENDRA SINGH CHAUHAN
Date: 2026.01.16 15:46:00 +05'30'

THE ENVIROMENTAL AUDIT TEAM

THE AUDIT TEAM

External Audit Team		
Sr. No.	**Name**	**Position**
1	Mr. Sanjay Singh	BEE, Certified Energy Auditor, EA-1462
2	Mr. Rambabu Raghuwanshi	BEE, Certified Energy Auditor,
3	Mr. Vinod Kumar Kumawat	Sr. Energy Consultant

Internal Audit Team		
1	Principal	Dr. Shail Joshi
2	IQAC & NAAC Coordinator	Dr. Vandana Barve

Acknowledgement

Sabs Energy Enviro Pvt. Ltd**.** is thankful to the **Govt. P.G. College Khargone Madhya Pradesh** for their positive support in undertaking this intricate task of Environment Audit. The field studies would not have been completed on time without their interaction and timely support. We are grateful for their co-operation during field studies and provision of data for the study. The field study of this audit was carried out for FY 24-25

The officials of **Govt. P.G. College Khargone Madhya Pradesh** coordinated and helped the audit team during the field study and measurement. Sabs Energy Enviro Pvt. Ltd**.** expresses special thanks to the following persons of **Govt. P.G. College Khargone Madhya Pradesh**.

1	Principal	Dr. Shail Joshi
2	IQAC Coordinator	Dr. Vandana Barve

And all other officers, technicians and staffs for the keen interest shown in this study and the courtesy extended.
We are thankful to the management for giving us the opportunity to be involved in this very interesting and challenging project.

We would be happy to provide any further clarifications, if required, to facilitate implementation of the recommendations.

SABS ENERGY ENVIRO PVT.LTD.

MR. SANJAY SINGH
EA-1462
Certified Energy Auditor
M. Tech (Energy Management)

Ref.No. SABS /GA/24-25/217 **Dated**

ENVIRONMENT AUDIT

Certificate

This is to certify that **Govt. P.G. College Khargone Madhya Pradesh** has conducted, Green Audit in the academic year 2024 - 2025 to assess the environmental initiative planning, efforts, activities, implemented in the college campus like Plantation, Rain Water Harvesting, Plastic ban, Conservation of Energy, Energy Management and various Environmental Awareness activities. **Sabs Energy** has verified campus data of **Govt. P.G. College Khargone Madhya Pradesh** This Environment Audit are also aimed to assess impact of environmental development initiatives for maintenance of the campus eco-friendly.

Mr. Sanjay Singh

A P: Indian Green Building council Green Building Consultant
EA 1462 Bureau of Energy efficiency
Ministry of Power Govt. of India

Save Energy save Nation

List of Contents

Sr. No.	Topic	Page No.
1	CH-1: About The College	6-7
2	CH-2: General Overview of The Concept of Land use	8-9
3	CH-3: Air Quality Audit	10-13
4	CH-4: Water Audit	14-16
8	CH-5:Waste Management	17-19
Sr. No.	**Table**	**Page No.**
1	Table 1: Air Quality Data of The Location of Past Three Months On Selected Date	**10**

CHAPTER -1
ABOUT THE COLLEGE

1.1 Introduction

Govt. P.G. College Khargone Began its journey with faculties of Science, Arts and Commerce on a dynamic path of progress in 1958 in Devi Ahilya Higher Secondary School Khargone (M.P.). It was shifted in the present campus in 1967-68. It is a district with notable tribal population and generally known as a tribal distinct deprived of modern transport and conveyance facilities i.e. railways and airways. In spite of all these disparities, it is one of the largest co-ed colleges of the state. The college has a huge campus sprawling over an area of 11 acres with constructed area of 3625.93 square meters. It caters to the needs of higher/advanced academic knowledge with programs in Science, Arts and Commerce. The campus is a confluence of teachers with variety of skills and experiences in diverse fields offering students.

1.1 Audit Framework

The rapid urbanization and economic development at local, regional and global level has led to several environmental and ecological crises. On this background it becomes essential to adopt the system of the Green Campus for the institute which will lead for sustainable development Green Audit is a planned identification, data analysis and reporting of mechanisms of environmental diversity. The “Environment Audit” aims to analyze environmental practices within and outside the college campus, which will have an impact on the eco-friendly environment.

1.2 Objective Of the Green Audit

The institute, with the advice of the External Quality Assessment Cell (EQAC) has set up an environmental quality assessment Team that aimed at performing the green audit of the College. The main objectives of the audit are:

- To fulfill the Institution’s responsibility towards reducing carbon footprint and contribute to environmental protection.
- To promote Environmental Consciousness and Responsibility among students.
- To implement green practices consistently and effectively towards creating a sustainable campus.
- To monitor and evaluate the green practices, towards a sustainable campus
- To generate innovative green practices, promoting the spirit of eco-innovation among students.

1.3 Methodology

The Green Audit taken up by Arihant College Indore, Madhya Pradesh has been divided into three stages:

- Data//Observation
- Analysis of finding
- Recommendations

1.4 Division of Audit

For better investigation and pinpoint observation our team has divided this work in 6 parts

The college has adopted the 'Green Campus' system for environmental conservation and sustainability. There are main three pillars i.e. zero environmental foot print, positive impact on occupant health and performance and 100% graduates demonstrating environmental literacy. The goal is to reduce CO2 emission, energy and water use, while creating atmosphere where students can learn and be healthy.

CHAPTER-2
GENERAL OVERVIEW OF THE CONCEPT OF LAND USE

2.1 Introduction

Land use refers to man's activities and the various uses which are carried on and derived from land. Viewing the earth from space, it is now very crucial in man's activities on natural resource. In situations of rapid changes in land use, observations of the Earth from space give the information of human activities and utilization of the landscape.

Remote sensing and GIS techniques are now providing new tools for advanced land use mapping and planning. The collection of remotely sensed data facilitates the synoptic analyses of earth system, functions, patterning, and change in the local, regional as well as at global scales over time. Satellite imagery particularly is a valuable tool for generating land use map.

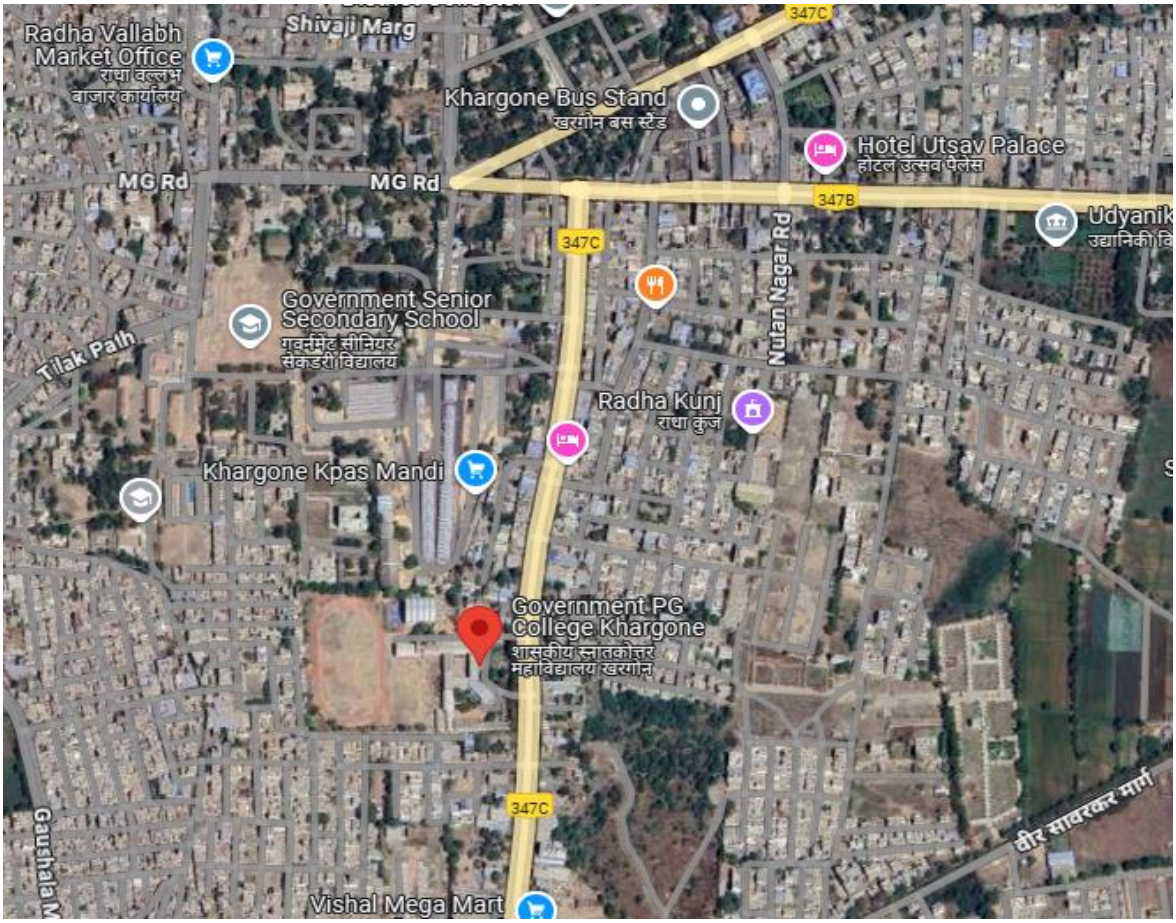


Figure 1: Govt. P.G. College Khargone Satellite View

2.2 Methodology Adopted For Land Use Mapping

Three types of data that are GPS points, field survey data and Google earth data for Geo referencing have been used in this study. Land use map of the study area have been prepared using the above three types of data with the help of Arc GIS Pro software.

2.3 Data Processing and Analysis

Land use map preparation is executed through the following steps:

Acquisition of data, Geo-coding and Geo referencing of satellite imageries by extracting the ground control points. Supervised classification was carried out with the aid of ground truth data collected during field survey. Scanning and digitization of maps and editing of all the Geo referenced maps were done using GIS. Data manipulation and analysis and linking the spatial data with the attribute data for creation of topology was carried out using GIS software. Creation of GIS output in the form of land use map showing various land use have been prepared.

Therefore, attempt has been made in this study to map land use for Geography Department of with a view to detect the land consumption in the built-up land area using both remote sensing and GIS techniques.

2.4 Geographical Location with Campus Map in Scale

The college has a**s prowling pollution-free campus spread over the acres** of land in the heart of District. It has an ideal geographical location with the approximately to the important cities of the region The college is located at 6.5 km from Indore Railway Station. Scaled image of college campus is shown. Green color in Map is representing green area. The Google aerial view of College Campus has been shown in figure.

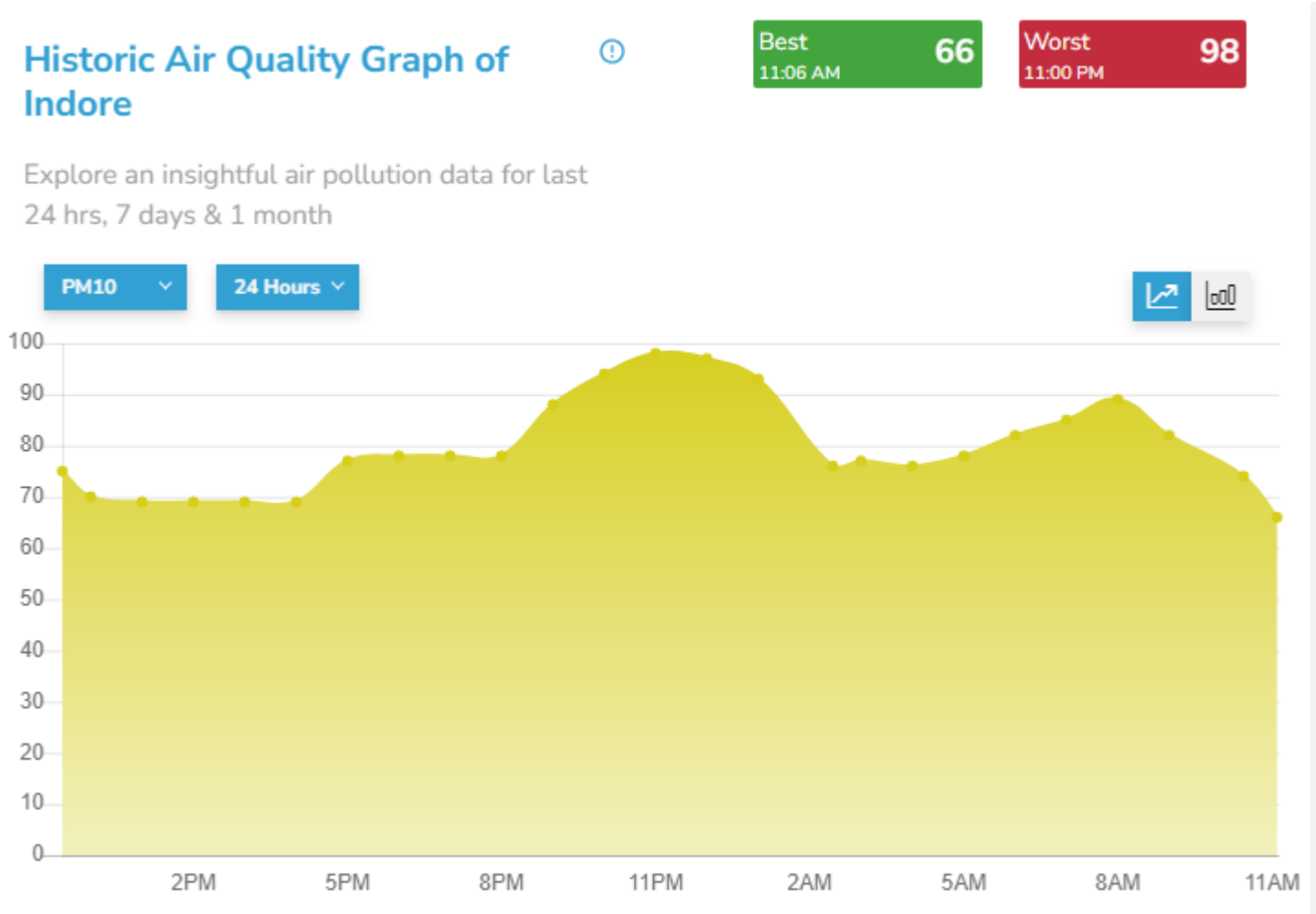
CHAPTER 3
AIR QUALITY AUDIT

3.1 Data/Observations

Air quality in the academic college is very significant for creating good educational atmosphere as well as for the health of the students, faculty, staff and other stake holder of the institute. College is exposed to various atmospheric pollutants from vehicles as well as by other external means of urban areas, but mainly turn proves us that vehicles may contribute to high carbon dioxide emission.

Table 1: Air Quality Data of the Location of Past Three Months on Selected Date

Date	PM_{10}	$PM_{2.5}$	No_x	CO	SO2	NH_3	O_3
1-June-24	93	86	8	52	5	9.2	35
8-June-24	88	80	28	60	16	9.6	26
15-June-24	99	93	27	45	17	12.3	45
22-June-24	105	91	18.2	57	22	12.4	67.9
30-June-24	87	73	19	51	14	13.2	45
13-July-25	132	84	41	41	14	14.5	78.9
14-July-25	144	90	49	49	16	28.2	34.9
15-July-25	162	67	44	44	17.2	21.3	45.9
16-July-25	141	43	51	48	17.8	21.4	32.5
17-July-25	67	36	46	43	18.2	14.2	112
18-July-25	69	23	47	51	21,7	32.8	45.9
19-July-25	125	40	67	46	7.9	21.9	34
20-July-25	131	32	50	47	8.2	11	123.8
21-July-25	146	45	55	67	9.5	6.9	45.9
22-July-25	152	34	13.5	45	8.9	28.7	34.5



3.2 Finding

From the above study on air quality during these times air quality is Moderate most of the times, sometimes satisfactory and a few times good, which indicates medium pollution most of the times.

Study shows the changes in air quality due to regulatory parameters which includes Sulphur di oxide, nitrogen per oxide and particle matter.

AQI is less than standard value on some of the days. All other parameters were within permissible range air quality index inside and around the college campus was better than other parts of the city, mainly because of the greenery & also students prefer public transport to Commute. Most students use public transport for commuting since the college is well connected by public transport secrecies as local bus service Use of Bicycles and public transport is encouraged by the institute amongst the students., faculty members, office staff residing nearby are encouraged to come by bicycles, or public transport which help in reduction of the release of carbon-dioxide in the campus.

3.3 Observations & Recommendation

College has campus Covered with trees, number of garden and greenery in campus beautify the campus and automatically neutralize carbon footprint. College has already taken some steps like Plantation of local and common plant species, arranges special programs by inviting the eminent personalities for environmental consciousness of teaching and nonteaching staff in college as well as student, cleaning and beautification of our campus by various activities through various units. The college should plant different types of large number of trees in the campus, this greenery in campus helps to neutralize the carbon products generated. There should be ban on the entry of vehicles in college premises.

OUTDOOR AIR POLLUTION STANDARDS IN INDIA

	1-year	24-hour	8-hour	1-hour
particulate matter (PM_{10})	60 (20)	100 (50)	- (-)	- (-)
particulate matter ($PM_{2.5}$)	40 (10)	60 (25)	- (-)	- (-)
sulfur dioxide (SO_2)	50 (-)	80 (20)	- (-)	- (-)
nitrogen dioxide (NO_2)	40 (40)	80 (-)	- (-)	- (200)
carbon monoxide (CO)	- (-)	- (-)	2000 (10000)	4000 (30000)
ozone (O_3)	- (-)	- (-)	100 (100)	180 (-)

all units in $\mu g/m^3$

numbers in brackets are WHO guidelines

source
http://www.cpcb.nic.in
http://www.who.int/en

National ambient air quality standards

Pollutant	Satisfactory level*	Time weighted average
Sulphur dioxide (SO_2)	80 µg/m^3	24 hrs
Nitrogen dioxide (NO_2)	80 µg/m^3	24 hrs
Ozone (O_3)	100 µg/m^3	8 hrs
Carbon Monoxide (CO)	2 mg/m^3	8 hrs
Ammonia (NH_3)	400 µg/m^3	24 hrs
Lead (Pb)	1 µg/m^3	24 hrs
PM2.5	60 µg/m^3	24 hrs
PM10	100 µg/m^3	24 hrs
Benzene (C_6H_6)	5 µg/m^3	Annual
Benzo Pyrene	1 ng/m^3	Annual
Arsenic (As)	6 ng/m^3	Annual
Nickel (Ni)	20 ng/m^3	Annual

***Must comply at least 98% of the time**

CHAPTER 4
WATER AUDIT

4.1Introduction

Water is a natural resource, all living matters depend on water .While freely available in many natural environments, in human settlements potable (drinkable) water is less readily available. We need to use water wisely to ensure that drinkable water is available for all, now and in the future. A small drip from a leaky tap can waste more than 180 liter of water in a day. It is therefore essential that any environmentally responsible institution should examine its water use practices .Water audit improves the knowledge and documentations of distribution system:

- It leads to reduce water losses.
- It improves financial performance.
- Efficient use of existing water.

The concerned auditor investigates the relevant method that can be adopted and improved to balance the demand and supply of water**.**

4.2 Observations:

Questioner for data collection

1) **What are the uses of water in college?**

Answer- Drinking, Washing, Toilet, Lab, Garden, Canteen, Hostel, Staff quarter.

2) **What are the sources of water in college?**

Answer-The main source of water is bore well.

3) **No. of motors used for pumping water?**

Answer- There is 2 pumps in college are in working condition. Each One has the capacity 3 HP.

4) **Is there any water collection and recharge system.**

Answer- No, there is no water collection and recharge system for waste water coming from water cooler and taps.

5) **Is there any Wastage of water?**

Answer- No, there is no major wastage of water, 1. No leakage from Taps, 2. No wastage from over flowed tanks 3. Some wastage from water cooler.

6) **Is there any treatment plant for the lab water?**
Answer-No there is no treatment plant for the lab water .As water drains out in a pit and goes to ground.

7) **What is the Capacity of tank?**
Answer- 25000 liters each approximately.
8) **No. of tanks in the Campus?**
Answer- There are 16 such tanks.
9) **Any water used in agriculture purpose.**
Answer-Yes in garden.

10) **Does college harvest rain water?**
Answer- No, there is no rain water harvesting system in Campus at time of site visit.

11) **Is drip irrigation used to water plants outside?**
Answer-No

12) Some idea for how your college could save more water.

Answer –

a) Stop leakage of water from taps.

b) Use minimum water needed for daily needs.

c) Immediate turns off the, taps after washing hands.

d) Renew water ball for water tanks to 100% prevent the waste of water.

Saving water helps to preserve our environment. It reduces the energy required to process and deliver water, which helps in conserving resources.

4.3 Key findings:-

1. Main water uses in the campus.
a) Garden
b) Lab
c) Cleaning
d) Drinking
e) Toilet
g) Washing

2) No water treatment system in Place = 0
3) No. of water pump =5
4) Municipal water connection -No
5) Using water from own well –No

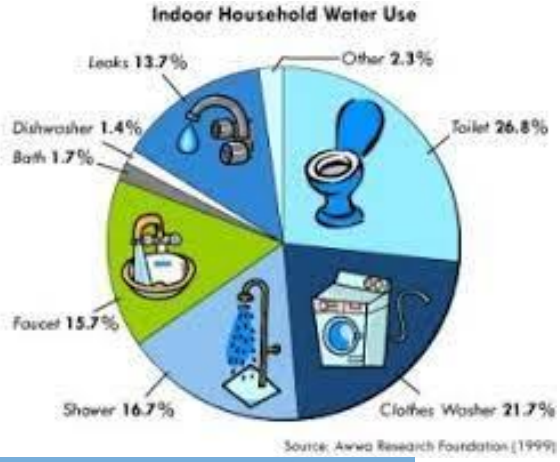
6) No. of water tank for water storage =16
7) Amount of water stored =25000 Liters approx.

4.4 Reason for water wastage–

1) There is no water consumption monitoring system in the college campus.
2) The college does not have waste water treatment plant for waste water, generated from laboratories, canteen, Toilets.
3) There is no rain water harvesting system in building.
4) Automatic switching system is not installed for pump sets used for overhead tank filling.

4.5 Recommendations-

1) Remove old taps and install sensitive taps if possible.
2) Drip irrigation for gardens and vegetable cultivation can be initiated.
3) Establish rain water harvesting system for each building.
4) Water treatment system should be installed for labs.
5) Awareness program on water conservation to be conducted.
6) Install display boards to control over exploitation of water.



CHAPTER 5
WASTE AUDIT

5.1 Solid waste

- **Fact**–

Waste is produced by all types of routine activities carried out in the college that includes waste papers, parts of trees, leaf, poly bags plastics, glass, food products, etc.

- **Finding-**

Reduce-Reuse-Recycle is the root of sustainable development and qualitative human life with green environment, college strongly believes in this philosophy.

Reuse: Reuse of waste materials and recycling of those

Recycle: Organic waste material like parts of trees, leaf litters collected & should be dump in compost pits. This compost pit is in College Campus, need to active it. This waste convert is to compost & reuse as a manure in garden for campus.

The waste papers from college centrally collected answer sheets and question papers from Autonomous Dept. Practical records collected from science laboratory. Newspapers and magazines from library, etc. The Institute has outsourced a Vendor to dispose of all the Answer Sheets, News Papers and other Paper Material. The Vendor recycle the paper as per the agreed the vendor. All paper waste given to vendors for recycling at regular intervals.

The waste should be separated at each level and source. Throwing the waste anywhere is strictly prohibited. Usage of plastic bags is discouraged within the premises of the College. **Dust bins are provided throughout the campus.** The administrator in each building confirms that the waste in each floor is collected at selected time to time. The staff in each floor collects, clean, segregates and compiles the waste in the Green & Blue dustbins provided at each floor. The floor dustbins are covered and easily portable. Dry garbage from college campus collected by housekeeping staff from different collection point (from different lab, office, hostel.) Indore Municipal Corporation has system to collect the garbage daily from the Institute campus solid waste. The primary goal of solid waste management is reducing and eliminating adverse impacts of waste materials on human health and environment to support economic development and superior quality of life .The entire campus is duly cleaned regularly by sweepers and cleansing works.

5.2 Liquid Waste

Well-constructed drainage system leading to the IMC constructed chambers is there in place withinthecampus.Liquidwasteisdulydischargedbymeansofundergroundwelllaidpipelines. But the college does not have waste water treatment plant for waste water, generated from laboratories, canteen, hostel, Toilets.

- **Recommendations for Liquid Waste Management:**
  Water Treatment System should be placed in college campus.

5.3 E-waste

E-waste: The E-waste is collected separately than the other type of waste generated in the campus. Separated E-waste is deposited in the separate box provided for the same purpose.

GIRIJENDRA SINGH CHAUHAN

Digitally signed by GIRIJENDRA SINGH CHAUHAN
Date: 2026.01.16 15:46:18 +05'30'