



ENVIRONMENTAL AUDIT REPORT

— 2025–2026 —

Bokaro Steel Mines College
Bhawnathpur, Garhwa



Submitted To:
Internal Quality
Assurance Cell (IQAC)



Prepared By:
Environmental
Audit Committee



**GREEN
CAMPUS**



**WATER
CONSERVATION**



**WASTE
MANAGEMENT**



**ENERGY
EFFICIENCY**



**SUSTAINABLE
FUTURE**



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Care Today, Sustain Tomorrow, Secure Forever

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ACKNOWLEDGEMENT

The Environmental Audit Committee of Bokaro Steel Mines College (BSM College), Bhawnathpur expresses its sincere gratitude to the college administration for providing the opportunity to conduct the Environmental Audit for the academic session 2025–2026. The committee appreciates the support, cooperation, and valuable contributions received from all stakeholders during the audit process.

We extend our heartfelt thanks to the Principal, faculty members, non-teaching staff, students, and members of the Internal Quality Assurance Cell (IQAC) for their active involvement and assistance in collecting data, providing relevant information, facilitating campus inspections, and supporting various environmental assessment activities.

Our special thanks are due to:

- Prof. Chandrabhushan Choubey, Principal, BSM College, Bhawnathpur
- Prof. B. K. Vishwakarma, IQAC Coordinator
- Prof. A. K. Bharti, NSS Programme Officer
- Prof. B. B. Singh, Faculty Representative
- Sri Amit Kumar, Expert, Audit Team
- Sri Awadhesh Ram, Non-Teaching Representative
- Teaching and Non-Teaching Staff of BSM College, Bhawnathpur

The committee also acknowledges the enthusiastic participation of students who actively contributed to environmental awareness activities, campus inspections, plantation drives, cleanliness initiatives, and data collection efforts.

The successful completion of this Environmental Audit would not have been possible without the collective support, cooperation, and commitment of all stakeholders. Their valuable contributions have helped in assessing the institution's environmental performance and identifying measures for continuous improvement towards a cleaner, greener, and more sustainable campus.

Environmental Audit Committee
BSM College, Bhawnathpur

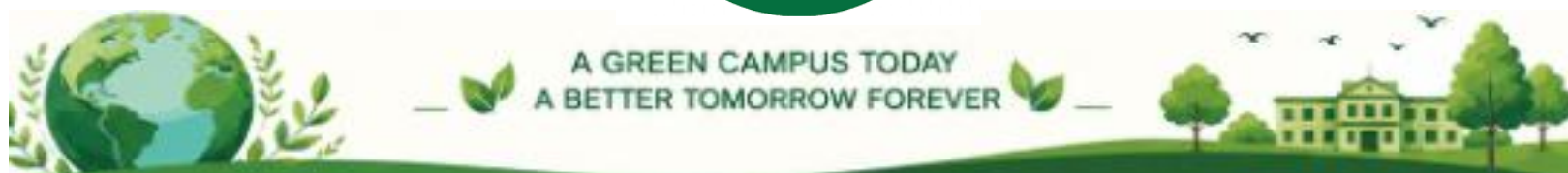


Environmental Audit Committee

Sl. No.	Name	Designation	Role
1	Prfo. Chandrabhushan Choubey, Principal	Chairperson	Overall Supervision
2	Prof. B.K. Vishwakarma, IQAC Coordinator	Member	Coordination
3	Prof. A.K. Bharti, NSS Programme Officer	Member	Environmental Activities
4	Prod. B.B. Singh, Faculty Representative	Member	Audit Support
5	Sri Amit Kumar	Member	Expert, Audit Team
6	Awadhesh Ravi, Non-Teaching Representative	Member	Data Collection



Figure 1: Meeting with Environmental Audit Committee



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Executive Summary

The Environmental Audit of **Bokaro Steel Mines College (BSM College), Bhawnathpur, Garhwa** was conducted for the academic session **2025–2026** to assess the institution's environmental performance, sustainability practices, resource utilization, and compliance with environmental responsibilities. The audit aims to evaluate the existing environmental management systems and identify opportunities for continuous improvement in creating a sustainable and eco-friendly campus.

BSM College recognizes the importance of environmental conservation and sustainable development as an integral part of its educational mission. The college campus is characterized by a green environment with adequate tree cover, landscaped areas, and open spaces that contribute positively to ecological balance. Various initiatives undertaken by the institution demonstrate its commitment to environmental protection, resource conservation, and environmental awareness among students and staff.

The audit examined key environmental aspects including water management, energy consumption, waste management, biodiversity conservation, green campus initiatives, and environmental awareness activities. The findings indicate that the college has adopted several environmentally responsible practices such as rainwater conservation measures, plantation drives, energy-efficient lighting systems, proper waste collection mechanisms, and awareness programs conducted through NSS, NCC, and other student bodies.

The institution promotes responsible use of natural resources through regular monitoring of electricity and water consumption. Efforts have been made to maintain cleanliness across the campus and encourage segregation and proper disposal of waste. The college also actively participates in environmental campaigns, cleanliness drives, plastic-free initiatives, and tree plantation programs, fostering environmental consciousness among stakeholders.

The audit reveals that the overall environmental performance of BSM College is satisfactory and reflects a positive commitment toward sustainable campus development. However, further improvements can be achieved through enhanced waste segregation, increased renewable energy utilization, strengthened water conservation practices, and continuous environmental education programs.

The Environmental Audit Committee appreciates the support and cooperation extended by the college administration, faculty members, non-teaching staff, students, and stakeholders during the audit process. The recommendations presented in this report are intended to assist the institution in further strengthening its environmental management framework and advancing its vision of becoming a greener, cleaner, and more sustainable educational institution.



Conclusion:

BSM College continues to demonstrate its commitment to environmental stewardship and sustainable development. Through continuous improvement and active participation of all stakeholders, the institution is well-positioned to enhance its environmental performance and contribute meaningfully to the broader goals of ecological conservation and sustainable growth.

Environmental Audit



Introduction

Bokaro Steel Mines College (BSM College), Bhawnathpur, has been imparting higher education in one of the most educationally and economically disadvantaged regions of Jharkhand since its establishment in 1984. Located in Bhawnathpur Block of Garhwa District, the college is situated amidst a naturally rich environment and serves the educational needs of students from the bordering regions of Jharkhand, Bihar, Uttar Pradesh, and Chhattisgarh.

The college was established through the dedicated efforts of local educationists, social workers, and community leaders with the objective of providing accessible higher education to the youth of the region, particularly to women and students from socially and economically weaker sections. At the time of its establishment, the nearest constituent college was approximately 55 kilometers away, making access to higher education difficult due to inadequate transportation facilities and financial constraints. Consequently, many deserving students, especially female students, were deprived of opportunities for higher learning.

Since its inception, the college has consistently strived to provide quality, affordable, and employment-oriented education through a combination of curricular, co-curricular, and extracurricular activities. Despite facing financial and infrastructural challenges, the institution has continued to progress with the active support and commitment of its teaching and non-teaching staff.

The college possesses adequate academic infrastructure and was granted permanent affiliation in the faculties of Arts and Commerce and temporary affiliation in the Faculty of Science by Ranchi University, Ranchi, in 2008. Following the establishment of Nilamber-Pitamber University, Medininagar, the college became one of its affiliated institutions. Since then, the college has been successfully offering undergraduate programmes in Arts, Commerce, and Science.

Being located in an industrially influenced region with significant developmental potential, the college also recognizes the importance of vocational and skill-based education. Accordingly, it continues to explore opportunities for introducing career-oriented and vocational programmes that enhance the employability and entrepreneurial capabilities of its students.

Today, BSM College stands as a leading center of higher education in the region, committed to academic excellence, social responsibility, environmental sustainability, and the holistic development of its students.



Objectives of Environmental Audit

The Environmental Audit of Bokaro Steel Mines College (BSM College), Bhawnathpur, is conducted with the objective of assessing the institution's environmental performance and promoting sustainable practices within the campus. The audit serves as a systematic evaluation of the college's efforts toward environmental conservation, resource management, and ecological sustainability.

The specific objectives of the Environmental Audit are:



Historical Background of Bokaro Steel Mines College (BSM College), Bhawnathpur, Garhwa

Bokaro Steel Mines College, popularly known as **BSM College**, is one of the oldest institutions of higher education in the western part of Jharkhand. It was established in **1984** at Bhawnathpur in the present-day Garhwa district with the objective of providing access to higher education in a region that was economically backward, geographically remote, and educationally underserved.

Genesis and Establishment

During the early 1980s, students of Bhawnathpur and surrounding areas had very limited opportunities for higher education. The nearest degree colleges were located far away, and poor transportation facilities made it difficult, especially for women and students from economically weaker families, to pursue college education. Recognizing this need, a group of local educationists, social workers, and community leaders took the initiative to establish a



degree college in the region. The result was the founding of Bokaro Steel Mines College in 1984.

Why the Name "Bokaro Steel Mines College"?

The college derives its name from the nearby mining activities of the **Bhawnathpur Limestone and Dolomite Mines**, operated by [Steel Authority of India Limited \(SAIL\)](#). These mines supply raw materials to the Bokaro Steel Plant, one of India's major steel-producing facilities. The mining sector played a significant role in the local economy, and the college was named to reflect this industrial association and regional identity.

Regional Importance

BSM College serves students from a large rural and tribal belt covering parts of:

- Garhwa district (Jharkhand)
- Border areas of Bihar
- Eastern Uttar Pradesh
- Northern Chhattisgarh

Its location at Bhawnathpur made it a crucial educational centre for first-generation learners and students who otherwise could not afford to travel to distant urban colleges. The institution has contributed significantly to improving literacy and higher educational attainment in the region.

Academic Development

Initially offering undergraduate courses in the humanities, the college gradually expanded its academic programmes to include:

- Bachelor of Arts (B.A.)
- Bachelor of Science (B.Sc.)
- Bachelor of Commerce (B.Com.)

The college functions as an affiliated institution under the university system of Jharkhand and is presently associated with Nilamber-Pitamber University.

Infrastructure and Growth

Over the decades, BSM College has developed basic academic infrastructure including:

- Library facilities
- Laboratories
- Sports facilities
- Classrooms and IT infrastructure
- Student support services

The college campus occupies approximately 12 acres and continues to cater primarily to rural students.

Contribution to Society

The most significant contribution of BSM College has been the democratization of higher education in one of Jharkhand's most backward regions. Thousands of graduates from Garhwa and adjoining districts have passed through the institution and gone on to careers in teaching, government service, business, and social development. The college has played an important role in increasing educational opportunities for women and economically disadvantaged communities.



Brief Timeline

Year	Milestone
1984	Establishment of Bokaro Steel Mines College, Bhawnathpur
1980s-1990s	Expansion of undergraduate programmes and student enrolment
2000	Became part of Jharkhand after the creation of the new state
2009 onward	Affiliation under Nilamber-Pitamber University framework
Present	Major higher-education institution serving Garhwa and adjoining regions



Audit Methodology

The Environmental Audit of Bokaro Steel Mines College (BSM College), Bhawnathpur was conducted using a systematic and participatory approach to evaluate the institution's environmental performance, resource utilization, and sustainability practices. The methodology adopted for the audit included the following stages:

1. Planning and Scope Definition

- Identification of key environmental aspects to be assessed.
- Determination of audit objectives, criteria, and performance indicators.
- Formation of the Environmental Audit Committee and allocation of responsibilities.

2. Data Collection

- Collection of primary and secondary data related to environmental management practices.
- Review of institutional records pertaining to water consumption, electricity usage, waste management, plantation activities, and environmental initiatives.
- Examination of policies, reports, and relevant documentation.

3. Physical Inspection of Campus

- On-site inspection of academic buildings, laboratories, administrative blocks, library, canteen, parking areas, and open spaces.
- Assessment of campus cleanliness, sanitation facilities, drainage systems, and green cover.
- Observation of waste collection and disposal practices.

4. Resource Assessment

- Evaluation of water sources, water consumption patterns, and conservation measures.
- Assessment of electricity consumption and energy-saving initiatives.
- Review of infrastructure supporting environmental sustainability.

5. Green Campus Evaluation

- Assessment of biodiversity, tree cover, landscaped areas, and plantation drives.
- Evaluation of initiatives related to plastic-free campus, cleanliness, and environmental awareness.
- Review of eco-friendly practices adopted by the institution.

6. Stakeholder Consultation

- Interaction with college administration, faculty members, non-teaching staff, and students.



- Collection of information regarding environmental awareness, participation, and sustainability initiatives.

7. Data Analysis and Interpretation

- Compilation and analysis of collected data.
- Identification of strengths, gaps, and areas requiring improvement.
- Comparison of existing practices with recognized environmental standards and best practices.

8. Preparation of Audit Report

- Documentation of findings, observations, and recommendations.
- Development of action points for enhancing environmental performance and sustainability.
- Submission of the Environmental Audit Report to the Internal Quality Assurance Cell (IQAC) and College Administration.

Tools and Techniques Used

- Campus Survey and Observation
- Document Verification
- Environmental Checklist
- Photographic Documentation
- Stakeholder Interaction
- Resource Consumption Analysis
- Comparative Assessment of Existing Practices

The audit methodology ensured a comprehensive evaluation of environmental practices and provided a reliable basis for recommending measures to strengthen the institution's commitment to environmental sustainability and green campus development.





CONCEPT OF ENVIRONMENTAL AUDIT

The term **Environmental Audit** or **Green Audit** refers to a systematic process of evaluating an institution's environmental performance and sustainability practices. It serves as an important management tool for assessing the impact of institutional activities on the environment and identifying opportunities for continuous improvement in environmental management.

Various organizations and educational institutions use terms such as *environmental assessment*, *environmental review*, and *green campus evaluation* to describe similar activities. While some institutions focus exclusively on environmental aspects, others include health, safety, and sustainability considerations within the scope of the audit.

Although there is no universally accepted definition of Environmental Audit, the concept is widely recognized and practiced across educational institutions, industries, and organizations worldwide. One of the most widely accepted definitions was provided by the **International Chamber of Commerce (ICC)** in its publication *Environmental Auditing (1989)*.

According to the ICC:

"Environmental Auditing is a management tool comprising a systematic, documented, periodic, and objective evaluation of how well environmental organization, management systems, and equipment are performing, with the aim of safeguarding the environment and conserving natural resources."

In the context of **Bokaro Steel Mines College (BSM College), Bhawnathpur**, the Environmental Audit is undertaken to evaluate the institution's environmental practices,



resource utilization, waste management systems, energy and water conservation measures, biodiversity initiatives, and overall commitment towards environmental sustainability.

The Environmental Audit provides a comprehensive assessment of the institution's environmental performance and helps in:

- Identifying strengths and areas requiring improvement.
- Promoting efficient utilization of natural resources.
- Encouraging sustainable campus management practices.
- Enhancing environmental awareness among stakeholders.
- Supporting Green Campus initiatives and sustainable development goals.
- Ensuring continuous environmental monitoring and improvement.

The outcome of the Environmental Audit is based on verifiable evidence, field observations, institutional records, stakeholder interactions, and environmental performance indicators. The findings and recommendations generated through the audit assist the institution in strengthening its environmental management framework and achieving its vision of becoming a clean, green, and environmentally responsible campus.

Environmental Audit is therefore not merely an evaluation exercise but a continuous process of improving environmental quality, conserving natural resources, and fostering a culture of sustainability within the institution.

Clean and Green Campus

Bokaro Steel Mines College (BSM College), Bhawnathpur is committed to maintaining a clean, healthy, and environmentally sustainable campus. The institution continuously undertakes various initiatives to promote environmental awareness, conserve natural resources, and create a pollution-free academic environment for students, faculty members, and visitors.

Key Clean and Green Campus Initiatives

Green Landscaping and Tree Plantation

- Regular tree plantation drives are conducted across the campus.
- Maintenance of gardens, lawns, and green spaces enhances biodiversity and improves air quality.
- Native and medicinal plant species are encouraged to support ecological balance.

Waste Management Practices

- Waste bins are installed at strategic locations across the campus.
- Segregation of biodegradable and non-biodegradable waste is encouraged.
- Cleanliness drives are organized regularly to maintain a litter-free environment.

Plastic-Free Campus Initiative

- Students and staff are sensitized about the harmful effects of single-use plastics.
- Use of eco-friendly alternatives is promoted during college events and activities.
- Awareness campaigns support responsible waste disposal and plastic reduction.



Water Conservation Measures

- Efficient utilization of water resources is promoted throughout the campus.
- Rainwater harvesting and water-saving practices are encouraged.
- Regular monitoring helps prevent water wastage.

Energy Conservation

- Energy-efficient LED lighting systems are installed in academic and administrative buildings.
- Awareness programs encourage responsible use of electricity.
- Efforts are made to minimize unnecessary energy consumption.

Campus Cleanliness and Sanitation

- Regular cleaning of classrooms, laboratories, offices, corridors, and common areas.
- Proper sanitation facilities are maintained for students and staff.
- Clean surroundings contribute to a healthy learning environment.

Environmental Awareness Activities

- NSS and other student bodies organize environmental awareness programs, rallies, and campaigns.
- Observance of World Environment Day, Swachh Bharat Abhiyan, Van Mahotsav, and other environmental events.
- Students actively participate in plantation drives and cleanliness initiatives.

Impact of Green Campus Initiatives

- ✓ Enhanced campus aesthetics and biodiversity
- ✓ Improved environmental awareness among stakeholders
- ✓ Reduced environmental pollution and waste generation
- ✓ Promotion of sustainable resource utilization
- ✓ Creation of a healthy and eco-friendly learning environment

Vision

"To develop BSM College as a model Green Campus by fostering environmental responsibility, sustainable practices, and active participation of all stakeholders in preserving and protecting the environment."



About Environmental Audit:

Education plays a pivotal role in shaping a nation's future, and educational institutions have a significant responsibility in promoting environmental consciousness and sustainable development. In the present era, environmental sustainability has emerged as a critical concern, requiring collective efforts from all sectors of society, including higher educational institutions. Colleges and universities serve as centers of knowledge, innovation, and social transformation, making them ideal platforms for fostering environmental awareness and responsible resource management.

Bokaro Steel Mines College (BSM College), Bhawnathpur, established in 1984, is committed to promoting environmental stewardship and sustainable practices within its campus and the surrounding community. Situated in the ecologically rich region of Garhwa district, the college recognizes the importance of preserving natural resources and maintaining a healthy environment for present and future generations.



To achieve this objective, the institution undertakes various initiatives such as tree plantation drives, waste management practices, water conservation measures, energy-saving programs, cleanliness campaigns, and environmental awareness activities. These initiatives not only contribute to environmental protection but also help inculcate environmental values, ethics, and responsibility among students, faculty members, and staff.

Environmental Audit, also known as Green Audit, is a systematic process of evaluating an institution's environmental performance against established environmental objectives and sustainability practices. It provides a comprehensive assessment of resource utilization, environmental management systems, waste generation, biodiversity conservation, and campus sustainability initiatives. The audit helps identify strengths, areas for improvement, and opportunities for enhancing environmental performance.

A Green Audit serves as an effective tool for understanding how resources such as water, energy, and land are utilized within the institution. It facilitates the



identification of resource conservation opportunities, promotes efficient waste management practices, and encourages the adoption of environmentally responsible behaviors. The audit process also helps institutions monitor their environmental impact and implement corrective measures for continuous improvement.

For BSM College, the Environmental Audit is an important step toward strengthening its commitment to creating a clean, green, and sustainable campus. The findings of the audit provide valuable insights into existing environmental practices and support informed decision-making for future sustainability initiatives.

A clean and healthy environment significantly enhances the teaching-learning process by providing a safe, pleasant, and conducive atmosphere for academic and extracurricular activities. Through continuous environmental monitoring and stakeholder participation, the college aims to integrate sustainability into its institutional culture and contribute meaningfully to national and global environmental goals.

The Environmental Audit Report 2025–2026 has been prepared to assess the current environmental status of the institution, document existing green initiatives, and recommend strategies for further improvement. The report reflects the collective efforts of the college administration, faculty members, students, and staff in promoting environmental responsibility and sustainable campus development.

BSM College firmly believes that environmental sustainability is not merely a compliance requirement but a shared responsibility. Through continuous improvement, awareness generation, and active participation of all stakeholders, the institution strives to become a model Green Campus and contribute to the broader vision of sustainable development.

Salient Features of BSM College, Bhawnathpur

Bokaro Steel Mines College (BSM College), Bhawnathpur is committed to providing quality, affordable, and inclusive higher education to students from diverse socio-economic backgrounds. The institution offers several student-centric facilities and support mechanisms that contribute to academic excellence, skill development, and holistic growth.

Affordable and Inclusive Education

- Lowest tuition fee structure in the region.
- **100% fee waiver for girl students** to promote women's education and empowerment.



- 75% fee concession for Economically Weaker Section (EWS) and SC/ST students.
- Acceptance of E-Kalyan Scholarships for eligible students.
- Facilitation of State and Central Government Scholarships for SC, ST, OBC, Minority, and other eligible categories

Courses Offered

Sl. No.	Programme	Subjects Offered
1	Bachelor of Arts (B.A.)	English, Hindi, Economics, Geography, History, Philosophy, Psychology, Political Science, Sociology, Sanskrit, Urdu
2	Bachelor of Science (B.Sc.)	Physics, Chemistry, Mathematics, Botany, Zoology, Geology
3	Bachelor of Commerce (B.Com.)	Commerce



WASTE MANAGEMENT

BSM COLLEGE, BHAWNATHPUR



BSM College, Bhawnathpur is committed to maintaining a clean and healthy campus through effective waste management practices. The institution follows the principles of **Reduce, Reuse and Recycle** to minimize waste generation and ensure its proper segregation, collection, treatment and disposal.

TYPES OF WASTE GENERATED

BIODEGRADABLE WASTE



- Food waste from canteen
- Garden waste (leaves, flowers, grass, etc.)
- Paper waste

Disposed through composting/vermi-composting pits in the campus.

NON-BIODEGRADABLE WASTE



- Plastic items
- Papers, wrappers
- Glass, metals
- Stationery items

Collected separately and handed over to authorized recyclers.

HAZARDOUS WASTE



- Chemical waste from laboratories
- Expired medicines
- E-waste
- Used batteries and bulbs

Stored safely and disposed of as per government norms through authorized agencies.

WASTE MANAGEMENT PRACTICES



Segregation at Source
Separate bins are provided in classrooms, offices, laboratories, library, canteen and common areas.



Collection and Storage
Waste is collected regularly and stored in designated bins to maintain hygiene.



Reuse and Recycling
Recyclable waste is reused or sent to authorized recyclers for further processing.



Composting
Organic waste is composted in compost pits and used as manure for plants in the campus.



Safe Disposal
Hazardous and e-waste are disposed of through authorized agencies as per rules.

OUR INITIATIVES



Regular Cleanliness Drives



Tree Plantation and Garden Maintenance



Plastic-Free Campus Campaign



Awareness Programmes for Students and Staff

IMPACT



Clean and healthy campus environment



Increased awareness and participation



Reduced pollution and landfill waste



Cost-effective waste management



Conservation of natural resources



Promotion of sustainable and eco-friendly practices






Let's manage waste wisely today for a cleaner and greener tomorrow.



Energy Conservation

Bokaro Steel Mines College (BSM College), Bhawnathpur recognizes energy conservation as a key component of environmental sustainability and responsible resource management. The institution continuously strives to minimize energy consumption through efficient practices, awareness programs, and the adoption of energy-saving technologies. These initiatives contribute to reducing the institution's carbon footprint while promoting a culture of environmental responsibility among students and staff.

Energy Conservation Initiatives

Energy-Efficient Lighting

- Installation of LED bulbs and tube lights in classrooms, laboratories, offices, corridors, and common areas.
- Replacement of conventional lighting systems with energy-efficient alternatives.
- Regular maintenance of electrical fixtures to ensure optimal performance.

Promotion of Renewable Energy

- Exploration and promotion of renewable energy sources such as solar energy.
- Encouragement of sustainable energy practices within the campus community.

Efficient Use of Electrical Equipment

- Use of energy-efficient computers, printers, and electrical appliances.
- Switching off lights, fans, projectors, and electronic devices when not in use.
- Regular monitoring of electrical equipment to prevent energy wastage.

Green Building Practices

- Maximum utilization of natural daylight and ventilation in classrooms and offices.
- Architectural design that reduces dependence on artificial lighting during daytime.

Awareness and Sensitization

- Conducting awareness programs on energy conservation and climate change.
- Encouraging students and staff to adopt energy-saving habits in their daily activities.
- Observance of National Energy Conservation Day and other environmental events.

Monitoring and Management

- Periodic review of electricity consumption patterns.
- Identification of areas where energy efficiency can be improved.
- Adoption of corrective measures to reduce unnecessary energy consumption.



Water Conservation

Bokaro Steel Mines College (BSM College), Bhawnathpur is committed to the sustainable management and conservation of water resources. Recognizing water as a precious natural resource, the institution has adopted various measures to promote its efficient utilization, prevent wastage, and create awareness among stakeholders regarding the importance of water conservation.

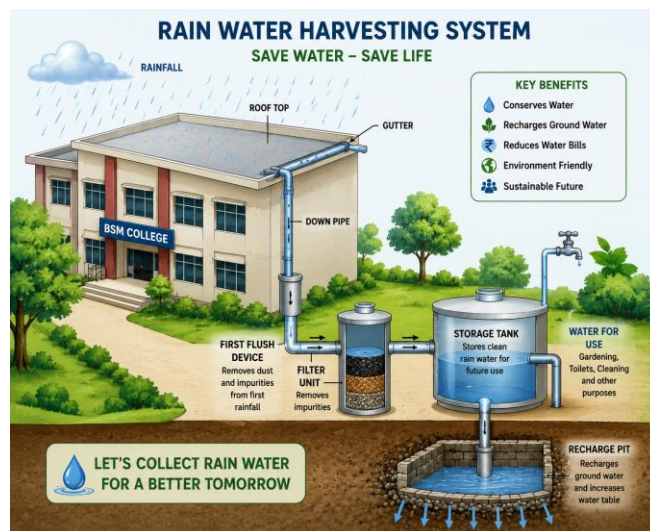
Water Conservation Initiatives

Efficient Water Management

- Regular monitoring of water consumption across the campus.
- Maintenance of water supply systems to prevent leakage and wastage.
- Promotion of responsible water usage among students and staff.

Rainwater Harvesting

- Encouragement of rainwater harvesting practices for groundwater recharge.
- Collection and utilization of rainwater wherever feasible.
- Promotion of sustainable water management strategies.



Water-Saving Infrastructure

- Installation and maintenance of water-efficient taps and fixtures.
- Regular inspection of pipelines, storage tanks, and distribution systems.
- Immediate repair of leaking taps and damaged water lines.

Sustainable Landscaping

- Plantation and landscaping practices that support water conservation.
- Use of appropriate irrigation methods to minimize water loss.
- Protection and maintenance of green spaces within the campus.

Awareness and Sensitization

- Organization of awareness programs on water conservation.
- Celebration of World Water Day and related environmental events.
- Encouraging students to adopt water-saving habits in daily life.

Clean Water Practices

- Maintenance of clean drinking water facilities.
- Regular cleaning of water storage tanks and supply systems.
- Ensuring safe and hygienic water for all campus users.

Environmental Awareness

Bokaro Steel Mines College (BSM College), Bhawnathpur actively promotes environmental awareness among students, faculty members, and staff to foster a sense of



responsibility towards environmental protection and sustainable development. The institution believes that environmental education and awareness are essential for creating environmentally conscious citizens capable of addressing present and future environmental challenges.

Environmental Awareness Initiatives

Environmental Education

- Integration of environmental issues and sustainability concepts into academic and co-curricular activities.
- Encouragement of discussions, seminars, and workshops on environmental concerns.

Tree Plantation and Green Campaigns

- Organization of regular tree plantation drives within and outside the campus.
- Promotion of biodiversity conservation and green campus initiatives.
- Participation of students and staff in environmental protection activities.

Cleanliness and Waste Management Awareness

- Awareness campaigns on waste segregation, recycling, and responsible disposal practices.
- Promotion of the principles of Reduce, Reuse, and Recycle (3Rs).
- Encouraging a plastic-free and litter-free campus environment.

Water and Energy Conservation Awareness

- Sensitization programs on the efficient use of water and energy resources.
- Promotion of sustainable consumption habits among stakeholders.
- Observance of important environmental days related to water and energy conservation.

Plastic-Free Campus Initiative

- Awareness drives highlighting the harmful effects of single-use plastics.
- Encouragement of eco-friendly alternatives and sustainable lifestyle practices.
- Active participation of students in plastic reduction campaigns.

Environmental Events and Observances

- Celebration of World Environment Day, World Water Day, Earth Day, Van Mahotsav, and Swachh Bharat Abhiyan activities.
- Organization of rallies, poster competitions, slogan-writing competitions, and awareness campaigns.
- Community outreach programs to spread environmental awareness beyond the campus.

Community Engagement

- Participation in environmental awareness activities through NSS and other student groups.



- Collaboration with local communities for cleanliness drives and plantation programs.
- Promotion of environmental responsibility at the community level.

Plantation & Biodiversity



PLANTATION & BIODIVERSITY

Green Campus • Healthy Environment • Sustainable Future

BSM COLLEGE, BHAWNATHPUR

BSM College, Bhawnathpur is committed to creating a green and environmentally sustainable campus. Through extensive plantation drives and conservation of biodiversity, the institution strives to maintain ecological balance, enhance plant diversity and foster a healthy environment for all.

OUR PLANTATION INITIATIVES

- Regular tree plantation drives are organized within the campus and surrounding areas.
- Native, medicinal, ornamental and fruit-bearing plants are encouraged.
- Proper care, watering and maintenance ensure healthy growth and survival of plants.
- Active participation of students, faculty and staff in planting and nurturing trees.

BENEFITS OF PLANTATION

- Improves air quality
- Maintains ecological balance
- Reduces soil erosion
- Provides shade and cool environment
- Supports biodiversity
- Enhances aesthetic beauty of the campus

Plant a Tree, Nurture Life!

BIODIVERSITY CONSERVATION

- Conservation of diverse plant species supports a variety of birds, insects and beneficial organisms.
- Green spaces, lawns, gardens and tree groves provide natural habitats and promote ecological harmony.
- We protect and preserve our natural resources for a sustainable and balanced ecosystem.
- Awareness programs promote the importance of biodiversity conservation among students and staff.

TYPES OF PLANTS IN OUR CAMPUS



Shade Trees
(Neem, Ashok, Peepal, Gulmohar)



Ornamental Plants
(Hibiscus, Bougainvillea, Areca Palm)



Fruit Bearing Plants
(Mango, Guava, Jamun, Lemon)



Medicinal Plants
(Tulsi, Aloe Vera, Giloy, Ashwagandha)



Flowering Plants
(Rose, Marigold, Jasmine, Isora)

GREEN COVER OF THE CAMPUS



OUR COMMITMENT

- To increase green cover and maintain a pollution-free campus.
- To conserve biodiversity and natural resources.
- To create a sustainable environment for present and future generations.
- Together, we can build a greener, healthier and better tomorrow.

OUR IMPACT

- Increased green cover
- Enhanced biodiversity
- Healthier and happier campus
- Sustainable future

MORE PLANTS, MORE LIFE, BETTER TOMORROW!



Let's Grow Together for a Greener and Biodiverse Campus

A **Water Audit** is a systematic assessment of water use, water losses, and water efficiency within a facility, building, industry, campus, or water distribution system. The purpose is to identify where water is being consumed, wasted, or lost and to recommend measures for conservation and improved management.

Objectives of a Water Audit

- Quantify total water consumption.
- Identify sources of water supply.
- Detect leaks, losses, and inefficiencies.
- Evaluate water-use patterns.
- Recommend water-saving measures.
- Improve operational efficiency and reduce costs.

Steps in Conducting a Water Audit



1. Data Collection

- Water bills
- Meter readings
- Process flow diagrams
- Equipment specifications

2. Water Balance Preparation

- $\text{Water Input} = \text{Water Consumption} + \text{Water Losses} + \text{Water Discharge}$

3. Inspection and Measurement

- Identify water-use points
- Measure flow rates
- Check for leaks and overflows

4. Analysis

- Compare actual consumption with benchmarks
- Determine efficiency levels

5. Recommendations

- Leak repairs
- Low-flow fixtures
- Recycling and reuse systems
- Rainwater harvesting
- Process optimization

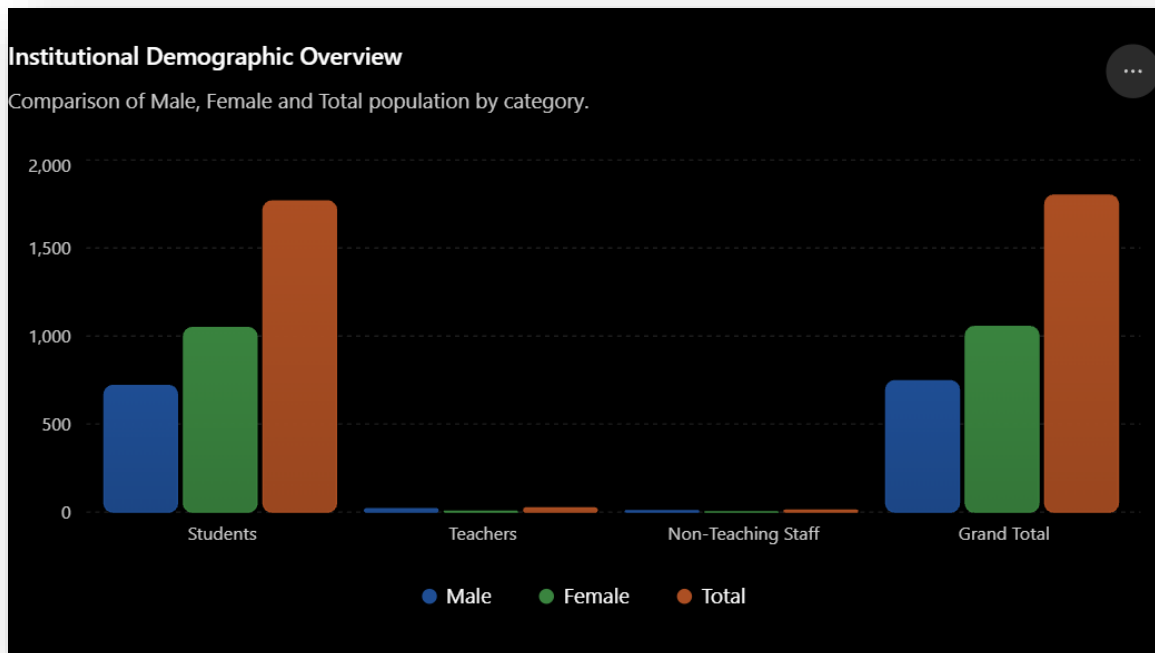
6. Reporting

- Current water-use profile
- Loss assessment
- Potential savings
- Implementation plan

College Population and Working Days Permanent Population of the College

Category	Male	Female	Total
Students	719	1048	1767
Teachers	19	04	23
Non-Teaching Staff	08	02	10
Grand Total	746	1054	1800





Additional Information

Particulars	Number
Approximate Number of Visitors (Per Day)	60-65
Total Number of Working Days in a Year	215

SWOT Analysis

SWOT Analysis of Environmental Management Practices

A SWOT Analysis was conducted to evaluate the strengths, weaknesses, opportunities, and threats associated with the environmental management practices and sustainability initiatives of the institution.

STRENGTHS

- Green and pollution-free campus environment.
- Presence of significant green cover with trees, gardens, and open spaces.
- Active participation of students through NSS and environmental awareness programs.
- Regular tree plantation and campus cleanliness drives.
- Strong commitment of the college administration towards environmental sustainability.
- Availability of adequate natural lighting and ventilation in academic buildings.



- Awareness among stakeholders regarding environmental conservation.
- Supportive institutional policies promoting a clean and green campus.

WEAKNESSES

- Limited financial resources for large-scale environmental projects.
- Lack of extensive renewable energy infrastructure such as solar power systems.
- Need for strengthening waste segregation and recycling mechanisms.
- Limited rainwater harvesting and groundwater recharge facilities.
- Inadequate environmental monitoring and data management systems.
- Insufficient availability of advanced green technologies.
- Need for more structured environmental training programs for stakeholders.

OPPORTUNITIES

- Installation and expansion of solar energy systems.
- Development of comprehensive rainwater harvesting facilities.
- Introduction of green building and energy-efficient infrastructure.
- Establishment of composting and waste recycling units.
- Collaboration with government agencies, NGOs, and environmental organizations.
- Organization of environmental research projects and green campus initiatives.
- Enhancement of biodiversity through medicinal plant gardens and eco-parks.
- Access to government schemes and grants related to environmental sustainability.
- Adoption of digital solutions to reduce paper consumption.

THREATS

- Increasing environmental pollution in surrounding areas.
- Climate change impacts such as irregular rainfall and rising temperatures.
- Water scarcity and depletion of groundwater resources.
- Growing waste generation due to increasing campus activities.
- Rising energy costs and dependence on conventional energy sources.
- Natural disasters and extreme weather events affecting campus infrastructure.
- Environmental degradation caused by human activities in nearby regions.
- Limited external funding for environmental improvement projects.

Recommendations

Based on the findings of the Environmental Audit, the following recommendations are proposed to further strengthen environmental sustainability and enhance the overall environmental performance of Bokaro Steel Mines College (BSM College), Bhawnathpur.

1. Green Campus Development



- Increase the number of trees and ornamental plants through regular plantation drives.
- Develop dedicated green zones, herbal gardens, and biodiversity parks within the campus.
- Ensure proper maintenance and monitoring of existing green cover.

2. Water Conservation and Management

- Strengthen rainwater harvesting systems for groundwater recharge.
- Install additional water-saving fixtures and leak detection mechanisms.
- Conduct periodic water audits to monitor consumption and identify areas of improvement.
- Promote awareness regarding responsible water usage among stakeholders.

3. Energy Conservation

- Expand the use of LED lighting and energy-efficient electrical equipment.
- Explore the installation of solar photovoltaic systems to reduce dependence on conventional energy sources.
- Conduct periodic energy audits to assess energy consumption patterns.
- Encourage energy-saving practices among students and staff.

4. Waste Management

- Implement a systematic waste segregation system at the source.
- Establish composting facilities for biodegradable waste generated on campus.
- Strengthen recycling mechanisms for paper, plastic, and electronic waste.
- Promote the principles of Reduce, Reuse, and Recycle (3Rs).

5. Plastic-Free and Clean Campus Initiatives

- Minimize the use of single-use plastic products within the campus.
- Promote eco-friendly and reusable alternatives during college events and activities.
- Organize regular cleanliness drives and awareness campaigns.

6. Biodiversity Conservation

- Increase the plantation of native, medicinal, and fruit-bearing species.
- Develop and maintain a biodiversity register of campus flora and fauna.
- Encourage conservation practices that support local ecosystems and wildlife.

7. Environmental Awareness and Education

- Conduct regular workshops, seminars, training programs, and awareness campaigns on environmental issues.
- Celebrate important environmental observance days such as World Environment Day, Earth Day, World Water Day, and Energy Conservation Day.
- Encourage student participation in environmental projects and community outreach activities.



8. Sustainable Resource Management

- Promote digital documentation and communication to reduce paper consumption.
- Encourage responsible procurement and use of environmentally friendly products.
- Monitor resource utilization regularly to improve efficiency.

9. Environmental Monitoring and Reporting

- Establish a structured environmental monitoring mechanism.
- Conduct annual Environmental Audits, Green Audits, and Energy Audits.
- Maintain records of environmental initiatives and resource consumption data for continuous improvement.

10. Institutional Commitment

- Develop a comprehensive Environmental Management Policy and Action Plan.
- Strengthen the role of IQAC, NSS, and Environmental Committees in implementing sustainability initiatives.
- Allocate adequate resources for environmental protection and green campus development.

Expected Outcomes

- ✓ Improved environmental quality and campus sustainability
- ✓ Reduced consumption of water, energy, and other natural resources
- ✓ Enhanced biodiversity and green cover
- ✓ Better waste management and pollution control
- ✓ Increased environmental awareness among stakeholders
- ✓ Strengthened compliance with sustainable development goals and environmental best practices

Conclusion

The implementation of these recommendations will help BSM College further enhance its environmental performance and reinforce its commitment to sustainable development. Continuous monitoring, stakeholder participation, and institutional support will play a crucial role in transforming the campus into a model of environmental excellence and sustainability.



Campus Facilities and Surrounding Infrastructure

A. Facilities Available Within the College Campus

Sl. No.	Facility	Status
1	Garbage / Waste Storage Yard	Available
2	Laboratory Facilities	Available
3	Canteen	Available
4	Hostel Facility	Available
5	Guest House	Not Available

B. Facilities and Infrastructure Near the College Campus

Sl. No.	Particulars	Status / Details
1	Municipal Dump Yard	Available
2	Garbage Heap	No Garbage Heaps Found
3	Public Convenience	Available
4	Sewer Line	Available
5	Stagnant Water	No Stagnant Water Observed
6	Open Drainage	Available
7	Industry (within vicinity)	No major industry located within 3 km of the campus
8	Bus Stand	Available (Approx. 1–2 km from campus)
9	Railway Station	Available (Nearest Railway Station approx. 10–15 km from campus)
10	Public Halls / Community Facilities	Available

Environmental Observation Summary

Environmental Parameter	Status
Waste Storage Facility	Available
Laboratory Infrastructure	Available
Stagnant Water Issues	Not Observed
Public Sanitation Facilities	Available
Sewerage Connectivity	Available
Open Drainage System	Available
Industrial Pollution Risk	Low
Transport Accessibility	Good
Community Infrastructure	Available



Waste Management, Green Campus and Energy Conservation

Waste Generation and Management

Particulars	Details
Does the College Generate Waste?	Yes
Types of Waste Generated	Solid Waste, Paper Waste, Plastic Waste, Toilet Waste, Horticulture Waste, E-Waste

Approximate Waste Generated per Day

Type of Waste	Quantity (Approx.)
Biodegradable Waste	10 kg/day
Non-Biodegradable Waste	12 kg/day
Hazardous Waste	5 kg/day
Other Waste	Less than 5 kg/day

Waste Management Practices

Method	Status / Details
Composting	Compost pits available for biodegradable waste
Recycling	Limited recycling through authorized agencies
Reusing	One-side printed papers reused for internal communication
Waste Collection	Separate bins for biodegradable and non-biodegradable waste
Disposal	Waste handed over to local municipal authorities for safe disposal
Horticulture Waste	Converted into compost and/or disposed through municipal services

Recycling and Reuse

Particulars	Status
Use of Recycled Paper	No
Use of Reused Paper	Yes

Environmental Awareness Initiatives

The NSS Unit and Environmental Committee regularly organize:

-  Waste Segregation Awareness Campaigns
-  Tree Plantation Programmes
-  Anti-Plastic Awareness Drives
-  E-Waste Management Campaigns
-  Sustainable Development Goal (SDG) Awareness Activities
-  Campus Cleanliness Drives



Zero Waste Vision

The institution aims to achieve a **Zero Waste Campus** by:

- ✓ Converting biodegradable waste into compost
- ✓ Reusing paper and other recyclable materials
- ✓ Promoting waste segregation at source
- ✓ Reducing single-use plastics
- ✓ Increasing environmental awareness among stakeholders

Greening the Campus

Campus Greenery Status

Particulars	Status
Garden Available	Yes
Students Utilize Garden Area	Yes

Green Cover on Campus

Plant Type	Approximate Number
Trees	60
Shrubs	115
Grass Cover	Approx. 2,000 sq. ft.

Recommended Plantation Species

- Neem
- Peepal
- Ashoka
- Arjun
- Mango
- Bel
- Amla
- Guava
- Moulshree
- Date Palm
- Thuja
- Sita Ashok



Horticulture Facilities

Particulars	Status
Horticulture Department	No
Dedicated Horticulture Staff	Not Available

Plantation Activities

Particulars	Details
Plantation Drives Conducted Annually	3–4 Drives
Number of Saplings Planted per Year	More than 100
Trees Planted During Last Academic Year	100
Survival Rate	80%

Plant Distribution Programme

Particulars	Status
Distribution of Saplings to Students and Community	Yes
Source of Saplings	Forest Department Nurseries

Plant Ownership Programme

Particulars	Status
Plant Ownership Programme	No

Energy Conservation

Energy Sources Used in the College

Source	Usage
Electricity	Lighting, Computers, Office Equipment, Laboratories
Solar Energy	Renewable Energy Generation
Natural Lighting & Ventilation	Energy Conservation Measure

Energy Conservation Measures

Initiative	Status
LED Lighting Installed	Yes
Solar Power Plant Installed	Yes
Renewable Energy Utilization	Yes
Natural Lighting and Ventilation	Encouraged
Energy Awareness Programmes	Conducted Regularly



LED Lighting Status

Particulars	Details
Conventional Lights Replaced with LED	Approximately 90%

Renewable Energy

Particulars	Details
Solar Power Plant Capacity	10 KW
Photovoltaic Solar Panels	Installed

Energy Management Practices

Particulars	Status
Switch-Off Campaigns	Yes
Power Saving Mode in Computers	Yes
Energy Efficient Equipment Usage	Yes

Standby Energy Consumption

Equipment	Approximate Standby Duration
Computers, Printers, TV, etc.	Approximately 4 Hours

Key Achievements

- ✓ 90% LED-based lighting system
- ✓ 7.5 KW Solar Power Plant Installed
- ✓ Regular Energy Conservation Awareness Activities
- ✓ Promotion of Natural Lighting and Ventilation
- ✓ Adoption of Energy-Efficient Practices
- ✓ Commitment towards Sustainable and Green Campus Development

Water Conservation and Management

Water Usage in the College

Sl. No.	Purpose of Water Use	Description
1	Drinking Water	Drinking and domestic use
2	Sanitation	Toilets and washrooms
3	Gardening	Irrigation of gardens and green spaces
4	Cleaning	Cleaning of classrooms, offices, and campus premises
5	Other Uses	Laboratory and miscellaneous requirements



Water Consumption

Particulars	Details
Total Water Consumption	Approximately 500 KL per Month
Source of Water	Groundwater (Borewell)

Water Storage and Distribution System

Particulars	Details
Water Source	Borewell / Groundwater
Storage System	Overhead Water Tanks
Distribution Method	Pipeline Distribution Network
Overflow Control	Control Valves Installed

Water Conservation Practices

- ✓ Use of overhead tanks for efficient distribution
- ✓ Installation of control valves to prevent overflow
- ✓ Regular inspection of water supply systems
- ✓ Monitoring of leakage and water losses
- ✓ Awareness among stakeholders regarding water conservation

Water Leakage Prevention

Particulars	Details
Water Wastage Identified	Minor leakages, if any
Preventive Action	Immediate repair by authorized plumbers
Monitoring System	Regular inspection and maintenance

Measures to Prevent Water Wastage

- Immediate repair of leaking taps and pipelines.
- Regular maintenance of water supply infrastructure.
- Monitoring of valves and storage tanks.
- Awareness programmes on responsible water use.

Water Entry and Exit Points

Particulars	Details
Point of Water Entry	Groundwater through Borewell
Point of Wastewater Exit	Campus Drainage System



Water Conservation Measures Adopted

Sl. No.	Conservation Measure
1	Rainwater Harvesting System in New Buildings
2	Closing Taps After Use
3	Regular Maintenance of Valves and Pipelines
4	Prevention of Overflow and Leakage
5	Water Conservation Awareness Programmes
6	Efficient Use of Water for Gardening and Cleaning

Water Consumption Monitoring

Particulars	Status
Water Meter Installed	No
Water Consumption Records Available	Not Available
Future Plan	Installation of Water Meter for Accurate Monitoring

Recommendation

The institution may install water meters at strategic locations to facilitate accurate monitoring, measurement, and analysis of water consumption patterns.

Rainwater Harvesting

Particulars	Status
Rainwater Harvesting System	Available
Location	New Academic Buildings
Purpose	Groundwater Recharge and Water Conservation

Benefits

- ✓ Reduces dependence on groundwater
- ✓ Promotes groundwater recharge
- ✓ Supports sustainable water management
- ✓ Enhances campus environmental sustainability



Water Recycling

Particulars	Status
Water Recycling System	Not Available

Future Scope

- Introduction of greywater recycling systems.
- Reuse of treated water for gardening and landscaping.
- Development of sustainable wastewater management practices.

Key Findings

- 💧 Water consumption is approximately **250-500 KL per month**.
- 💧 Water is sourced through borewells and distributed through overhead tanks.
- 💧 Rainwater harvesting facilities are available in newer buildings.
- 💧 Water leakages are promptly repaired to minimize wastage.
- 💧 No water recycling system currently exists.
- 💧 Water meters may be installed in the future for better monitoring and management.

Air Quality and Environmental Management

Campus Ventilation

Sl. No.	Particulars	Status / Details
1	Are the rooms on the campus well-ventilated?	Yes
2	Window-to-Floor Ratio	Excellent (Approximately 1:8)

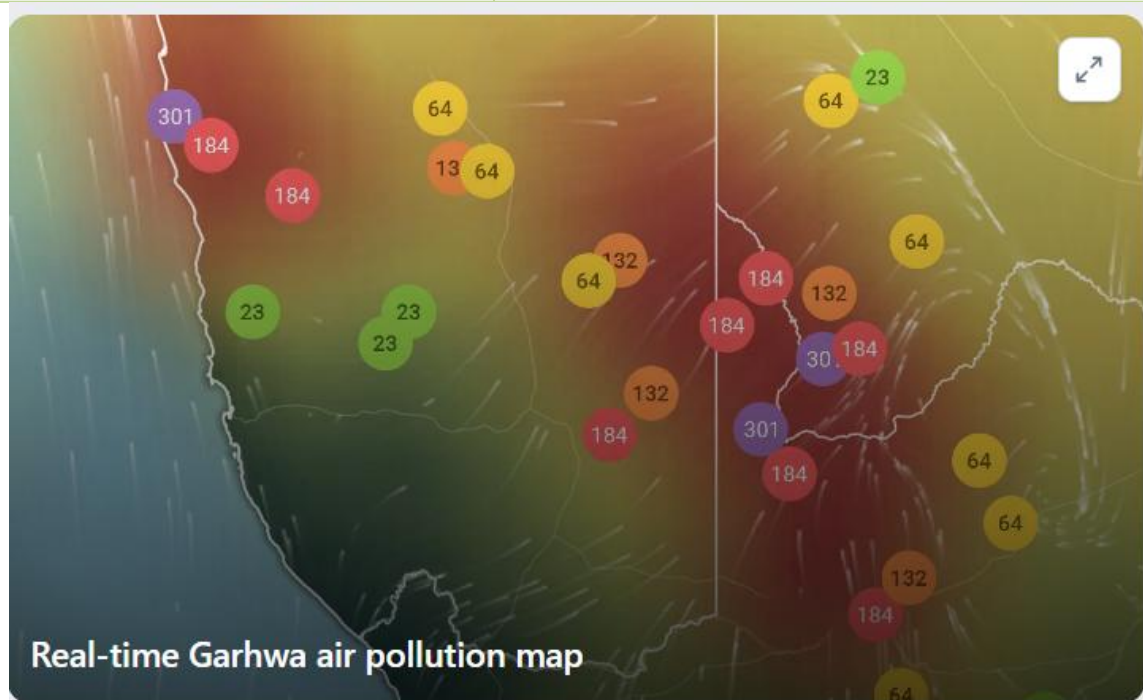
College-Owned Motorized Vehicles

Particulars	Buses	Cars	Vans	Other	Total
Number of Vehicles	Nil	Nil	Nil	Nil	Nil
Vehicles More Than Five Years Old	--	--	--	--	--
Air-Conditioned Vehicles	--	--	--	--	--
Pollution Under Control (PUC) Certificate	--	--	--	--	--



Fuel Used by College Vehicles

Fuel Type	Status
Diesel	Not Applicable
Petrol	Not Applicable
CNG	Not Applicable
LPG	Not Applicable
Electric	Not Applicable



Air Quality Management

Sl. No.	Particulars	Status / Details
36	Air Quality Monitoring Programme	No formal monitoring system is available on the campus.
37	Respiratory Ailments Among Students	No significant respiratory ailments have been reported.



CENTRAL POLLUTION CONTROL BOARD'S AIR QUALITY STANDARDS

AIR QUALITY INDEX (AQI)	CATEGORY
0-50	Good
51-100	Satisfactory
101-200	Moderate
201-300	Poor
301-400	Very Poor
401-500	Severe

Diesel Generator (DG) Set Details

Particulars	Details
Number of DG Sets	1
Brand	Mahindra
Capacity	7.5 kVA
Stack Height	Adequate stack height provided as per environmental norms



Biodiversity and Animal Welfare

Animals and Birds Found on Campus

Category	Approximate Presence
Birds	More than 200
Dogs	Approximately 15
Cats	Approximately 5-6
Squirrels	Frequently observed
Lizards	Present
Snakes	Occasionally observed
Rats	Present
Butterflies	Abundant
Honey Bees	Present
Earthworms	Present
Other Insects	Commonly found

Animal Welfare

Sl. No.	Particulars	Status
1	Dogs Covered Under Anti-Rabies / Animal Birth Control (ABC-AR)	Approximately 5-6
2	Biodiversity Conservation Programme	Yes





Environmental Legislative Compliance

Sl. No.	Particulars	Status / Details
42	Awareness of Environmental Laws	Yes
43	Environmental Protection Rules	Single-use plastic is prohibited. Environmental awareness and conservation activities are conducted through NSS, IQAC, and various academic departments. Environmental Studies is offered as a compulsory course as per UGC guidelines.
44	Ambient Air Quality Monitoring	The College does not have its own ambient air quality monitoring system. Air quality is periodically assessed through observations and surrounding environmental conditions.
45	Water and Wastewater Quality Monitoring	Yes
46	DG Stack Emission Monitoring	Conducted as per applicable environmental norms.
47	Warning Notice from Government Authorities	No
48	Hazardous Waste Generation	No significant hazardous waste is generated.
49	Biomedical Waste Generation	No biomedical waste is generated, as the College does not operate healthcare facilities.



Best Practices and Initiatives for Environmental Sustainability

Bokaro Steel Mines College (BSM College), Bhawnathpur has adopted several best practices to promote environmental sustainability, conserve natural resources, and create a clean, healthy, and eco-friendly campus. These initiatives encourage active participation of students, faculty members, and staff in protecting the environment and fostering a culture of sustainability.

Environmental Best Practices

Green Campus Development

- Regular tree plantation drives under NSS and Environmental Awareness Programmes.
- Development and maintenance of gardens, lawns, and green spaces.
- Plantation of native and medicinal plant species to enhance biodiversity.

Waste Management and Cleanliness

- Segregation of biodegradable and non-biodegradable waste.
- Composting of biodegradable waste generated on the campus.
- Reuse of one-side printed paper for internal office work.
- Regular campus cleanliness drives under the Swachh Bharat Mission.

Plastic-Free Campus

- Ban on single-use plastic within the college premises.
- Promotion of reusable and eco-friendly alternatives.
- Awareness campaigns on plastic pollution and sustainable lifestyles.

Water Conservation

- Rainwater harvesting systems installed in campus buildings.
- Regular maintenance of water supply systems to prevent leakage.
- Awareness programmes on responsible water use and conservation.

Energy Conservation

- Extensive use of LED lighting across the campus.
- Utilization of a **7.5 kW Solar Power Plant** as a renewable energy source.
- Promotion of natural lighting and ventilation to reduce electricity consumption.
- Encouragement of switching off lights and electrical equipment when not in use.

Biodiversity Conservation

- Protection and maintenance of campus flora and fauna.
- Annual plantation drives with a high survival rate of saplings.
- Distribution of saplings to students and local communities.

Environmental Awareness

- Celebration of World Environment Day, Earth Day, World Water Day, Van Mahotsav, and Energy Conservation Day.
- Organization of seminars, workshops, poster competitions, rallies, and awareness campaigns.
- Active involvement of students through NSS and other institutional committees.



Community Outreach

- Plantation programmes in nearby villages and public places.
- Awareness campaigns on environmental conservation and sustainable development.
- Promotion of environmental responsibility beyond the campus.

Environmental Education

- Environmental Studies included in the curriculum as per UGC guidelines.
- Integration of sustainability concepts into academic and extension activities.

Sustainable Campus Management

- Continuous monitoring of environmental performance through Green and Environmental Audits.
- Implementation of eco-friendly campus practices.
- Promotion of stakeholder participation in sustainability initiatives.

Major Environmental Initiatives

Initiative	Status
Green Campus Development	✓ Implemented
Tree Plantation Drives	✓ Regularly Conducted
Rainwater Harvesting	✓ Available
Solar Energy (7.5 kW)	✓ Installed
LED Lighting	✓ Approximately 90% Coverage
Waste Segregation	✓ Implemented
Composting	✓ Practiced
Plastic-Free Campus	✓ Implemented
Water Conservation	✓ Ongoing
Environmental Awareness Programmes	✓ Regularly Conducted
NSS Green Activities	✓ Active
Biodiversity Conservation	✓ Ongoing

Outcomes

- Enhanced campus greenery and biodiversity.
- Reduced electricity consumption through LED lighting and solar energy.
- Improved waste management and campus cleanliness.
- Efficient utilization and conservation of water resources.
- Increased environmental awareness among students and staff.
- Promotion of sustainable practices and responsible citizenship.
- Strengthened institutional commitment to environmental protection.

Future Action Plan

- Expand renewable energy capacity.
- Introduce greywater recycling systems.



- Increase native tree plantation and biodiversity conservation.
- Establish an Environmental Monitoring Cell.
- Conduct annual Green, Energy, and Environmental Audits.
- Move towards a **Carbon-Neutral and Zero-Waste Campus**.

Best Practice Motto

"Reduce • Reuse • Recycle • Restore • Respect Nature"

Vision Statement

"BSM College is committed to nurturing environmentally responsible citizens through sustainable campus practices, conservation of natural resources, and continuous improvement towards a cleaner, greener, and more sustainable future."

Recommendations

Based on the Environmental Audit findings, the following recommendations are proposed for **BSM College, Bhawnathpur**:

- Increase plantation of native and medicinal trees to enhance campus biodiversity.
- Expand rainwater harvesting and install water meters for efficient water management.
- Increase the use of renewable energy and achieve 100% LED lighting across the campus.
- Strengthen waste segregation, composting, and e-waste management practices.
- Completely eliminate single-use plastics and promote eco-friendly alternatives.
- Conduct regular environmental awareness programmes, workshops, and green campaigns.
- Promote paperless administration and sustainable resource utilization.
- Carry out annual Green, Energy, and Environmental Audits for continuous improvement.
- Encourage active participation of students, faculty, and staff in sustainability initiatives.
- Develop a long-term Environmental Management Plan to achieve a clean, green, and sustainable campus.



Annexures

Institutional Profile:

Name of Institution: Bokaro Steel Mines College, Bhawnathpur

District: Garhwa, Jharkhand

Affiliation: Nilamber Pitamber University (NPU)

Campus Area: 12 Acres

Built-up Area: 20234.3 Sq. Meter

Number of Students: 615

Number of Teaching Staff: 26

Number of Non-Teaching Staff: 12

Campus Environment Assessment

Green Cover and Biodiversity

- The college campus is surrounded by greenery and maintains a healthy ecological environment.
- Various trees and ornamental plants are planted throughout the campus.
- Regular plantation drives are conducted through NSS and Eco Club activities.

Details of Green Cover

Particulars	Number
Trees	250
Flowering Plants	100
Medicinal Plants	25
Lawn Area	500 Sq. Meter

Major Species Available

- Neem
- Peepal
- Mango
- Ashoka



- Gulmohar
- Banyan
- Amla

B. Water Management

Sources of Water

- Borewell
- Municipal Supply
- Hand Pump

Water Conservation Measures

- Rainwater harvesting (if available)
- Awareness regarding water conservation
- Regular monitoring of water leakage

Observation

The institution utilizes water judiciously and encourages responsible usage among students and staff.

C. Energy Management

Sources of Energy

- Electricity supplied by JBVNL
- Solar Energy (if available)

Energy Conservation Practices

- Use of LED bulbs
- Switching off electrical equipment after use
- Natural lighting through windows and ventilation
- Awareness campaigns on energy conservation

Electrical Infrastructure

Particulars	Quantity
LED Lights	30
Ceiling Fans	60
Computers	10
Solar Panels	03

Waste Management

Solid Waste Management

- Dustbins installed at strategic locations.



- Segregation of biodegradable and non-biodegradable waste.
- Regular disposal through local municipal arrangements.

Liquid Waste Management

- Proper drainage system available.
- Wastewater discharged through designated channels.

E-Waste Management

- Obsolete computers and electronic items are stored separately.
- Disposal through authorized agencies whenever required.

E. Sanitation and Hygiene

- Separate toilets for boys and girls.
- Drinking water facilities available.
- Regular cleaning of classrooms and campus.
- Hygienic environment maintained throughout the year.

Environmental Awareness Activities Conducted During 2025-26

Date	Activity	Participants
World Environment Day (5 June)	Plantation Drive	Students & Staff
Van Mahotsav	Tree Plantation	NSS Volunteers
Swachhta Abhiyan	Campus Cleanliness Drive	Students
Awareness Programme	Plastic-Free Campus Campaign	Students & Faculty

Strengths Identified

1. Green and pollution-free campus environment.
2. Active participation of NSS volunteers.
3. Adequate natural ventilation and lighting.
4. Regular plantation and cleanliness drives.
5. Environmental awareness among students.

Areas for Improvement

1. Expansion of rainwater harvesting system.
2. Installation of additional solar energy units.
3. Development of medicinal plant garden.
4. Strengthening e-waste disposal mechanisms.
5. Increased use of renewable energy resources.

Recommendations

1. Increase tree plantation activities every year.
2. Adopt a plastic-free campus policy.
3. Install water-saving devices.



4. Enhance waste segregation practices.
5. Conduct regular environmental awareness workshops.
6. Introduce green energy initiatives wherever feasible.

Conclusion

The Environmental Audit of Bokaro Steel Mines College, Bhawnathpur indicates that the institution is making consistent efforts towards environmental sustainability through green campus initiatives, energy conservation, waste management, and environmental awareness programmes. The college possesses a healthy and eco-friendly environment and has the potential to further strengthen its sustainable development practices through the implementation of the recommendations suggested in this report.



A GREEN CAMPUS TODAY
A BETTER TOMORROW FOREVER

REFERENCES

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2. University Grants Commission. *UGC Guidelines on Environmental Studies for Undergraduate Courses*.
3. Ministry of Environment, Forest and Climate Change. *Environmental Protection Act, 1986 and related environmental guidelines*.
4. Central Pollution Control Board. *Guidelines on Solid Waste Management, Water Conservation, and Air Pollution Control*.
5. National Assessment and Accreditation Council. *Manual for Higher Education Institutions – Quality Indicators for Green Campus and Environmental Sustainability*.
6. Swachh Bharat Mission. *Guidelines for Clean and Sustainable Campuses*.
7. Ministry of New and Renewable Energy. *Solar Energy and Energy Conservation Guidelines*.
8. Bokaro Steel Mines College. **Institutional Records and Documents**, including:
 - IQAC Reports
 - Campus Environmental Records
 - Water and Energy Consumption Records
 - Plantation and Biodiversity Records
 - NSS Activity Reports
 - Waste Management Records
 - Infrastructure and Maintenance Records
 - College Prospectus and Annual Reports
9. Nilamber-Pitamber University. Academic Regulations and Environmental Education Guidelines.
10. United Nations>. *Transforming Our World: The 2030 Agenda for Sustainable Development (SDGs)*.





Certificate of Registration

This is to certify that the
Environmental Management System
of
BOKARO STEEL MINES COLLEGE
at

AT-SINDURIA, P.O.-BHAWNATHPUR, P.S.-BHAWNATHPUR, DIST.-
GARHWA, JHARKHAND, PIN CODE - 822112, INDIA

has been independently assessed and is
compliant with the requirements of:

ISO 14001:2015

For the following scope of activities:

**PROVIDING BACHELOR'S DEGREE PROGRAMS IN ARTS, SCIENCE AND
COMMERCE WITH A FOCUS ON QUALITY EDUCATION, CURRICULUM
DELIVERY AND EVALUATION PROCESSES UNDER NEP 2020.**

Certificate Number: UQ - 2025012730

Validity of this certificate can be verified at www.ukcertifications.org.uk/verify

Date of Certification	27th January 2025
1 st Surveillance Audit Due	26th January 2026
2 nd Surveillance Audit Due	26th January 2027
Certificate Expiry	26th January 2028

Daniel..
Authorised Signatory



This certificate is the property of UK Certification & Inspection Limited and shall be returned immediately on request.



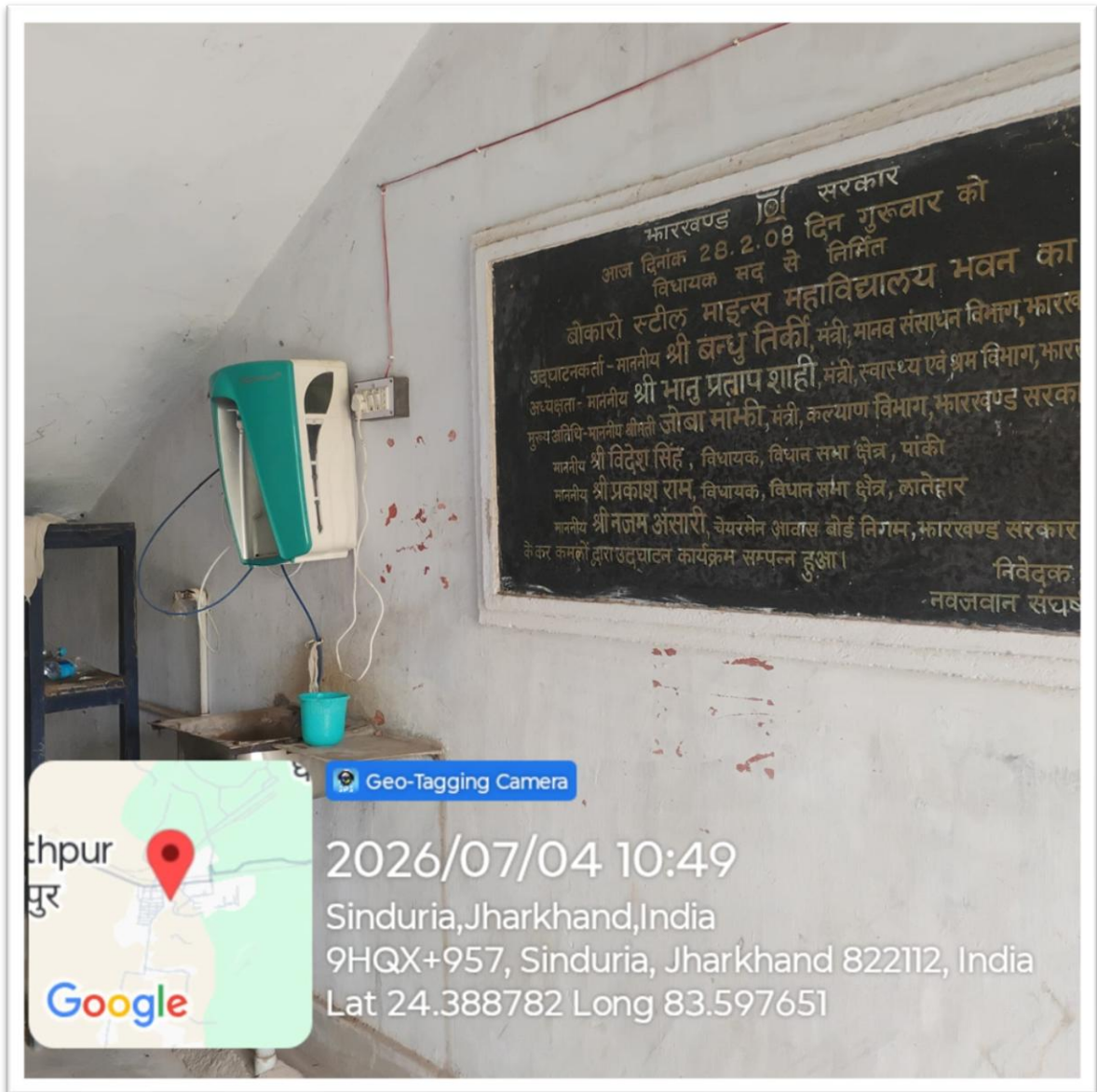
Appendix

Question for Audit

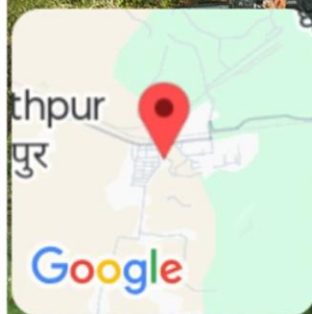
1. Is an Environmental Policy available in the institution?
2. Has the Environmental Policy been communicated to stakeholders?
3. Are environmental objectives and targets documented?
4. Is waste segregation practiced on campus?
5. Are biodegradable and non-biodegradable wastes separated?
6. Is proper disposal of solid waste ensured?
7. Are e-waste management procedures implemented?
8. Are cleanliness drives conducted regularly?
9. Are adequate dustbins available on campus?
10. Is plastic usage restricted within the campus?
11. Are sanitation facilities properly maintained?
12. Are energy conservation measures implemented?
13. Are LED lights used in the institution?
14. Are electricity consumption records maintained?
15. Are water conservation measures implemented?
16. Is rainwater harvesting available on campus?
17. Are water leakages monitored regularly?
18. Are tree plantation programmes conducted?
19. Is greenery properly maintained on campus?
20. Are environmental awareness programmes organized regularly?
21. Are students involved in Swachhta Abhiyan activities?
22. Are NSS/NCC volunteers participating in environmental programmes?
23. Are environmental training and awareness records maintained?
24. Are legal environmental requirements identified and complied with?
25. Are EMS documents properly maintained and controlled?
26. Are internal environmental audits conducted periodically?
27. Are corrective actions taken for non-conformities?
28. Is management review conducted regularly?
29. Are emergency preparedness measures available?
30. Is continual improvement of the Environmental Management System ensured?



Photographic Evidence







Geo-Tagging Camera

2026/07/04 10:48

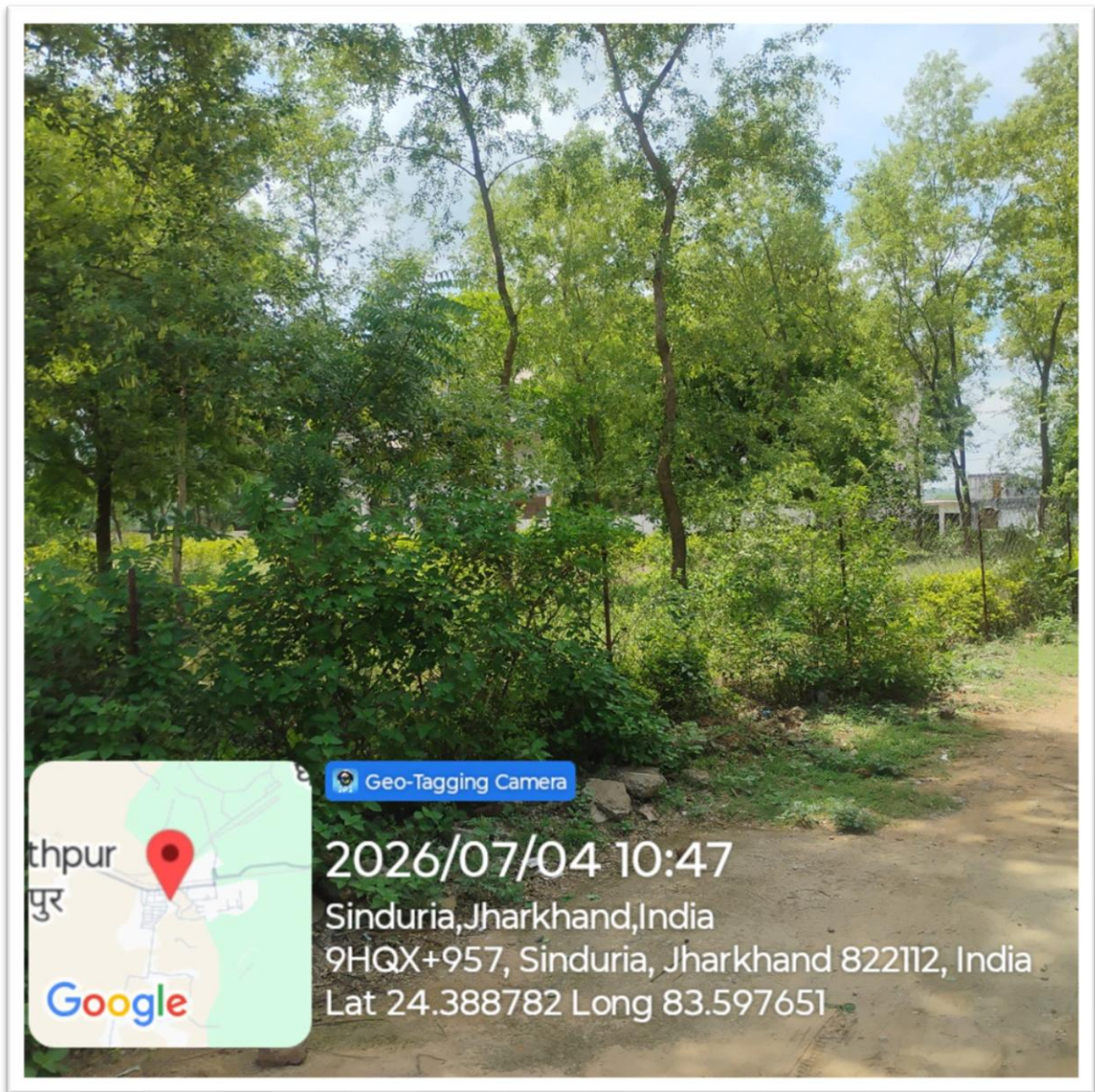
Sinduria, Jharkhand, India

9HQX+957, Sinduria, Jharkhand 822112, India

Lat 24.388782 Long 83.597651







Geo-Tagging Camera

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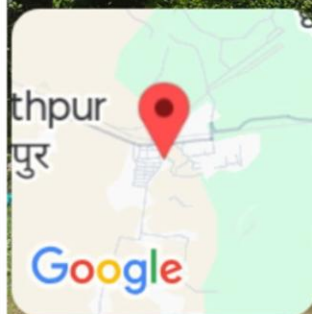
Sinduria, Jharkhand, India

9HQX+957, Sinduria, Jharkhand 822112, India

Lat 24.388782 Long 83.597651







Geo-Tagging Camera

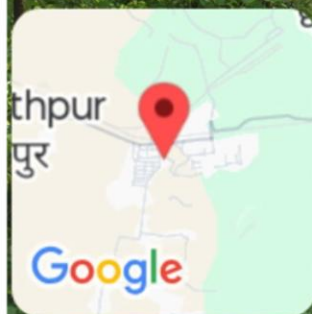
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Sinduria, Jharkhand, India

9HQX+957, Sinduria, Jharkhand 822112, India

Lat 24.388782 Long 83.597651





Geo-Tagging Camera

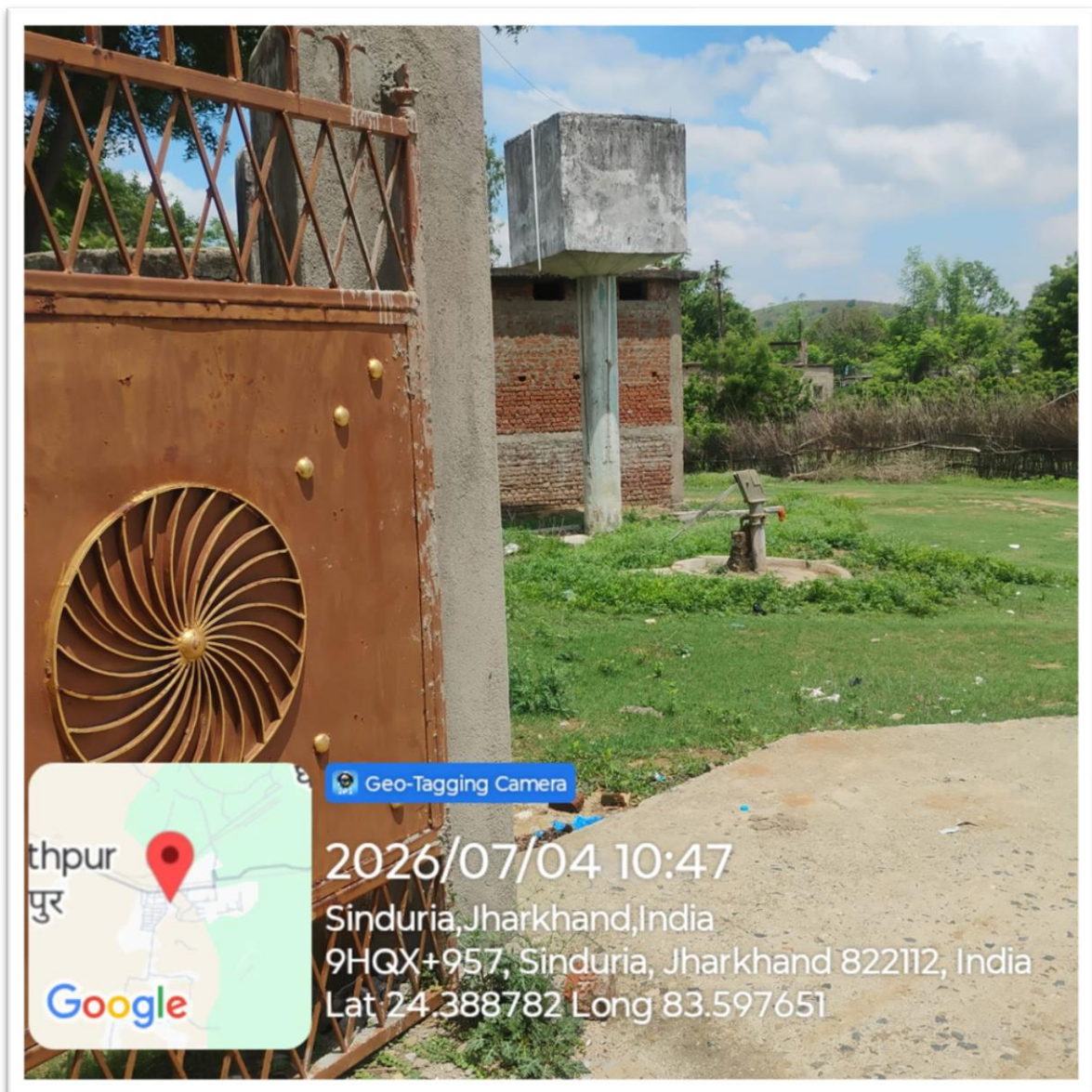
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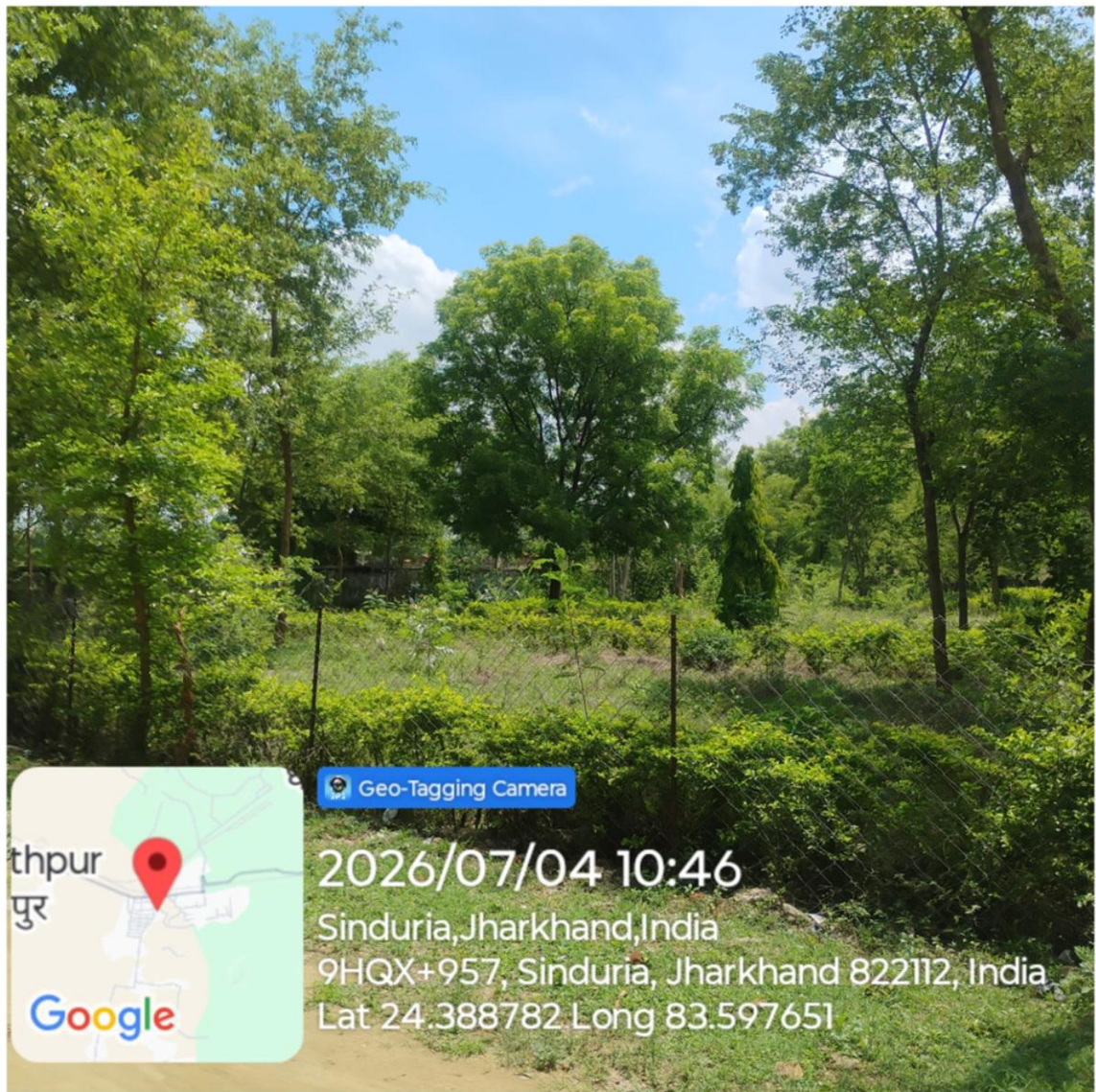
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9HQX+957, Sinduria, Jharkhand 822112, India

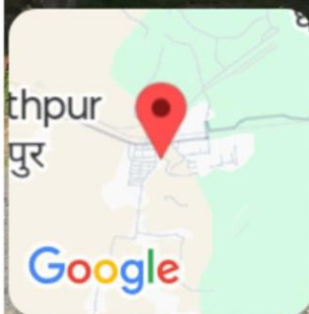
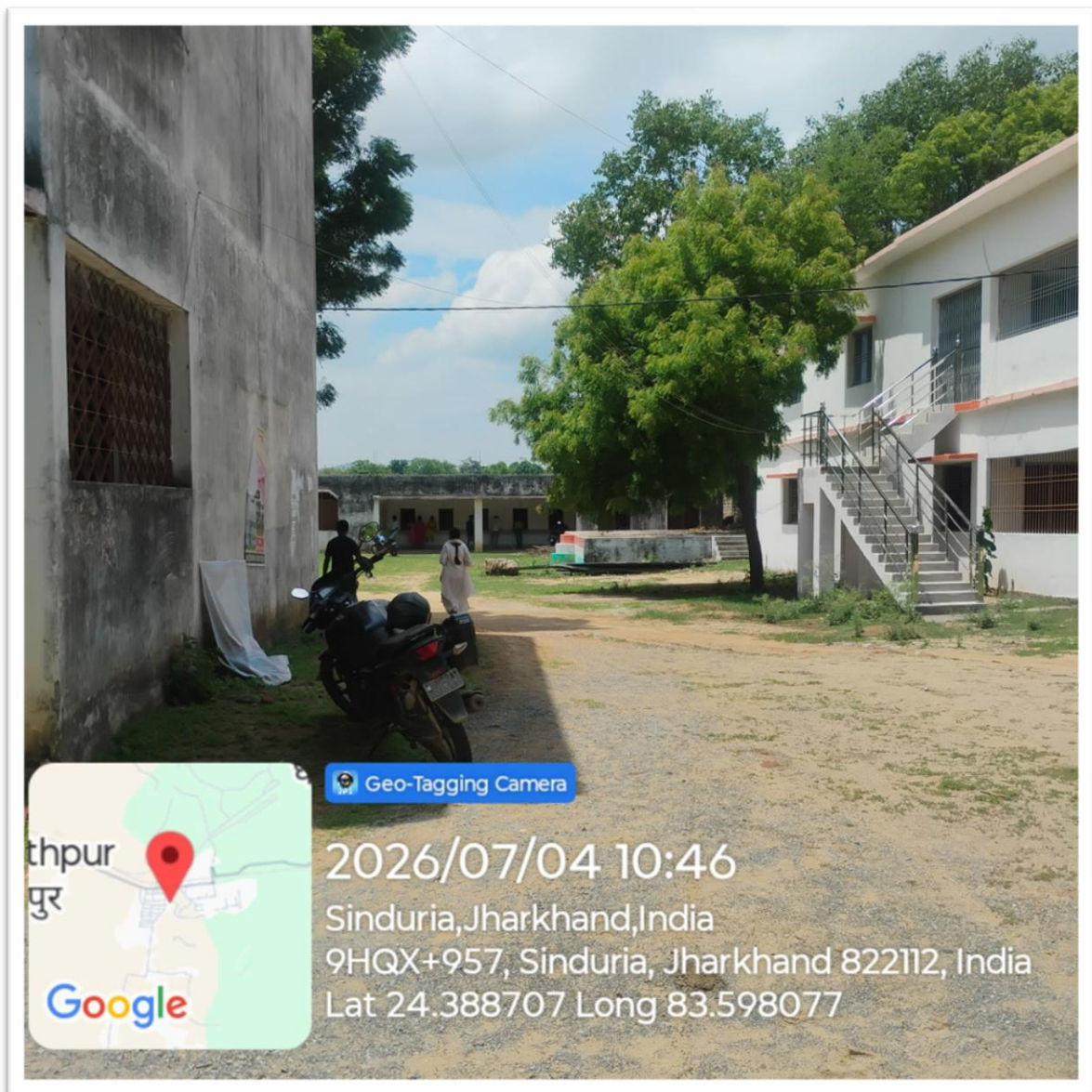
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Geo-Tagging Camera

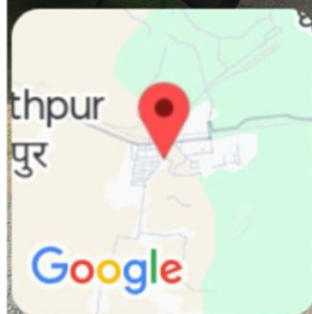
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Sinduria, Jharkhand, India

9HQX+957, Sinduria, Jharkhand 822112, India

Lat 24.388707 Long 83.598077





Geo-Tagging Camera

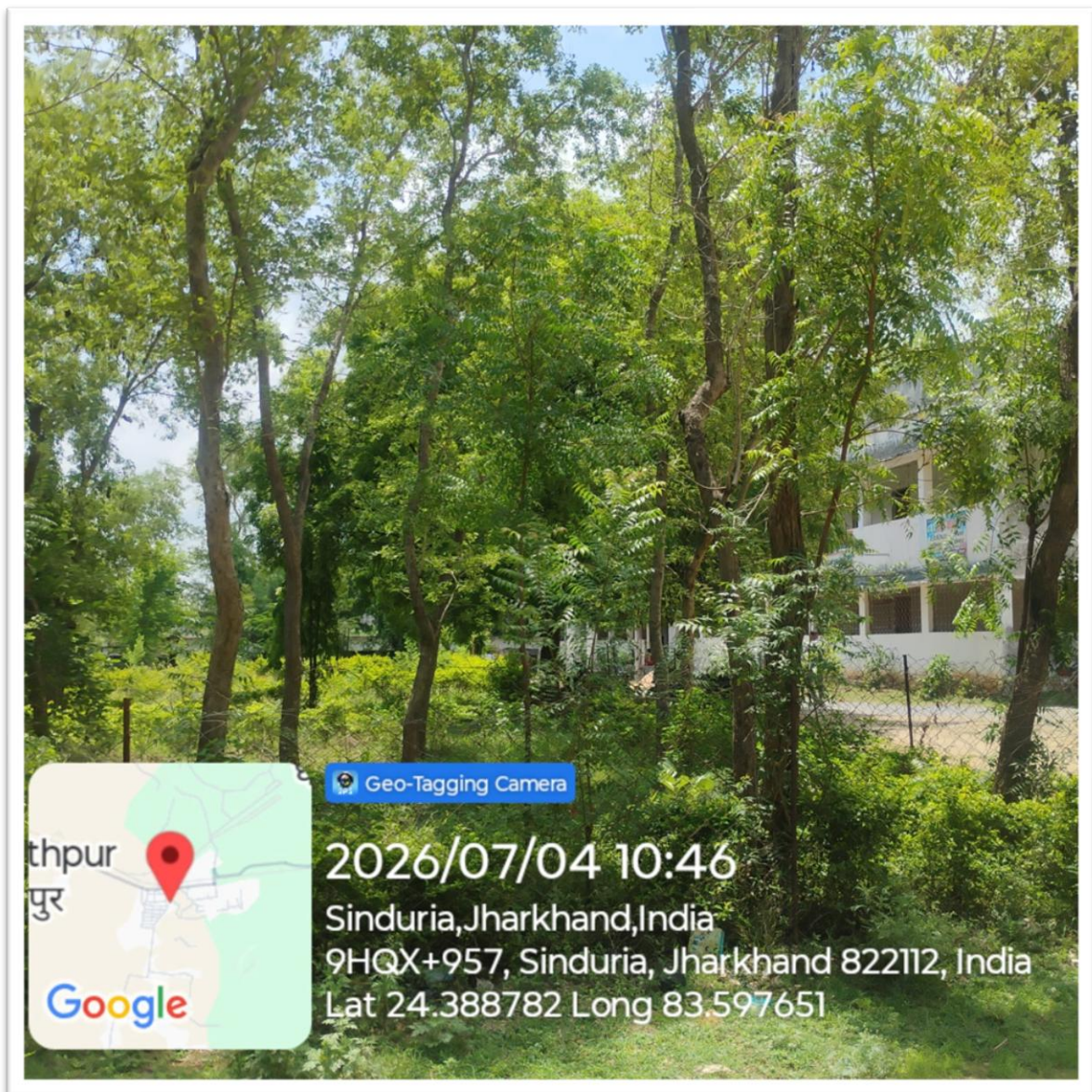
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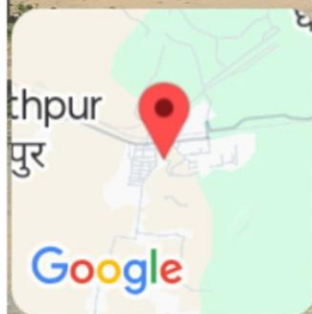
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Geo-Tagging Camera

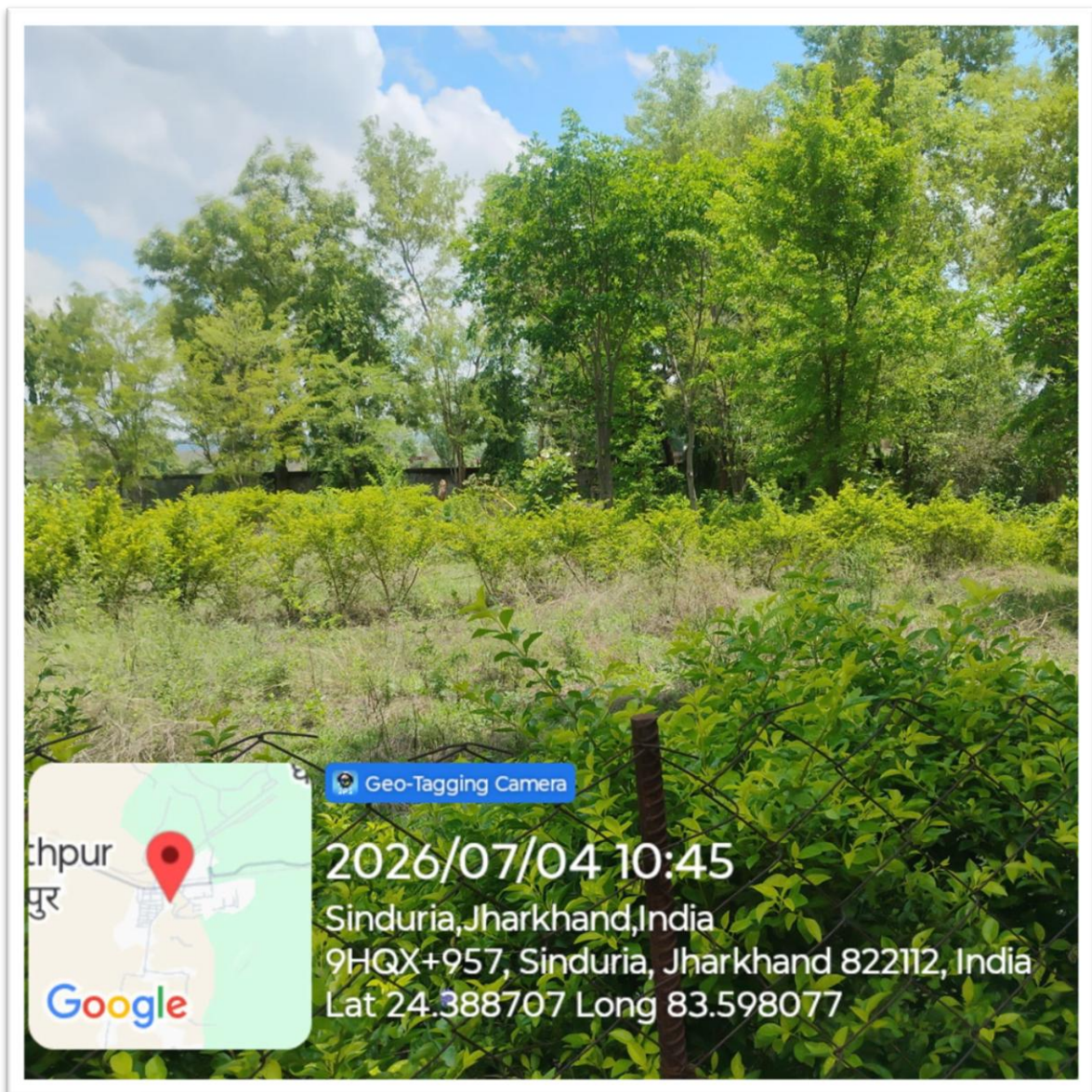
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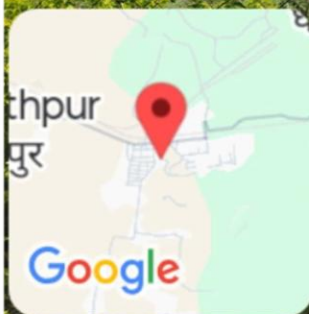
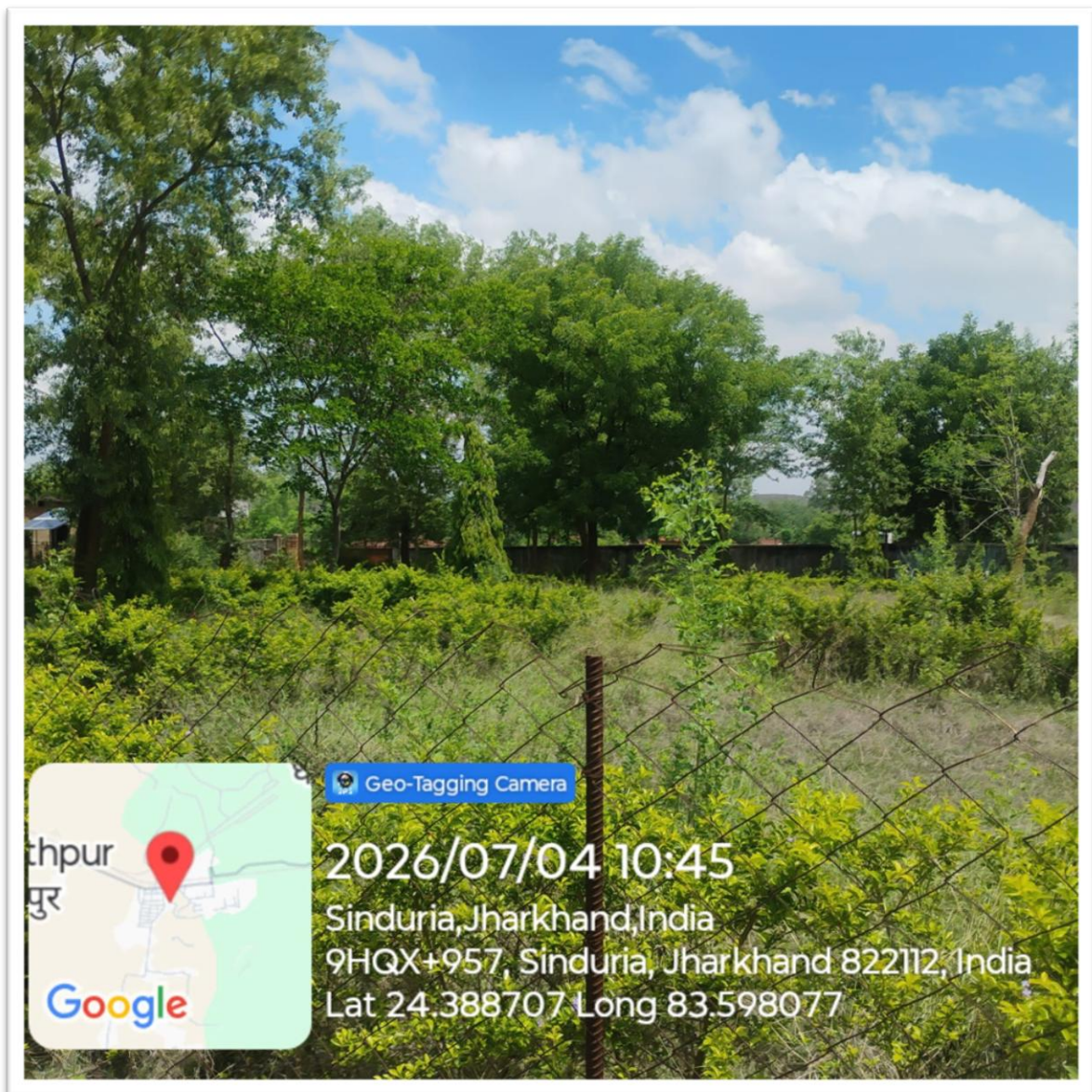
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9HQX+957, Sinduria, Jharkhand 822112, India

Lat 24.388707 Long 83.598077







Geo-Tagging Camera

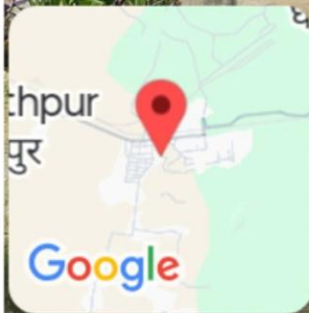
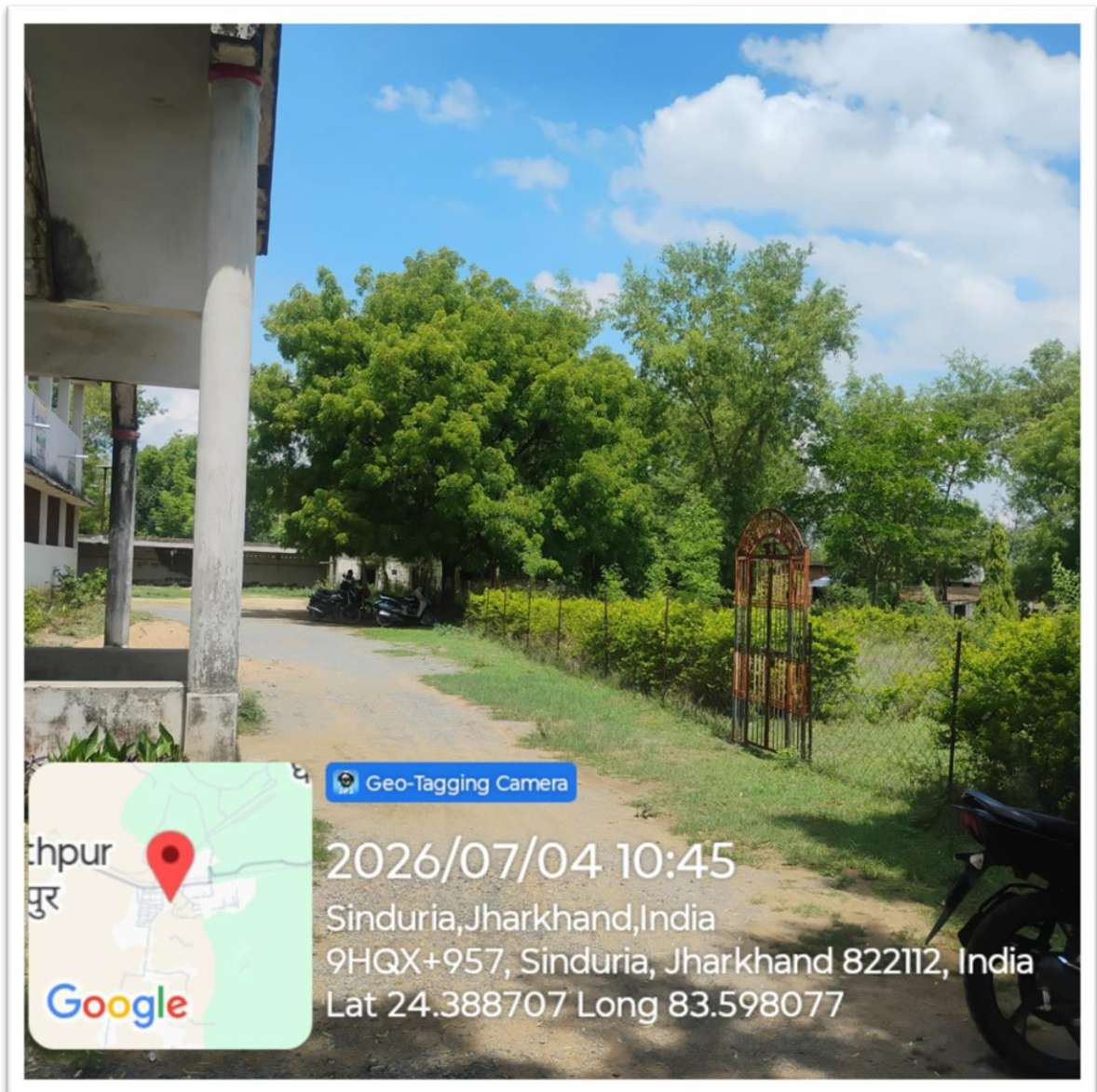
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Sinduria, Jharkhand, India

9HQX+957, Sinduria, Jharkhand 822112, India

Lat 24.388707 Long 83.598077





Geo-Tagging Camera

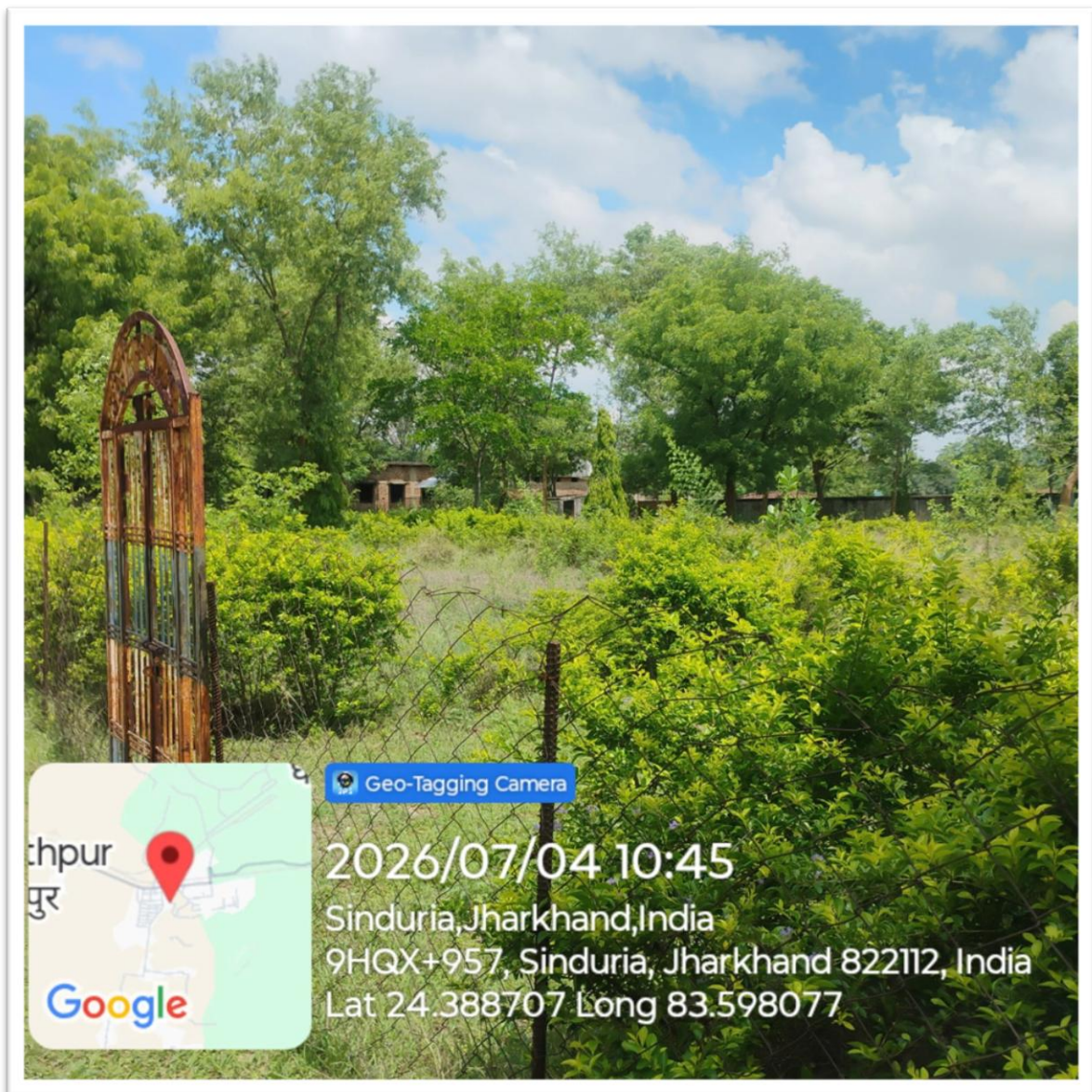
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Sinduria, Jharkhand, India

9HQX+957, Sinduria, Jharkhand 822112, India

Lat 24.388707 Long 83.598077







Geo-Tagging Camera

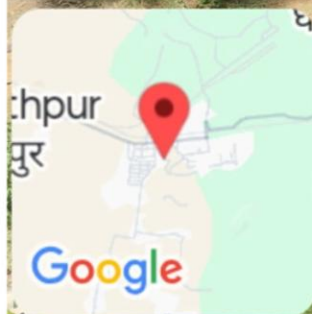
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Sinduria, Jharkhand, India

9HQX+957, Sinduria, Jharkhand 822112, India

Lat 24.388707 Long 83.598077





Geo-Tagging Camera

2026/07/04 10:44

Sinduria, Jharkhand, India

9HQX+957, Sinduria, Jharkhand 822112, India

Lat 24.388707 Long 83.598077





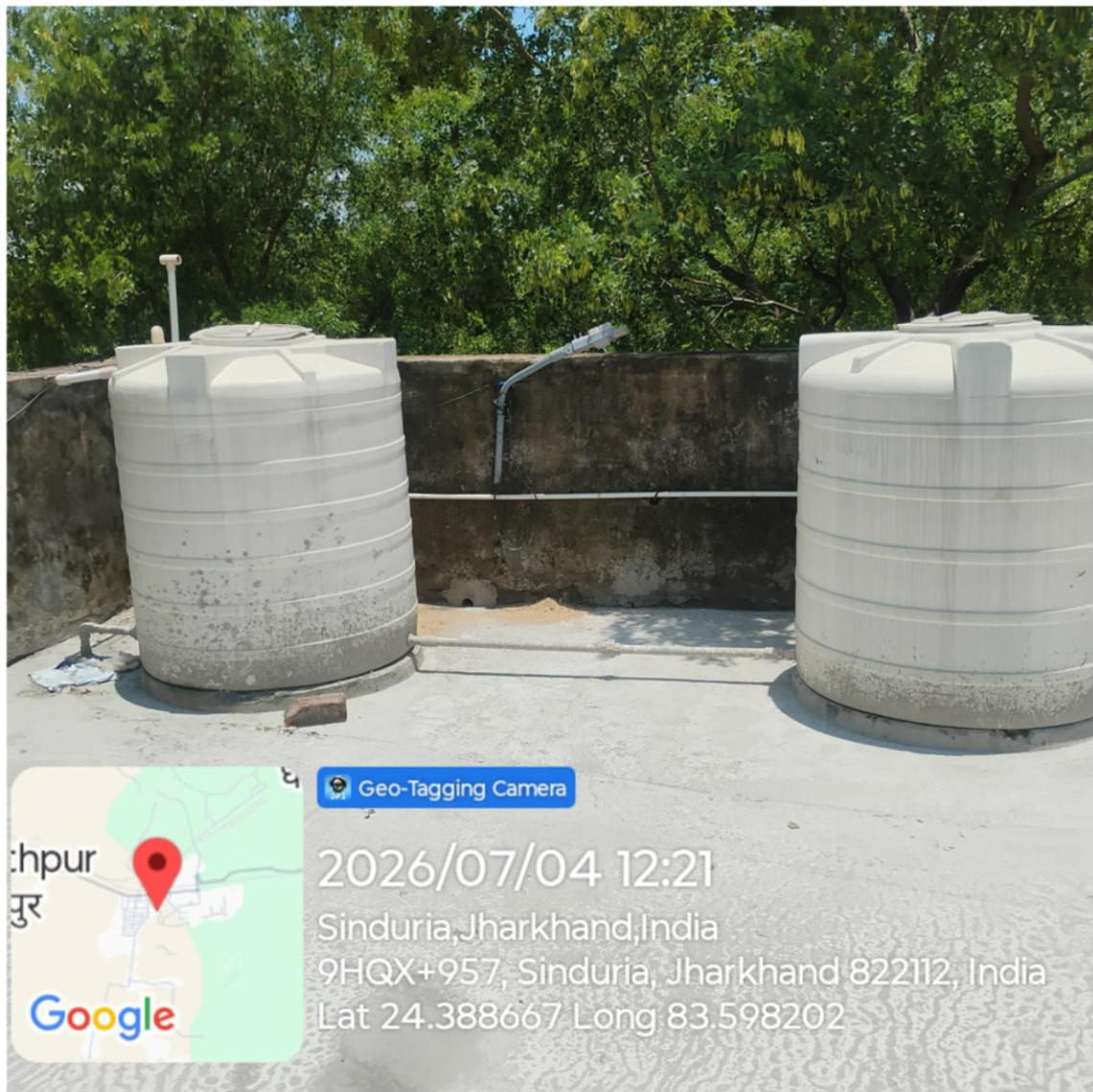


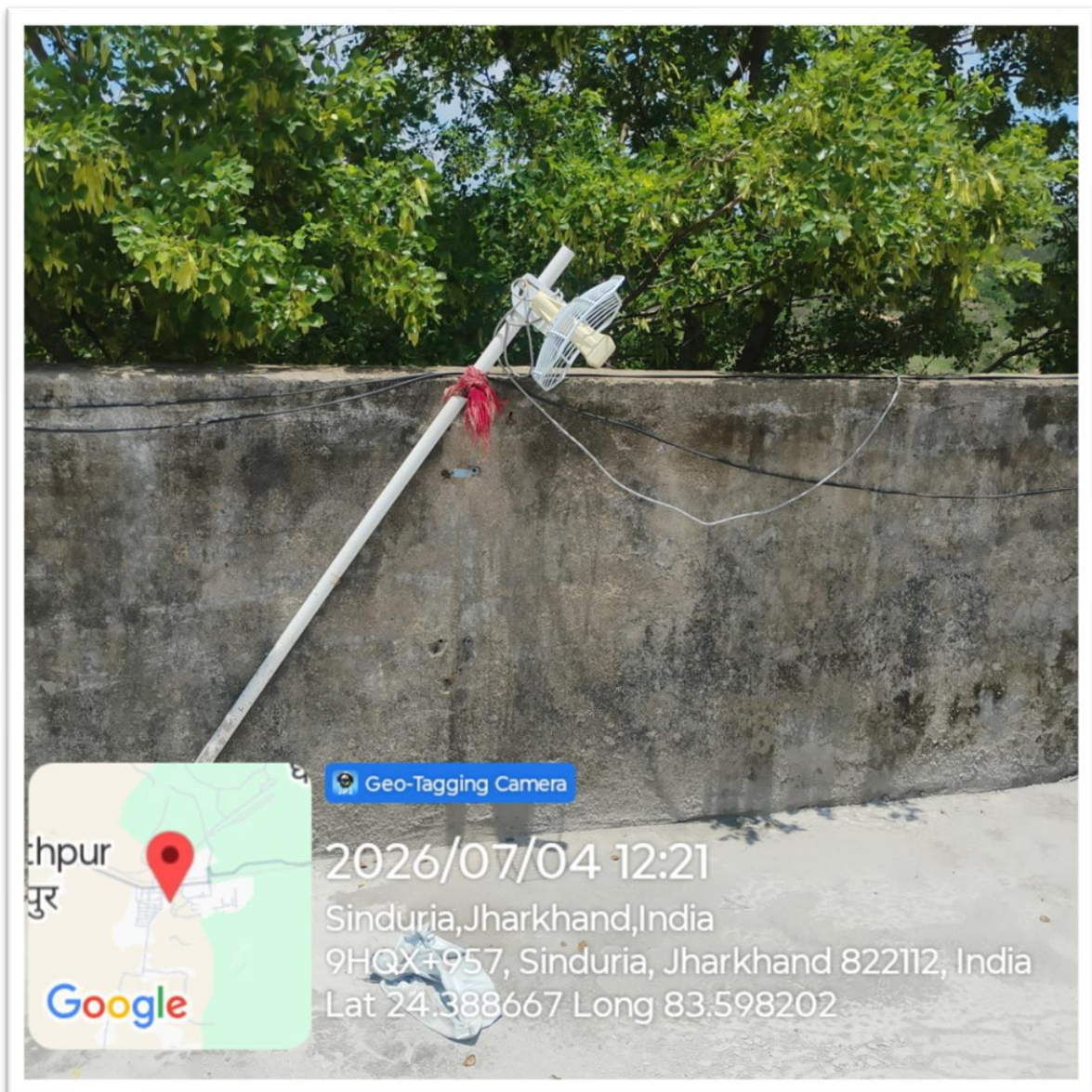
vivo V50 | ZEISS

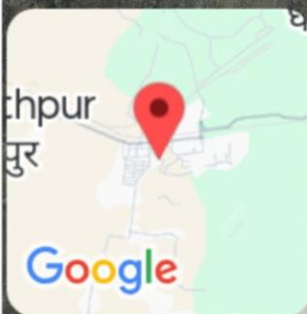
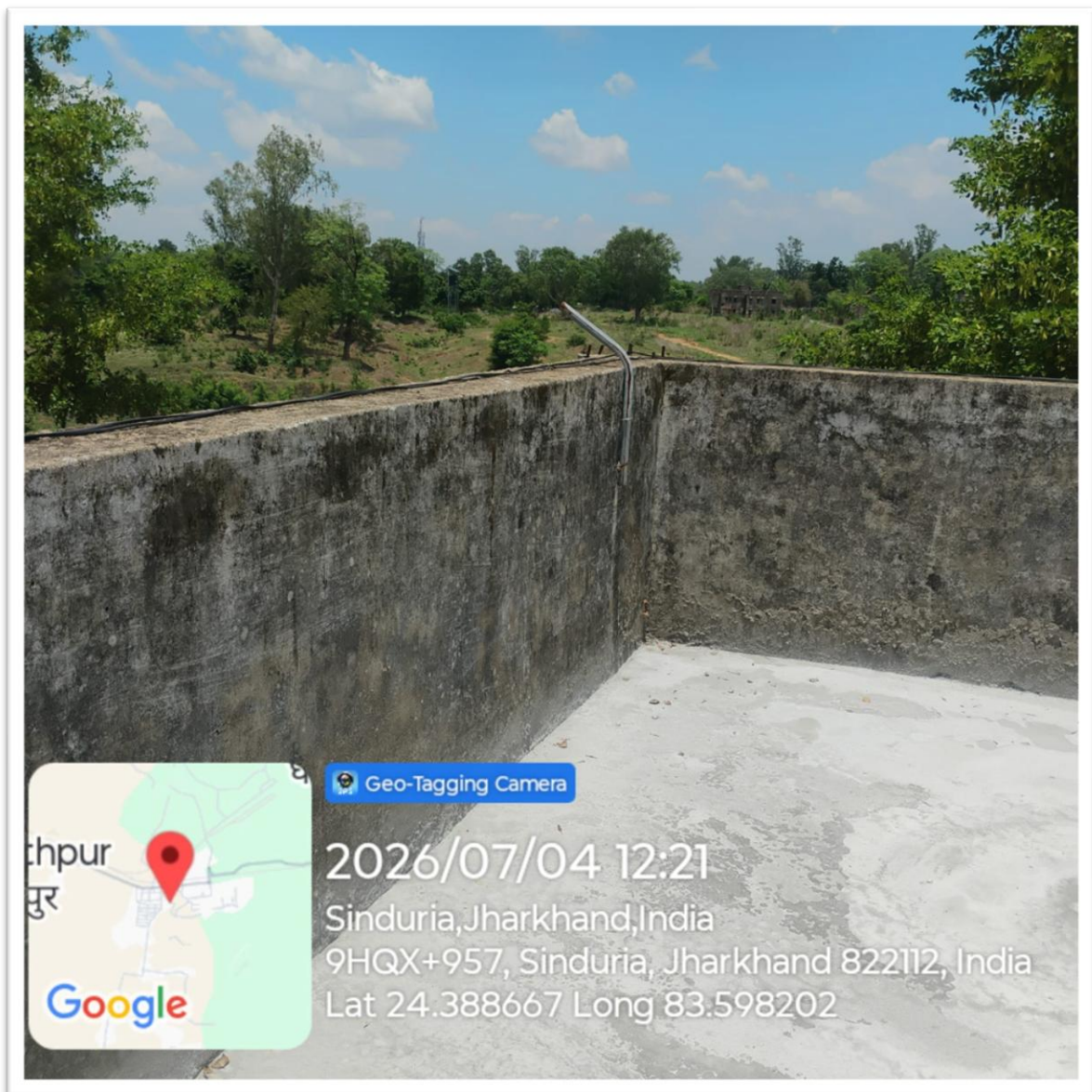
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Geo-Tagging Camera

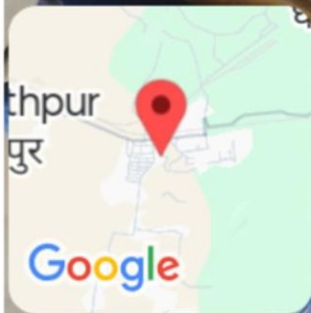
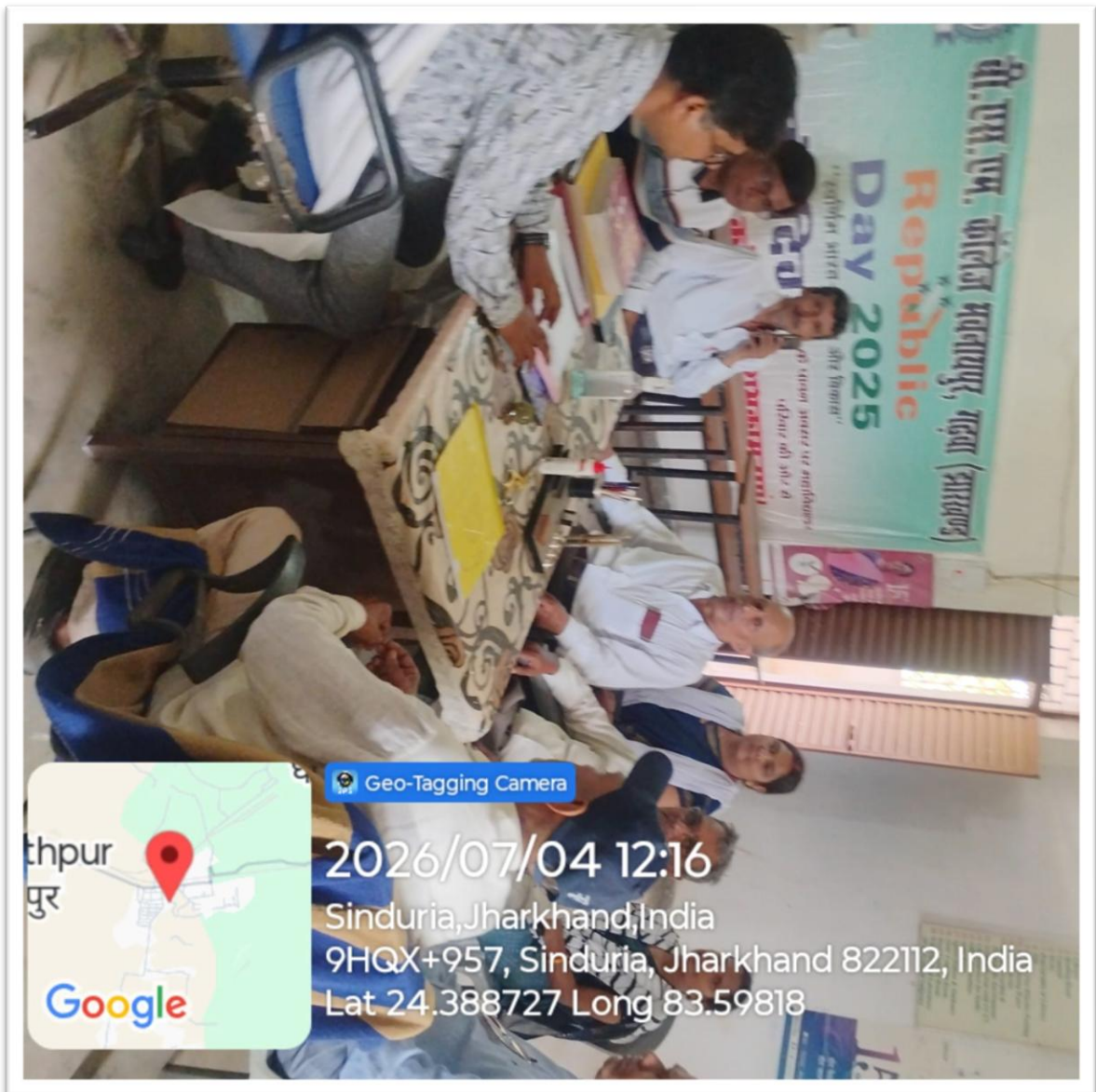
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Sinduria, Jharkhand, India

9HQX+957, Sinduria, Jharkhand 822112, India

Lat 24.388667 Long 83.598202





Geo-Tagging Camera

2026/07/04 12:16
Sinduria, Jharkhand, India
9HQX+957, Sinduria, Jharkhand 822112, India
Lat 24.388727 Long 83.59818







Geo-Tagging Camera

2026/07/04 12:21

Sinduria, Jharkhand, India

9HQX+957, Sinduria, Jharkhand 822112, India

Lat 24.388667 Long 83.598202



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