BEFORE THE HON'BLE NATIONAL GREEN TRIBUNAL,
EASTERN ZONE BENCH, KOLKATA

Original Application no. 165 of 2025/EZ
(Under Section 14, read with Section 18 of the National Green Tribunal Act, 2010.)

IN THE MATTER OF:

M/s. KESPYA ENVIRONMENT MANAGEMENT PVT LTD.

...Applicant

-Versus-

The State of Assam & Ors.

...Respondents

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Ksepya Environment Management Pvt. Ltd.

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Dated: 22/08/2025
Place: Barpeta, Assam.

Rajiv Saikia
Director
Ksepya Environment Management Pvt. Ltd.

BEFORE THE HON'BLE NATIONAL GREEN TRIBUNAL,
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SYNOPSIS

The present application is being filed under Section 14 read with Section 18 of the National Green Tribunal Act, 2010 by the applicant company seeking relief against discriminatory and arbitrary decision-making by the State Level Expert Appraisal Committee (SEAC), Assam in granting Terms of Reference (ToR) to M/s. Kaziranga Biotech Private Limited while keeping the applicant's proposal in abeyance, despite the applicant being in a superior state of regulatory compliance and having obtained necessary approvals including Consent to Establish from PCBA and entering into MOU with Government of Assam under "Advantage Assam 2.0" initiative.

The case raises substantial questions relating to environmental law implementation, violation of principles of natural justice, arbitrary discrimination between similarly situated applicants, and potential environmental and safety risks posed by the competing proposal which fails to meet mandatory distance criteria from sensitive receptors including schools, residential areas, and water bodies as prescribed under CPCB Guidelines for Common Bio-Medical Waste Treatment and Disposal Facilities.

Hench this Original Application.

Rajiv Saikia
Director
Ksepya Environment Management Pvt. Ltd.

BEFORE THE HON'BLE NATIONAL GREEN TRIBUNAL,
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LIST OF DATES

DATE	PARTICULARS
25.02.2025	Applicant entered into MOU with Government of Assam under "Advantage Assam 2.0" initiative with investment commitment of Rs. 30 crores
25.02.2025	Applicant obtained Consent to Establish (CTE) vide Consent No. PCBA/SVR/T-2005/24-25/7 from PCB, Assam
01.07.2025	Applicant submitted application for Environmental Clearance for establishment of CBMWTF at Village: Phukon Khat, Choukhat, District: Jorhat, Assam
21.07.2025	28th SEAC Meeting (2nd Sitting) Part A held - ToR granted to M/s. Kaziranga Biotech Pvt. Ltd. while applicant's proposal kept in abeyance
Present	Filing of this application seeking justice and fair treatment

Director
Ksepya Environment Management Pvt. Ltd.

BEFORE THE HON'BLE NATIONAL GREEN TRIBUNAL,
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MEMO OF PARTIES

IN THE MATTER OF:

M/s. KSEPYA ENVIRONMENT MANAGEMENT PVT LTD, through its Director Mr. Raju Saikia, having its registered office at Village- Helonarpam, P.O. - Howly, District - Barpeta, Assam, Pin - 781316, E: ksepyaenvironment@gmail.com. M: 6002150473

...APPLICANT

-VERSUS-

1. **The State of Assam, Represented by the Chief Secretary to the Government of Assam, Lok Sewa Bhawan,Dispur Gawahati (K.M) Assam 781006; E: cs-assam@nic.in**

2. **State Environment Impact Assessment Authority (SEIAA), Assam, Through its Member Secretary, 3rd Floor, E Block, Janata Bhawan, Dispur, Guwahati (K M), Assam- 781006, E: chmn-seiaa-as@gov.in**

3. **State Expert Appraisal Committee (SEAC), Assam, Through its Member Secretary, PCBA Building, Bamunimaidam, Guwahati- (K M), Assam- 781021, E: sefassam@gmail.com**

4. **The Assam Pollution Control Board, represented by its Member Secretary Dr. G. K. Misra, Bamunimaidam, Guwahati, (K. M.) Assam- 781021, E: membersecretary@pcbassam.org**

Raju Saikia
Director
Ksepya Environment Management Pvt. Ltd.

5. M/s. Kaziranga Biotech Private Limited, Through its Director Mr. Ripunjit Dutta, Plot-1B, Titabor Industrial Estate, Mouza-Thengal Village-Kundorgaon, District-Jorhat, Assam Pin - 785630; EMAIL ID: kaziranga.biotech@gmail.com.

...RESPONDENTS

Director
Ksepya Environment Management Pvt. Ltd.

BEFORE THE HON'BLE NATIONAL GREEN TRIBUNAL,
EASTERN ZONE BENCH, KOLKATA

Original Application no. _____ of 2025/EZ
(Under Section 14, read with Section 18 of the National Green Tribunal Act, 2010.)

IN THE MATTER OF:

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1. The State of Assam, Represented by the Chief Secretary to the Government of Assam, Lok Sewa Dispur, Guwahati, (K M) Assam - 781006; E: cs-assam@nic.in

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3. State Level Expert Appraisal Committee (SEAC), Assam, Through its Member Secretary, PCBA Building, Bamunimaidam, Guwahati (K M), Assam - 781021; EMAIL ID: sefassam@gmail.com

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4. The Assam Pollution Control Board, represented by its Member Secretary Dr. G. K. Misra, Bamunimaidam, Guwahati (K M), Assam- 781021; E: membersecretary@pcbassam.org

5. M/s. Kaziranga Biotech Private Limited, Through its Director Mr. Ripunjit Dutta, Plot - 1B, Titabor Industrial Estate, Mouza - Thengal, Village - Kundorgaon, District-Jorhat, Assam, Pin - 785630; EMAIL ID : kaziranga.biotech@gmail.com.

...RESPONDENTS

The humble application on behalf of the petitioners/ Applicant most respectfully.

SHEWETH :

1. The applicant is a registered company incorporated under the Companies Act 2013, having its registered office at Vill Helonar pam Po Howly, Barpeta, Assam. The applicant is a law-abiding entity engaged in environmental management services and bio-medical waste treatment consultancy with legitimate commercial interests in establishing Common Bio-Medical Waste Treatment Facilities (CBWTF) in accordance with the Bio-Medical Waste Management Rules, 2016. The address of the applicant is given in the cause title above and the addresses of the respondents are also given in the cause title memo of parties above.

2. The present Original Application is being filed under Section 14 read with Section 18 of the National Green Tribunal Act, 2010. The present application raises substantial questions relating to environment arising out of the implementation of statutes relating to environment, more particularly mentioned in Schedule-I of the National Green Tribunal Act, 2010, specifically concerning discriminatory application of environmental clearance procedures and violation of principles enshrined in the Environment (Protection) Act, 1986.

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3. The addresses of the respondents are stated above for the purpose of service of notices pertaining to the instant application. All the acts, actions and inactions of the respondent authorities are amenable to the jurisdiction of this Hon'ble Tribunal. The respondent no. 1 to 4 are authorities within the meaning of Article 12 of the Constitution of India, 1950 and/or functionaries thereunder and respondent no. 5 is the private respondent whose competing proposal has received preferential and discriminatory treatment in violation of constitutional and environmental law principles.

A. FACTS OF THE CASE:

1. That in view of the pressing need for Common Bio-Medical Waste Treatment Facilities (CBWTF) in the state of Assam, particularly in Jorhat district, the Applicant submitted an application for Environmental Clearance for establishment of CBMWTF in accordance with the Bio-Medical Waste Management Rules, 2016 and guidelines issued by the Central Pollution Control Board. The applicant's initiative addresses a critical gap in healthcare waste management infrastructure, considering that the region has over 31,477 healthcare facility beds generating substantial biomedical waste requiring scientific treatment and disposal.

2. The present matter arises out of the manifestly illegal, arbitrary, and discriminatory order contained in the Minutes of 28th SEAC-ASSAM Meeting (2nd Sitting) Part A State Expert Appraisal Committee meeting held on 21st July 2025, whereby the application of the applicant for grant of Terms of Reference (ToR) for establishment of Common Bio-Medical Waste Treatment Facility (CBWTF) at Village: Phukon Khat, Choukhat, District: Jorhat, Assam has been kept in abeyance while simultaneously and inexplicably granting ToR to M/s. Kaziranga Biotech Private Limited for a competing facility in the same region, despite the applicant's demonstrably superior state of regulatory compliance and environmental preparedness.

3. The applicant states that vide application dated 1st July 2025, it had submitted a comprehensive application for grant of Terms of Reference (TOR) for establishment of CBMWTF at Village: Phukon

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Khat, Choukhat, District: Jorhat, Assam covering Khata no. 100, Plot No. 416, Khata No. 133, Plot No. 415 and Khata No. 76, Plot no. 743 measuring 0.607 hectares. The application was accompanied by all requisite documents including Pre-feasibility Report, technical specifications, and environmental management plans demonstrating full compliance with statutory requirements.

Copy of the application and other documents are attached herewith and marked as Annexure- A/1 Collectively.

4. That the Applicant's project has been meticulously planned and designed in strict compliance with all environmental norms, regulations, and safety standards prescribed under the Environment (Protection) Act, 1986, Bio-Medical Waste Management Rules, 2016 and CPCB Guidelines. The Applicant has already demonstrated exceptional regulatory diligence by obtaining various statutory approvals including Trade License valid till 30th July 2026 from BDO, East Teok Development Block, Jorhat and has proactively applied for NOC from Central Ground Water Authority vide Application No. IND/AS/2025/11404, evidencing its commitment to comprehensive regulatory compliance.

Copy of the Acknowledgment Receipt and site photograpgh is attached herewith and marked as Annexure- A/2 Collectively.

5. The applicant has entered into a legally binding Memorandum of Understanding dated 25th February, 2025 with the Government of Assam under the prestigious "Advantage Assam 2.0" initiative, representing a substantial investment commitment of Rs. 30 crores. This MOU constitutes formal governmental recognition and endorsement of the applicant's project, demonstrating the state government's confidence in the applicant's technical competence, financial capability, and strategic importance for Assam's healthcare infrastructure development. The Government of Assam's willingness to invest such a substantial amount reflects the merit, viability, and public importance of the applicant's proposal.

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Director
Ksepya Environment Management Pvt. Ltd.

Copy of the Memorandum of Understanding dated 25th February, 2025 is attached herewith and marked as Annexure-A/3.

6. The applicant has successfully obtained Consent to Establish (CTE) vide Consent No. PCBA/SVR/T-2005/24-25/7 dated 25.02.2025 from the Assam Pollution Control Board (APCB), demonstrating its advanced state of preparation and meticulous compliance with environmental regulatory requirements. This CTE was granted only after rigorous and thorough examination by APCB of the applicant's comprehensive technical proposal, detailed site suitability analysis, and robust environmental compliance measures. The grant of CTE by the Assam Pollution Control Board, has found the applicant's proposal to be technically sound, environmentally viable, and worthy of regulatory approval.

Copy of the CTE granted by Member Secretary PCBA is attached herewith and marked as Annexure- A-4.

7. That as per the Central Pollution Control Board Guidelines for Common Bio-Medical Waste Treatment and Disposal Facilities, 2016, specifically clause 8(a), a CBMWTF shall be allowed to cater to health care units situated at a radial distance of 75 KM, ensuring comprehensive regional coverage. Clause 8(b) provides clear criteria that a new CBMWTF may be allowed in case the number of beds in health care facilities exceed 10,000 in a locality, thereby recognizing the legitimate need for multiple facilities in high-density healthcare regions.

8. That based on verifiable data from the Indira Gandhi Institute of Medical Science and other authoritative healthcare sources, the district of Jorhat has more than 31,477 health care facility beds. The sole existing CBMWTF in the region is operating beyond its optimal capacity, handling bio-medical waste from multiple districts, creating an urgent and demonstrable need for additional treatment facilities to ensure scientific waste management and prevent environmental and public health hazards.

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9. That on 21st July 2025, the 28th SEAC Meeting (2nd Sitting) Part A was convened wherein both the Applicant's meticulously prepared proposal and that of M/s. Kaziranga Biotech Pvt. Ltd. were listed for consideration. However, in a shocking display of discriminatory and arbitrary decision-making that violates fundamental constitutional principles, the Committee recommended grant of ToR to M/s. Kaziranga Biotech Pvt. Ltd. while inexplicably deferring the Applicant's superior proposal seeking Additional Details Sought (ADS), despite the applicant's demonstrably advanced state of regulatory preparedness.

Copy of the Meeting Agenda and Minutes of the Meeting dated 21st July, 2025, of the 28th SEAC Meeting (2nd Sitting) Part A are attached herewith and marked as Annexure- A/5 Collectively.

10. That the reasons cited by SEAC for deferring the Applicant's proposal are manifestly misconceived, legally untenable, arbitrary, and contrary to the established guidelines and principles of environmental jurisprudence. The SEAC observed that the Applicant's land is agricultural land requiring classification, however, this is merely a procedural requirement that can be fulfilled during the project implementation phase as per established practice and does not constitute any legal impediment or justification for rejection or deferral of ToR, particularly when the competing proposal was not subjected to similar stringent scrutiny or procedural requirements.

11. That most shockingly and demonstrating fundamental legal ignorance, the SEAC questioned why the Applicant obtained Consent to Establish (CTE) from APCB prior to obtaining Environmental Clearance (EC) from SEIAA in a situation where Member Secretary of SEAC-ASSAM is also the Member Secretary of Assam Pollution Control Board, who has granted Consent to Establish (CTE) to the Petitioner's organisation vide order No. PCBA/SVR/T-2005/24-25/7 dated 25.02.2025. APCB granted the CTE only after its officials visited the proposed site suitable for the construction of a CBWTF. This observation is fundamentally flawed, legally misconceived, and demonstrates either ignorance of or deliberate misapplication of the regulatory framework. There

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exists no legal prohibition whatsoever on obtaining CTE before EC under any environmental statute, rule, or guideline. Furthermore, the statutory time limit in CTE for establishing a plant is 5 years, providing more than sufficient time to complete the EC process. The CTE-first approach actually demonstrates the applicant's proactive regulatory compliance and should have been viewed favorably rather than being used as grounds for discrimination.

12. That the area surrounding the proposed site of the applicant contains tea estates and orchid cultivation farms, which are indeed sensitive to environmental pollution. However, the applicant's proposal includes comprehensive environmental management measures, adequate buffer zones, and state-of-the-art pollution control technologies specifically designed to ensure that any potential contamination is prevented, thereby protecting these agricultural and horticultural activities and safeguarding the livelihood of local farmers. The applicant's environmental management plan demonstrates scientific rigor and regulatory compliance that addresses all potential environmental concerns.

13. That in stark contrast, the location chosen by Respondent no. 5 flagrantly violates the basic principles of site selection for biomedical waste treatment facilities as prescribed in various guidelines issued by CPCB, Ministry of Environment, and established environmental jurisprudence, which emphatically emphasize maintaining adequate distance from schools, residential areas, water bodies and agricultural lands to prevent environmental degradation and protect public health.

14. Additionally, the applicant has demonstrated comprehensive regulatory foresight by applying for NOC from the Central Ground Water Authority (CGWA) vide Application No. IND/AS/2025/11404, evidencing its unwavering commitment to obtaining all necessary regulatory clearances in accordance with law. The applicant also holds a valid trade license till 30th July 2026 issued by BDO, East Teok Development Block, Jorhat, thereby establishing its legitimate business operations and legal standing in the region.

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Copy of the Certificate of Incorporation and Trade License is annexed herewith and marked as Annexure A/6 Collectively.

15. The applicant's proposal encompasses a strategically planned total project area of 0.607 hectares, with a scientifically designed layout that includes adequate space for treatment facilities, administrative buildings, and comprehensive environmental safeguards. The project proponent proposes to collect and transport biomedical waste to CBMWTF for treatment and disposal from different districts namely Jorhat, Golaghat, Sivasagar, Lakhimpur and Charaideo, thereby serving a crucial regional need for scientific biomedical waste management and contributing significantly to public health protection and environmental conservation.

16. The applicant has proposed development of Green Belt covering an area of 0.2 hectares in strict compliance with environmental regulations requiring 33% of the total plot area, involving plantation of 250 numbers of saplings with a dedicated budget of INR 5.0 Lakh earmarked specifically for this environmental conservation purpose. This demonstrates the applicant's genuine commitment to environmental protection, compliance with mandatory green cover requirements, and contribution to ecological restoration.

17. The total project cost is estimated at Rs. 950 Lakh, representing a substantial and serious investment in advanced waste treatment technology and robust infrastructure development. The applicant's proposal includes deployment of state-of-the-art treatment technologies that not only comply with but exceed the requirements of the Bio-medical Waste Management Rules, 2016 and the comprehensive guidelines issued by the Central Pollution Control Board (CPCB), ensuring optimal environmental protection and operational efficiency.

Copy of the Pre-feasibility Report and other documents are attached herewith and marked as Annexure- A-7 Collectively.

18. The applicant's proposed site at Village: Phukon Khat, Choukhat has been carefully and scientifically selected after comprehensive evaluation of various environmental, logistical, geological, and

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social factors. The site provides adequate buffer distances from residential areas, educational institutions, and other sensitive receptors as mandated by CPCB guidelines and environmental best practices. The location offers strategic advantages for efficient waste collection from the target districts while minimizing environmental impact on surrounding communities and ensuring operational viability.

19. The comprehensive site assessment conducted by qualified environmental consultants reveals that the proposed location meets and exceeds all the mandatory criteria specified in the CPCB Guidelines for Common Bio-Medical Waste Treatment and Disposal Facilities, including appropriate soil conditions, accessibility for transportation, adequate water supply arrangements, proper drainage facilities, and geological suitability. The detailed environmental impact assessment conducted for the site indicates minimal adverse effects on the local ecosystem when proper mitigation measures are implemented as proposed.

Copy of the CPCB Guidelines for CBMWTF is attached herewith and marked as Annexure- A-8.

20. The applicant states that in the 28th SEAC Meeting (2nd Sitting) Part A held on 21st July 2025, the State Level Expert Appraisal Committee, Assam considered the applicant's meticulously prepared proposal as Agenda Item No. 3 alongside the proposal of M/s. Kaziranga Biotech Private Limited as Agenda Item No. 1. Despite the applicant's demonstrably superior state of preparation, having already obtained CTE from the competent authority and entered into binding MOU with the Government of Assam with substantial financial commitment, the Committee inexplicably and without any rational basis granted ToR to M/s. Kaziranga Biotech Private Limited while arbitrarily deferring the applicant's proposal for Additional Details Sought (ADS).

21. The SEAC's deliberations reveal a clear, manifest, and legally impermissible bias against the applicant's proposal, violating constitutional principles of equality and fair treatment. The Committee noted that requisite documents requiring clearances

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from the statutory bodies were uploaded including Form 1, Pre-feasibility Report (PFR), and proposed standard ToR containing the conditions required for compliance. However, the Committee arbitrarily and without proper legal basis determined that land conversion and Jamabandi copy of land in question were not submitted/uploaded, despite the applicant having provided comprehensive documentation in accordance with prescribed requirements.

22. Furthermore, the Committee categorically and erroneously submitted that the parcel of land in question was agricultural land and necessary classification of land befitting establishment of the proposed unit was found wanting. However, this determination was made without proper site inspection, verification, or adherence to due process, and the Committee failed to provide the applicant with adequate opportunity to clarify, supplement, or rectify the documentation as required by principles of natural justice and procedural fairness.

23. The SEAC's decision-making process constitutes a flagrant violation of fundamental principles of natural justice, procedural fairness, and constitutional due process guaranteed under Articles 14 and 21 of the Constitution of India. The Committee failed to apply uniform standards to both applicants, creating an arbitrary, discriminatory, and legally impermissible distinction between similarly situated parties without any rational basis. While the applicant was subjected to stringent scrutiny and asked for additional details, M/s. Kaziranga Biotech Private Limited was granted ToR despite having less advanced preparation, inferior regulatory compliance, and questionable site suitability.

24. The Committee's reasoning that the applicant failed to justify the cogent reasons for obtaining CTE from PCBA prior to obtaining necessary EC from SEIAA demonstrates a fundamental misunderstanding of the regulatory framework and environmental law principles. The EIA notification and related regulations do not prohibit obtaining CTE before EC; rather, it is a common, accepted, and legally permissible practice in the industry to obtain various

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clearances in parallel to expedite project implementation and demonstrate regulatory compliance.

25. The Committee also demanded NOC from the Circle Office/Revenue Office showing that the proposed parcel of land was non-agricultural land, NOC from local authority/Gram Panchayat, and permission from CGWA. However, these requirements were imposed selectively and discriminatorily on the applicant while not being similarly applied to the competing proposal, demonstrating clear procedural bias, violation of equal treatment principles, and arbitrary exercise of administrative power.

26. The proposal of M/s. Kaziranga Biotech Private Limited, which was granted ToR by the SEAC in a patently discriminatory manner, raises serious, substantial, and legally cognizable environmental and safety concerns that were either deliberately overlooked or inadequately considered by the Committee in violation of environmental protection principles. The proposed site at Plot-1B, Titabor Industrial Estate, Mouza-Thengal, Village-Kundorgaon, District-Jorhat, Assam is located in dangerous proximity to sensitive receptors, creating potential and substantial risks to public health, environmental safety, and community welfare.

27. Most critically and alarmingly, the proposed site of M/s. Kaziranga Biotech Private Limited is merely 95 meters away from Kundar High School, which constitutes a serious, flagrant, and legally impermissible violation of CPCB guidelines that mandate minimum buffer distances from educational institutions for public safety. The proximity of a biomedical waste treatment facility to a school creates unacceptable and legally prohibited risks to the health and safety of students, teachers, and staff, particularly considering the potential for air emissions, noise pollution, odor nuisance, and accidental releases during waste treatment operations.

28. Additionally, the proposed site of M/s. Kaziranga Biotech Private Limited is located within 150 meters of densely populated residential areas, tea estates, and agricultural lands, which directly and flagrantly contravenes the fundamental principle of biomedical waste management that such facilities should be located away from

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sensitive receptors to minimize health risks and environmental impacts. The presence of tea estates and agricultural activities in the vicinity raises serious concerns about potential contamination of food crops and water sources used for agriculture, thereby threatening food security and agricultural livelihoods.

29. The area also contains water bodies that could be adversely affected by the biomedical waste treatment operations, creating substantial risk of groundwater and surface water contamination from facility operations. This poses a significant threat to the local ecosystem, community water supplies, and aquatic biodiversity. The presence of orchid cultivation and other ecologically sensitive flora in the area further compounds the environmental risks associated with the competing proposal.

Copy of the Google Photographs showing the distances and other photographs are attached herewith and marked as Annexure- A-9 Collectively.

30. That the action of the SEAC in granting ToR to Respondent no. 5 while keeping the Applicant's proposal in abeyance constitutes a flagrant violation of the Central Pollution Control Board Guidelines which provide clear, unambiguous criteria for establishment of CBMWTF and do not discriminate between private entrepreneurs or provide any basis for preferential treatment based on arbitrary considerations.

31. That Clause 2(d) of the CPCB Guidelines specifically provides that alternatively, a CBWTF may be allowed to be established on land procured by an entrepreneur himself, in accordance with location criteria suggested under the Guidelines. The Applicant's proposal falls squarely within this provision and should have been evaluated solely on its technical and environmental merits.

32. That the 75 km radius guideline mentioned in Clause 8(a) of the CPCB Guidelines is not violated by the Applicant's project, and both projects being within the same district and within the threshold radius makes the grant of ToR to one while rejecting the other

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completely arbitrary, discriminatory, and contrary to the principle of equal treatment under law.

33. That the SEAC's decision fails to consider the actual demand for biomedical waste treatment facilities in the region based on scientific assessment. Given that the existing facility is handling waste from multiple districts beyond its optimal capacity and the region has over 31,477 healthcare beds, there is clear and demonstrable justification for multiple facilities to ensure comprehensive coverage and environmental protection.

34. That the Environmental Impact Assessment Notification, 2006 requires fair, transparent, and non-discriminatory appraisal of all projects without favoritism or bias. The differential treatment accorded to similar projects violates the fundamental principles of environmental jurisprudence, constitutional law, and administrative justice.

35. The Central Pollution Control Board Guidelines for Common Bio-Medical Waste Treatment and Disposal Facilities specifically mandate strict adherence to location criteria, comprehensive environmental impact assessment, and buffer zone requirements. These guidelines, developed after extensive scientific research and stakeholder consultation, represent the minimum standards necessary to ensure environmental protection and public health safety in the context of biomedical waste treatment operations.

36. The guidelines emphasize the critical importance of proper site selection, requiring that facilities be located at scientifically determined appropriate distances from residential areas, educational institutions, water bodies, and other sensitive receptors. The minimum distance requirements are not arbitrary but are based on rigorous scientific assessment of potential environmental impacts, including air emissions, noise generation, traffic impacts, and risk of accidental releases.

37. The competing proposal's (M/s. Kaziranga Biotech Private Limited) failure to meet these mandatory requirements should have resulted in its outright rejection by the SEAC. The Committee's decision to

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grant ToR despite these obvious violations of established guidelines demonstrates either a lack of proper evaluation, deliberate disregard for environmental protection standards, or susceptibility to extraneous considerations. This decision sets a dangerous precedent that could undermine the effectiveness of environmental regulation in the biomedical waste management sector.

38. The establishment of the competing facility effectively creates a monopolistic situation in the biomedical waste treatment sector within the 75 km radius mandated by CPCB guidelines. This exclusion of the applicant from the market violates principles of fair competition, creates an anti-competitive environment detrimental to both service quality and pricing for healthcare facilities in the region, and constitutes abuse of administrative power.

39. The applicant's proposal offers superior economic benefits to the region, including greater operational efficiency, better service coverage, competitive pricing for biomedical waste treatment services, and substantial employment generation. The Government of Assam's decision to invest Rs. 30 crores in the applicant's project through the MOU demonstrates official recognition of the project's economic viability, technical soundness, and strategic importance for the state's healthcare infrastructure development.

40. The exclusion of the applicant from the market also represents a significant economic loss to the state, as the proposed investment of Rs. 950 Lakh and employment generation opportunities associated with the applicant's project will be foregone due to arbitrary administrative decision-making. The applicant's project was designed to create sustainable employment opportunities while providing essential environmental services to the healthcare sector in the region.

41. The SEAC's discriminatory treatment of the applicant's proposal constitutes a flagrant violation of Article 14 of the Constitution of India, which guarantees equality before law and equal protection of laws. The Committee applied different standards to similarly situated applicants without any rational, legal, or policy basis, creating an arbitrary classification that cannot withstand

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constitutional scrutiny and violates the fundamental principle of equal treatment.

42. The applicant's fundamental right to carry on trade and business under Article 19(1)(g) of the Constitution has been violated through the arbitrary denial of ToR while granting the same to a competing entity under identical circumstances. The restrictions imposed on the applicant's business activities are neither reasonable nor proportionate to any legitimate regulatory objective, making them constitutionally impermissible and legally unsustainable.

43. The procedural violations in the SEAC's decision-making process also constitute a denial of natural justice, which is a fundamental aspect of constitutional due process under Article 21 of the Constitution. The applicant was denied adequate opportunity to present its case, respond to concerns raised by the Committee, and receive fair consideration of its proposal on merits, thereby violating well-established principles of administrative law.

44. The rejection of the applicant's proposal is manifestly contrary to public interest, as it denies the region access to additional biomedical waste treatment capacity that is urgently needed to handle the growing volume of healthcare waste from over 31,477 healthcare beds. The existing single facility in the region is inadequate to handle the waste generation from multiple districts, creating potential public health risks from improper waste management.

45. The applicant's proposal would have provided additional treatment capacity while ensuring competitive pricing, improved service quality, and enhanced environmental management for healthcare facilities in the region. The proposal included advanced treatment technologies and comprehensive environmental management measures that would have elevated the overall standard of biomedical waste management in the area.

46. The Government of Assam's support for the applicant's project through the MOU reflects the state's recognition of the project's importance for healthcare infrastructure development and

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environmental protection. The investment of Rs. 30 crores in the project would have generated significant economic benefits, including job creation, technology transfer, improved environmental services, and contribution to the state's industrial development.

47. That there is urgent need for interim relief as Respondent no. 5 may proceed with the next steps of Environmental Clearance process based on the ToR granted, which would cause irreparable harm to the Applicant's legitimate business interests and create serious environmental risks due to the unsuitable location and non-compliance with mandatory safety requirements.

48. That the environmental and safety concerns regarding Respondent no. 5's project location require immediate attention and intervention by this Hon'ble Tribunal to prevent potential harm to school children studying at Kundar High School, local population residing in proximity, and the fragile environment of the region.

49. That the Applicant's project, being supported by the Government of Assam with a substantial financial commitment of Rs. 30 Crore and having demonstrated superior regulatory compliance, deserves fair consideration on merits and cannot be allowed to be prejudiced by arbitrary, discriminatory, and legally impermissible actions of the authorities.

50. The grant of ToR to the competing proposal creates an irreversible situation that causes irreparable harm to the applicant's legitimate business interests and constitutional rights. Once the competing facility becomes operational, the applicant will be permanently excluded from the market due to the 75 km radius limitation specified in CPCB guidelines. This exclusion cannot be adequately compensated through monetary damages, as it represents the loss of a unique business opportunity in a regulated sector with limited entry possibilities.

51. The applicant has already invested substantial resources in project development, regulatory compliance, and obtaining various clearances in legitimate expectation of fair treatment. The time and

Rajiv Saikia
Director
Ksepya Environment Management Pvt. Ltd.

financial investments made by the applicant in reliance on the legitimate expectation of fair regulatory treatment will be entirely lost if the competing proposal is allowed to proceed without proper evaluation.

52. The environmental risks associated with the competing proposal pose ongoing threats to public health and ecosystem integrity that cannot be adequately remedied after the facility becomes operational. The proximity to sensitive receptors and violation of environmental standards create permanent risks that will persist throughout the facility's operational life.

53. The Hon'ble Supreme Court in M.C. Mehta v. Union of India (1987) 1 SCC 395 (Oleum Gas Leak Case) established the principle of absolute liability for enterprises engaged in hazardous activities and emphasized that environmental clearances must be granted based on strict compliance with safety norms, not arbitrary preferences or considerations extraneous to environmental protection. The Court emphasized that regulatory authorities must apply consistent standards and provide reasoned decisions based on objective criteria.

54. In Vellore Citizens Welfare Forum v. Union of India (1996) 5 SCC 647, the Hon'ble Supreme Court laid down the precautionary principle and polluter pays principle as fundamental principles of environmental law, emphasizing that environmental decisions must prioritize ecological protection and public health over commercial considerations. The Court held that regulatory authorities have a constitutional duty to ensure that environmental clearances are granted only to projects that meet prescribed environmental standards and do not pose unacceptable risks to public health or environmental integrity.

55. The Hon'ble National Green Tribunal in Goa Foundation v. Union of India has consistently held that environmental clearances granted in violation of statutory provisions and procedural requirements are liable to be set aside. The Tribunal has emphasized that regulatory authorities must follow prescribed procedures, apply uniform standards without discrimination, and

Raju Sairam
Director
Ksepya Environment Management Pvt. Ltd.

provide adequate reasoning for their decisions based on environmental and legal considerations.

56. The impugned decision of the SEAC granting ToR to M/s. Kaziranga Biotech Private Limited while keeping the applicant's proposal in abeyance is not sustainable in the eyes of law for the following comprehensive legal reasons:

a. Firstly, the applicant was not required to participate in any competitive tender process, as a joint reading of clause 2(c), (d) and (e) of the CPCB Guidelines makes it amply clear that Expression of Interest is to be sought from the proponents/applicants for establishing new CBMWTF only when the suitable land is being allocated by the department in the business allocation of land assignment. The same can also be deduced from the flow chart provided in the said Guidelines.

b. Secondly, clause 2(d) of the CPCB Guidelines provides that alternatively, a CBMWTF may also be allowed to be established on a land procured by an entrepreneur himself, in accordance with the location criteria suggested under these Guidelines. This provision clearly establishes that private entrepreneurs like the applicant are entitled to establish facilities without participating in any tender process and should be evaluated solely on merit.

c. Thirdly, clause 2(e) of the Guidelines specifically provides that Expression of Interest may be sought from those proponents/applicants to whom land has been allocated by concerned department in the business allocation of land. Since the applicant has procured its own private land in accordance with law, this requirement does not apply and cannot be used as grounds for discrimination.

57. The respondents did not consider the applicant's application in the time bound manner as prescribed per the EIA notification and administrative guidelines. The allegation that the applicant did not comply with additional conditions is misconceived, as the application of the applicant was way past the preliminary stage and

Raju Saikia
Director
Ksepya Environment Management Pvt. Ltd.

had demonstrated comprehensive regulatory compliance through obtaining CTE and other clearances.

58. There is grave urgency in the matter as the applicant believes that the private respondent may soon begin operations as ToR has been granted, thus causing irreparable damage to the applicant's legitimate business interests and constitutional rights. Therefore, it is just and necessary to quash and set aside the said impugned orders, recommendations and observations passed by the members present in the SEAC meeting and to restrain the Respondent authorities from giving any effect or further effect to these arbitrary and discriminatory orders.

59. The applicant, therefore, reserves its right to amend/alter the present petition, if deemed necessary, after obtaining additional evidence or documentation that may come to light during the proceedings.

60. There is no alternative or efficacious remedy available to the applicant, as the discriminatory decision affects fundamental rights and environmental interests that can only be adequately addressed by this Hon'ble Tribunal.

61. The applicant has not approached the Hon'ble Supreme Court of India or any other Court/Tribunal for reliefs pertaining to the same cause of action, ensuring that there is no multiplicity of proceedings.

62. If the reliefs as prayed for herein are not granted, the applicant and the environment will suffer irreparable loss and injury, and the precedent set will encourage arbitrary decision-making in environmental matters.

63. The applicant states that the SEAC under no circumstances question the CTE granted by PCBA, as both bodies are equivalent and not subordinate to another.

64. Being aggrieved by and dissatisfied with the said illegal, arbitrary, discriminatory, and constitutionally impermissible order contained

Raju Saikia
Director
Ksepya Environment Management Pvt. Ltd.

in the Minutes of 28th SEAC Meeting (2nd Sitting) Part A State Level Expert Appraisal Committee meeting held on 21st July 2025, the applicant begs to move this application on, inter alia, the following amongst other grounds:

B. GROUNDS:

I. FOR THAT the ToR granted to M/s. Kaziranga Biotech Pvt. Ltd. is illegal, arbitrary, unconstitutional, and violates environmental safety norms given the dangerous proximity to Kundar High School (95 meters), residential areas (150 meters), water bodies, and agricultural lands, in flagrant violation of CPCB Guidelines for Common Bio-Medical Waste Treatment and Disposal Facilities and established principles of environmental protection.

II. FOR THAT the deferral of the Applicant's proposal seeking Additional Details Sought (ADS) while granting ToR to a competitor project violates fundamental principles of natural justice, equal treatment, and non-discrimination as guaranteed under Articles 14, 19(1)(g), and 21 of the Constitution of India, and constitutes arbitrary exercise of administrative power.

III. FOR THAT both projects being within the 75 km radius threshold makes the decision to favor one over the other completely arbitrary, discriminatory, and contrary to CPCB Guidelines, especially when the region has over 31,477 healthcare beds justifying multiple facilities under clause 8(b) of the Guidelines.

IV. FOR THAT the region requires multiple CBWTF facilities given the large number of healthcare beds (31,477+) and the demonstrable inadequacy of existing facilities to handle the volume of biomedical waste generated, making the exclusion of the applicant contrary to public interest and environmental protection.

V. FOR THAT the Applicant has demonstrated superior compliance with all necessary requirements including government support through MoU with Rs. 30 crore investment commitment, obtaining CTE from PCBA, applying for CGWA clearance, and securing trade

Raju Sarkia
Director
Ksepya Environment Management Pvt. Ltd.

license, while the competing proposal lacks such comprehensive regulatory preparedness.

VI. FOR THAT the environmental and safety risks posed by Respondent no. 5's project location, particularly its proximity to educational institutions and residential areas, make it manifestly unsuitable for biomedical waste treatment operations and its approval violates the precautionary principle and duty of care towards public health.

VII. FOR THAT the SEAC's decision violates the Environmental Impact Assessment Notification, 2006 which mandates fair and transparent appraisal of all projects without discrimination, and the differential treatment accorded to similar projects contravenes fundamental principles of environmental jurisprudence and administrative law.

VIII. FOR THAT the grant of ToR to the competing proposal creates an illegal monopolistic situation within the 75 km radius mandated by CPCB guidelines, violating principles of fair competition and creating an anti-competitive environment detrimental to service quality and pricing for healthcare facilities in the region.

IX. FOR THAT the SEAC's decision demonstrates either lack of proper evaluation or deliberate disregard for environmental protection standards, setting a dangerous precedent that undermines the effectiveness of environmental regulation in the biomedical waste management sector.

X. FOR THAT the actions of respondent authorities constitute abuse of discretionary power, violation of legitimate expectation, and failure to consider relevant factors while considering irrelevant factors in the decision-making process, thereby violating established principles of administrative law.

65. There is no alternative or efficacious remedy available to the applicant.

Rajiv Saikia
Director
Ksepya Environment Management Pvt. Ltd.

66. The applicant has not approached the Hon'ble Supreme Court of India or any other Court/Tribunal for reliefs pertaining to the same cause of action.

67. If the reliefs as prayed for herein are not granted, the applicant and the environment will suffer irreparable loss and injury.

C. LIMITATION:

That there has been no delay in preferring this application and the present application is not barred by the Laws of Limitation. The discriminatory order contained in the Minutes of 28th SEAC Meeting was passed on 21st July 2025 and this application is being filed within the limitation period prescribed under Section 14(3) of the National Green Tribunal Act, 2010.

Furthermore, the environmental damage and discrimination is a continuing offense, and the cause of action is still continuing as the respondent authorities continue to give effect to the impugned discriminatory decision and have not taken appropriate action to remedy the arbitrary and illegal actions complained of herein.

D. PRAYERS:

In the circumstances aforesaid, your applicant prays that Your Lordships may graciously be pleased to pass the following orders:

a. Cancel and/or quash and/or set aside the impugned order contained in the Minutes of 28th SEAC Meeting dated 21st July 2025 by SEIAA granting ToR to M/s. Kaziranga Biotech Private Limited in relation to Agenda Item No. 1 while keeping applicant's proposal in abeyance as Agenda Item No. 3;

b. To direct the respondent authorities to consider the application of the applicant for grant of Environmental Clearance for establishment of CBWTF on merits, in accordance with law, and without any discrimination or bias;

c. An order of injunction restraining the respondent authorities, their officers, men, agents, servants and/or assigns, from granting

Raju Saikia
Director
Ksepya Environment Management Pvt. Ltd.

Environmental Clearance to respondent no. 5 till the pendency of this Original Application;

d. Direct the SEAC, Assam to re-evaluate the proposal of respondent no. 5 considering the mandatory distance criteria from schools, residential areas, water bodies and agricultural lands as prescribed in CPCB Guidelines for Common Bio-Medical Waste Treatment and Disposal Facilities;

e. Issue an order directing the Respondent nos. 1 to 4 to ensure that the CPCB Guidelines for Common Bio-Medical Waste Treatment and Disposal Facilities are strictly implemented and uniform standards are applied to all applicants without discrimination;

f. Direct the APCB and SEAC to submit a complete inventory of all Biomedical Waste Treatment Facilities to whom ToR/CTE has been issued in violation of distance and siting criteria in Jorhat district and other parts of Assam after the notification of relevant guidelines;

g. Direct the authorities to verify and submit a comprehensive report on the nature of land where biomedical waste treatment facilities are being established, and to take appropriate legal action if agricultural land has been illegally converted for commercial use without proper approvals;

h. Direct appropriate departmental inquiry into the decision-making process of the SEAC meeting dated 21st July 2025 and take suitable action against officials responsible for discriminatory and arbitrary decision-making that violates constitutional and environmental law principles;

i. Award exemplary costs in favor of the applicant for the harassment, discrimination, and violation of constitutional rights suffered due to arbitrary actions of respondent authorities;

j. Issue any other order or direction that this Hon'ble Tribunal may deem appropriate in the facts and circumstances of the present case for protection of environment and constitutional rights;

Raju Saikia
Director
Ksepya Environment Management Pvt. Ltd.

k. Interim and ad interim orders in terms of prayers above;

l. Costs;

m. Such other and/or further order or orders as this Hon'ble Green Tribunal may deem fit and proper.

And your Petitioner, as in duty bound, shall ever pray.

Rajiv Saimia

Director
Ksepya Environment Management Pvt. Ltd.

VERIFICATION

I, Raju Saikia, son of Late Ram Saikia, aged about 48 years old, resident of Village, P.O., VTC, Sundaridia, District: Barpeta, Assam, Pin- 781314, Director of M/s. Ksepya Environment Management Pvt Ltd, verified at Barpeta, Assam by the Deponent named on this the 22 day of August, 2025, and I do hereby verify that all the facts mentioned in the affidavit are true to my knowledge and no part thereof is false and nothing material has been concealed therefrom.

Raju Saikia

DEPONENT

Dated: 22/08/2025

Place: Barpeta, Assam.

NOTARY
G.K. BAYAN
BARPETA DISTRICT
REGD. NO.-BPT-2
Exp. Date-13/06/2027
GOVT. OF ASSAM

AFFIDAVIT

No - 13022
dt. 22.8.25.

I, Raju Saikia, son of Late Ram Saikia, aged about 48 years old, resident of Village, P.O., VTC, Sundaridia, District: Barpeta, Assam, Pin- 781314, Director of M/s. Ksepya Environment Management Pvt Ltd, do hereby solemnly affirm and state as follows: -

1. That the Applicant is well acquainted with the facts and circumstances of the present case. I am competent to affirm and swear this affidavit on her behalf before this Hon'ble Court.

2. That the documents filed with the present affidavit are true replica of their respective originals.

The deponent is identified by me Nuri Ali Deka. Advocate
dt. 22.08.25

3. The statements made in paragraphs 1-2,7,8,10-13,15,16,18, 20-28, 30-67 of the foregoing petition are true to my knowledge and those contained in paragraph nos. 3, 4, 5, 6, 9, 14, 17, 19, 29 ~~to ____ and ____~~ are matters of record and information derived from record, which are believed to be true and correct and the rest thereof including the prayer portion are my respectful submissions before this Hon'ble Tribunal.

NOTARIAL

Raju Saikia
DEPONENT
Prepared in my Office
Bipasha Jaiswal
Advocate

Identified by me
Nuri Ali Deka
dt. 22.08.2025
Enrolment No: 739/2001
Advocate

BEFORE ME

22/8/25
NOTARY PUBLIC
Gunajit Kr. Bayan
NOTARY; BARPETA

-Annexure A/1 Colly-

Proposal Timeline

Proposal No.:	**SIA/AS/INFRA2/542955/2025**
Project Name:	Common Bio Medical Waste Treatment Facility proposed by M/s Ksepya Environment Management Private Limited
State:	ASSAM
Proposal Submission Date:	01/07/2025

S. No.	Activity	Activity Start date	Activity End date
1	Submitted	27/06/2025	01/07/2025
2	Examination Completed	01/07/2025	19/07/2025
3	MS Verification Completed	19/07/2025	19/07/2025
4	Processed by MS SEAC	19/07/2025	01/08/2025
5	ADS Raised	01/08/2025	N/A

KSEPYA ENVIRONMENT MANAGEMENT PVT LTD

HELONAR PAM, P.O-HOWLY, P.S-HOWLY, DT-BARPETA,
Pin no-781316, ASSAM, INDIA
Email id-ksepyaenvironment@gmail.com, Mo no-7002213959/6002150473

Date: 05.06.2025

To,
The Member Secretary
State Level Expert Appraisal Committee
Office of the State Environmental Impact Assessment Authority (SEIAA)-Assam
MoEF &CC, Govt. of India
Bamunimaidam, Guwahati-21
Assam

Subject: Application for the issuance of Terms of Reference (ToR) for Proposed Common Bio-Medical Waste Treatment Facility at Village Phukon Khat, Choukhat , District Jorhat, Assam by M/s Ksepya Environment Management Pvt. Ltd.

Dear Sir/Madam,

This is to state that the Common Bio-medical Waste Treatment and Disposal Facility (CBWTF) is proposed to be established by M/s Ksepya Environment Management Pvt. Ltd.at Village Phukon Khat, Choukhat , District Jorhat, Assam in accordance with the Bio-Medical Waste Management Rules, 2016 and as per CPCB guidelines framed for setting up of CBWTF.We are herewith submitting Form 1, Pre-feasibility Report, required Annexures and Proposed TOR in the prescribed format of Ministry of Environment Forests & Climate Change for your kind perusal and consideration for the issuance of Terms of Reference (ToR) please.

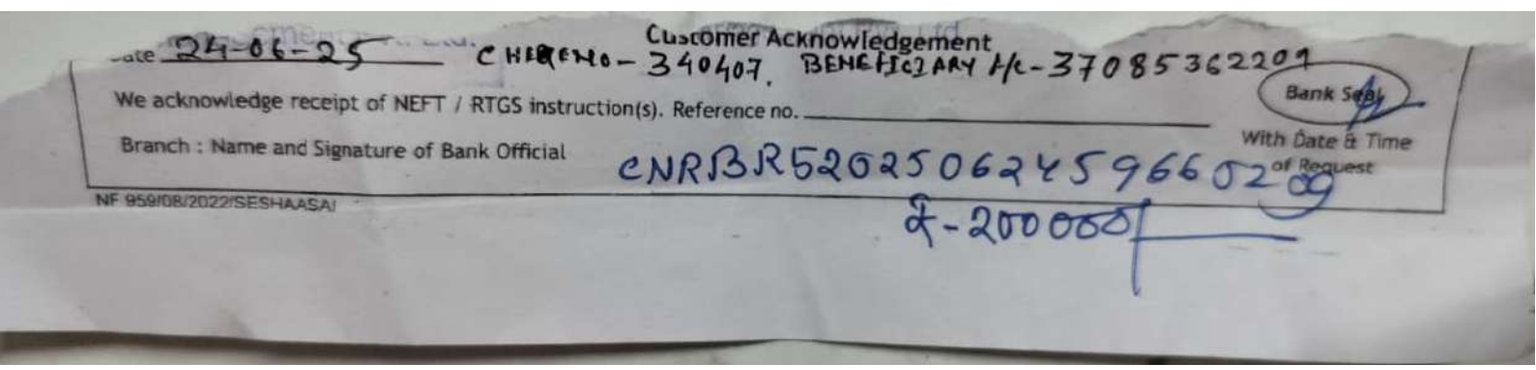
Further, as the cost of the project is Rs. 9.5 Cr. Hence, EC processing fee amounting Rs. 2,00,000 is also attached for submission.

Kindly, consider our application forthe issuance of Terms of Reference (ToR).
Thanking You
Yours truly

Director
Ksepya Environment Management Pvt. Ltd.
Raju Saikia
(Authorized Signatory)
M/s Ksepya Environment Management Pvt. Ltd.

Encl: 1. PFR, Proposed TOR & Form I
2. Annexures & Drawings
3. DD Amounting Rs. 2,00,000

Scanned with OKEN Scanner



Customer Acknowledgement

Date 24-06-25 CHEQUE NO - 340407. BENEFICIARY A/c - 37085362207

We acknowledge receipt of NEFT / RTGS instruction(s). Reference no. CNRB R52025062459660209

Bank Seal

Branch : Name and Signature of Bank Official

With Date & Time of Request

NF 959/08/2022/SESHAASAI

₹ - 200000/-

FORM-1 & PRE-FEASIBILITY REPORT

for

Common Bio-Medical Waste Treatment Facility

At

Village Phukon Khat, Choukhat, District Jorhat, Assam

Project Area: 6070 sq.m./1.5 Acres

Capacity: Incinerator: 250 kg/hr.+250 kg/hr. (stand by)
Autoclave: 850 liter/hr.+ 850 liter/hr. (stand by)
Shredder: 200 kg/hr
Effluent Treatment Plant: 15 KLD

by

M/s Ksepya Environment Management Pvt. Ltd.

Project Schedule 7(da): Common Bio-Medical Waste Treatment Facilities

Category- 'B'

PREPARED BY

SHIVALIK SOLID WASTE MANAGEMENT LIMITED
(QCI/ NABET Certificate No: NABET/EIA/23-26/RA 0310 dated December 13, 2023)

Address: SCO 20-21, 1st floor, Baltana, Zirakpur, (Punjab)- 140604

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Pre-Feasibility Report

Common Bio-Medical Waste Treatment Facility at village Phukon Khat, Choukhat, District Jorhat, Assam by M/s Ksepya Environment Management Pvt. Ltd.

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PRE-FEASIBILITY REPORT

1 EXECUTIVE SUMMARY

A Common Bio-medical Waste Treatment and Disposal Facility (CBWTF) is a set up where biomedical waste generated from member health care facilities is to be imparted necessary treatment to reduce adverse effects that this waste may pose on human health and environment. The treated waste may finally be sent for disposal in a secured landfill or for recycling.

Installation of captive treatment facilities by individual healthcare units requires comparatively high capital investment. The CBWTF popular and proven concept in many developed countries. CBWTF as an option has been legally introduced in India. The Bio-medical Waste Management Rules gives an option to the bio-medical waste generator to treat the biomedical waste at the CBWTF.

The Ministry of Environment Forest and Climate Change, Government of India has notified the Bio- medical Waste Management Rules, 2016, which replaces earlier Biomedical Waste (Management & Handling) Rules 1998 amended time to time; mandates that the operator of a CBWTF authorized by the prescribed authority is required to take all necessary steps to ensure that the bio-medical waste collected from the occupier is transported, handled, stored, treated and disposed of in accordance with the BMWM Rules and the guidelines issued by the Central Pollution Control Board (CPCB) from time to time.

The revised guidelines have been prepared by the CPCB with an aim to have uniformity in ensuring site selection, allowing and establishment of a state-of-the-art CBWTF, operation, as well as verification of compliance to the BMWM Rules, 2016 throughout the country.

The guidelines include the criteria for coverage area of the bio-medical waste generation and adequacy of existing treatment capacity of the CBWTF in each coverage area of radius 75 KM.

M/s Ksepya Environment Management Pvt. Ltd. is a company of environmentally conscious individuals/ members with a single-minded approach to make Assam a clean and "sustainably developed" state. M/s Ksepya Environment Management Pvt. Ltd. proposes to setup a Common Bio Medical Waste Treatment Facility under the BMW Rules at village Phukon Khat, Choukhat, District Jorhat, Assam.

Management of waste presupposes scientific approach to the process of waste generation, storage, transportation, treatment, and its disposal. This arduous task can only be achieved by the synergistic efforts of the health care establishments, Government health department,Pollution Control Boards and Service Provider for Waste Management. It is then that we can build a pollution-free environment.
In accordance with the EIA Notification, 2006 & subsequent amendment made by MoEF & CC vide S.O.1142 (E) dated 17.04.2015 that the Common Bio-Medical Waste Treatment Facilities are included under Category 7(da) of the Schedule-Gazette Notification, MoEF&CC,Govt. of India dated 17th April, 2015.

Table 1: SALIENT FEATURES OF THE PROJECT

S. No	PARTICULARS	DESCRIPTION
1.	**Name of project**	Common Bio Medical Waste Treatment Facility at village Phukon Khat, Choukhat, District Jorhat, Assam.
2.	**Nature of the project.**	Common Facility for treatment of Biomedical waste generated in Hospitals, Clinic, pathological lab, Blood bank etc.
3.	**Description of the project.**	Bio-medical waste shall be collected from healthcare facilities, transported to Common treatment sites and treated as per the prescribed procedure & norms laid down in the regulation.
4.	**Total Plot Area.**	Approx. 1.5 Acres (6125 sq.m.)
5.	**Location of the Project.**	village Phukon Khat, Choukhat, District Jorhat, Assam. **Site Co-ordinates** are 26°50'45.41"N; 94°17'28.67"E

<table>
<tr><td></td><td></td><td>Toposheet Number: G46K5</td></tr>
<tr><td>6.</td><td>Total Cost of the project</td><td>Rs. 9.5 Cr.</td></tr>
<tr><td>7.</td><td>Equipment details</td><td>
<table>
<tr><th>Sr.No.</th><th>Equipment</th><th>Number</th><th>Proposed Capacity</th></tr>
<tr><td>1.</td><td>Incinerator</td><td>2</td><td>250 kg/hr
(one Standby)</td></tr>
<tr><td>2.</td><td>Autoclave</td><td>2</td><td>850kg/batch
(one Standby)</td></tr>
<tr><td>3.</td><td>Shredder</td><td>1</td><td>200 kg/hr</td></tr>
<tr><td>4.</td><td>Effluent treatment plant</td><td>1</td><td>15 KLD</td></tr>
</table>
</td></tr>
<tr><td>8.</td><td>Water Requirement</td><td>Fresh water requirement - 16 KLD
Source: Borewell</td></tr>
<tr><td>9.</td><td>Power Requirement</td><td>Total estimated Power Requirement 80 KW is supplied by Assam Power Distribution Company Limited (APDCL). During power failure, DG set of capacity 82.5 kVA shall be used.</td></tr>
<tr><td>10.</td><td>Manpower Requirement</td><td>
<table>
<tr><th>Sr.No.</th><th>Designation</th><th>Number</th></tr>
<tr><td>1</td><td>Operation Manager</td><td>1</td></tr>
<tr><td>2</td><td>Accountant</td><td>1</td></tr>
<tr><td>3</td><td>Field Supervisor</td><td>1</td></tr>
<tr><td>4</td><td>Facility Supervisor</td><td>1</td></tr>
<tr><td>5</td><td>Field Operator</td><td>5</td></tr>
<tr><td>6</td><td>Equipment Operator</td><td>4</td></tr>
<tr><td>7</td><td>Field Helper</td><td>6</td></tr>
<tr><td>8</td><td>Equipment Helper</td><td>6</td></tr>
<tr><td>9</td><td>Security</td><td>3</td></tr>
<tr><td colspan="2">Total:</td><td>26</td></tr>
</table>
</td></tr>
<tr><td>11.</td><td>Nearest Railway Station</td><td>Jorhat Town Train station – 13 Km, SW</td></tr>
<tr><td>12.</td><td>Nearest Highway</td><td>NH-715K – 4.4 Km, W</td></tr>
<tr><td>13.</td><td>Nearest Airport</td><td>Jorhat Airport - 16.1 Km, SW</td></tr>
</table>

Table 2: APPLICABILITY OF GENERAL CONDITIONS

The compliance of General conditions of the industry is as follows: -

S. No.	General Conditions	Reply
1.	Protected Areas notified under the Wildlife (Protection) Act, 1972	**Not applicable,** as no wildlife Sanctuary exist within 5km radius of the project.
2.	Critically Polluted areas as notified by the Central Pollution Control Board from time to time	**Not applicable** no Critically Polluted area falls within 5 km radius of project site.
3.	Eco-sensitive areas notified by MoEF&CC and Assam Govt.	**Not applicable** As there is no eco-sensitive area within 5km radius of project site.
4.	Inter-State boundaries and international boundaries	**Not applicable** As there is no Inter-State boundary or international boundary within 5km of project site.

2 INTRODUCTION OF THE PROJECT/ BACKGROUND INFORMATION

Common Bio-medical Waste Treatment Facility (CBWTF) is a set up where biomedical waste generated from healthcare units is imparted necessary treatment to reduce adverse effects that this waste may pose. Residue after incineration is sent to Secured landfill. The treated recyclable waste may finally be sent for recycling.

Installation of individual treatment facilities by small healthcare units requires comparatively high capital investment. In addition, it requires trained manpower and infrastructure development for proper operation and maintenance of treatment systems. The concept of CBWTF not only addresses such problems but also prevents proliferation of treatment equipment in a city. In turn it reduces the monitoring pressure on regulatory agencies. By running the treatment equipment at CBWTF to its full capacity, the cost of treatment per kilo of waste gets significantly reduced.

The proposed facility will be established by M/s Ksepya Environment Management Pvt. Ltd. at village Phukon Khat, Choukhat, District Jorhat, Assam in accordance with the Bio-Medical Waste Management Rules, 2016 and as per CPCB guidelines framed for setting up of CBWTF. The company will collect and transport, Biomedical waste to CBWTF for treatment and disposal from Govt. Health Care Facilities in district Jorhat, Sivasagar, Lakhimpur. The facility will be operated as per BMW rules and guidelines of Central Pollution Control Board for collection, reception, transportation, treatment, and final disposal of Biomedical Waste. The Proposed treatment facility shall enable smooth and methodical operation with better management focus on segregation, collection, timely lifting and giving relief & benefit to all HCFs in various ways.

2.1 IDENTIFICATION OF THE PROJECT AND PROJECT PROPONENT

M/s Ksepya Environment Management Pvt. Ltd. is led by committed & promising promoter with a vision of creating awareness regarding Bio Medical Waste & offering state of art services to the society and to contribute in protecting our environment".

M/s Ksepya Environment Management Pvt. Ltd. will be operating Bio Medical Waste treatment plants and has highly trained & experienced professionals in the field of Biomedical Waste Management. It will be ensuring that collection, transportation, storage & treatment of Bio- medical Waste is done in a systematic manner by complying all regulatory

norms as stipulated in Bio-medical Waste Management Rules 2016 and as per CPCB Guidelines for installation of Common Bio-medical Waste Treatment Facility.

2.2 BRIEF DESCRIPTION OF NATURE OF PROJECT

As per the Gazette Notification dated 28th March, 2016 which replaces earlier Biomedical Waste (Management & Handling) Rules 1998 amended time to time; it is the duty of every occupier (a person having control over an institution or premises) of an institution generating biomedical waste including a hospital, nursing home, clinic, dispensary, veterinary institution, animal house, pathological laboratory, blood bank to take all steps to ensure that such waste is handled without any adverse effect to human health and the environment.

Under these rules-

A. Bio-medical waste shall not be mixed with other wastes.
B. Bio-medical waste shall be segregated into container / bags at the point of generation as per their respective categories.
C. Bio-medical waste shall not be stored for more than 48hrs.
D. Every occupier is required to set up requisite bio-medical waste treatment facilities like incinerator, autoclave, microwave system for the treatment of waste or ensure requisite treatment of waste at a common waste treatment facility.
E. Every occupier shall make an application to the prescribed authority for grant of authorization.
F. Every occupier shall maintain records related to generation, collection, reception, storage, transportation, treatment, and disposal of bio-medical waste.
G. Waste shall be stored in following color containers/Bags:
    i. Yellow: Incineration Waste
    ii. Red: Autoclave/ Microwave Chemical Treatment
    iii. Blue/White: Autoclave/ Microwave Chemical Treatment
    iv. Black: Disposal to landfill site

The Biomedical Waste generator will take authorization from State Pollution Control Board. Central Pollution Control Board (CPCB) has made guidelines for installation of Common Biomedical Waste Management facility (CBWTF) which has defined following criteria:

1. One CBWTF should at least cater to 10,000 beds and/ or 75Km in radius from its location.

2. CBWTF should have following equipment for process/Treatment of Bio-Medical Waste.
   - **Incinerator**: It is a controlled air combustion process where waste is completely oxidized, and harmful microorganisms present in it are destroyed /denatured under high temperature.
   - **Autoclave**: Autoclaving is a low-heat thermal process where steam is brought into direct contact with waste in a controlled manner and for sufficient duration to disinfect the wastes.
   - **Shredder**: Shredding is a process by which waste are mutilated /de-shaped or cut into smaller pieces so as to make the wastes unrecognizable. It helps in prevention of reuse of bio-medical waste and also acts as an identifier that the waste has been disinfected and is safe to be disposed of.
   - **Sharp pit/Encapsulation**
   - **Vehicle/Container washing facility**
   - **Effluent Treatment Plant**
3. CBWTF should have following infrastructure:
   - Treatment Equipment Room
   - Main Waste Storage Room
   - Treated Waste Storage Room
   - Administrative Room
   - D.G. Set Room
   - Site Security
   - Green Belt
   - Sign Board
4. CBWTF should have proper record keeping:
   - Waste quantum received and treated.
   - Solid waste disposal
   - Logbook for equipment
   - Site records
5. CBWTF should have proper waste collection & transportation facility.

Some of the common benefits are:

I. General Public & End User of Hospital Facilities -happens to gain in cleaner & infectious free environment.

II. Hospital Staff - Less of workload since bulk of the responsibilities are outsourced/ transferred to well trained staff of service provider.

III. Hospital Management - Will be able to focus better on their core competence.

IV. Service Providers - Eventually gains from economies of scale.

Major Sources of Bio medical waste are:

- Hospitals
- Nursing Homes/Dispensaries
- Primary health centers
- Medical colleges and research center
- Blood banks
- Pathological labs.
- Veterinary hospitals

Minor Sources:

- Physician /dentist's clinic
- Blood donation camps
- Medical Camps

ACTIVITIES:

The prime activities of CBWTF comprise of collection, reception, storage, transport, treatment & disposal of Bio-Medical Waste collected from the Member Health Care Facilities of the area of operation.

- **Collection:**

Door to door collection service shall be rendered to all member health care facilities. The Biomedical waste segregated and duly packed in color coded bags shall be collected from member Health Care Facilities and transported in the authorized covered vehicles. Each bag shall be labeled by the member health care facilities as per schedule I of the Biomedical waste Management Rules 2016.

- **Transportation:**

The biomedical waste collected in color coded bags shall be transported to the CBWTF in fully covered vehicles. Depending upon the volume of the waste to be transported, the vehicle may be a light motor vehicle or heavy motor vehicle. In either case, the vehicle shall possess the following:

- Separate cabins provided for driver/staff and the bio-medical waste containers.
- The base of the waste cabin shall be leak proof to avoid pilferage of liquid during transportation.
- The waste cabin suitably designed for storing waste containers and easy to wash and disinfect.
- The waste cabin shall have provisions for sufficient openings in the rear and/or sides so that waste can be easily loaded and unloaded.
- The vehicle shall be labeled with the Bio-Hazard symbol as per rules and should display the name, address and telephone number of the CBWTF.

➢ **Treatment:**

4 types of treatment options shall be provided in Common Biomedical Waste Treatment Facility (CBWTF).

- ➢ Incineration
- ➢ Autoclaving
- ➢ Shredding
- ➢ ETP

Incineration for the treatment of:

- ➢ Human anatomical waste (human tissue, organs, body parts).
- ➢ Animal anatomical waste (animal tissue, organs, body parts, bleeding parts, experimental animals used in research).
- ➢ Discarded medicines and toxic drugs (waste comprising of outdated, contaminated, and discarded medicines).
- ➢ Soiled waste (item contaminated with blood and body fluids including cotton, dressing, soiled plaster casts, lines, bedding other material contaminated with blood).

Autoclave for the treatment of:

Microbiological waste (device used for transfer of medicines).

- ➢ Infected Plastic Waste, Gloves etc.
- ➢ Broken Glass Bottles etc.
- ➢ Shredder for mutilation of treated Waste using Autoclave.
- ➢ Plastic Waste duly treated by Autoclave unit.

Sharp pit has also been provisioned for the encapsulation of Sharps such as Needles, Scalpels etc.

Effluent Treatment Unit: for the treatment of Effluent generated during the process of Bio-

Medical waste Treatment and this treated water will be used for Floor Washing and Vehicle Washing etc.

- **Disposal:**

The treated bio-medical waste shall be disposed of as per following:

- Treated wastewater shall be used for washing and in greenbelt
- Incineration ash shall be sent to secured landfill for safe disposal.

Bio-Medical Waste Management Rules

Biomedical wastes categories and their segregation, collection, treatment, processing and disposal options

Category	Type of Waste	Type of Bag or Container to be used	Treatment and Disposal options
Yellow 	a) Human Anatomical Waste b) Animal Anatomical Waste c) Soiled Waste d) Expired or Discarded Medicines e) Chemical Waste f) Discarded linen, mattresses, beddings contaminated with blood or body fluid, routine mask and gown	Yellow coloured non-chlorinated plastic bags or containers	Incineration or Plasma Pyrolysis or deep burial* The discarded medicines shall be either sent back to manufacturer or disposed by incineration
	g) Micro, Bio-t and other clinical lab waste	Autoclave safe plastic bags or containers	
	h) Chemical liquid Waste	Separate collection system leading to effluent treatment system	After resource recovery, the chemical liquid waste shall be pre-treated before mixing with other wastewater
Red 	Contaminated Waste (Recyclable)	Red coloured nonchlorinated plastic bags or containers	Autoclaving or micro-waving/ hydroclaving followed by shredding or mutilation or combination of sterilization and shredding. Treated waste to be sent to recyclers. Plastic waste should not be sent to landfill sites.
White (Translucent) 	Waste sharps including Metals	Puncture proof, Leak proof, tamper proof containers	Autoclaving or Dry Heat Sterilization followed by shredding or mutilation or encapsulation in metal container or cement concret
Blue 	Glassware and Metallic Body Implants	Puncture proof and leak proof boxes or containers with blue coloured marking	Disinfection or through autoclaving or microwaving or hydroclaving and then sent for recycling

Source: Bio-Medical Waste Management Rules, 2016 and amended rules 2018

The most essential part of hospital waste management is the segregation of Bio-medical waste. The colour coding type of container to be used for different waste categories and suggested treatment options are listed below:

Table 3:Colour coding & type of Container for Disposal of Bio-medical waste

Colour Coding	Appearance	Type of Containers	Waste Category	Treatment Options as per Schedule II Rule 1998
Yellow		Plastic bag disinfected	Cat. No. 1,2,3,6	Incineration/deep burial
Red		Disinfected container/Plastic bag	Cat. No. 3,6,7	Autoclaving/Microwaving/Che mical treatment
Blue/White Translucent		Plastic bag/puncture proof container	Cat. No. 4, 7	Autoclaving/Microwaving/Che mical treatment and destruction/shredding
Black		Plastic bags	Cat. No. 5, 9, 10 (solid)	Disposal in Second landfill

2.3 NEED FOR THE PROJECT AND ITS IMPORTANCE TO THE COUNTRY AND OR REGION

Inadequate biomedical waste management causes severe threats at community level. There is some common bio-medical waste treatment and disposal facility exists in the distant places mentioned below. Proposed facility is as the center location of all the facilities, the Talukas and city places nearby proposed facility are away from the existing facilities, daily basis BMW collection is difficult and hence there is possibility of disposal of BMW in unscientific manner

posing health hazards and pollution.

It is necessary to establish more facility:

- Existing facility is collecting BMW once in a week of nearby tehsils & district.
- Daily generated public waste is generally thrown in unknown public places which is harmful for public health and causing pollution.
- Due to future development and avoiding pollution, health hazards are necessary to establishmore facilities.

  Since the initial information obtained from the nearby areas of the proposed facility BMW waste is not being there must be a CBWTF within 75 km range so asto dispose of or treat such a Biomedical waste within 48 hrs. Owing to lack of coverage of collection of BMW nearby proposed area, to cater districts viz. district Jorhat, Sivasagar, Lakhimpur.

2.4 DEMAND AND SUPPLY GAP

As per annual report of CPCB for 2023, Assam has 1558 HCF (675 bedded and 883 non-Bedded) generating 8084 Kg/day of Biomedical waste. Total no of beds is 29,265.

Currently there are 02 no. of CBWTFs at Barpeta and Guwahati is present in the State and 4,044 kg/day of BMW is treated and disposed through CBWTF. 423 no. of HCFs in the State have captive treatment facility and 3,024 kg/day of BMW is treated and disposed through captive treatment facilities. A gap of around 12.56 % is observed between the generation and disposal of the biomedical waste in the State.

No. of HCFs	1,558
No. of bedded HCFs	675
No. of non-bedded HCFs	883
No. of beds	29,265
No. of CBWTFs	02
No. of HCFs granted authorization	602
No. of HCFs utilizing CBWTFs	464
No. of HCFs having Captive Treatment Facilities	423
No. of Captive Incinerators Operated by HCFs	INP
Quantity of BMW generated in kg/day	8,084
Quantity of BMW treated in kg/day	7,068
No. of HCFs/CBWTFs violated BMW Rules	NIL
No. of Show-Cause notices/Directions issued to defaulter HCFs/CBWTFs	NIL

Source: https://cpcb.nic.in/uploads/Projects/Bio-Medical-Waste/AR_BMWM_2023.pdf

A Common Bio-Medical Waste Treatment Facility (CBWTF) is a set up where bio-medical waste, generated from a number of healthcare units, is imparted necessary treatment to reduce

adverse effects that this waste may pose.

State/UT	Name of CBWTFs	Total No of treatment equipment				Total Treatment Capacity (kg/day)			
		Incinerator	Autoclave	Shredder	Deep burial	Incinerator	Autoclave	Shredder	Deep burial
Assam	Fresh Air Waste Management Services Pvt ltd. Registered office 2nd Floor Tulip Tower G.N.B. Road, Chandmari Guwahati Assam	2	2	2	1	6400	3200	3200	INP

s.no.	Name of the State/UT	Total no. of Bedded Health Care Facilities (HCFs)	Total no. of Non-bedded Health Care Facilities (HCFs)	Total no. Health Care Facilities (HCFs)	Total no. of Beds	Authorization Status			No. of HCFs utilization CBWTFs	Total Quantity of BMW generated (kg/day)	Total Quantity of BMW Treated and Disposed (kg/day)	Captive BMW Treatment Facilities Operated by the (HCFs		Common Bio-medical Waste Treatment Facilities (CBWTFs)		Deep burial installed by HCF & CBWTFs		Total BMW treated by captive treatment facilities by HCF in Kg/day	Total BMW treated by CBWTFs kg/day)	Total no. of violation by HCFs & CBWTFs	Total No. of Show Cause notice issued to HCFs/CBWTFs	No. of CBWTFs that have installed COEMS
						Total no. of HCFs applied for authorization	Total no. of HCFs granted authorization	Total no. of HCFs in operation without Authorization				No. of HCFs having Captive Treatment Facilities	No of Captive Incinerators Operated by HCFs	CBWTFs Operational	CBWTFs under Construction	HCF	CBWTFs					
I.	II.	III.	IV.	V.	VI.	VII.	VIII.	IX.	X.	XII.	XIII.	XVI.	XV.	XVI.	XVII.	XVIII.	XIX.	XX.	XXI.	XXII.	XXIII.	XXIV.
1	Andaman Nicobar	87	198	285	1328	285	145	INP	0	452.79	452.79	6	6	0	0	7	0	452.79	0	5	5	0
2	Andhra Pradesh	7687	6627	14314	168043	3220	3218	1190	13804	17784.12	17784.12	0	0	12	0	0	0	0	17784.118	1194	1194	12
3	Arunachal Pradesh	126	324	450	1839	450	443	60	0	185.85	185.85	443	7	0	0	207	0	185.85	0	60	60	0
4	Assam	675	883	1558	29265	1089	602	469	464	8084	7068	423	INP	2	1	135	0	3024	4044	0	0	1
5	Bihar	6781	19691	26472	104943	2763	2427	1892	9262	26061.35	14701.9	1	1	4	0	NIL	NIL	143.52	14558.38	316	316	4

Source: https://cpcb.nic.in/uploads/Projects/Bio-Medical-Waste/AR_BMWM_2023.pdf



Figure 1: Showing Existing & Proposed CBWTF

2.5 IMPORTS vs. INDIGENOUS PRODUCTION

This project involves the treatment of bio medical waste and the raw material for the process is collected from various hospitals, health care sector nursing homes, clinical laboratories etc.

2.6 EXPORT POSSIBILITY

No export is involved as the project is for treatment of BMW, only Ash from incineration of biomedical waste shall be generated which will be disposed of at common hazardous waste treatment and disposal facility.

2.7 DOMESTIC/EXPORT MARKETS

The project will cater the treatment of bio medical waste of district Jorhat, Sivasagar, Lakhimpur.

2.8 EMPLOYMENT GENERATION (DIRECT & INDIRECT) DUE TO THE PROJECT

During Construction phase the labors and workers will be hired from nearby villages. A total of 26 persons will be hired for Plant operations. Detail given below:

Table 4: Manpower Details

Sr.No.	Designation	Number
1	Operation Manager	1
2	Accountant	1
3	Field Supervisor	1
4	Facility Supervisor	1
5	Field Operator	5
6	Equipment Operator	4
7	Field Helper	6
8	Equipment Helper	6
9	Security	3
Total:		26

3 PROJECT DESCRIPTION

3.1 TYPE OF PROJECT INCLUDING INTERLINKED AND INTERDEPENDENT PROJECTS, IF ANY

A Common Bio-medical Waste Treatment Facility (CBWTF) is required for the treatment of the biomedical waste generated from a number of healthcare units to reduce adverse effects that this waste may pose.

Proposed project of setting up of the Common Bio-medical Waste Treatment Facility includes Incinerator, Autoclave, Shredder, Storage, Online monitoring and Effluent Treatment Plant.

3.2 LOCATION (map showing general location, specific location and project boundary & project site layout) WITH COORDINATES

The project is proposed at village Phukon Khat, Choukhat, District Jorhat, Assam.

Plot area 1.5 acre on Dag No 44 under KP no 22, Village Phukon Khat, Choukhat, district Jorhat, Assam

Site Co-ordinates are: -

A - 26°50'47.50"N; 94°17'27.93"E

B - 26°50'46.40"N; 94°17'30.07"E

C - 26°50'43.29"N; 94°17'29.25"E

D - 26°50'44.22"N 94°17'27.29"E

- **Railway line:**
  Jorhat Town Train station – 13 Km, SW

- **Roadways:**
  Lahdoigarh road - 3.3 Km, S; NH-715K – 4.4 Km, W

- **Airways:**
  Jorhat Airport - 16.1 Km, SW.



FIGURE 2: LOCATION OF PROPOSED PROJECT ON GOOGLE MAP

3.3 DETAILS OF ALTERNATE SITES CONSIDERED AND THE BASIS OF SELECTNG THE PROPOSED SITE, PARTICULARLY THE ENVIRONMENTAL CONSIDERATIONS GONE INTO.

Based on availability of land, private land with an area of approx. 1.5 Acres (6125 sq.m.) is selected for the setting up of CBWTF. The project site is well connected with road network and power supply. All necessary amenities are easily available at the site.

3.4 SIZE AND MAGNITUDE OF OPERATION

The capacity of equipment to be installed is given below **Table 5.**

Table 5:EQUIPMENT AND THEIR CAPACITY

Sr.No.	Equipment	Number	Proposed Capacity
1.	Incinerator	2	250 kg/hr (One standby)
2.	Autoclave	2	850 Kg/batch (One standby)
3.	Shredder	1	200 kg/hr
4.	Effluent treatment plant	1	15 KLD

3.5 PROJECT DESCRIPTION WITH PROCESS DETAIL (A SCHEMATIC DIAGRAM/FLOW CHART SHOWING WITH PROJECT LAYOUT, COMPONENTS OF THE PROJECT ETC.)

M/s Ksepya Environment Management Pvt. Ltd. shall collect, transport and treat theBiomedical waste in accordance to the BMW Rules and CPCB guidelines.

An integrated waste management system for treatment of biomedical wastes must look into various stages of the process to complete the operation. These key components in the process of treatment can be broadly classified as stated below:

- Segregation of Waste at source
- Waste Collection and Transport
- Waste Treatment, Storage and Disposal

1. Segregation of Waste at Source –

Biomedical Waste segregated by the generator in colour coded containers as per Biomedical Waste Management and Handling Rules shall be collected from various Health Care Facilities. The coloured bags handed over by the healthcare units shall be collected in similar coloured containers with proper cover. Each bag shall be labelled as per Schedule IV of the Bio-medical Waste Management Rules as well as with bar coding system (to be complied by the occupier or operator of a CBWTF as per BMWM Rules).

The collected waste shall be transported in specially designed closed vehicle to the proposed CBMWTF for treatment and disposal. The vehicle shall be labelled with the bio-hazard symbol (as per Schedule IV of the BMWM Rules) and should display the name, address and contact telephone and mobile number of the CBMWTF. It shall be ensured that the total time taken from generation of bio-medical waste to its treatment, which also includes collection and transportation time, shall not exceed 48 hours. The vehicles will undergo periodic cargo bed cleaning with water mixed with disinfectant on an impervious reverse sloped ramp.

2. Waste Collection and Transport

Waste from each health care establishment shall be collected on a daily basis. Segregated wastes collected in non- chlorinated, bar-coded and colour coded plastic bags from different wards and after internal shifting to the common collection point shall be the responsibility of health care establishments. Waste bags must be properly packed and sealed (tied) before shifting, to avoid spillage. The common collection point room location, from where the operator's vehicle will lift the wastes must be mutually agreed for easy access of vehicle and environmentally safe. Incinerable waste and autoclavable wastes must be kept with separate identity at common collection point for collection by the operator in separate colour coded closed containers for unloading in separate treatment area.

Bar Code System:

Bar code system will be adopted in compliance to the BMWM Rules, 2016 by the Occupier as well as Operator of a CBMWTF. It helps in (i) tracking of waste from source of generation to final destination for final treatment and disposal; (ii) identification of waste in the event of source of generation in case waste is disposed of improperly; and (iii) Helps in quantification of biomedical waste generated. The colour coding-wise waste will be handed over to the CBMWTF Operator by the Occupier, for further treatment and disposal in accordance with the BMWM Rules, 2016.

3. Waste Treatment, Storage & Disposal

An integrated bio-medical waste management system must look into various stages of the process.
The Common Bio- Medical Waste Management Facility Process Flow Chart is given below:

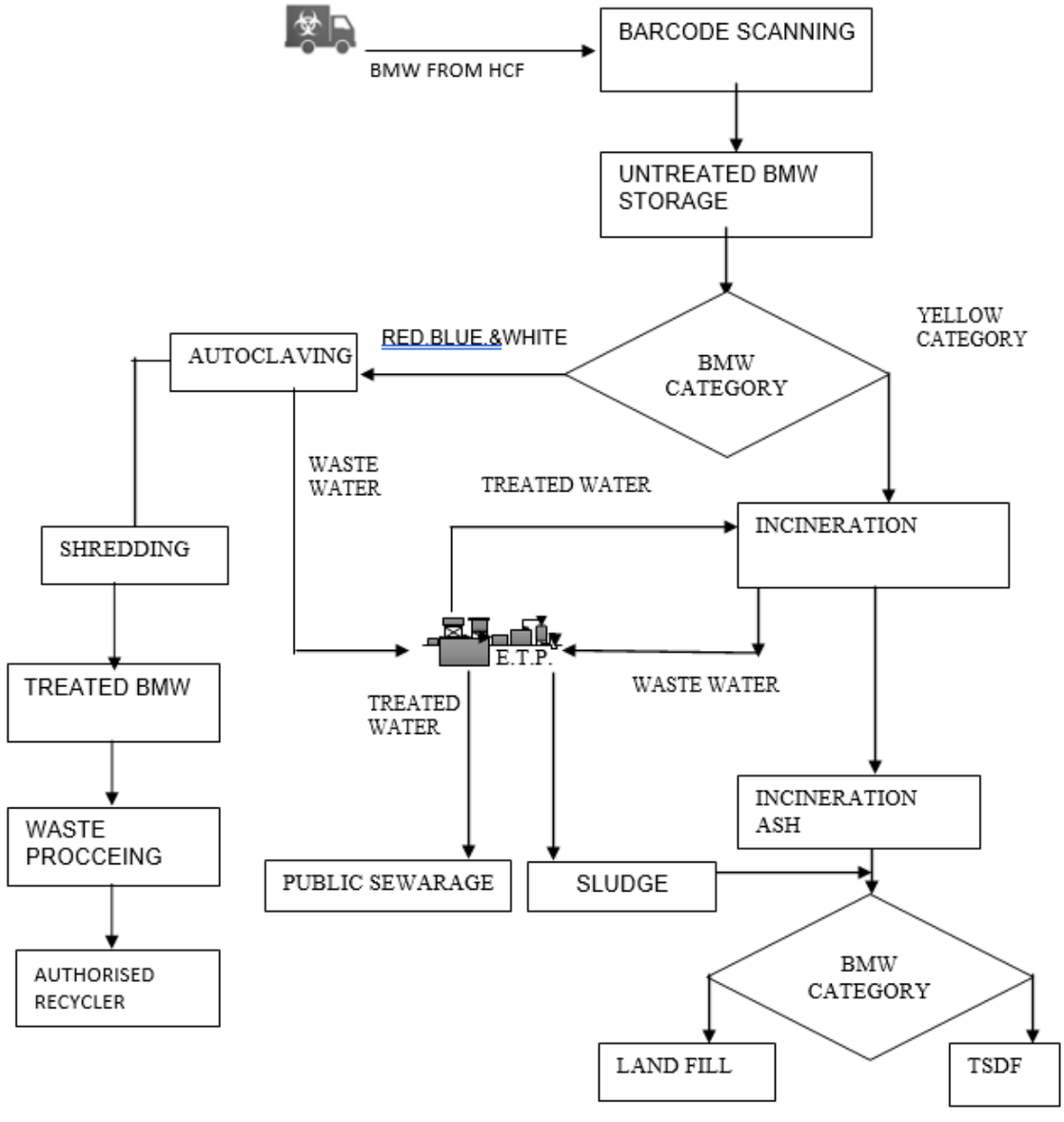


Figure 3: PROCESS FLOW DIAGRAM OF CBMWTF

Treatment Technology

3.5.1 Incineration

This is a high temperature thermal process employing combustion of the waste under controlled conditions for converting it into inert material and gases. Incinerators can be oil fired or electrically powered or a combination of both. Broadly, three types of incinerators are used for biomedical waste: multiple hearth type, rotary kiln and controlled air types. All the types have primary and secondary combustion chambersto ensure optimal combustion. These are refractory lined. In the multiple hearth

incinerators, solid phase combustion takes place in the primary chamber whereas the secondary chamber is for gas phase combustion. These are referred to as excess air incinerators because excess air is present in both the chambers. Thus, the waste is incinerated in two stages i.e. the primary chamber and the secondary combustion chamber which are positioned adjacent to each other. The flue gases then pass through the high pressure drop Venturi Scrubber, droplet separator and are let out to atmosphere via ID fan and chimney. The Primary Combustion Chamber operates under near pyrolytic condition where the waste is decomposed & all volatiles are released. The substrate remaining gets converted into sterile ash. The volatiles released from the Primary Combustion Chamber are then completely burnt in the Secondary Combustion Chamber under high temperature & excess air.

3.5.2 Air Pollution Control Device (APCD)

The gases after being burnt at 1050^0C shall be run into a ventury scrubber followedby a flooded scrubber with water quenching arrangement. The scrubber shall be analkaline scrubber to neutralise the gases and ensure trapping of any pollutants escaping into the environment. The purpose of water quenching is to reduce the temperature of the gases which are at high temperature. The clean gases are let out into the environment. The scrubbed water shall be collected into a sump, where the water is neutralized, and then sent into a cooling tower from where the water is re- circulated into the scrubber after cleaning them of their particulates by way of pressure sand filter and activated carbon filter. The system is thus a zero-discharge system in terms of water discharges and is pollution free.

Table 6: TECHNICAL SPECIFICATIONS FOR STATIC DESIGN INCINERATOR WITH DRYSCRUBBING TECHNOLOGY

INCINERATOR	
Brand Type & Model	Diesel Fired Incinerator
Type of Waste	Biomedical Waste
Burning Capacity	250 Kg/hr
Auxiliary Fuel	Diesel
Type of Burner Operation	Monoblock fully automatic burners
Temperature	Primary Chamber – 800 ± 500C Secondary Chamber – 1050 ± 500C

PRIMARY CHAMBER	
Type	Static Type
Material of Construction	Mild Steel
Refractory	Castable Refractory/bricks
Temperature Resistance	1400^0C
Insulation	Castable Insulation
Solid Waste Feeding	Automatic through conveyor/Hydraulic Ram
Ash Removal	Manual

SECONDARY CHAMBER	
Type	Static Solid Hearth
Material of Construction	Mild Steel
Refractory Thickness	115 mm thick
Material	Refractory Bricks confirming to IS – 8
Temperature Resistance	1400^0C
Insulation Thickness	115 mm
Material	Insulation bricks confirming to IS – 2042
Residence Time for flue Gas	2 Seconds

CONTROL PANEL	
Type	Digital
MOC	Mild Steel duly powder coated
No. of Temp. Controller	2Nos. Each for Primary & Secondary Chambers
Details	The Control panel is provided with Indicators
Operative on	3 Phase 440 V 50 Hz
ID FAN	
Type	High Pressure Centrifugal type
MOC	Mild Steel
Motor	Kirloskar/Havells/Crompton
Capacity	5 HP

COMBUSTION AIR FAN	
Type	Centrifuge Type
Capacity	1 HP
Make of Motor	Kirloskar/Havells/Crompton
MOC	Kild Steel

BURNER	
Type	Mono Block fully Automatic Oil Fired
No. of Burners	Two (1 for Primary & 1 for Secondary)
Fuel Consumption	5 – 7 Kg/Hr per burner
Details	The burner is complete with electric motor, fuel pump, nozzles, blower, sequence controller ignition transformer, Solenoid valve etc.

VENTURY SCRUBBER	
Type	Ventury
MOC	Stainless Steel
Temperature at the outlet	78 – 80^{0}C

DROPLET SEPARATOR	
Type	Centrifugal
Application	To Separate water droplets from flue gases
MOC	Mild Steel FRP lined

STACK CONE & CHIMNEY PIPE	
Height	100 Feet
MOC	Mild Steel of IS std. 5 mm
Top Dia	300 mm
DIESEL TANK	
MOC	Mild Steel of IS Std.
Capacity	200 Liters
Oil Level Indicator	Provided

3.5.3 AUTOCLAVE

An autoclave is a specialized piece of equipment designed to deliver 121^{0}C temperature under 15 psi pressures to a chamber, with the goal of decontaminating or sterilizing the contents of the chamber. Decontamination is the reduction of contamination to a level where it is no longer a hazard to people or the environment.EWC intends to establish an autoclave with above principle. To ensure safety and quality control, all bio-hazardous materials and items contaminated with potentially infectious agents should be decontaminated before use or disposal. Such items include, but are not limited to culture media, surgical instruments, laboratory equipment, glassware, and biomedical waste including sharps.

TECHNICAL SPECIFICATION OF HORIZONTAL AUTOCLAVE

1. Single door horizontal, self-standing type, stainless steel chamber
2. The inner and outer chamber is made of high-grade stainless-steel sheet.
3. Strong and study lid cover also made of high-grade stainless-steel plate.
4. The unit is fitted with very efficient radial locking system.
5. Working Pressure of 1.2 kg/cm, 1.5 with pressure guage indicating 1-2 kg/cm2
6. Working temperature 121/126 ^{0}C selectable
7. Display shall be digital indicator for actual temperature
8. Stainless steel steam release valve
9. Spring loaded safety valve of stainless steel
10. Water inlet valve
11. Provided with low water cut off system
12. Auto water filling: auto steam exhaust water level indicating guage glass with stainless steel guard
13. Electrical control box, fitted with switch and operation indicating lamps
14. Electrical Supply 440 V, 50 Hz

3.5.4 Shredder

Shredding is a process by which waste is de-shaped or cut into smaller pieces so as to make the waste unrecognizable. Shredders have non- corrosive sharp blades capable for shredding plastic waste, sharps, bottles, needles, tubing's, and other general waste. The low speed two

shaft systems are effective for shredding hard and solid waste. Environ intends to establish a Shredder, thus rendering the waste free from infection. The dis-infected waste shall then be segregated into HDPE, PP, rubber, latex, glass and metal. The segregated materials shall then be shredded completing the process of dis-infection and ensuring non- recycling of the waste materials for medical/ food grade purposes.

TECHNICAL SPECIFICATIONS OF SHREDDER

Portable compact equipment having solid body structure and casing with low noise level, heavy duty maintenance gear with automatic overload system to shred all kinds of bio-medical waste like syringes, blood bags, glucose bottles, mineral water bottles, cardboard boxes and plastic lumps etc. Supplied complete with digital control panel with auto reverse that can be conveniently operated. Fitted with 5 HP motor of reputed make like Siemens/Hindustan/Equiv and gear box.

Shredding Capacity	**200 kg/hr**
Drive motor	**5 HP, 3 Phase**
Hopper Size	**540 mm × 545 mm × 585 mm**
Cutting Chamber	**290 mm × 250 mm**
Control	**Through Control Panel**
Discharge	**Waste Bin below the cutting chamber**
Weight	**400 kg**

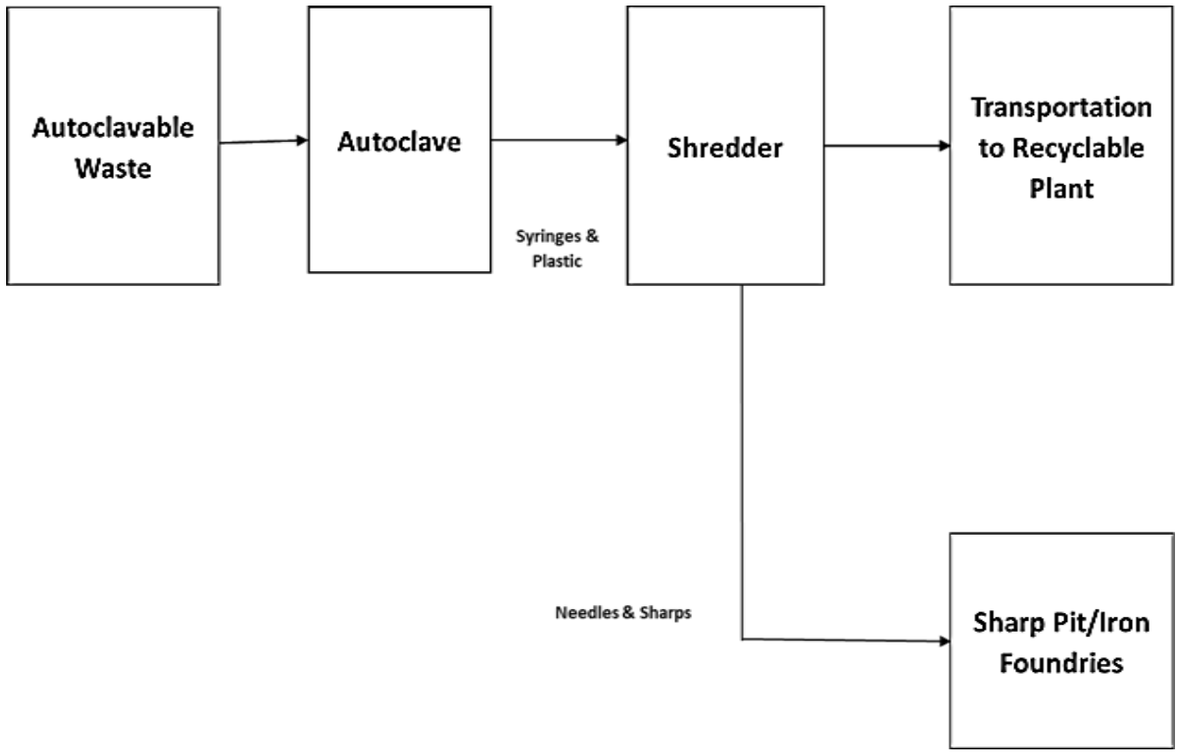


Figure 4: PROCESS FLOW OF AUTOCLAVING & SHREDDING

3.5.5 Sharp Pits

Sharp pits shall be provided for the disposal of treated sharps. Needles are cut into pieces to avoid reuse. For disposal of sharps, pits of about 3m diameter and 3m depth will be constructed of concrete/concrete hollow bricks with suitable plastering. The sharp pits shall be emptied & waste shall be sent to nearby foundries.

3.5.6 Effluent Treatment Plant

The proposed CBWTF will have an ETP of 15 KLD capacity. The wastewater generated from Floor washing, Vehicle washing, scrubber, floor washing will be treated in proposed ETP of capacity 15 KLD and domestic sewage shall be treated in septic tank followed by soak pit. Municipal Solid waste generated shall be sent to nearest Municipal Landfill.

Table 7: EFFLUENT TREATMENT PLANTS

CIVIL WORK			
Sr. No.	**Description of Unit**	**Qty.**	**MOC**
1.	Collection cum Equalization tank	01	Concrete (2000 Ltr)

2.	Sludge Drying Bed	02	Concrete (1m × 1m × 1m)
3.	Platform for ETP	01	As per actual requirement
4.	Foundations for Pumps	01	As per actual requirement
ELECTRO-MECHANICAL			
1.	Reactor tank	01	MSEP
2.	SBR Tank	01	MSEP
3.	Chemical Dosing tanks	03	MSEP
4.	Dual Media Filter	01	FRP
5.	Pipes, Fittings and Valves etc.	01	CPVC/UPVC
6.	Media & Diffusers	01	CPVC/UPVC
7.	Treated Water Tank	01	PVC
ELECTRICAL & INSTRUMENTATION			
1.	Effluent transfer Pump	02	250 LPH (Kirloskar/Lubi/Shakti)
2.	Filter Feed Pump	02	300 LPH (Kirloskar/Lubi/Shakti)
3.	Dosing Pump	01	0-6 LPH (E-dose/M-dose/Equi)
4.	Air Blower	01	15 m^3/Hr (A1/BlowVacc/Equiv)
5.	Panel	01	ISI (as per actual)

3.6 RAW MATERIAL REQUIRED:

This project involves the treatment of bio medical waste and the raw material for the process is collected from various hospitals, health care sector nursing homes, clinical laboratories etc.

3.6.1 MODE OF TRANSPORT OF RAW MATERIALS AND FINISHED PRODUCTS

Bio-Medical Waste shall be collected and transported to CBWTF in a fully covered specially designed and dedicated vehicle (as per the guidelines of CPCB). 6 vehicles will be used as per the requirement (4 Vehicles to be used for collection and transportation of BMW+2 Vehicles to be used in facility).

Vehicle Specifications: -

- GPS enabled vehicle tracking system shall be installed in each vehicle transporting bio medical waste.

- Separate cabins are provided for driver/staff and for bio medical waste cabin in the vehicle.
- The base of the waste cabin of vehicle is leak proof and easy to wash.
- The inner surface of the waste cabin is made of smooth surface to minimize water retention.
- The vehicles are properly labeled with the symbol of Biohazard as per schedule IV of the BMW (M&H) Rules, 2016 and display the name, address and telephone number of the company.
- The waste cabin shall have sufficient opening from rear so that Bio Medical waste can be easily loaded and unloaded.
- The vehicles are provided with the First Aid Kit to handle emergency situations.
- Mobile phones are given at all the vehicles for effective supervision and monitoring of collection and transportation work.

3.7 RESOURCE OPTIMIZATION/RECYCLING AND REUSE ENVISAGED IN THEPROJECT, IF ANY, SHOULD BE BRIEFLY OUTLINED.

Since the project involves the development of Bio-Medical Waste treatment plant, therefore there is nothing to be reuse but only the water used in the process of treatment of Biomedical Waste shall be reused after treatment using ETP and other solid waste viz. glass bottle/plastic waste shall be handed over to authorize recycler thereby ensuring resource optimization.

3.8 AVAILABILITY OF WATER ITS SOURCE, ENERGY/POWER REQUIREMENT ANDSOURCE

Water

The proposed CBWTF has a freshwater requirement of 16 KLD.

Source: Borewell

Power and fuel requirement

Total Power Requirement 80 KW is supplied by Assam Power Distribution Company Limited (APDCL). During power failure, DG set of capacity 82.5 kVA shall be used.

3.9 QUANTITY OF WASTE TO BE GENERATED (LIQUID AND SOLID) AND SCHEMEFOR THEIR MANAGEMENT/ DISPOSAL

There will be generation of solid as well as liquid waste during the operational phase of the project which will be responsibly managed. Water effluents shall be generated from all sources such as, Floor Washing, Vehicle/ Container Washing etc. and the same shall be treated in ETP and after treatment the treated water shall be recycled and reused in the

greenbelt.

Domestic Wastewater: Sewage generated from sanitary blocks will be disposed-off in Septic Tanks followed by Soak pits.

Type of solid waste generated in site and their management facilities are given in Table No. 8

Table 8: TYPES OF WASTE AND THEIR DISPOSAL FACILITY

S. No.	Process	Type of waste	Disposal
1	Incineration	Incinerated Ash	TSDF
2	Autoclaving	Sharp	Encapsulation
		Autoclaved/ shredded plastic waste	Through authorized recyclers
3	ETP	Sludge	TSDF

- All non-chlorinated plastic bags shall be as per BIS standards prevailing Plastic Waste Management Rules.
- Chemical treatment using at least 10% Sodium Hypochlorite having 30% residual chlorine for twenty minutes or any other equivalent chemical reagent that should demonstrate $Log_{10}4$ reduction efficiency for microorganisms as given in Schedule-III.
- Mutilation or shredding will be to an extent to prevent use.
- There will be no chemical pretreatment before incineration, except for microbiological, lab and highly infectious waste.
- Incineration ash (ash from incineration of any bio-medical waste) shall be disposed through hazardous waste treatment, storage and disposal facility, if toxic or hazardous constituents are present beyond the prescribed limits as given in the Hazardous Waste (Management, Handling and Trans-boundary Movement) Rules, 2016 or as revised from time to time.
- Dead Fetus below the viability period (as per the Medical Termination of Pregnancy Act 1971, amended from time to time) can be considered as human anatomical waste. Such waste should be handed over to the operator of common bio-medical waste treatment and disposal facility in yellow bag with a copy of the official Medical

Termination of Pregnancy certificate from the Obstetrician or the Medical Superintendent of hospital or healthcare establishment.

- Cytotoxic drug vials shall not be handed over to unauthorized people under any circumstances. These shall be sent back to the manufacturers for necessary disposal at a single point. As a second option, these may be sent for incineration at common bio-medical waste treatment and disposal facility or TSDFs or plasma pyrolysis at temperature>1200^{0}C.
- Residual or discarded chemical wastes, used or discarded disinfectants and chemical sludge can be disposed at hazardous waste treatment, storage and disposal facility. In such case, the waste should be sent to hazardous waste treatment, storage and disposal facility through operator of common bio-medical waste treatment and disposal facility only.
- On-site pre-treatment of laboratory waste, microbiological waste, blood samples, and blood bags should be disinfected or sterilized as per the Guidelines of World Health Organization or National AIDS Control Organization and then given to the common bio-medical waste treatment and disposal facility.
- Installation of in-house incinerator is not allowed. However, in case there is no common biomedical facility nearby, the same may be installed by the occupier after taking authorization from the State Pollution Control Board.
- Syringes should be either mutilated or needles should be cut and or stored in tamper proof, leak proof and puncture proof containers for sharps storage. Wherever the occupier is not linked to a disposal facility it shall be the responsibility of the occupier to sterilize and dispose in the manner prescribed.
- Bio-medical waste generated in households during healthcare activities shall be segregated as per these rules and handed over in separate bags or containers to municipal waste collectors. Urban Local Bodies shall have tie up with the common bio-medical waste treatment and disposal facility to pick-up this waste from the Material Recovery Facility (MRF) or from the household directly, for final disposal in the manner as prescribed in this Schedule.

3.9.1 STANDARDS

3.9.1.1 For Incineration

Our Proposed incinerators shall meet the following operating and emission standards.

(A) Operating Standards

1) Combustion efficiency (CE) shall be at least 99.00%.
2) The Combustion efficiency is computed as follows:

$$C.E. = \frac{\%CO_2}{\%CO_2 + \%\ CO} \times 100$$

3) The temperature of the primary chamber shall be a minimum of 800^0C and the secondary chamber shall be minimum of 1050^0C $\pm 50^0$C.
4) The secondary chamber gas residence time shall be at least two seconds.

(B) Emission Standards

Table 9: EMISSION STANDARDS

S.No.	Parameter	Standards	
(1)	(2)	(3)	(4)
		Limiting concentration in mg/Nm^3 unless stated	Sampling Duration in minutes, unless stated
1.	Particulate matter	50	30 or 1Nm^3 of sample volume, whichever is more
2.	Nitrogen Oxides as NO_2	400	30 for online sampling or grab sample
3.	HCl	50	30 or 1Nm^3 of sample volume, whichever is more
4.	Total Dioxins and Furans	0.1ngTEQ/Nm^3 (at 11%O_2)	8 hours or 5Nm^3 of sample volume, whichever is more
5.	Hg and its compounds	0.05	2 hours or 1Nm^3 of sample volume, whichever is more

(C) Stack Height

Minimum stack height shall be 30 meters above the ground and shall be attached with the necessary monitoring facilities as per requirement of monitoring of 'general parameters' as notified under the Environment (Protection) Act, 1986 and in accordance with the Central

Pollution Control Board Guidelines of Emission Regulation Part-III.

Note:

All standards for incineration mentioned above shall be compiled from the date of commissioning of plant

1. Waste to be incinerated shall not be chemically treated with any chlorinated disinfectants.
2. Ash from incineration of biomedical waste shall be disposed of at common hazardous waste treatment and disposal facility. However, it may be disposed of in municipal landfill, if the toxic metals in incineration ash are within the regulatory quantities as defined under the Hazardous Waste (Management and Handling and Trans-boundary Movement) Rules, 2016 as amended from time to time.
3. Only low Sulphur fuel like Light Diesel Oil or Low Sulphur Heavy Stock or Diesel, Compressed Natural Gas, Liquefied Natural Gas or Liquefied Petroleum Gas shall be used as fuel in the incinerator.
4. Monitoring of the stack gaseous emissions (under optimum capacity of the incinerator) will be done once in three months through a laboratory approved under the Environment (Protection) Act, 1986 and record of such analysis results shall be maintained and submitted to the prescribed authority. In case of dioxins and furans, monitoring will be done once in a year.
5. Continuous emission monitoring system for the parameters as stipulated by State Pollution Control Board or Pollution Control Committees in authorization and transmit the data real time to the servers at State Pollution Control Board or Pollution Control Committees and Central Pollution Control Board will be installed
6. All monitored values shall be corrected to 11% Oxygen on dry basis.
7. Incinerators (combustion chambers) shall be operated with such temperature, retention time and turbulence, as to achieve Total Organic Carbon content in the slag and bottom ashes less than 3% or their loss on ignition shall be less than 5% of the dry weight.
8. A combustion gas analyzer to measure CO_2, CO and O_2 will be installed.

3.9.1.2 Standards For Autoclaving of Bio-Medical Waste

The autoclave should be dedicated for the purposes of disinfecting and treating bio-medical waste.

1. When operating a vacuum autoclave, medical waste shall be subjected to a minimum of three pre-vacuum pulses to purge the autoclave of all air. The air removed during the pre-vacuum cycle should be decontaminated by means of HEPA and activated carbon filtration, steam treatment, or any other method to prevent release of pathogen. The waste shall be subjected to the following:
2. Temperature of not less than 121°C and pressure of 15-17 psi per an autoclave residence time than 45 minutes of not less.
3. Medical waste shall not be considered as properly treated unless the time, temperature and pressure indicators indicate that the required time, temperature and pressure were reached during the autoclave process. If for any reasons, time temperature or pressure indicator indicates that the required temperature, pressure or residence time was not reached, the entire load of medical waste must be autoclaved again until the proper temperature, pressure and residence time were achieved.
4. **Recording of operational parameters:** Each autoclave shall have graphic or computer recording devices which will automatically and continuously monitor and record dates, time of day, load identification number and operating parameters throughout the entire length of the autoclave.
5. **Validation test for autoclave:** The validation test shall use four biological indicators strips, one shall be used as a control and left at room temperature, and three shall be placed in the approximate center of three containers with the waste. Personal protective equipment (gloves, face mask and coveralls) shall be used when opening containers for the purpose of placing the biological indicators. At least one of the containers with a biological indicator should be placed in the most difficult location for steam to penetrate, generally the bottom center of the waste pile. The occupier or operator shall conduct this test three consecutive times to define the minimum operating conditions. The temperature, pressure and residence time at which all biological indicator vials or strips for three consecutive tests show complete inactivation of the spores shall define the

minimum operating conditions for the autoclave. After determining the minimum temperature, pressure and residence time, the occupier or operator of a common biomedical waste treatment facility shall conduct this test once in three months and records in this regard shall be maintained.

6. **Routine Test:** A chemical indicator strip or tape that changes colour when certain temperature is reached can be used to verify that a specific temperature has been achieved. It may be necessary to use more than one strip over the waste package at different locations to ensure that the inner content of the package has been adequately autoclaved. Common bio medical waste treatment facility shall conduct this test during autoclaving of each batch and records in this regard shall be maintained.
7. **Spore testing:** The autoclave should completely and consistently kill the approved biological indicator at the maximum design capacity of each autoclave unit. Biological indicator for autoclave shall be Geobacillusstearo-thermophilus spores using vials or spore Strips; with at least $1X10^6$ spores. Under no circumstances will an autoclave have minimum operating parameters less than a residence time of 30 minutes, a temperature less than 121^oC or a pressure of 15-17 psi. The occupier or operator of a common bio medical waste treatment and disposal facility shall conduct this test at least once every week and records in this regard shall be maintained.

3.9.1.3 Standards For Liquid Waste

The effluent generated or treated from the premises of occupier or operator of a common bio medical waste treatment and disposal facility, before discharge into the sewer should conform to the following limits:

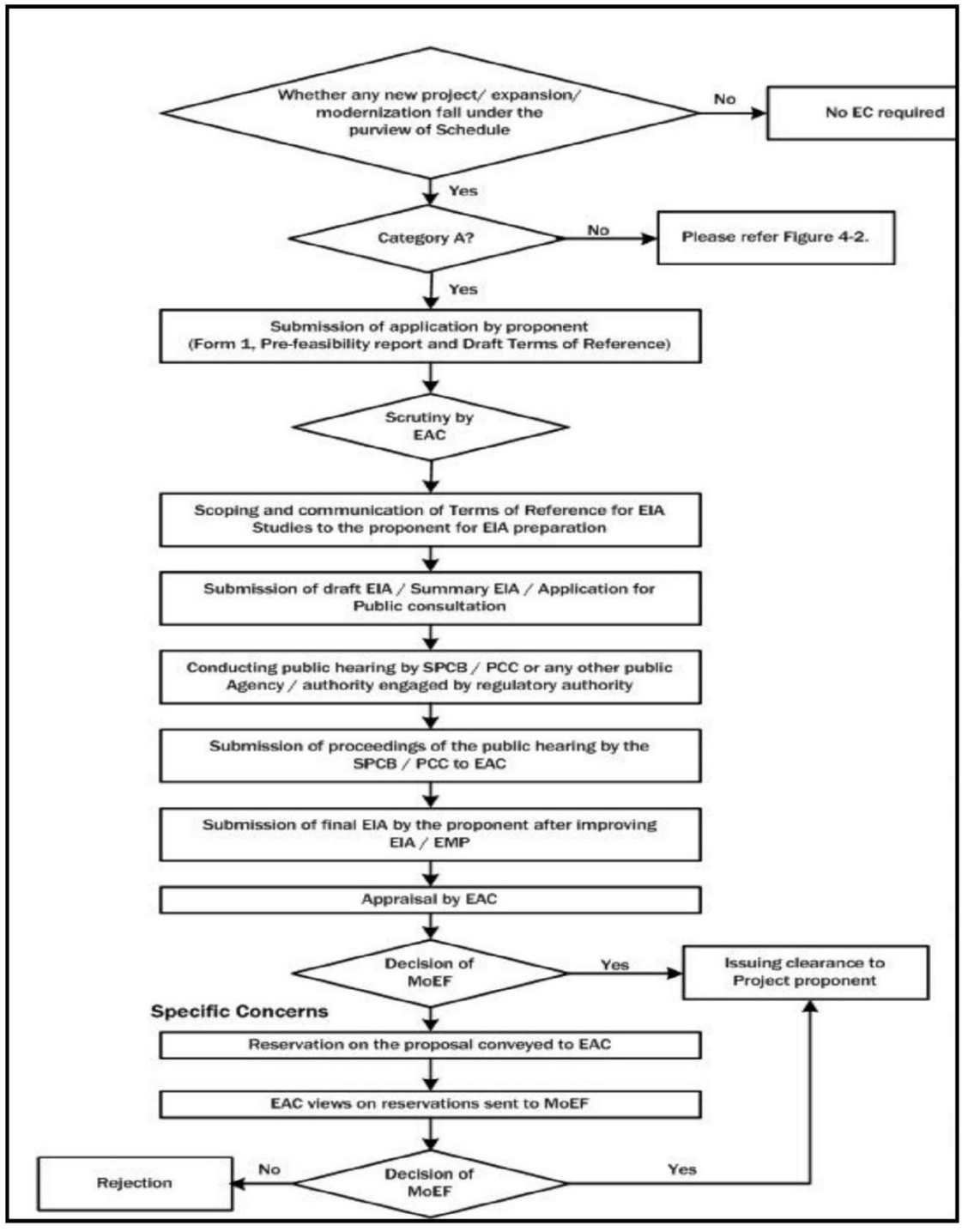
Table 10: PERMISSIBLE LIMITS OF LIQUID WASTE

Parameters	Permissible limits
pH	6.5-9.0
Suspended solids	100 mg/l
Oil and grease	10 mg/l
BOD	30 mg/l
COD	250 mg/l
Bio-assay test	90% survival of fish after 96 hours in 100% effluent

Sludge from Effluent Treatment Plant shall be given to common bio-medical waste treatment facility for incineration or to hazardous waste treatment, storage and disposal facility for disposal.

3.10 Schematic representations of the feasibility drawing which give information of EIA purpose.

Prior Environment Clearance Process for activities falling under category B is provided in flowchart below-



4 SITE ANALYSIS

4.1 Connectivity

Table 11: NEAREST CONNECTIVITY/ESTABLISHMENTS.

S.No.	Particulars	Name
1.	Nearest town	Jorhat Town – 12 Km in SW direction.
2.	Nearest Highway	Lahdoigarh road - 3.3 Km, S; NH-715K – 4.4 Km, W
3.	Nearest Railway	Jorhat Town Train station – 13 Km, SW
4.	Nearest Airport	Jorhat Airport - 16.1 Km, SW.

4.2 Landform, Land Use and Land Ownership

The proposed project site consists of 1.5 Acres of private land. Change in Land Use has been granted. The project proponent has acquired the land on lease to establish CBWTF. Land documents are attached as **Annexure-I.** Layout of the Project is given below:

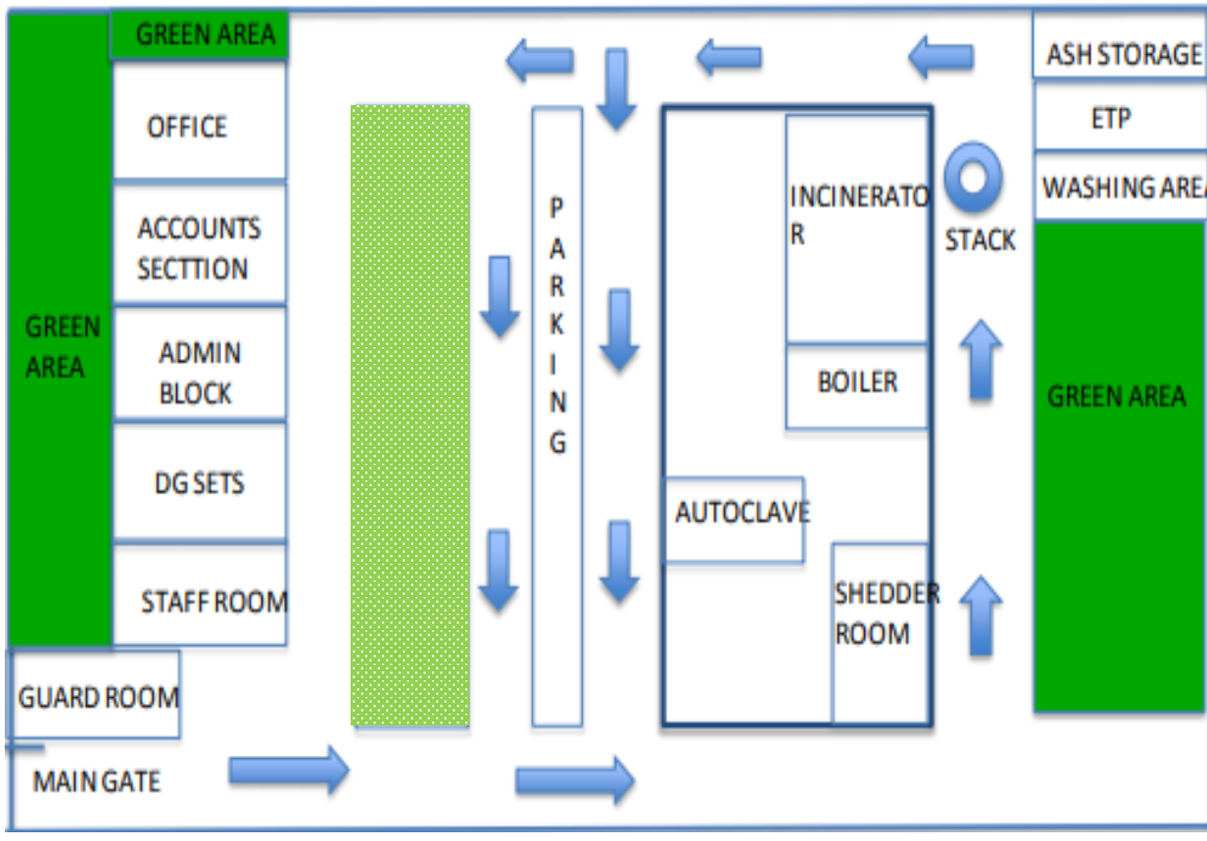


Figure 5: Proposed Layout of the Project

4.3 Topographical Map of 10 Km from Proposed Project Site

The proposed facility will be established by M/s Ksepya Environment Management Pvt. Ltd. at village Phukon Khat, Choukhat, District Jorhat, Assam.

4.4 Site Suitability

As per CPCB guidelines, as far as possible, the CBWTF shall be located near to its area of operation in order to minimize the transportation distance in waste collection, thus enhancing its operational flexibility as well as for ensuring compliance to the time limit for treatment and disposal of bio-medical waste as stipulated under the BMWM Rules (i.e., within 48 hours). Also, the location of the CBWTF should be in conformity to the CRZ Normsand other provisions notified under the Environment (Protection) Act, 1986. The location criteria for development of a CBWTF are as follows: -

A. A CBWTF shall preferably be developed in a notified industrial area without any

requirement of buffer zone (or)

B. A CBWTF can be located at a place reasonably far away from notified residential and sensitive areas and should have a buffer distance of preferably 500 m so that itshall have minimal impact on these areas.

The proponent is proposing to set up the facility at village Phukon Khat, Choukhat, District Jorhat, Assam

Table 12: ENVIRONMENTAL SENSITIVITY PARAMETERS

Parameter	**Observation**
Lake or Pond (Distance from SW body)	There are no lakes or ponds within 200 m of project boundary.
River	Brahamputra River – 3Km, NW
Highway – State or National	Lahdoigarh road - 3.3 Km, S; NH-715K – 4.4 Km, W
Habitation – Notified habituated area	Village Phukanar Khat – 2 Km, SE
Public Parks	**Hatisal balimahi –250M**
Critical habitat area- area in which one or more endangered species live	-
Reserved forest area	No Reserved Forest area near project site
Airport	Jorhat Airport – 16.1, SW
Water Supply	Borewell
Coastal Regulation Area	No
Presence of monuments/ religious structures.	**Temple:** Dokhin bohat gaon temple – 4Km, S

4.5 EXISTING LAND USE

The proposed project site consists of 1.5 Acres of land. Change in Land use has been approved. Land documents are attached as **Annexure-I**.

4.6 EXISTING INFRASTRUCTURE

This is a proposed CBWTF project for the treatment of Bio Medical Waste of district Jorhat. All infrastructure facilities exist within the area. A well-equipped first aid facility is proposed. Water will be sourced from Borewell.

4.7 TOPOGRAPHY AND GEOLOGY

TOPOGRAPHY: The area represents a major part of the plains of the Brahmaputra valley at an altitude of about

60 m to 140 m above the mean sea level. Some areas at the south and southeast of the district have low hill ranges which are the continuation of the Naga Hills. The altitude of this area ranges from 150 m to 450 m above MSL. The hills are dissected and moderately steep to steeply sloping and forested. The northern part of the valley is flat to nearly level and often subject to moderate to severe flooding whereas the other parts have very gentle slopes with impeded drainage and occasionally affected by flood and the area is mostly under paddy. Colluvial and alluvial materials are deposited at the foothill slopes and from the piedmont. Piedmonts and uplands are very gently sloping to gently sloping and dissected. They are mostly under tea cultivation and some parts are under forest.

Physiographically the district can be divided into three broad categories: The first one is the belt of flooded land. The expanse of flooded belt stretches from 4 to 12 kms in width on the southern bank of Bramhaputra. The area is covered with interspersed jungle reed, swamps and rich variety of fodder grass. In summer rice is cultivated followed by Rabi crops in winter. A few patches of dense forests act as the habitats of wild animals. (Census, 2011) The second one constitutes of a vast plain lies between Nagaland and the Bramhaputra river. The area is densely populated with enormous plain area for cultivation. Tea is grown in exorbitant quantity in the high altitudes and rice is cultivated in the plain land. Topographically the total district is a plain land.

GEOLOGY: The district covers a portion of the part of Brahmaputra valley in the north and the

foothills of Naga Schuppen Belt in south. Geologically, the district is characterized by Tertiary and Quaternary litho assemblages ranging from Eocene to Meghalayan age. The oldest litho-unit is Jenam formation. This Formation is composed of carbonaceous shale and sandstone along with coal. It is overlain unconformably by the Tipum Group of rocks. Tipam formation forming the older boundary of the Tipam Group. It is composed of ferruginous sandstone with siltstone and clay of Miocene to Pliocene in age. The upper part of Tipam group is generally filled with Girujan formation. This formation is characterized by mottled clay, mudstone and ferruginous sandstone. Tipam Group is unconformably overlain by the rocks of Dupitila group making a thrusted contact. The Namsang Group of Dupituila formation, is characterized by grit, conglomerate, sandstone, clay with or without coals. The southern part of the district is mostly covered by quaternary sediments. These quaternary sediments are classified into two groups i.e., Older and Newer Alluvium. These Quaternary sediments are separated from the rest of the Precambrian rocks by an unconformity. Older Alluvium is classified into two morpho-stratigraphic units i.e., Chapar and Sorbhog. Chapar Formation is composed of highly oxidized dark brown to red brown loamy sand. Sorbhog Formation is characterized by highly oxidized reddish-brown sand, silty clay with occasional pebbles and cobbles. Newer Alluvium Group is classified into e.g., Haul, Barpeta I and Barpeta II. The oldest formation, Haul which is forming the basement of quaternary sediments of Newer Alluvium. It is characterized by oxidized alternate sand and silt and also clay with carbonized wood and minor pebbles in flood plains. Barpeta-I comprises with white to greyish sand, silt, pebble and clay with carbonaceous matter. Barpeta- II contains with most recent sediments like unoxidiz goled sand, silt, clay with occasional pebbles along with carbonaceous matters.

Source: https://jorhat.assam.gov.in/sites/default/files/public_utility/DsrJorhat.pdf

4.8 CLIMATIC DATA FROM SECONDARY SOURCES

The climate of Jorhat is classified as mesothermal wet climate and characterized by highly humid atmosphere, abundant rainfall and coolness. The summer season consists of May to July and winter season starts from November and ends in January. Heavy rainfall coupled with storms and thunderstorms; the result of south-west monsoon characterizes the rainy season in the district. Temperature starts falling from November and rises from the month of March every

year.

The Jorhat district has sub-tropical tropical/Equatorial climate as Assam lies in the regime of monsoon climate of the sub-tropical belt. So, people of Jorhat enjoy heavy summer rainfall, abundance of monsoonal rain, experiences winter drought, high humidity and relatively pleasant temperature throughout a year.

Rainfall and humidity are closely allied in terms of climatology. The district has a climate which is characterized by a highly humid atmosphere, abundant rain and general coolness. Therefore, heavy summer rainfall and high humidity affect the weather of Jorhat district. The area enjoys a sub-tropical climate with abundance of monsoonal rain. The rainfall is not uniform throughout the district. The average monsoonal rainfall is about 1723mm. Almost 60% of precipitation is received during July to September.

Average temperature of the district is around 34 °C (Max) and minimum of 9 °C. In summer weather becomes hot and humid with temperature range 30°C - 35 °C. The temperature ranges from 7 °C - 18°C degree in winter which begins from October and continues till February.

Source: https://jorhat.assam.gov.in/sites/default/files/public_utility/DsrJorhat.pdf

4.9 POPULATION AND URBANISATION

In 2011, Jorhat had population of 1,092,256 of which male and female were 556,805 and 535,451 respectively. In 2001 census, Jorhat had a population of 999,221 of which males were 517,015 and remaining 482,206 were females. Jorhat District population constituted 3.50 percent of total Maharashtra population. In 2001 census, this figure for Jorhat District was at 3.75 percent of Maharashtra population. There was change of 9.31 percent in the population compared to population as per 2001. In the previous census of India 2001, Jorhat District recorded increase of 14.69 percent to its population compared to 1991.

Out of the total Jorhat population for 2011 census, 20.19 percent lives in urban regions of district. In total 220,534 people lives in urban areas of which males are 113,837 and females are 106,697. Sex Ratio in urban region of Jorhat district is 937 as per 2011 census data. Similarly child sex ratio in Jorhat district was 948 in 2011 census. Child population (0-6) in urban region was 21,200 of which males and females were 10,883 and 10,317. This child population figure of Jorhat district is 9.56 % of total urban population. Average literacy rate in Jorhat district as

per census 2011 is 90.39 % of which males and females are 92.89 % and 87.72 % literates respectively. In actual number 180,181 people are literate in urban region of which males and females are 95,637 and 84,544 respectively.

As per 2011 census, 79.81 % population of Jorhat districts lives in rural areas of villages. The total Jorhat district population living in rural areas is 871,722 of which males and females are 442,968 and 428,754 respectively. In rural areas of Jorhat district, sex ratio is 968 females per 1000 males. If child sex ratio data of Jorhat district is considered, figure is 968 girls per 1000 boys. Child population in the age 0-6 is 103,394 in rural areas of which males were 52,545 and females were 50,849. The child population comprises 11.86 % of total rural population of Jorhat district. Literacy rate in rural areas of Jorhat district is 80.01 % as per census data 2011. Gender wise, male and female literacy stood at 86.24 and 73.58 percent respectively. In total, 614,748 people were literate of which males and females were 336,698 and 278,050 respectively.

Source: https://www.census2011.co.in/census/district/154-jorhat.html

4.9.1 PROPOSED INFRASTRUCTURE

The Proposed project Common Bio Medical Waste Treatment Facility consists:

A. Waste storage area
B. Incineration area
C. Auto calving area
D. Shredder area
E. Office

5 PLANNING & MANAGEMENT

5.1 PLANNING CONCEPT (TYPE IF INDUSTRIES, FACILITIES, TRANSPORTATION ETC) TOWN AND COUNTRY PLANNING/DEVELOPMENT AUTHORITY CLASSIFICATION

The nearby area and the related facilities are already developed hence no planning is envisaged. The Jorhat district have necessary amenities.

5.2 POPULATION PROJECTION

There would not be any significant development/increase in the population of surrounding area. Workers for the proposed project will come from the residents in the surrounding villages. There won't be any influx of people in the area due to the proposed project**.**

5.3 LAND USE PLANNING (BREAK-UP ALONG WITH GREENBELT ETC.)

The open space inside the project area will be suitably landscaped and covered with the vegetation of indigenous variety. Green Belt area will be developed as per the CPCB guidelines. The facility will be provided with green belt in the open area within the treatment facility.

5.4 ASSESSMENT OF INFRSTRUCTURE DEMAND (PHYSICAL & SOCIAL).

The Proposed project is a Common Bio Medical Waste Treatment Facility Plant consist of:

- Waste storage area
- Incineration area
- Auto calving area
- Shredder area
- Office

5.5 AMENITIES/FACILITIES

Major basic facilities are available for the proposed project. **Road, electricity, water, transportation facility etc.** are well developed in the surrounding area. All the amenities related to project on the site will be installed.

6 PROPOSED INFRASTRUCTURE

6.1 INDUSTRIAL AREA (PROCESSING AREA)

The site shall have an administrative and site control office with latest equipment like computers, printers, fax, Xerox machine, fuel pump, air blower, damper, ignition transformer, etc. to keep the system safe in operation.

Water for construction and domestic purpose as well industrial purposes will be sourced from borewell.

6.2 RESIDENTAL AREA (NON-PROCESSING AREA)

During Construction and operational phase, the labors and workers will be hired from nearby villages. 26 persons will be hired for Plant operations including supervisor, skilled and unskilled workers.

6.3 GREEN BELT

33% area of the total land will be developed as greenbelt.

6.4 SOCIAL INFRSTRUCTURE

Schools, colleges, hospitals & healthcare centers, shops & bazaars, community centers, etc. are all available in nearby area.

6.5 CONNECTIVITY (TRAFFIC AND TRANSPRTATION ROAD/RAIL/METRO/ WATER WAYS ETC.)

Project is located in village Phukon Khat, Choukhat, District Jorhat. Lahdoigarh road is at 3.3 Km, S; Railway Station – Jorhat Town Train station is 13 Km towards SW direction.

6.6 DRINKING WATER MANAGEMENT (SOURCE & SUPPLY OF WATER)

The freshwater requirement is 16KLD, detailed water balance given below in **Figure 7.**
Source: Borewell.

6.7 Wastewater Management

The amount of wastewater generated during the CBWTF's operation, Floor washing, Vehicle/ container washing shall be treated using in-house ETP and the Treated water shall be reused in vehicle washing/ Quencher and scrubber/Floor washing and for irrigation in green belt.

The proposed CBWTF will have an ETP of 15.0 KLD capacity. The wastewater generated from Floor washing, Vehicle washing, Quencher, Autoclave and domestic will be treated through ETP. ETP will be used for the treatment of wastewater. ETP sludge generated will be

disposed of through TSDF.

Table 13: Wastewater Generation detail

S. No	Description	Break up (KLD)			
		Fresh water	**Treated**	**Effluent generated**	**Treatment**
1.	Vehicle & wheel Washing	**4.0**		3.6	Modular ETP of 15 KLD (10+5 KLD) with ZLD Concept is proposed for wastewater treatment (Physio chemical and biological)
2.	Autoclave	**5.0**		1.0	
3.	Floor Washing	**2.0**		1.5	
4.	Domestic	**5.0**		4	Septic Tank followed by Soak pit
5.	Plantation and maintaining green area		5.5	0	
Total		**16.0**	**5.5**	**10.1**	

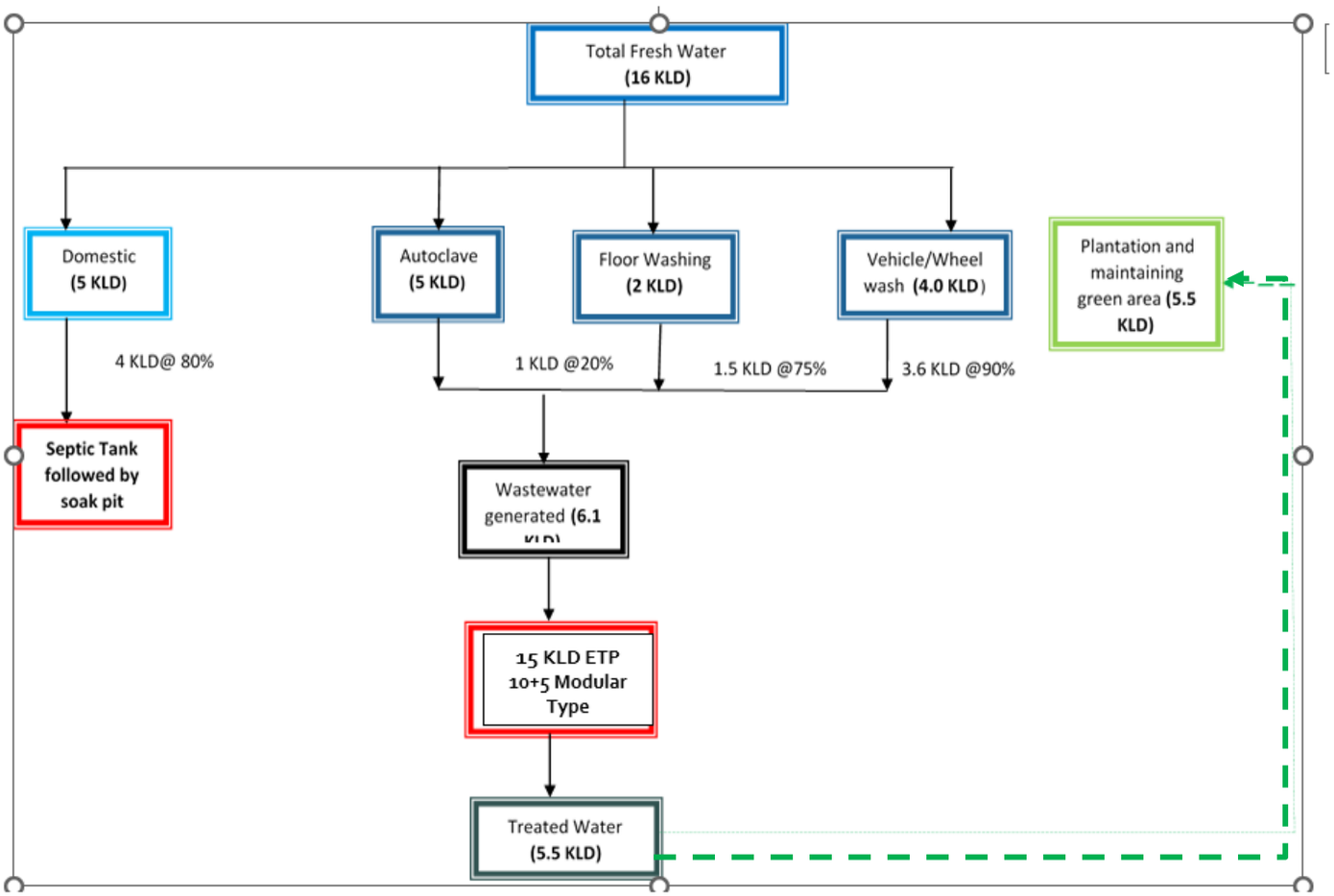


Figure 7: Water Balance

6.8 SEWERAGE SYSTEM

Around 4 KLD domestic wastewater would be generated and would be treated in septic tank followed by soak pit.

6.9 INDUSTRIAL WASTE MANAGEMENT

Separate storage space shall be provided for the storage of treated and untreated bio medical waste. Bio medical waste received by different vehicles will be unloaded as per the provision of the treatment requires. Incinerable waste, i.e yellow bags are unloaded from the vehicle at the space designated for incinerable waste near the incinerator. The autoclavable waste i.e. red bags are unloaded in the autoclavable section. After autoclaving the treated waste will be transferred to the shredder room for shredding & disposal.

6.10 Solid Waste Management

- Municipal solid waste will be segregated and organic waste will be used in organic waste convertor. Other waste will be sent to recycler
- Incinerator ash will be generated as waste after the treatment of Bio medical waste and will be disposed through TSDF.
- Used plastic bottles will be shredded and resulting plastic will be sold to authorized recyclers.
- The domestic waste will be generated mainly of domestic waste fromworkers. The domestic waste will be disposed through municipal dustbins.

6.11 POWER REQUIREMENT & SUPPLY/SOURCE

Total Power Requirement 80KW is supplied by APDCL.

For power back up, DG set of capacity 82.5 KVA shall be installed.

7 REHABILITATION AND RESETTLEMENT (R & R) Plan

The proposed project is to be established in village Phukon Khat, Choukhat, District Jorhat, Assam. The land is in the ownership of M/s Ksepya Environment Management Pvt. Ltd. Thus, No R&R is involved.

7.1 POLICY TO BE ADOPTED (CENTRAL/STATE) IN RESPECT OF THE PROJECT AFFECTED PERSON INCLUDING HOME OUSTEES, LAND OUSTEES AND LANDLESS LABORERS

Not applicable

8 PROJECT SCHEDULE AND COST ESTIMATES

8.1 Likely date of start of construction and likely date of completion (time schedule for the project to be given)

Date of Start of Construction: - Within Six months after getting Environmental Clearance.

Date of Completion: Within one year from the date of start of construction.

8.2 ESTIMATED PROJECT COST ALONG WITH ANALYSIS IN TERMS OF ECONOMIC VIABILITY OF THE PROJECT

The cost of the project is **Rs 9.5 Crores** approximately. The profitability of the project will depend upon the treatment of bio medical waste coming from various hospitals and healthcare centers in the city and nearby areas.

8.2.1 DETAILS OF CORPORATE ENVIRONMENTAL RESPONSIBILITY (CER)

Corporate Environment Responsibility (CER) Budget is now the part of Environment Management Plan. However, the amount for CER shall be reserved based on the basis of activities/observation raise during Public Hearing.

9 ANALYSIS OF PROPOSAL (FINAL RECOMMENDATIONS)

9.1 Financial and social benefits with special emphasis on the benefit to the local people including tribal population, if any, in the area

CBWTF (Common Bio-Medical Waste Treatment Facility) is an infrastructural set up where Bio-Medical Waste is treated & disposed of in a most economical and viable method. It is a system that is designed to ensure Win-Win situation for all the Stake holders:

- General Public & the End User of Hospital Facilities: Happens to gain in cleaner & infectious free environment.
- Hospital Staff: Less of workload since bulk of the responsibilities are outsourced / transferred to well trained staff of Service Provider.
- Hospital Management: Will be able to focus better on their Core Competence.
- Service Providers: Eventually gains from Economies of Scale. Therefore, thisproject shall

ensure following benefits to the society:

- Cleaner and healthier surroundings.
- Reduction in the incidence of hospital acquired and general infections.
- Reduction in the cost of infection control within the hospital.
- Reduction in the possibility of disease and death due to reuse and repacking ofinfectious disposal.
- Low incidence of community and occupational health hazards.
- Reduction in the cost of waste management through appropriate treatment anddisposal of waste.
- Employment generation for people.

9.2 PROJECT BENEFITS

In view of recent Pandemic, the Covid -19, there is urgent need for management of large amount of Bio Medical Waste being generated by Health Care Facilities. Management of waste adopting scientific approach to the process of waste generation, storage, transportation, treatment and its disposal. This arduous task can only be achieved by the synergistic efforts of the health care establishments, Government health department, Pollution Control Boards and Service Provider for Bio-Medical Waste Management. It is then we can build a pollution-free environment for better places to live in. M/s Ksepya Environment Management Pvt. Ltd. intends to implement a better and effective Bio Medical processing plant in Jorhat, Assam meeting the requirements of rules and guidelines of Biomedical waste management rules 2016.

Form I

Proposed Common Bio-Medical Waste Treatment Facility at Village Phukon Khat, Choukhat , District Jorhat, Assam by M/s Ksepya Environment Management Pvt. Ltd.

FORM 1

(I) Basic Information:

<table>
<tr><th>S.No.</th><th>Item</th><th>Details</th></tr>
<tr><td>1</td><td>Name of the project/Activity</td><td>Common Bio Medical Waste Treatment Facility located Village Phukon Khat, Choukhat, District Jorhat, Assam proposed by M/s Ksepya Environment Management Pvt. Ltd.</td></tr>
<tr><td>2</td><td>S. No. in the schedule</td><td>7 (da) – Bio medical waste treatment facility (CBMWTF)</td></tr>
<tr><td>3.</td><td>Proposed capacity/area/length/ Tonnage to be handled/command area/lease area/number of Wells to be drilled.</td><td>Proposed Capacity
<table>
<tr><th>S.No.</th><th>Equipment</th><th>Number</th><th>Proposed Capacity</th></tr>
<tr><td>1.</td><td>Incinerator (Twin Chamber)</td><td>2</td><td>250 kg/hr (one Standby)</td></tr>
<tr><td>2.</td><td>Autoclave</td><td>2</td><td>850kg/batch (one Standby)</td></tr>
<tr><td>3.</td><td>Shredder</td><td>1</td><td>200 kg/hr.</td></tr>
<tr><td>4.</td><td>Effluent treatment plant</td><td>1</td><td>15KLD</td></tr>
<tr><td colspan="4">Plot area 1.5 acre on Dag No 44 under KP no 22</td></tr>
</table></td></tr>
<tr><td>4.</td><td>New/Expansion/Modernization</td><td>New</td></tr>
<tr><td>5.</td><td>Existing Capacity /Area etc.</td><td>NA</td></tr>
<tr><td>6.</td><td>Category of Project i.e.' A' or 'B'</td><td>B</td></tr>
<tr><td>7.</td><td>Does it attract the general condition? If yes, please specify.</td><td>No</td></tr>
<tr><td>8.</td><td>Does it attract the specific condition? If 'yes, please specify.</td><td>No</td></tr>
<tr><td>9.</td><td>Location</td><td>Plot area 1.5 acre on Dag No 44 under KP no 22, Village Phukon Khat, Choukhat, district Jorhat, Assam
Site Co-ordinates are: -
A - 26°50'47.50"N; 94°17'27.93"E
B - 26°50'46.40"N; 94°17'30.07"E
C - 26°50'43.29"N; 94°17'29.25"E
D - 26°50'44.22"N 94°17'27.29"E</td></tr>
</table>

	Plot/Survey/Khasra No.	Plot area 1.5 acres on Dag No 44 under KP no 22
	Village	Village Phukon Khat, Choukhat,
	District	Jorhat
	State	Assam
10.	Nearest railway station/airport along with Distance in kms.	Jorhat Town Train station – 13 Km, SW, Jorhat Airport - 16.1 Km, SW
11.	Nearest Town, city, District Headquarters along with distance in kms.	The proposed project location is under the District of Jorhat, Assam. District head quarter Jorhat at 26.00 KM via State Highway. Jorhat town at a distance of 12 Km by road in SW direction.
12.	Village Panchayats, Zilla Parishad, Municipal Corporation, Local body (Complete postal Address with telephone nos. to be given)	Phukon Khat, Village, 2.2 Km
13.	Name of the applicant	Raju Saikia Director
14.	Registered Address	Kahara pathar, PO-Bhawanipur, PS-Sarupeta, Dist Bajali, Assam
15.	Address for correspondence:	M/s Ksepya Environment Management Pvt. Ltd.
	Name	Raju Saikia
	Designation (Owner/Partner/CEO)	Director
	Address	Kahara pathar, PO-Bhawanipur, PS-Sarupeta, Dist Bajali, Assam
	Pin Code	781352
	E-mail	ksepyaenvironment@gmail.com
	Telephone No.	-
	Fax No.	--
16.	Details of Alternative Sites examined, if any. Location of these sites should be shown on a topo sheet.	Site has been selected, keeping in view selection criteria as per CPCB guideline.
17.	Interlinked Projects	No
18.	Whether separate application of interlinked Project has been submitted?	NA
19.	If yes, date of submission	NA
20.	If no, reason	NA

21.	Whether the proposal involves approval / clearance under: if yes, Details of the same and their status to be given. (a) The Forest (Conservation) Act, 1980? (b) The Wildlife (Protection) Act, 1972 (c) The C.R.Z. Notification, 1991?	No
22.	Whether there is any Government Order/ Policy relevant/ relating to the site?	No
23.	Forest land involved (hectares)	No
24.	Whether there is any litigation pending against the project and /or land in which the project is proposed to be set up? (a) Name of the Court (b) Case No. (c) Orders/directions of the Court if any and its relevance with the proposed project.	No litigation pending against the project.

(II) Activity

1. Construction, operation or decommissioning of the Project involving actions, which will cause physical changes in the locality (topography, land use, changes in water bodies, etc.)

S.No.	Information/Checklist confirmation	Yes/No	Details thereof (with approximate quantities /rates, wherever possible) with source of information data
1.1	Permanent or temporary change in land use, land cover or topography including increase in intensity of land use (with respect to local land use plan)	Yes	Proposed Project site is private land. Thus, change in Land use is required.
1.2	Clearance of existing land, vegetation, and buildings?	No	Proposed Project site is a vacant land.
1.3	Creation of new land uses?	Yes	Land will be utilized for the establishment of CBWTF.
1.4	Pre-construction investigations e.g. bore houses, soil testing?	No	Site is suitable for construction activity.
1.5	Construction works?	Yes	RCC structures will be Constructed as per BWM rules 2016 for the proposed CBWTF.
1.6	Demolition works?	No	No demolition work is involved at the proposed site as the site is vacant land.
1.7	Temporary sites used for construction works or housing of construction workers?	Yes	Most of the local people will be engaged for construction activities. Temporary labour hutments will be provided to workers, if required.
1.8	Above ground buildings, structures or earthworks including linear structures, cut and fill or excavations	Yes	Above ground infrastructures like main plant, administration building will be constructed apart from supporting infrastructures like offices and toilets. Excavation for laying the foundation of structures will be involved.
1.9	Underground works including mining or tunneling?	No	NA
1.10	Reclamation works?	No	NA
1.11	Dredging?	No	NA
1.12	Offshore structures?	No	NA
1.13	Production and manufacturing processes?	No	Proposed Common Bio Medical Waste Treatment Facility involves collection,

			Transportation, storage, and treatment of Biomedical waste from health care facilities.
1.14	Facilities for storage of goods or materials?	Yes	Temporary storage will be provided for storage of BMW generated from HCFs.
1.15	Facilities for treatment or disposal of solid waste or liquid effluents?	Yes	The freshwater requirement of 16 KLD which includes 5 KLD for domestic purposes, 11 KLD for process and vehicle wash. **Source:** Borewell The proposed CBWTF will have an ETP of 15 KLD capacity. The wastewater generated from Floor washing, Vehicle washing, scrubber, floor washing will be treated in proposed ETP of capacity 15 KLD(10+5modular type) and domestic sewage shall be treated in septic tank followed by soak pit.. Municipal Solid waste generated shall be sent to nearest Municipal Landfill.
1.16	Facilities for long term housing of operational workers?	No	Mostly local resident shall be employed.
1.17	New road, rail or sea traffic during construction or operation?	No	--
1.18	New road, rail, air waterborne or other transport infrastructure including new or altered routes and stations, ports, airports etc.?	No	**Existing:** Lahdoigarh road - 3.3 Km, S; NH-715K – 4.4 Km, W
1.19	Closure or diversion of existing transport routes or infrastructure leading to changes in traffic movements?	No	The project does not involve any change in the existing transport route.
1.20	New or diverted transmission lines or pipelines?	No	For power, existing transmission lines will be used.
1.21	Impoundment, damming, culverting, realignment or other changes to the Hydrology of watercourses or aquifers?	No	The project does not involve impoundment, damming, culverting, realignment, or other changes leading to change in hydrology.
1.22	Stream crossings?	No	No stream crossings involved
1.23	Abstraction or transfers of water from ground or surface waters?	Yes	Water requirement for the project will be met through proposed borewell.

1.24	Changes in water bodies or the land surface affecting drainage or run-off?	No	A proper storm water drainage system shall be planned.
1.25	Transport of personnel or materials for construction, operation, or decommissioning?	Yes	During construction, plant machineries and construction material shall be brought to the site. When the facility comes in operation dedicated containerized vehicles shall be used for transportation of the waste by road.
1.26	Long-term dismantling or decommissioning or restoration works?	No	The project does not involve long term dismantling, decommissioning or restoration works.
1.27	Ongoing activity during decommissioning which could have an impact on the environment?	No	Nil
1.28	Influx of people to an area in either temporarily or permanently?	No	Not expected, as mostly local people shall be hired during construction & operation phase.
1.29	Introduction of alien species?	No	Introduction of alien species is not expected from this project
1.30	Loss of native species or genetic diversity?	No	The project will involve development of greenbelt with native species and therefore loss of genetic diversity is not expected.
1.31	Any other actions?	No	-

2. Use of Natural resources for construction or operation of the Project (such as land, water, materials or energy, especially any resources which are non-renewable or in short supply):

S.No.	Information/checklist confirmation	Yes/No	Details thereof (with approximate quantities /rates, wherever possible) with source of information data
2.1	Land especially undeveloped or agricultural land (ha)	No	Vacant land
2.2	Water (expected source & competing users) unit: KLD	Yes	Freshwater requirement of 16KLD which includes 5 KLD for domestic purposes and 11 KLD for process and vehicle wash. Source: Borewell
2.3	Minerals (MT)	No	The project is not expected to use any minerals.
2.4	Construction material – stone, aggregates, sand / soil (expected source – MT)	Yes	Stones, aggregates, soil, etc. will be used for construction, which will be sourced from local vendors.
2.5	Forests and timber (source – MT)	No	No forest and timber will be used for the project.
2.6	Energy including electricity and fuels (source, competing users) Unit: fuel (MT), energy (MW)	Yes	Total Power Requirement 80 kVA is supplied by Assam Power Distribution Company Limited (APDCL). During power failure, DG set of capacity 82.5 kVA shall be used.
2.7	Any other natural resources (use appropriate standard units)	No	Use of any other natural resources is not anticipated

3. Use, storage, transport, handling or production of substances or materials, which could be harmful to human health or the environment or raise concerns about actual or perceived risks to human health.

S. No.	Information/Checklist confirmation	Yes/ No	Details thereof (with approximate quantities /rates, wherever possible) with source of information data
3.1	Use of substances or materials, which are hazardous (as per MSIHC rules) to human health or the environment (flora, fauna, and water supplies)	No	There are no substances or materials shall be used which are hazardous (as per MSIHC rules).
3.2	Changes in occurrence of disease or affect disease vectors (e.g. insect or water borne diseases)	No	The proposed facility is for treatment of infectious Biomedical waste with all preventive measures.
3.3	Affect the welfare of people e.g. by changing living conditions?	Yes	Scientific management of biomedical waste shall prevent spreading of diseases & improve overall environment of the area. During construction as well as operation phase, direct as well as indirect employment opportunities will be generated for local people. This will have a positive impact on socio-economic condition of the surrounding areas.
3.4	Vulnerable groups of people who could be affected by the project e.g. hospital patients, children, the elderly etc.,	Yes	The workers handling infectious biomedical waste are likely to be affected, shall be immunized, and protected by PPE.
3.5	Any other causes	No	No other Causes

4. Production of solid wastes during construction or operation or Decommissioning (MT/month)

S. No.	Information/Checklist confirmation	Yes/No	Details thereof (with approximate quantities /rates, wherever possible) with source of information data
4.1	Spoil, overburden, or mine wastes	No	No.
4.2	Municipal waste (domestic and commercial wastes)	Yes	Municipal solid Waste generated will be disposed of as per prescribed MSW rules.
4.3	Hazardous wastes (as per Hazardous Waste Management Rules)	Yes	The proposed project is a Common Bio Medical Waste Treatment facility. Ash and ETP sludge generated will be sent to nearby authorized TSDF site.
4.4	Other industrial process wastes	No	-
4.5	Surplus product	No	-
4.6	Sewage sludge or other sludge from effluent treatment	Yes	Sludge generated from ETP will be sent to TSDF site.
4.7	Construction or demolition wastes	No	Construction waste: Construction wastes such as damaged sand, brick, gravel, and cement will be used for developing internal road or filled in low lying area. No Demolitions activities are involved at site
4.8	Redundant machinery or equipment	No	Nil
4.9	Contaminated soils or other materials	No	Nil
4.10	Agricultural wastes	No	Nil
4.11	Other solid wastes	No	Nil

5. Release of pollutants or any hazardous, toxic or noxious substances to air (Kg/hr)

S. No.	Information/Checklist confirmation	Yes/ No	Details thereof (with approximate quantities /rates, wherever possible) with source of information data
5.1	Emissions from combustion of fossil fuels from stationary or mobile sources	Yes	**Emission Sources:** • **Construction phase:** Emission from vehicles used for transportation construction material. • **Operation Phase:** -Emission from incinerator- PM, SO2, NOx, HCl & Dioxin and Furon. -Emission from DG set
5.2	Emissions from production processes	No	The proposed project is CBWTF, does not involve production process.
5.3	Emissions from materials handling including storage or transport	Yes	Emissions of Particulate matter from infectious biomedical waste during collection, transportation, storage, and handling.
5.4	Emissions from construction activities including plant and equipment	Yes	Fugitive emissions are likely during the construction & transportation activities.
5.5	Dust or odors from handling of materials including construction materials, sewage, and waste	Yes	Dust and Odor will be generated from handling of Biomedical waste. Appropriate enclosed areas for storage will be provided for biomedical waste. Sewage will be disposed to septic tank followed by soak pit.
5.6	Emissions from incineration of waste	Yes	The BMW waste will be incinerated as per prescribed norms. Emissions will be controlled by providing necessary air pollution control system to meet prescribed standards.
5.7	Emissions from burning of waste in open air (e.g. slash materials, construction debris)	No	The project does not involve burning of wastes in open air.
5.8	Emissions from any other sources	No	Emission from any other sources is not expected.

6. Generation of Noise and Vibration, and Emissions of Light and Heat:

S. No.	Information/Checklist confirmation	Yes/No	Details thereof (with approximate quantities /rates, wherever possible) with source of information data
6.1	From operation of equipment e.g. engines, ventilation plant, crushers	Yes	**Construction Phase:** The vehicles and machineries used for construction activities and transportation of materials shall generate the noise. Drivers shall not use pressure horns. Work will be carried out during daytime. Construction machineries shall be maintained. **Operation Phase:** DG set will be in operation during power failure. The DG set will be acoustically enclosed.
6.2	From industrial or similar processes	Yes	Noise levels are expected from incineration plant, use of pumps and motors. Necessary PPEs (earmuffs, closed chamber) will be provided for the personnel's working in this area.
6.3	From construction or demolition	Yes	Foundation works, fabrication of structures, working of equipment and movement of vehicles are expected to raise the level of sound during construction phase.
6.4	From blasting or piling	No	The project does not involve blasting or piling activities
6.5	From construction or operational traffic	Yes	Vehicles carrying raw materials during construction and biomedical wastes during operation phase are likely to generate noise. Regular servicing of vehicles shall be ensured.
6.6	From lighting or cooling systems	No	Noise generation from such activities is not anticipated.
6.7	From any other sources	No	Noise generation from other activities is not anticipated.

7. Risks of contamination of land or water from releases of pollutants into the ground or into sewers, surface waters, groundwater, coastal waters or the sea:

S.No.	Information/Checklist confirmation	Yes/No	Details thereof (with approximate quantities /rates, wherever possible) with source of information data
7.1	From handling, storage, use or spillage of hazardous materials	Yes	There is a risk of contamination of land and water from accidental spillage of infectious biomedical waste. However, utmost care will be taken during transportation, storage and handling of waste and cleanup operation shall be taken immediately in case of accidental spillage.
7.2	From discharge of sewage or other effluents to water or the land (expected mode and place of discharge)	No	The effluent generated during the process will be treated in ETP and the treated water will be reused/recycled within the plant. Domestic waste will be treated in septic tank.
7.3	By deposition of pollutants emitted to air into the land or into water	No	Major emission from the facility is expected from incinerator and DG sets. Proper pollution control measures and stack height meeting MoEF&CC's guidelines will be provided to prevent the dispersion of pollutants in nearby areas. Hence, chances of contamination of land and water by deposition of pollutants are expected to be insignificant
7.4	From any other sources	No	-
7.5	Is there a risk of long-term buildup of pollutants in the environment from these sources?	Yes	Long term built-up of pollutants in the environment from this project is not expected.

8. Risk of accidents during construction or operation of the Project, which could affect human health or the environment

S.No	Information/Checklist confirmation	Yes/No	Details thereof (with approximate quantities /rates, wherever possible) with source of information data
8.1	From explosions, spillages, fires etc from storage, handling, use or production of hazardous substances	Yes	Spillage and handling of infectious biomedical waste during collection, transportation, and handling may lead to health hazard. Storage of plastic waste may pose fire hazard. Adequate steps for firefighting will be taken to control fires in case of emergency. During construction & operation all the workers will be provided with suitable PPE as required under the health & safety norms.
8.2	From any other causes	Yes	Risk of accidents is envisaged during transportation and operation. A disaster management plan will be emplaced to avoid such accidents. To deal with minor accidents, first aid facility will be provided at site.
8.3	Could the project be affected by natural disasters causing environmental damage (e.g. floods, earthquakes, landslides, Cloudburst etc)?	Yes	The project is in Seismic Zone V which is at High-risk zone. Design of the buildings shall be earthquake resistant and will comply with BIS specification. The proposed site in in plane area having no risk of land slide. Brahamputra River – 3Km, NW

9. Factors which should be considered (such as consequential development) which could lead to environmental effects or the potential for cumulative impacts with other existing or planned activities in the locality

S. No.	Information/Checklist confirmation	Yes/No	Details thereof (with approximate quantities /rates, wherever possible) with source of information data
9.1	Lead to development of supporting facilities, ancillary development or development stimulated by the project which could have impact on the environment e.g.: • Supporting infrastructure (roads, power supply, waste, or wastewater treatment, etc.) • housing development • extractive industries • supply industries • other	Yes	As a positive impact, supporting infrastructure facilities will come up in the surrounding areas once the project will be established. Staff quarter shall be developed for 5-10 employee and rest of the employee will be engaged from local village. The project will not lead to the development of any extractive industries.
9.2	Lead to after-use of the site, which could have an impact on the environment	No	No such planning has been considered
9.3	Set a precedent for later developments	No	The project will set an example for better waste management.
9.4	Have cumulative effects due to proximity to other existing or planned projects with similar effects	No	Nil

(III) Environmental Sensitivity

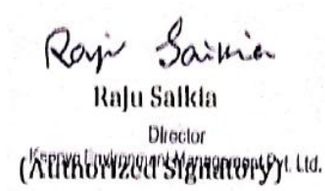
S. No.	Areas	Name/ Identity	Aerial distance (within 15 km.) Proposed project location boundary
1	Areas protected under international conventions, national or local legislation for their ecological, landscape, cultural or other related value	No	Hatishal Eco park 2.5 Km
2	Areas which are important or sensitive for ecological reasons - Wetlands, watercourses or other water bodies, coastal zone, biospheres, mountains, forests	Yes	Brahamputra River – 3Km, NW
3	Areas used by protected, important or sensitive species of flora or fauna for breeding, nesting, foraging, resting, over wintering, migration	No	-
4	Inland, coastal, marine or underground waters	Yes	Jhangi -4 Km NW Brahamputra River – 2.4Km, N
5	State, National boundaries	No	-
6	Routes or facilities used by the public for Access to recreation or other tourist, pilgrim areas	Yes	NH -715
7	Defense installations	No	Nil
8	Densely populated or built-up area	No	Jorhat at 2.33 Km in S direction.
9	Areas occupied by sensitive man-made land uses *(hospitals, schools, places of worship, community facilities)*	Yes	**Hospitals:** Sanjeevni Hospital Jorhat – Km, AAU Medical Unit Jorhat – Km, SE **Schools/Institute:** LP School Jorhat – 0.2 Km, NW Don Bosco High School Baghchung , Jorhut **Temple:** Baba Radev Mandir , Hati garh 8.5 Km Sw

10	Areas containing important, high quality or scarce resources. *(ground water resources, surface resources, forestry, agriculture, fisheries, tourism, minerals)*	No	-
11	Areas already subjected to pollution or environmental damage. *(those where existing legal environmental standards are exceeded)*	No	No notified critically polluted area.
12	Areas susceptible to natural hazard which could cause the project to present environmental problems *(earthquakes, subsidence, landslides, erosion, flooding or extreme or adverse climatic conditions)*	No	The region lies in seismic zone V i.e. under High-risk zone.

"I hereby undertake that the data & information given in the application and enclosures are true to the best of my knowledge and belief and I am aware that if any part of the data and information submitted is found to be false or misleading at any stage, the project will be rejected and clearance give, if any to the project will be revoked at our risk and cost."

Date: - 06.06.2025

For M/s Ksepya Environment Management Pvt. Ltd.



Place: Jorhat, Assam

7(da): STANDARD TERMS OF REFERENCE FOR CONDUCTING ENVIRONMENT IMPACT ASSESSMENT STUDY FOR BIO-MEDICAL WASTE TREATMENT FACILITIES AND INFORMATION TO BE INCLUDED IN EIA/EMP REPORT

I. Project Details

i. Importance and benefits of the project.

ii. Reasons for selecting the site with details of alternate sites examined/rejected/selected on merit with comparative statement and reason/basis for selection. The examination should justify site suitability in terms of environmental damages, resources sustainability associated with selected site as compared to rejected sites. The analysis should include parameters considered along with weightage criteria for short-listing selected site.

iii. The cost of the Project (capital cost and recurring cost) as well as the cost towards implementation of EMP should be clearly spelt out.

iv. Details of various waste management units with capacities for the proposed project. Details of utilities indicating size and capacity to be provided.

v. List of waste to be handled and their characteristics. Details of temporary storage facility for storage of Bio-medical waste at project site.

vi. Other chemicals and materials required with quantities and storage capacities.

vii. Detailed design of pre-treatment and waste stabilization facility of *Bio-medical waste.*

viii. Project proponents would also submit a write up on how their project proposal conform to the stipulations made in the " Bio-Medical Waste Management Rules, 2016 *", notified by the MoEF&CC on 28th March, 2016.*

ix. Process description along with major equipment and machineries, process flow sheet (quantitative) from *Bio-Medical waste* material to disposal to be provided.

x. Details of man-power requirement (regular and contract).

xi. A detailed layout of the project site indicating all the project components.

II. Road and Traffic

xii. Submit the details of the road/rail connectivity along with the likely impacts and mitigative measures

xiii. Examine the details of transportation of Bio-Medical wastes, and its safety in handling.

III. Land Environment

xiv. Detailed soil analysis of the site including its permeability, water holding capacity be included.

xv. Submit the present land use and permission required for any conversion such as forest, agriculture etc.

xvi. Specify the land area and space allotted for each activity proposed within the facility. The area requirements for each activity shall be calculated as per the CPCB guidelines for the specified activity.

xvii. Status of the land purchases in terms of land acquisition Act. If acquisition is not complete, stage of the acquisition process and expected time of complete possession of the land.

xviii. The EIA would address to the conformity of site to the stipulations as made in the Bio-Medical Waste Management Rules, 2016 and Hazardous and Other Wastes (Management and Trans-boundary Movement) Rules, 2016 and will have a complete chapter indicating conformity to the said rules. NOC shall be obtained from State Pollution Control Board/Committee (SPCB/SPCC) regarding site suitability for establishment of Bio-Medical Waste Treatment Facilities.

xix. Post project reclamation management program with financial allocation.

IV. Environmental Monitoring and Management

xx. Examine and submit the details of on line pollutant monitoring.

xxi. Project proponent must ensure Good Combustion Practice (GCP) to reduce the possibilities of formation of 'Total dioxins and furans'. In addition, GCP must be coupled with appropriate End-of-the-pipe treatment at low temperature to reduce the emission of 'Total dioxins and furans' below the standards. Further, the project proponent must provide detailed Standard operating procedure (SOPs) for sampling and monitoring of 'Total dioxins and furans'.

xxii. Environmental Management Plan should be accompanied with Environmental Monitoring Plan and environmental cost and benefit assessment. Regular monitoring shall be carried out for odour control

xxiii. Water quality around the landfill site shall be monitored regularly to examine the impact on the ground water.

xxiv. A detailed draft EIA/EMP report should be prepared in accordance with the above additional TOR and should be submitted to the Ministry in accordance with the Notification.

xxv. Air Quality Index shall be calculated for base level air quality.

xxvi. Baseline data on Ground water quality is required.

xxvii. Possible carbon footprint contribution from each activities and mitigation measures proposed shall be included as part of Environment Management Plan.

V. Waste Management

xxviii. Examine and submit details of the proposed odour control measures.

xxix. The storage and handling of Bio-Medical wastes shall be as per the Bio-Medical Waste Management Rules, 2016.

xxx. Details of storage and disposal of pre-processing and post-processing rejects/inerts and products. List of proposed end receivers for the rejects/inerts/products should be provided. MoUs to be submitted in this regard.

xxxi. Details of hazardous/solid waste generation and their management.

VI. Water Environment

xxxii. Detailed hydro-geological studies and possible impact if any accidental contamination occurs shall be included.

xxxiii. Examine and submit details of monitoring of water quality around the landfill site.

xxxiv. Examine and submit details of impact on water body and mitigative measures during rainy season.

xxxv. Details of Drainage of the project up to 5 km radius of study area. If the site is within 1 km radius of any major river, peak and lean season river discharge as well as flood occurrence frequency based on

peak rainfall data of the past 30 years. Details of Flood Level of the project site and maximum Flood Level of the river shall also be provided.

VII. Water Management

xxxvi. Details of effluent treatment and recycling process.

xxxvii. A certificate from the local body supplying water, specifying the total annual water availability with the local authority, the quantity of water already committed, the quantity of water allotted to the project under consideration and the balance water available. This should be specified separately for ground water and surface water sources, ensuring that there is no impact on other users.

VIII. Energy Management

xxxviii. A certificate of adequacy of available power from the agency supplying power to the project along with the load allowed for the project.

IX. Disaster Management Plan

xxxix. Submit details of a comprehensive Disaster Management Plan including emergency evacuation during natural and man-made disaster.

xl. Hazard identification and proposed mitigation measures.

X. Green Belt

xli. A detailed Plan for green belt development.

XI. Socioeconomic Environment

xlii. Public hearing to be conducted for the project in accordance with provisions of Environmental Impact Assessment Notification, 2006 and the issues raised by the public should be addressed in the Environmental Management Plan. The Public Hearing should be conducted based on the ToR letter issued by the Ministry and not on the basis of Minutes of the Meeting available on the web-site.

xliii. The project proponents shall satisfactorily address all the complaints/suggestions that have been received against the project till the date of submission of proposals for Appraisal.

XII. Court Cases

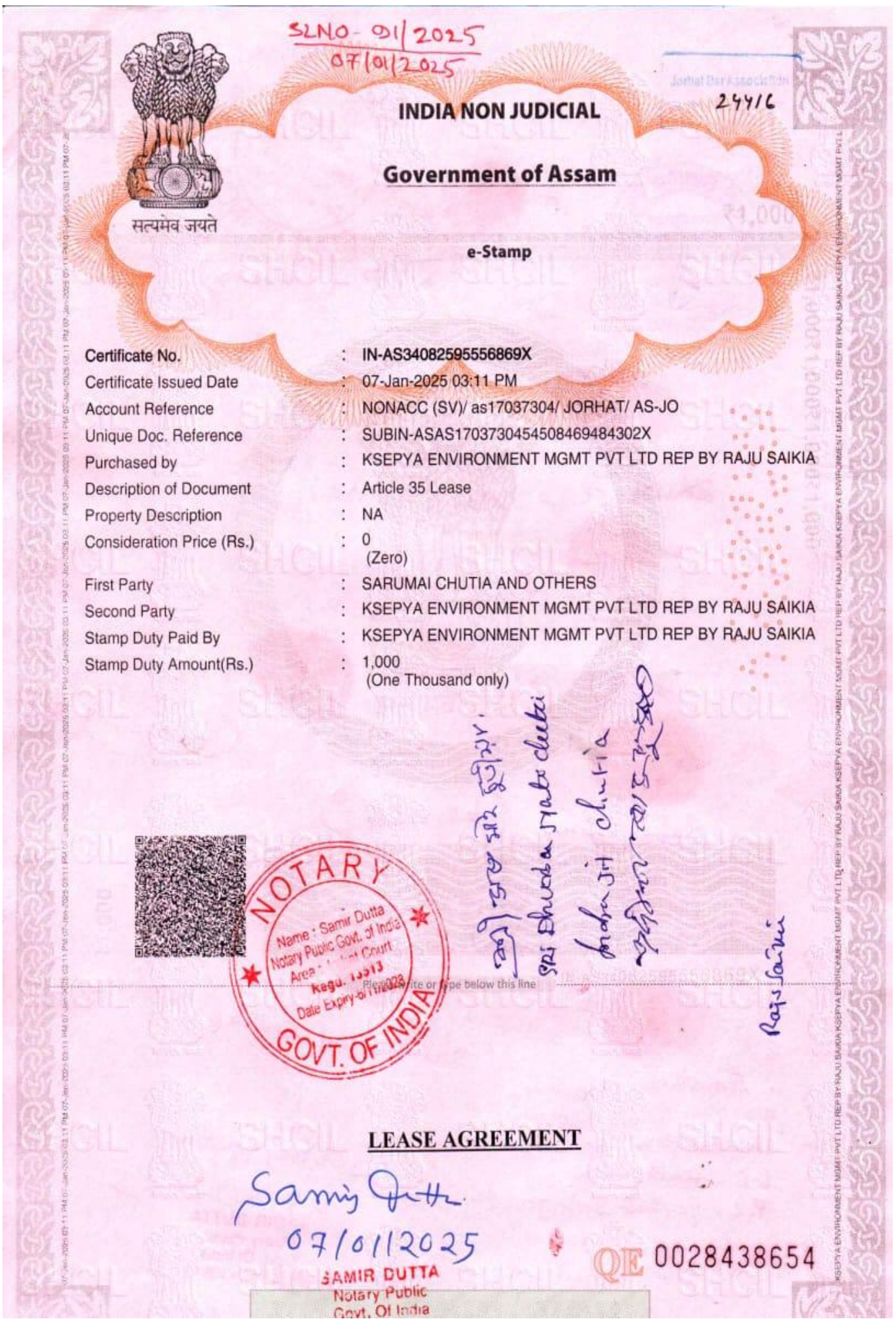
xliv. Details of litigation pending against the project, if any, with direction /order passed by any Court of Law against the Project should be given.

XIII. Miscellaneous

xlv. Any further clarification on carrying out the above studies including anticipated impacts due to the project and mitigative measure, project proponent can refer to the model ToR available on Ministry website http://moef.nic.in/Manual/Incinerator

****

ANNEXURE-I



SLNO- 01/2025
07/01/2025

सत्यमेव जयते

INDIA NON JUDICIAL

24416

Government of Assam

e-Stamp

Certificate No.	:	IN-AS34082595556869X
Certificate Issued Date	:	07-Jan-2025 03:11 PM
Account Reference	:	NONACC (SV)/ as17037304/ JORHAT/ AS-JO
Unique Doc. Reference	:	SUBIN-ASAS17037304545084694843O2X
Purchased by	:	KSEPYA ENVIRONMENT MGMT PVT LTD REP BY RAJU SAIKIA
Description of Document	:	Article 35 Lease
Property Description	:	NA
Consideration Price (Rs.)	:	0 (Zero)
First Party	:	SARUMAI CHUTIA AND OTHERS
Second Party	:	KSEPYA ENVIRONMENT MGMT PVT LTD REP BY RAJU SAIKIA
Stamp Duty Paid By	:	KSEPYA ENVIRONMENT MGMT PVT LTD REP BY RAJU SAIKIA
Stamp Duty Amount(Rs.)	:	1,000 (One Thousand only)

Please write or type below this line

NOTARY
Name : Samir Dutta
Notary Public Govt. of India
Area - Jorhat Court
Regn. 13313
Date Expiry-31/12/2028
GOVT. OF INDIA

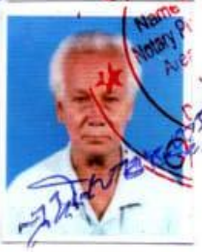
Raju Saikia

LEASE AGREEMENT

Samir Dutta
07/01/2025
SAMIR DUTTA
Notary Public
Govt. Of India

QE 0028438654




THIS DEED OF LEASE AGREEMENT is made this 07th day of January , 2025.

Between

We, **1) Smti Sarumai Chutia, 2) Sri Dhrubajyoti Chutia, 3) Indrajit Chutia**, all are S/D/o: Late Upendra Nath Chutia, **4) Sri Pradip Rajkumar**, S/o: Late Maju Gohain, all are R/O Pakhimora Gaon, P.O, P.S & Dist. Jorhat, Assam, hereinafter referred to as **LESSOR** of the 1st part.

AND

"KSEPYA ENVIRONMENT MANAGEMENT PVT LTD represented by **SRI RAJU SAIKIA,** S/O. Late Ram Saikia, R/O: Sundaridia, P.O. Sundaridia, P.S. & Dist. Borpeta, Assam (hereinafter called the **LESSEE**) of the Other part.

WHEREAS the 1st party are the absolute and lawful owners of a plot of land measuring total **14 Bigha 06 Kotha** (7 Bigha 03 Kotha land of No.1,2 & 3 No Lessor and + 7 Bigha 03 Kotha land of No.4 No Lessor) covered by Dag No. 44, under KP No. 22, of village Phukanar Khat, Mouza: Chowkhat, P.S & Dist : Jorhat, Assam which is morefully describe in the schedule below herein after called the said scheduled house.

WHEREAS, the lessee has approach to the Lessor with a proposal to lease out the below noted scheduled plot of land to them for their business purpose and offered to pay the yearly lease premium for the purpose for 45 (Forty Five) years.

07/01/2025

SAMIR DUTTA
Notary Public
Govt. Of India

NOTARY
Name : Samir Dutta
Notary Public Govt. of India
Area - Judicial Court
Regn. 13513
Date Expiry-31/12/2028
GOVT. OF INDIA

AND WHEREAS, the Lessee agreeing to the said proposal of the Lessee has become ready to lease out the below schedule plot of land to the Lessee on certain terms and conditions as agreed upon by and in between themselves.

NOW THIS DEED WITNESSETH AS FOLLOWS:

1. In pursuance of the said agreement and in consideration of the rent hereby reserved and the covenants, conditions and agreements hereinafter contained the lessor hereby demise and lease unto the lessee the "said plot of land" (more fully described in the schedule below) for a term of 45 (Forty Five) years from **07/01/2025** and will expire and /on determine on **06/01/2070**.
2. That yearly Rent for the "said plot of land" has been fixed at **Rs 10,000/-**(Rupees Ten Thousand only per year.
3. That yearly rent will be paid within 1st week of every year for which it is due and becomes payable.
4. That if the lessee will desire to construct any house building on that below schedule proposed plot of land their own cost and the cost of the structure may have been erected there upon will never be repaid by the lessor to the lessee.
5. That it is hereby agreed by the lessee that the property shall be used solely for the purposes of running a business of **BIOMEDICALWASTE MANAGEMENT TREATMENT FACILITY** under the name & style of Firm namely **"KSEPYA ENVIRONMENT MANAGEMENT PVT LTD"** situated at Howly, Helonarpam, P.O, P.S & Mouza : Howly, Dist : Barpeta, Assam.

SAMIR DUTTA
Notary Public
Govt. Of India
Regd No.- 13513

07/01/2025

Dhuba Nath Dutta
Indra Jit Chetia
Rajen Saikia

NOTARY
Name : Samir Dutta
Notary Public, Govt. of India
GOVT. OF INDIA

6. That the lessee shall have to pay all the taxes related to the leased property.
7. That the lessee shall have to pay all charges for electricity to be consumed by them in the said house building either to the lessor or the ASEB directly according to the reading on the electric meter .
8. That the Lessee shall be liable to repair any damage or injury of the house building caused by his own fault, negligence during the Lease period.
9. That the Lessor shall have to pay all land rents, taxes and or other outgoing or impositions whatsoever payable by owner/lessor in respect of the said house building.
10. That the Lessor shall execute all repairs to the premises and white washing and colour washing of the building.
11. That the Lessee can not indulge in any anti-social activities in the house building .
12. That during the lease period the lessor can not withdraw the Lease Agreement in his own will.
13. That if the lessor in future wants to sell the schedule land then he have to give preference to the lessee and if the lessee are unable to purchase to the lessee and if the lessee are unable to purchase the same then he may execute Deed of Sale with the third party.
14. That if the lessee will use the leased land in their own purpose and all rights of use and occupy will be bound with the lessee.
15. That in no circumstances this agreement can not be invalided by the lessee.

Samir Dutta
07/01/2025
SAMIR DUTTA
Notary Public

16. That during the lease period if the Lessor wants to sell the schedule premises, in that event the Lessor may have to give first preference to the Lessee.
17. That the Lessor shall not the sub lease to any body the said house building within the Lease period.
18. That the Lessee further assures the Lessor that he shall not do any act which may be construed to be hostile to the interest of the Lessee and in turn the Lessee assures the Lessor that they shall not carry out any work on that land and the Lessee shall possess the land peacefully without any kind of interfere in the business of the Lessee from his part.
19. That the lessor shall vacate the leased land within 30 days on expiry of the lease period and handover the vacate possession in thereof to the lessor unless the lessee is extended for any further period.

IN WITNESS whereof the Lessor and Lessee have signed in this Lease Deed on the day month and year written first. This Lease Deed is valid for 30(thirty) years from the date of hand over of the said land to the lessee.

SCHEDULE OF THE PREMISES:

A plot of land measuring **14 Bigha 06 Kotha** (7 Bigha 03 Kotha land of No.1,2 & 3 No Lessor and + 7 Bigha 03 Kotha land of No.4 No Lessor covered by Dag No. 44, under KP No. 22, of village Phukanar Khat, Mouza: Chowkhat, P.S & Dist : Jorhat, Assam within the following boundaries :-

SAMIR DUTTA
Notary Public
07/1/2025

East :

West :

North :

South :

NOTARY
Name : Samir Dutta
Notary Public Govt. of India
Area : Jorhat Court
Regd. 13512
Date Expiry
GOVT. OF INDIA

Dhurba Jyoti Chutia

Indra Jit Chutia

WITNESSES:

1.
Parama Borah
S/O Kanaklam Borah
Balichapori Bohatgaon
P. O. Haliyoroh
P.S - Teok Dist. Jorhat

2.
Sri Dulal Saikia
S/O Bhubaneswar Saikia
VIII Barlichadiya
P.O. Barlichadiya

LESSOR

Raju Saikia

LESSEE

Drafted by:

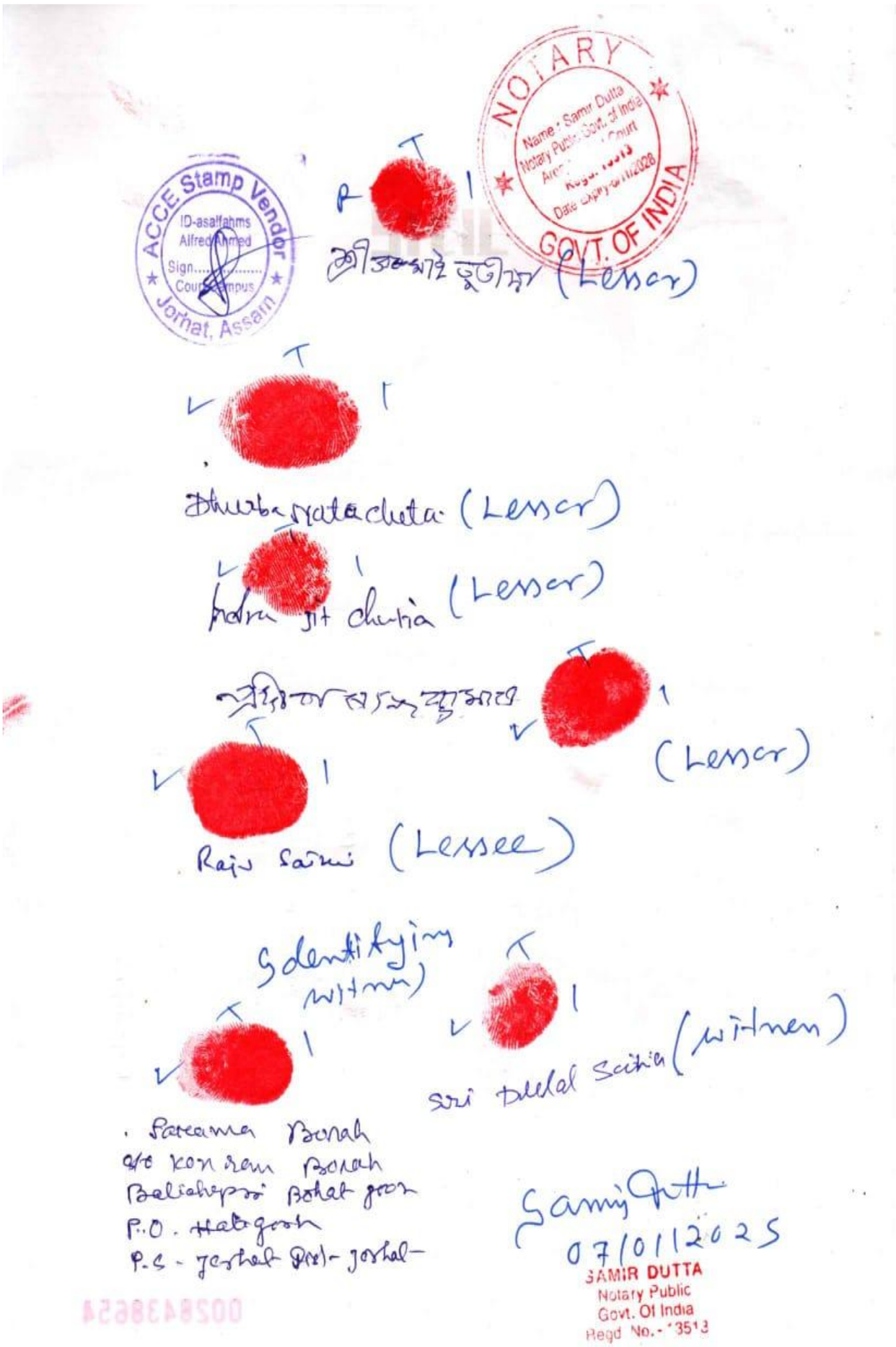
Kasturi Barua
Adv 7/1/25

Advocate, Jorhat

Advocate, Jorhat Bar Association
Enrol. No. 270 of 2012
Ph. 8876300679

Samir Dutta
07/01/2025

SAMIR DUTTA
Notary Public
Govt. Of India
Regd No. - 13512



Parama Borah
S/o Kon Ram Borah
Beliahapsi Bohat gaon
P.O. Hatgaon
P.S - Jorhat Dist- Jorhat-

ANNEXURE-III

KSEPYA ENVIRONMENT MANAGEMENT PVT LTD

HELONAR PAM, P.O-HOWLY, P.S-HOWLY, DT-BARPETA,

Pin no-781316, ASSAM, INDIA

Email id-ksepyaenvironment@gmail.com, Mo no-7002213959/6002150473

Date: 05.06.2025

To Whom it may Concern

We, hereby authorize M/s Shivalik Solid Waste Management Limited (a NABET Accredited Consultant) to make application, present our project and answer all queries for getting the Environmental Clearance ofour project "Common Bio-Medical Waste Treatment Facility proposed at village Phukon Khat, Choukhat, District Jorhat, Assamby M/sKsepya Environment Management Pvt. Ltd.All commitments made or statement given by him/her to the SEAC/SEIAA with respect to Environment Clearance will be acceptable.

Thanking you,

Yours truly,

Raju Saikia

Director

Ksepya Environment Management Pvt. Ltd.

Raju Saikia

(Authorized Signatory)

M/s Ksepya Environment Management Pvt. Ltd.

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ANNEXURE-IV

KSEPYA ENVIRONMENT MANAGEMENT PVT LTD

HELONAR PAM, P.O-HOWLY, P.S-HOWLY, DT-BARPETA,

Pin no-781316, ASSAM, INDIA

Email id-ksepyaenvironment@gmail.com, Mo no-7002213959/6002150473

Date: 05.06.2025

To Whom it may Concern

I, Golam Mustaffa Kamal, Director of M/s Ksepya Environment Management Pvt. Ltd.authorizes Mr. Raju Saikia toapply & sign documents/agreements etc. as required by SEIAA/SEAC and pollution control board for the Environmental Clearance of the projects namely"Common Bio-Medical Waste Treatment Facility proposed atvillage Phukon Khat, Choukhat, District Jorhat, Assam proposed by M/s Ksepya Environment Management Pvt. Ltd.".Signature of Mr. Raju Saikia is as under:

Raju Saikia

Authorized Signatory

Director
Ksepya Environment Management Pvt. Ltd.

Golam Mostafa Kamal

Golam Mustaffa Kamal,

Director

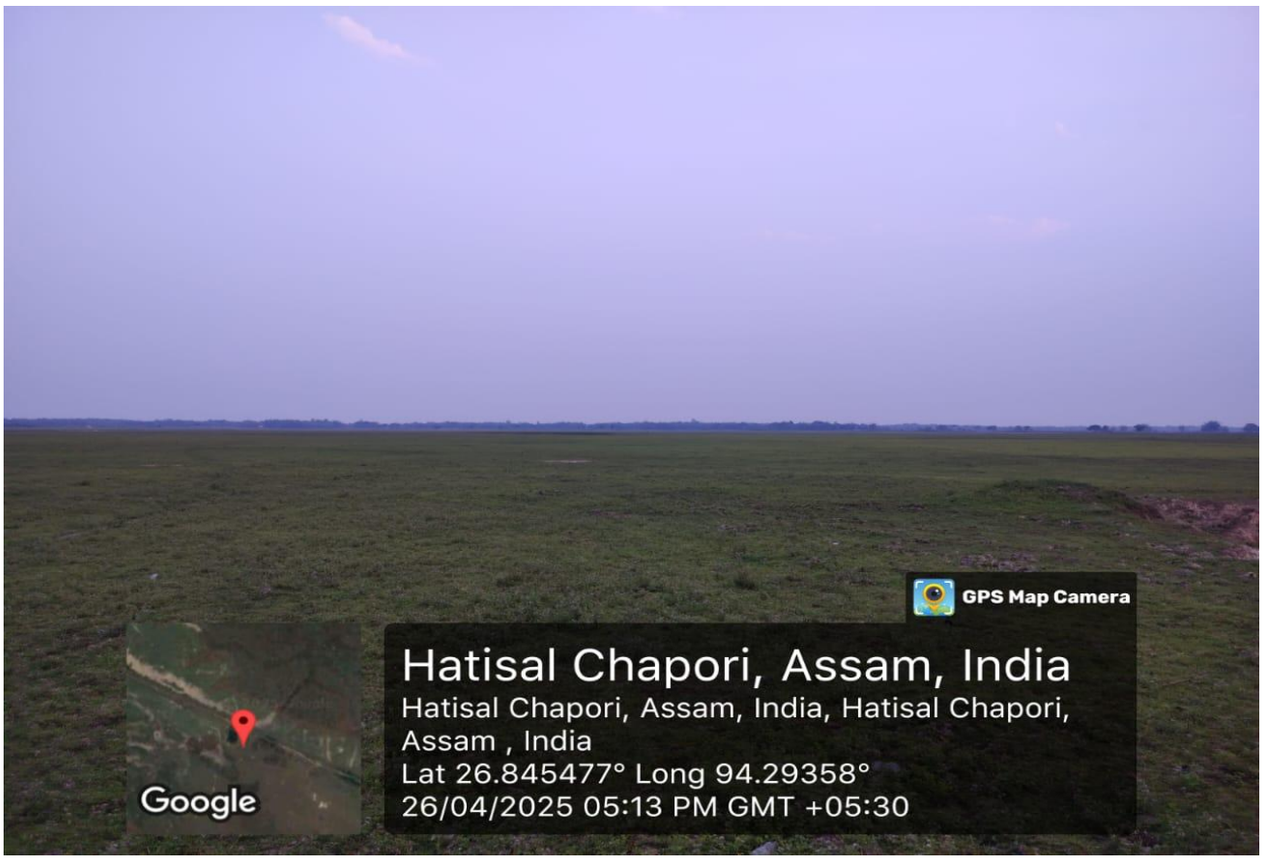
Director
Ksepya Environment Management Pvt. Ltd.

M/s Ksepya Environment Management Pvt. Ltd.

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ANNEXURE-VI

SITE VISIT PHOTOGRAPHS





ANNEXURE-VII

भारतीय गुणवत्ता परिषद्
QUALITY COUNCIL®
OF INDIA
QCI
Creating an Ecosystem for Quality

NABET®

National Accreditation Board for Education and Training

Certificate of Accreditation

Shivalik Solid Waste Management Limited, Zirakpur

SCO 20-21, 1st Floor, Near Hotel Dolphin, Dhakoli, Zirakpur - 140604, Punjab

The organization is accredited as ***Category-A*** *under the QCI-NABET* ***Scheme for Accreditation of EIA Consultant Organization, Version 3****: for preparing EIA/EMP reports in the following Sectors*

S.No	Sector Description	Sector (as per)		Cat.
		NABET	MoEFCC	
1.	Mining of minerals including open cast and underground mining	1	1 (a) (i)	A
2.	River Valley projects	3	1 (c)	A
3.	Metallurgical industries (ferrous & non-ferrous)	8	3 (a)	B
4.	Cement plants	9	3 (b)	B
5.	Pesticides industry and pesticide specific intermediates	17	5 (b)	A
6.	Synthetic organic chemicals industry	21	5 (f)	B
7.	Industrial estates/ parks/ complexes/ Areas, export processing zones(EPZs), Special economic zones (SEZs), Biotech parks, Leather complexes	31	7 (c)	B
8.	Common hazardous waste treatment, storage and disposal facilities (TSDFs)	32	7 (d)	A
9.	Bio-medical waste treatment facilities	32A	7 (d a)	B
10.	Common Effluent Treatment Plants (CETPs)	36	7 (h)	B
11.	Common Municipal Solid Waste Management Facility (CMSWMF)	37	7 (i)	B
12.	Building and construction projects	38	8 (a)	B
13.	Townships and Area development projects	39	8 (b)	B

Note: Names of approved EIA Coordinators and Functional Area Experts are mentioned in RAAC minutes dated October 27, 2023 posted on QCI-NABET website.

The Accreditation shall remain in force subject to continued compliance to the terms and conditions mentioned in QCI-NABET's letter of accreditation bearing no QCI/NABET/ENV/ACO/23/3065 dated Dec 13, 2023. The accreditation needs to be renewed before the expiry date by Shivalik Solid Waste Management Limited, Solan following due process of assessment.

Issue Date
December 13, 2023

Valid up to
August 17, 2026

Mr. Ajay Kumar Jha
Sr. Director, NABET

Certificate No.
NABET/EIA/23-26/RA 0310

Prof (Dr) Varinder S Kanwar
CEO- NABET

For the updated List of Accredited EIA Consultant Organizations with approved Sectors please refer to QCI-NABET website.

DRAWING-1

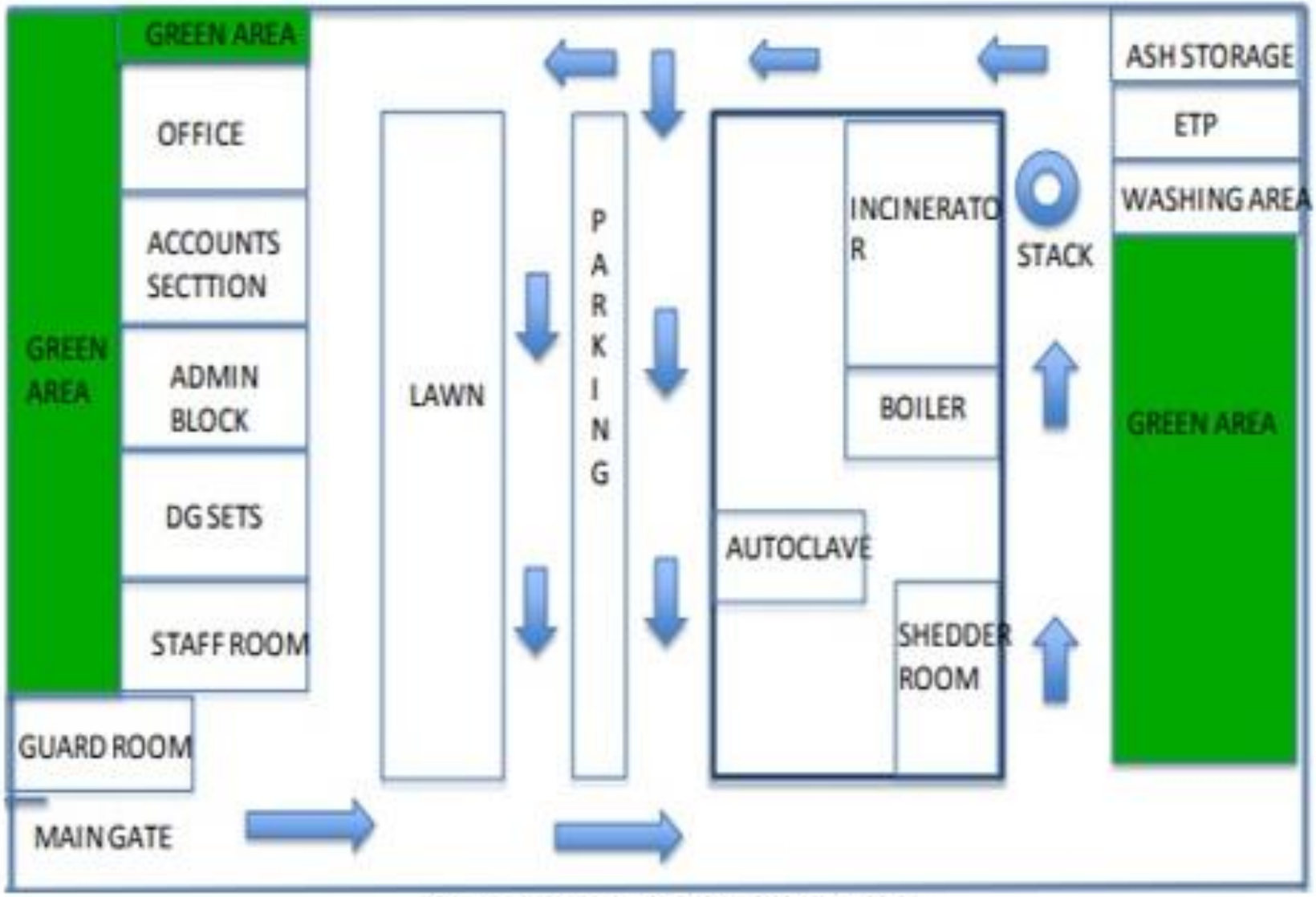
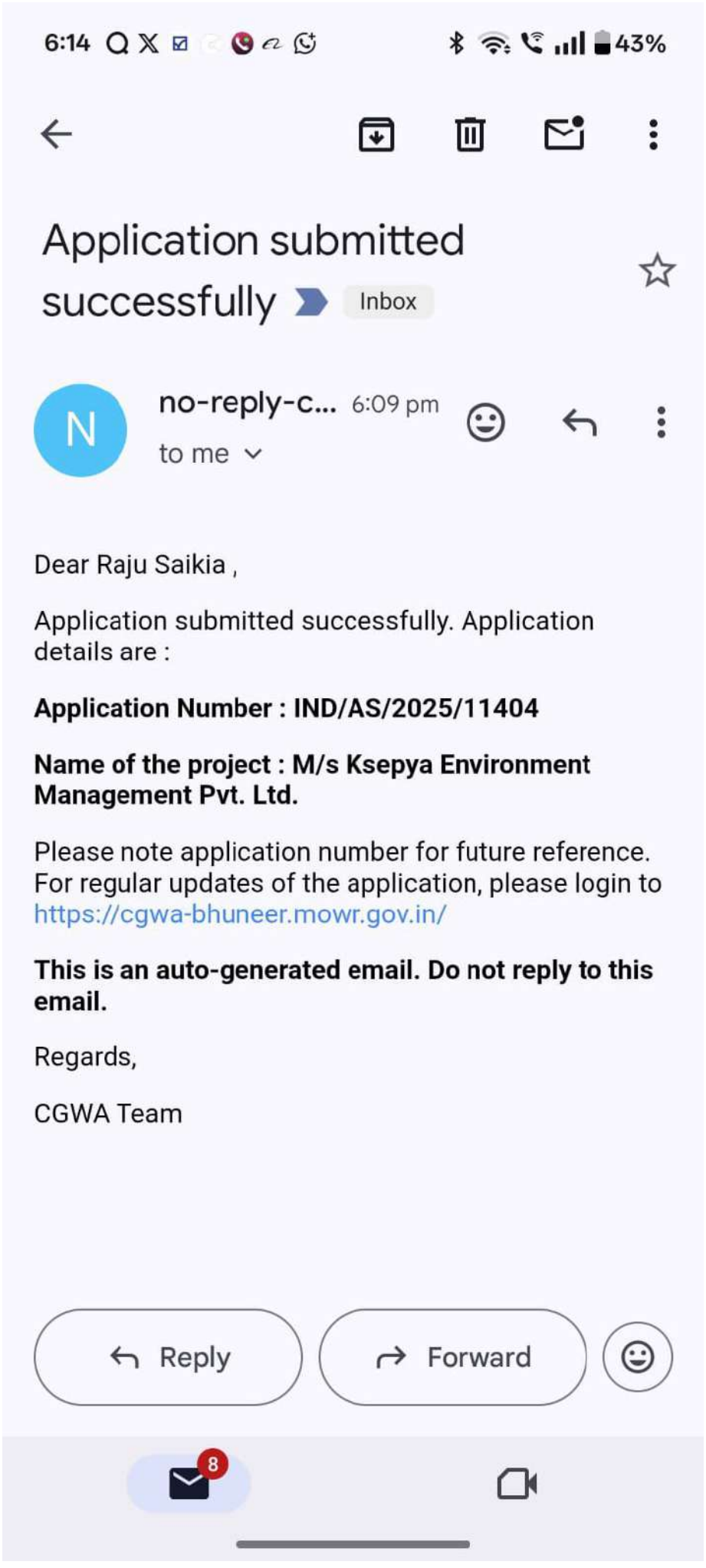


FIGURE 4 CBWTF SITE LAYOUT PLAN

-Annexure A/2 Colly-



6:14 43%

Application submitted successfully Inbox

no-reply-c... 6:09 pm

to me

Dear Raju Saikia ,

Application submitted successfully. Application details are :

Application Number : IND/AS/2025/11404

Name of the project : M/s Ksepya Environment Management Pvt. Ltd.

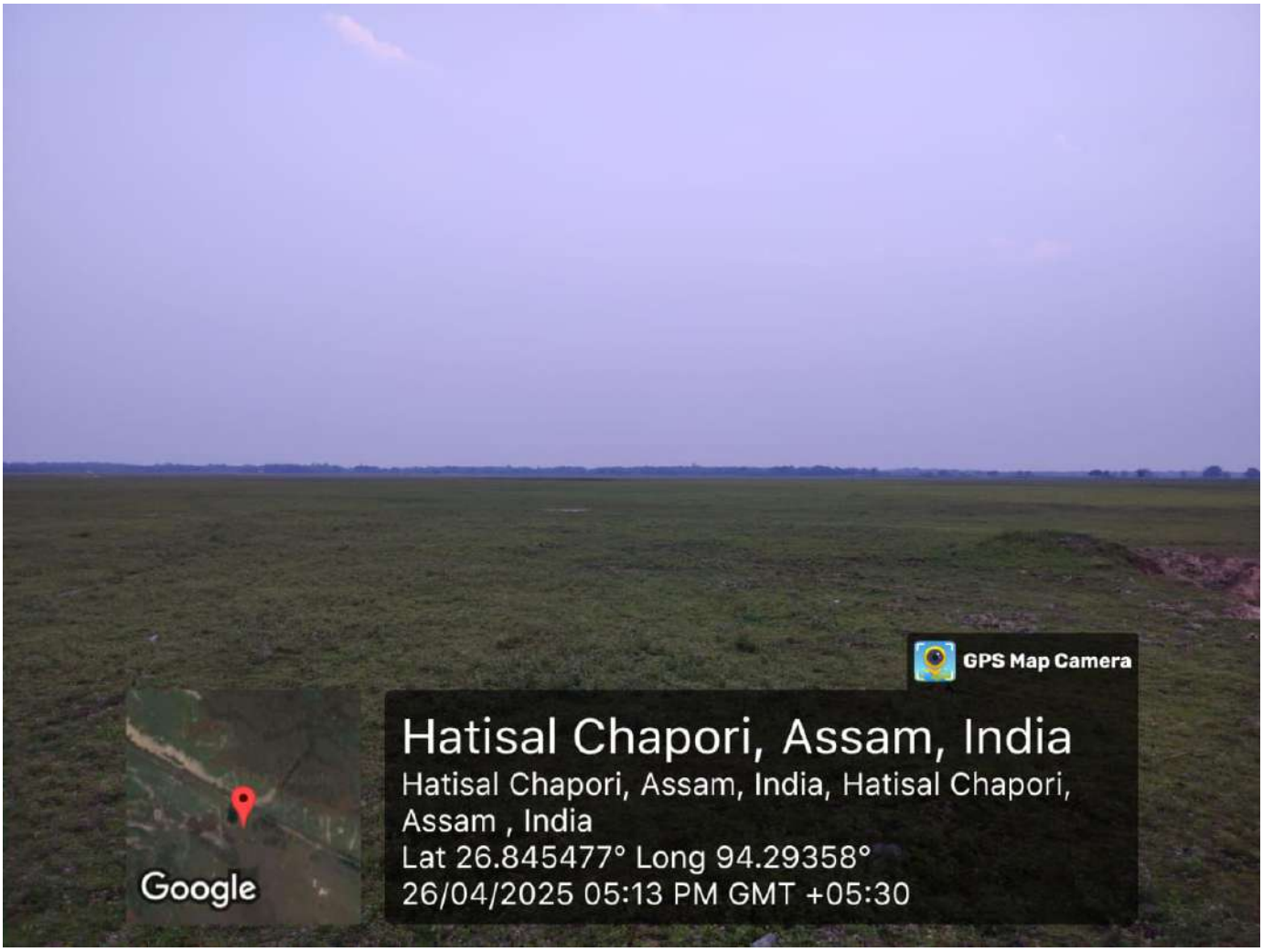
Please note application number for future reference. For regular updates of the application, please login to https://cgwa-bhuneer.mowr.gov.in/

This is an auto-generated email. Do not reply to this email.

Regards,

CGWA Team

Reply Forward


GPS Map Camera
Hatisal Chapori, Assam, India
Hatisal Chapori, Assam, India, Hatisal Chapori, Assam , India
Lat 26.845477° Long 94.29358°
26/04/2025 05:13 PM GMT +05:30
Google

-Annexure A/3-

অসম চৰকাৰ
GOVERNMENT OF ASSAM

ADVANTAGE ASSAM 2.0
Investment and Infrastructure Summit 2025

MEMORANDUM OF UNDERSTANDING

This Memorandum of Understanding is entered on the 25th February, 2025 at Guwahati.

Between

KSEPYA ENVIRONMENT MANAGEMENT PVT LTD, a Company incorporated under **Companies Act 2013/ LLP Act 2008,** having its registered office at **Vill Helonar pam Po Howly** (1st Party)

And

The Government of Assam (2nd Party)

Wherein,

KSEPYA ENVIRONMENT MANAGEMENT PVT LTD, wishes to establish the following project(s) in Assam:

#	Project Brief	Location	Proposed Investment (in INR Crore)	Direct Employment (in No.)	Proposed Commencement of Production
1.	Common Bio Medical Waste Treatment Facilities at Bhabanipur, Bajali (Expansion) and at Jorhat	1) Vill Kahara Pathar PO Bhawanipur Dist Bajali Assam 2) Vill Phukanor Khat Hatishila Po Lahdoigarh Dist Jorhat Assam	30 crores approx.	25	01/03/2023 and 01/12/2025

The Government of Assam would facilitate **KSEPYA ENVIRONMENT MANAGEMENT PVT LTD** to obtain necessary permissions, registrations, approvals, and clearances from the concerned Departments/ Agencies/ Authorities of the State, as per the existing policies, rules, and regulations of the State Government.

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অসম চৰকাৰ
GOVERNMENT OF ASSAM

ADVANTAGE ASSAM 2.0
Investment and Infrastructure Summit 2025

- This MOU indicates the intention of the investor in brief about the proposed industry and the possible facilitation to be extended by the State Government and shall remain valid only for a maximum period of 12 (twelve) months from the date of entering into the MOU unless otherwise extended by the second party. No separate notice will be required to be issued for this.

- The First Party will have to submit the **Common Application Form (CAF)** through the **Assam EoDB Portal** for all necessary and statutory approvals and clearances prior to the commencement of construction and production. The CAF submission should be within the period of validity of this MOU.

For and on behalf of **KSEPYA ENVIRONMENT MANAGEMENT PVT LTD**	For and on behalf of **Government of Assam**
(Authorized Signatory)	**(Authorized Signatory)**
Name: Raju Saikia Designation: Managing Director Mobile No.: +91 6002150473 Email:ksepyaenvironmnet@gmail.com Address: Vill Helonar pam Po Howly	Name: M.K. Yadava, IFS (Retd.) Designation: Special Chief Secretary, Environment & Forest Department Mobile No.: +919435012458 Email: scsforestoffice@gmail.com Address: 3rd Floor, E Block, Janata Bhawan, Dispur, Guwahati

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Pollution Control Board:: Assam
Bamunimaidam; Guwahati-21
(Department of Environment & Forests :: Government of Assam)
Phone: 0361-2652774 & 2550258; Fax: 0361-2550259
Website: www.pcbassam.org

No.PCBA/SVR/T-2005/24-25/7 Dated Guwahati the 25th February, 2025

"CONSENT TO ESTABLISH"

"CONSENT TO ESTABLISH" (CTE) under Section 25 of Water (Prevention & Control of Pollution) Act, 1974 and Section 21 of Air (Prevention & Control of Pollution) Act, 1981 as amended and Rules Framed thereunder is granted to:

i) Name of unit : KESPYA ENVIRONMENT MANAGEMENT PVT.LTD

ii) Name of the Occupier / Applicant and Designation : G M Kamal, Director

iii) Address of unit : Village Phukon Khat, Choukhat, Dist- Jorhat, Assam :785101

iv) Cost of the project : 950.0 Lakhs

v) Details of capacity:

Sl No	Unit	Capacity
1	Incinerator	1x 250 Kg/hr
2	Autoclave	1x 400 Kg/hr
3	Shredder	1x400 kg/hr

Pollution Control Board, Assam H.O. Guwahati-21

TERMS AND CONDITIONS:

1. This CTE has been accorded based on the particulars furnished by the applicant vide Application **ID 3319015** and subject to addition of further or more conditions if so warranted by subsequent developments. The CTE will automatically become invalid if any change or alteration or deviation made in actual practice;
2. The CTE will be valid till the date of commissioning of the unit or five (5) years whichever is earlier.
3. The CTE may be modified, suspended in whole or in part or withdrawn by the Board during its term for cause including, but not limited to the following:-
4. The unit shall obtain prior 'Consent to Establish' from the Board for any further expansion, alteration, modification, modernization of the project.
5. The project authority should install a Display Board as per the Boards notification No. PCBA/LGL-95/2021/Notification/01 dtd.11.11.2021 (Appendix-**A**)
6. Proper housekeeping shall be maintained. **Burning of any waste within the premises is prohibited.**
7. The project proponent shall develop a greenbelt/plantation area with native trees only at least 33% of the total plot area.
8. As per the provisions of the Water (Prevention and Control of Pollution) Act, 1974 as amended and the Air (Prevention and Control of Pollution) Act, 1981, as amended, any Officer empowered by the Board on its behalf shall have without interruption, the right at any reasonable time to enter the unit for inspection, collection of sample for analysis and

may call for any information as deemed necessary. Denial of this right will cause withdrawal of the Consent To Establish.

9. The unit shall obtain Consent to Operate (CTO) before starting operation.

A. Air Aspects:

1. The unit shall comply with the emission standards, notified in the Bio-medical Waste Management Rules, 2016 by the MoEF & CC, govt. of India vide GSR. 343 (E) dated 28.03.2016 as per part-B of Schedule-II of the said notification.
2. Minimum stack height of 30 meters shall be maintained with proper emission monitoring facilities. Sampling port shall be provided as per the Emission Regulations guidelines of CPCB (December 1985), Part-III (Appendix-B)
3. The unit shall comply with the standards and guidelines for control of noise pollution from stationary Diesel Generator (DG) set notified by **the MoEF & CC, Govt. of India vide, GSR 7, dated Dec.22, 1998** (Appendix-C)
4. The unit shall comply with noise level standard, notified by **the MoEF & CC, Govt. of India vide, GSR 7, dated Dec.22, 1998,** as mentioned herein under-



Day time (6:00 AM to 10:00 PM)	Night Time (10:00 PM to 6:00 AM.)
65 dB(A) Leq (max)	60 B(A) Leq (max)

5. Online Continuous Emission Monitoring System (OCEMS) shall be provided for continous monitoring of Particulate matter (PM), SOx, NOx, HCL, Total Dioxins and Furans, Hg emission, shall be properly maintained and OCMMS RT-DAS data should be regularly transmitted to Pollution Control Board Assam and Central Pollution Control Board.

B. Water Aspects:

1. Details of source of water, consumption of water, effluent generation etc.
   a) Source of water : Ground water
   b) Raw water consumption : 10 KLD
   c) Effluent generation : 10 KLD
   d) Capacity of ETP proposed: 15 KLD
   e) Permission of CGWA : Not obtained.
2. The project proponent must obtain NOC from CGWA within one month from the date of issue of CCA, unless failing in exempted category as per MoJS Guidelines dated 24.09.2020 and amendments dated 29.03.2023 thereto.
3. i) Storm water shall not be allowed to mix with effluent and/or floor washing.
   ii) Storm water within the battery limits shall be channelized through separate drain/pipe passing through an Oil and Grease trap.
   iii) For storm water discharge the unit shall comply with the general discharge standard notified by the **MoEF & CC, Govt. of India vide GSR.422 (E) dated.19.05.1993 (Appendix-B)**
4. Rain water harvesting facility shall be installed and maintained.
5. Flow meter shall be installed at ETP inlet and discharge/recycling lines.
6. The unit shall comply with comply with the industry specific effluent discharge standards, notified in the Bio-medical Waste Management Rules, 2016 by the MoEF & CC, govt. of India vide GSR. 343 (E) dated 28.03.2016 as per part-B of Schedule-II of the said notification.

C. Solid Waste Management:

1. Adequate facility should be created for collection, storage, transportation, treatment & disposal of solid waste generated from the unit.
2. Adequate system should be adopted on reduction of waste generation and enhancement of re-utilization & recycling of waste materials.
3. Solid waste generated in the unit shall be disposed of as per the provisions of Solid Waste Management Rules, 2016.

Pollution Control Board, Assam H.O. Guwahati-21

D . Plastic Waste Aspect:

1. **The unit shall not use any Single Use Plastic (SUP) items, the use of which has been banned by the MoEF & CC, Govt. of India vide Notification no.GSR 571 (E) dated 12.08.2021.**
2. Plastic Waste generated in the unit shall be disposed off in accordance of the provisions under the Plastic Waste Management Rules, 2016.
3. The unit shall submit a report regarding generation & disposal of Plastic waste within 30th June every year.

E. E-Waste Aspects:

1. Electronic wastes generated in the unit shall be disposed of as per the provisions of E-Waste Management Rules, 2016.
2. The unit shall submit the Annual Report in the Form-III within 30th June every year

F. Hazardous Waste Aspect:

1. Authorization under the Hazardous & Other Waste (Management and Trans Boundary Movement) Rules, 2016 shall be obtained from the Board.
2. The project authorities shall comply with the provisions of the said Rules.
3. Adequate facilities shall be provided for collection and storage of used/spent oil, which shall be sent to registered recyclers for recycling.
4. The unit shall dispose of any other Hazardous Waste generated by the unit as per the provisions of the Rules.
5. The unit shall identify and quantify all streams of Hazardous Waste generation as per Schedule-I and maintain proper record in Form-III of the said Rules.
6. The unit shall submit annual return in Form-IV under the said rules on or before 30th June every year.

G. Bio-Medical Waste Management:

1. The unit shall explore the possibility of avoiding/ minimizing mercury based equipment.
2. The earmarked area for temporary storage of Bio Medical waste shall be properly maintained.
3. Protective clothing like gloves, masks, and rubber boots shall be provided to staff handling bio-medical waste.
4. The project authority should apply for authorization under Bio-Medical Waste Management Rules, 2016 before commissioning.

5. The authority should submit the annual return in Form-IV to PCBA on or before 30th June of every year.
6. The unit should submit the annual return under Hazardous & Other Waste (Management & Trans Boundary Movement) Rules 2016 in the Form-IV within 30th June every year, E-Waste Management Rule 2016 in the Form-III within 30th June every year and Plastic Waste Management Rule 2016 within 30th June every year.
7. The authority should submit the compliance report of this consent conditions by 15th April of every year.

Pollution Control Board, Assam H.O. Guwahati-21

(Gakul Bhuyan)
Member Secretary

Memo No. PCBA/SVR/T-2005/24-25/7-A 3753 Dated Guwahati the 25th February, 2025

Copy to:

1. M/s Kespya Environment Management Pvt.Ltd, Village Phukon khat, Choukhat, Dist-Jorhat, Assam: 785101 for information and necessary action.

(Gakul Bhuyan)
Member Secretary

Appendix-A

Pollution Control Board, Assam
Bamunimaidam, Guwahati-21

NOTIFICATION

No. PCBA/LGL-95/2021/Notification/01 Dated Guwahati, the 11th Nov, 2021

In exercise of the powers conferred under Section-5 of the Environment (Protection) Act, 1986 as amended till date and keeping in view the need of public interest towards dissemination of vital information regarding Consent/Authorization of this Board, all industries are hereby directed to install a Display Board of minimum size 5'x4', near the main entrance gate.

The format of the display board is given below:

Name and Address of the Unit : M/s.

Description of Consent/Authorization	Details
Consent to Establish (CTE)	**No.:** **Date of Issue:**
Consent to Operate (CTO)	**No.:** **Date of validity:**
Authorization under Hazardous & Other waste (Management & Transboundary Movement) Rules, 2016 (if applicable)	**No.:** **Date of Issue:** **Date of validity:**

Member Secretary

Memo No. PCBA/LGL-95/2021/Notification/01-A/993 Dated Guwahati, the 11th Nov, 2021

Copy to:

1. The Commissioner & Secretary to the Govt. of Assam, Department of Environment & Forest, Dispur for kind information.
2. P.A. to the Chairman, PCBA for kind appraisal of the Hon'ble Chairman.
3. The All Regional Heads, PCBA for information & necessary action.
4. M/S APS Advertising Pvt. Ltd, Guwahati-1. They are requested to publish the "NOTICE" in "the Assam Tribune" and "Dainandin Barta" on **12.11.2021**.
5. Notice Board, Head Office / Website (www.pcbassam.org), PCBA.

Member Secretary

Pollution Control Board, Assam H.O. Guwahati-21

Appendix-

General Standards for discharge of environment Pollutants Part-A: Effluents

S. No.	Parameter	Standards			
		Inland surface water	public Sewers	Land for irrigation	Marine coastal areas
1	2	3			
		(a)	(b)	©	(d)
1	Color and Odor	5 to 25 Agreeable	-	5 to 25 Agreeable	5 to 25 Agreeable
2	Suspended Solids mg/l, Max.	100	600	200	(a) For process waste water- 100
					(b) For Cooling water effluent 10 percent above total suspended matter of influent
3	Particular size of suspended solids	Shall pass 850 micron IS Sieve	-	-	(a) Floatable solids, max. 3 mm
					(b) Settleable solids, max 850 microns
4*	---	-	-	---	-
5	pH value	5.5 to 9.0	5.5 to 9.0	5.5 to 9.0	5.5 to 9.0
6	Temperature	Shall not exceed 5°C above the receiving water temperature	-	-	Shall not exceed 5°C above the receiving water temperature
7	Oil and grease mg/L Max	10	20	10	20
8	Total residual chlorine mg/1, Max	1.0	-	-	1.0
9	Ammonical nitrogen (as N), mg/1 max.	50	50	-	50
10	Total Kjeldhal nitrogen (as NH_3) mg/l, Max	100	-	-	100
11	Free Ammonia (as NH_3) mg/1, Max	5.0	-	-	5.0
12	Biochemical oxygen demand (5 days at 20°C), mg/1 Max)	30	350	100	100
13	Chemical Oxygen demand, mg/1 Max	250	-	-	250
14	Arsenic (as As) mg/1 Max	0.2	0.2	0.2	0.2

Continued to p/2....

Pollution Control Board, Assam H.O. Guwahati-21

15	Mercury (As Hg), mg/1 max)	0.01	0.01	-	0.01
16	Lead (as Pb) mg/L, Max	0.1	1.0	-	2.0
17	Cadmium (as Cd) mg/1, Max	2.0	1.0	-	2.0
18	Hexavalent chromium, (as Cr) mg/1, Max	0.1	2.0	-	1.0
19	Total chromium (as Cr) mg/l, Max	2.0	2.0	-	2.0
20	Copper (as Cu) g/l, Max	3.0	3.0	-	3.0
21	Zinc (as Zn) mg/l,Max	5.0	15	-	15
22	Selenium (as Se) mg/l, Max	0.05	0.05	-	0.05
23	Nickel (as Ni) mg/l,Max	3.0	3.0	-	5.0
24*	-	-	-	-	
25*	-	-	-	-	-
26	-	-	-	-	-
27	Cyanide (as CN), mg/l Max	0.2	2.0	0.2	0.2
28*	-	-	-	-	-
29	Fluoride (as F) mg/l Max	2.0	15	-	15
30	Dissolved Phosphates (as p), mg/l Max	5.0	-	-	-
31*	-	-	-	-	-
32	Sulphide (as S) mg/l Max	2.0	-	-	5.0
33	Phenolic Compounds (as C_6H_5OH) mg/l Max	1.0	5.0	-	5.0
34	Radioactive materials:				
	(a)Alpha emitter micro curie/ml	10^{-7}	10^{-7}	10^{-8}	10^{-7}
	(b) Beta emitter micro curie/ml)	10^{-6}	10^{-6}	10^{-7}	10^{-6}
35	Bio-assay test	90% survival of fish after 96 hours in 100% effluent	90% survival of fish after 96 hours in 100% effluent	90% survival of fish after 96 hours in 100% effluent	90% survival of fish after 96 hours in 100% effluent
36	Manganese (as Mn)	2 mg/l	2 mg/l	-	2 mg/l
37	Iron (as Fe)	3 mg/l	3 mg/l		3 mg/l
38	Vanadium (asV)	0.2 mg/l	0.2 mg/l		0.2 mg/l
39	Nitrate Nitrogen	10 mg/l	-	-	20 mg/l
40	-	-	-	-	-

Appendix-

A. **GENERAL STIPULATIIONS**

1. The issuance of this Consent does not carry any property right in either real or personal property or any exclusive privileges nor does it authorize any injury to private property nor any invasion rights nor any infringement of Central, State or Local Laws or Regulations.
2. The Consent has been given by the Board basing on the information furnished in the Consent application and the Consent will become automatically invalid if any changes or alternations or deviations except mentioned in this Consent are made in actual practice from the particulars furnished in the application form.
3. The Board reserves the right to review from time to time any of the conditions imposed in this Consent and make any reasonable variation thereof or revoke any of the conditions as it thinks fit in accordance with provisions of Air (Prevention & Control of Pollution) Act, 1981 as amended in 1987 &
4. The Consent does not authorize or approve the construction of any physical structures of facilities or undertaking or any works except to the extent of works specially instructed herein.
5. The Consent is granted subject to payment of necessary 'FEES' as per the Rule framed under Water (Prevention & Control of Pollution) Act, 1974 as amended.
6. Be it mentioned that, if any of the above conditions are not fulfilled, this consent shall be treated as cancelled.
7. The Board has the right to add, delete or modify any of the above conditions in future to protect and safeguard the environment.

B. **Duties of the Occupier – It shall be the duty of every occupier to**

1. Take all necessary steps to ensure that bio-medical waste is handled without any adverse effect to human health and environment and in accordance with these rules;
2. Make a provision within the premises for a safe, ventilated and secured location for storage of segregated biomedical waste in coloured bags or containers in the manner as specified in Schedule-I, to ensure segregated bio-medical waste in coloured bags or containers in the manner as specified in Schedule-I to ensure that there shall be no secondary handling, pilferage of recyclables or inadvertent scattering or spillage by animals and the bio-medical waste from such place or premises shall be directly transported in the manner as prescribed in Schedule-I.
3. Pre-treat the laboratory waste, microbiological waste, blood samples and blood bags through disinfection or sterilization on site in the manner as prescribed by the World Health Organization (WHO) or National AIDs Control Organization (NACO guidelines and then sent to the common bio-medical waste treatment facility for final disposal;
4. Phase out use of chlorinated plastic bags (excluding blood bags)and gloves within two years from the date of notification of these rules;
5. Dispose of solid waste other than bio-medical waste in accordance with the provisions of respective waste management rules made under the relevant laws and amended from time to time
6. Not to give treated bio-medical waste with municipal solid waste;
7. Provide training to all its health care workers and others, involved in handling of bio medical waste at the time of induction and thereafter at least once every year and the details of training programmes conducted, number of personnel trained and number of personnel not undergone any training shall be provided in the Annual Report;
8. Immunize all its health care workers and others, involved in handling of bio-medical waste for protection against diseases including Hepatitis B and Tetanus that are likely to be transmitted by handling of biomedical waste, in the manner as prescribed in the National Immunization Policy or the guidelines of the Ministry of Health and Family Welfare issued from time to time;
9. Establish a Bar- Code System for bags or containers containing bio-medical waste to be sent out of the premises or place for any purpose within one year from the date of the notification of these rules;
10. Ensure segregation of liquid chemical waste at source and ensure pre-treatment or neutralization prior to mixing with other effluent generated from health care facilities;
11. Ensure treatment and disposal of liquid waste in accordance with the Water (Prevention and Control of Pollution) Act, 1974 (6 of 1974);
12. Ensure occupational safety of all its health care workers and others involved in handling of biomedical waste by providing appropriate and adequate personal protective equipment.
13. Conduct health check up at the time of induction and at least once in a year for all its health care workers and others involved in handling of bio- medical waste and maintain the records for the same;
14. Maintain and update on day to day basis the bio-medical waste management register and display the monthly record on its website according to the bio-medical waste generated in terms of category and colour coding as specified in Schedule I;
15. Report major accidents including accidents caused by fire hazards, blasts during handling of biomedical waste and the remedial action taken and the records relevant thereto, (including nil report)in Form I to the prescribed authority and also along with the annual report;
16. Make available the annual report on its web-site and all the health care facilities shall make own website within two years from the date of notification of these rules;
17. Inform the prescribed authority immediately in case the operator of a facility does not collect the biomedical waste within the intended time or as per the agreed time;
18. Establish a system to review and monitor the activities related to bio-medical waste management, either through an existing committee or by forming a new committee and the Committee shall meet once in every six months and the record of the minutes of the meetings of this committee shall be submitted along with the annual report to the prescribed authority and the healthcare establishments having less than thirty beds shall designate qualified person to review and monitor the activities relating to bio-medical waste management within that establishment and submit the annual report;
19. Maintain all record for operation of incineration, hydro or autoclaving etc., for a period of five years;
20. Existing incinerators to achieve the standards for treatment and disposal of bio-medical waste as specified in Schedule II for retention time in secondary chamber and Dioxin and Furans within two years from the date of this notification.

C. **Treatment and disposal:**

1. Bio-medical waste shall be treated and disposed of in accordance with Schedule I, and in compliance with the standards provided in Schedule-II by the health care facilities and common bio-medical waste treatment facility.
2. Occupier shall hand over segregated waste as per the Schedule-I to common bio-medical waste treatment facility for treatment, processing and final disposal: Provided that the lab and highly infectious biomedical waste generated shall be pre-treated by equipment like autoclave or microwave.

Contd..p/2

3. No occupier shall establish on-site treatment and disposal facility, if a service of ` common biomedical waste treatment facility is available at a distance of seventy-five kilometre.
4. In cases where service of the common bio-medical waste treatment facility is not available, the Occupiers shall set up requisite biomedical waste treatment equipment like incinerator, autoclave or microwave, shredder prior to commencement of its operation, as per the authorization given by the prescribed authority
5. Any person including an occupier or operator of a common bio medical waste treatment facility, intending to use new technologies for treatment of bio medical waste other than those listed in Schedule I shall request the Central Government for laying down the standards or operating parameters.
6. On receipt of a request referred to in sub-rule (5), the Central Government may determine the standards and operating parameters for new technology which may be published in Gazette by the Central Government.
7. Every operator of common bio-medical waste treatment facility shall set up requisite biomedical waste treatment equipment like incinerator, autoclave or microwave, shredder and effluent treatment plant as a part of treatment, prior to commencement of its operation.
8. Every occupier shall phase out use of non-chlorinated plastic bags within two years from the date of publication of these rules and after two years from such publication of these rules, the chlorinated plastic bags shall not be used for storing and transporting of bio-medical waste and the occupier or operator of a common bio-medical waste treatment facility shall not dispose of such plastics by incineration and the bags used for storing and transporting biomedical waste shall be in compliance with the Bureau of Indian Standards. Till the Standards are published, the carry bags shall be as per the Plastic Waste Management Rules, 2016.
9. After ensuring treatment by autoclaving or microwaving followed by mutilation or shredding, whichever is applicable, the recyclables from the treated bio-medical wastes such as plastics and glass shall be given to such recyclers having valid authorization or registration from the respective prescribed authority.
10. The Occupier or Operator of a common bio-medical waste treatment facility shall maintain a record of recyclable wastes referred to in sub-rule (9) which are auctioned or sold and the same shall be submitted to the prescribed authority as part of its annual report. The record shall be open for inspection by the prescribed authorities.
11. The handling and disposal of all the mercury waste and lead waste shall be in accordance with the respective rules and regulations.

D. **Segregation, packaging, transportation and storage:**

1. No untreated bio-medical waste shall be mixed with other wastes.
2. The bio-medical waste shall be segregated into containers or bags at the point of generation in accordance with Schedule I prior to its storage, transportation, treatment and disposal.
3. The containers or bags referred to in sub-rule (2) shall be labelled as specified in Schedule IV.
4. Bar code and global positioning system shall be added by the Occupier and common bio-medical waste treatment facility in one year time.
5. The operator of common bio-medical waste treatment facility shall transport the bio-medical waste from the premises of an occupier to any off-site bio-medical waste treatment facility only in the vehicles having label as provided in part 'A' of the Schedule IV along with necessary information as specified in part 'B' of the Schedule IV.
6. The vehicles used for transportation of bio-medical waste shall comply with the conditions if any stipulated by the State Pollution Control Board or Pollution Control Committee in addition to the requirement contained in the Motor Vehicles Act, 1988 (59 of 1988), if any or the rules made thereunder for transportation of such infectious waste.
7. Untreated human anatomical waste, animal anatomical waste, soiled waste and, biotechnology waste shall not be stored beyond a period of forty –eight hours: Provided that in case for any reason it becomes necessary to store such waste beyond such a period, the occupier shall take appropriate measures to ensure that the waste does not adversely affect human health and the environment and inform the prescribed authority along with the reasons for doing so.
8. Microbiology waste and all other clinical laboratory waste shall be pre-treated by sterilization to Log 6 or disinfection to Log 4, as per the World Health Organization guidelines before packing and sending to the common bio-medical waste treatment facility.
9. All plastic bags shall be as per BIS standards as and when published, till then the prevailing Plastic Waste Management Rules shall be applicable.
10. Chemical treatment using at least 1-2% Sodium Hypochlorite having 30% residual chlorine for twenty minutes or any other equivalent chemical reagent that should demonstrate $Log_{10}4$ reduction efficiency for microorganisms.
11. Mutilation or shredding must be to an extent to prevent unauthorized reuse.
12. There will be no chemical pre-treatment before incineration, except for microbiological, lab and highly infectious waste.
13. Incineration ash (ash from incineration of any bio-medical waste) shall be disposed through hazardous waste treatment, storage and disposal facility, if toxic or hazardous constituents are present beyond the prescribed limits as given in the Hazardous Waste (Management, Handling and Transboundary Movement) Rules, 2008 or as revised from time to time.
14. Dead Futes below the viability period (as per the Medical Termination of Pregnancy Act 1971, amended from time to time) can be considered as human anatomical waste. Such waste should behanded over to the operator of common bio-medical waste treatment and disposal facility in yellow bag with a copy of the official Medical Termination of Pregnancy certificate from the Obstetrician or the Medical Superintendent of hospital or healthcare establishment.
15. Cytotoxic drug vials shall not be handed over to unauthorized person under any circumstances. These shall be sent back to the manufactures for necessary disposal at a single point. As a second option, these may be sent for incineration at common bio-medical waste treatment and disposal facility or TSDFs or plasma pyrolysis is at temperature $>1200^0C$.
16. Residual or discarded chemical wastes, used or discarded disinfectants and chemical sludge can be disposed at hazardous waste treatment, storage and disposal facility. In such case, the waste should be sent to hazardous waste treatment, storage and disposal facility through operator of common bio-medical waste treatment and disposal facility only.
17. On-site pre-treatment of laboratory waste, microbiological waste, blood samples, and blood bags should be disinfected or sterilized as per the Guidelines of World Health Organization or National AIDS Control Organization and then given to the common bio-medical waste treatment and disposal facility.
18. Installation of in-house incinerator is not allowed. However in case there is no common biomedical facility nearby, the same may be installed by the occupier after taking authorization from the State Pollution Control Board.
19. Syringes should be either mutilated or needles should be cut and or stored in tamper proof, leak-proof and puncture proof containers for sharps storage. Wherever the occupier is not linked to a disposal facility it shall be the responsibility of the occupier to sterilize and dispose in the manner prescribed.

Contd..p/3

20. Bio-medical waste generated in households during healthcare activities shall be segregated as perthese rules and handed over in separate bags or containers to municipal waste collectors. Urban Local Bodies shall have tie up with the common bio-medical waste treatment and disposal facility to pick up this waste from the Material Recovery Facility (MRF) or from the house hold directly, for final disposal.

Disposal by deep burial is permitted only in rural or remote areas where there is no access to common biomedical waste treatment facility. This will be carried out with prior approval from the prescribed authority and as per the Standards specified in Schedule-III. The deep burial facility shall be located as per the provisions and guidelines issued by Central Pollution Control Board from time to time.

E. Biomedical wastes categories and their segregation, collection, treatment, processing and disposal options

1. The applicant shall adhere to all procedures in handling the bio-medical wastes during incineration, segregation, packaging, transportation, storage, treatment and disposal for safe management of bio-medical wastes as per Bio-Medical Waste (Management & Handling) Rule, 2016.
2. The incinerator should be installed at appropriate location away from the neighbourhood.
3. The Health Care Facilities shall treat their wastes as per following guidelines: -

Category	Type of Waste	Type of Bag or Container to be used	Treatment and Disposal options
(1)	(2)	(3)	(4)
Yellow	(a) Human Anatomical Waste: Human tissues, organs, body parts and fet us below the viability period (as per the Medical Termination of Pregnancy Act 1971,amended from time to time)	Yellow coloured non-chlorinated plastic bags	Incineration or Plasma Pyrolysis or deep burial
	(b)Animal Anatomical Waste : Experimental animal car cases, body parts, organs, tissues, including the waste generated from animals used in experiments or testing in veterinary hospitals or colleges or animal houses.		
	(c) Soiled Waste: Items contaminated with blood, body fluids like dressings, plaster casts, cotton swabs and bags containing residual or discarded blood and blood components.		Incineration or Plasma Pyrolysis or deep burial* In absence of above facilities, autoclaving or micro-waving/ hydroplaning followed by shredding or mutilation or combination of sterilization and shredding. Treated waste to be sent for energy recovery.
	(d) Expired or Discarded Medicines: Pharmaceutical waste like antibiotics, cytotoxic drugs including all items contaminated with cytotoxic drugs along with glass or plastic ampoules, vials etc.	Yellow coloured non-chlorinated plastic bags or containers	Expired `cytotoxic drugs and items contaminated with cytotoxic drugs to be returned back to the manufacturer or supplier for incineration at temperature>1200 ^{0}C or to common bio-medical Waste treatment facility or hazardous waste treatment, storage and disposal facility for incineration at >1200^{0}C Or Encapsulation or Plasma Pyrolysis
			at>1200^{0}C.All other discarded medicines shall be either sent back to manufacturer or disposed by incineration.
	(e) Chemical Waste: Chemicals used in production of biological and used or discarded disinfectants.	Yellow coloured Containers or non-chlorinated plastic bags.	Disposed of by incineration or Plasma Pyrolysis or Encapsulation in hazardous waste treatment, storage and disposal facility.
	(f) Chemical Liquid Waste : Liquid waste generated due to use of chemicals in production of biological and used or discarded disinfectants, Silver X-ray film developing liquid, discarded Formal in, infected secretions, aspirated body fluids, liquid from laboratories and floor washings, cleaning, house-keeping and disinfecting activities etc.	Separate collection system leading to effluent treatment system.	After resource recovery, the chemical liquid waste shall be pre-treated before mixing with other wastewater. The combined discharge shall conform to the discharge norms given in Schedule-III.
	g) Discarded linen, mattresses, beddings contaminated with blood or body fluid, routine mask, gown.	Non-chlorinated yellow plastic bags or suitable packing material.	Non-chlorinated chemical disinfection followed by incineration or Plazma Pyrolysis or for energy recovery. In absence of above facilities, shredding Or mutilation or combination of sterilization and shredding. Treated waste to be sent for energy recovery or incineration or Plazma Pyrolysis.
	(h) Microbiology, Biotechnology and other clinical laboratory waste: Blood bags, Laboratory cultures, stocks or specimens of microorganisms, live or attenuated vaccines, human and animal cell cultures used in research, industrial laboratories, production of biological, residual toxins, dishes and devices used for cultures.	Autoclave or Microwave or Hydro clave safe plastic bags or containers.	Pre-treat to sterilize with non-chlorinated chemicals on-site as per National AIDS Control Organization or World Health Organization guidelines thereafter for Incineration.

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Pollution Control Board, Assam H.O. Guwahati-21

Red	Contaminated Waste(Recyclable) (a) Wastes generated from disposable items such as tubing, bottles, intravenous tubes handsets, catheters, urine bags, syringes (without needles and fixed needle syringes) and vacutainers with their needles cut) and gloves.	Red coloured no chlorinatedplastic bags or containers.	Autoclaving or micro-Waving/hydroplaning followed by shredding or mutilation or combination of sterilization and shredding. Treated waste to be sent to registered or authorized recyclers or for energy recovery or plastics to diesel or fuel oil or for road making, whichever is possible. Plastic waste should not be sent to landfill sites.
White (Translucent)	Waste sharps including Metals: Needles, syringes with fixed needles, needles from needle tip cutter or burner, scalpels, blades, or any other contaminated sharp object that may cause puncture and cuts. This includes both used, discarded and contaminated metal sharps	Puncture proof, Leak proof, tamper proof containers.	Autoclaving or Dry Heat Sterilization followed by shredding or mutilation or encapsulation in metal container or cement concrete; combination of shredding cum autoclaving; and sent for final disposal to iron foundries (having consent to operate from the State Pollution Control Boards or Pollution Control Committees) or sanitary landfill or designated concrete waste sharp pit.
Blue	(a) Glassware: Broken or discarded and contaminated glass including medicine vials and ampoules except those contaminated with cytotoxic wastes.	Puncture proof and Leak proof boxes or containers with blue coloured marking.	Disinfection (by soaking the washed glass waste after cleaning with detergent and Sodium Hypochlorite Treatment) or through autoclaving or microwaving or hydro claving and then sent for recycling.
	(b) Metallic Body Implants	Puncture proof and Leak proof boxes or containers with blue coloured marking.	

F. **INCINERATION:**

All incinerators shall meet the following operating and emission standards-

a)Operating Standards:

1. Combustion efficiency (CE) shall be at least 99.00%.
2. The temperature of the primary chamber shall be a minimum of 800 ^{0}C and the secondary chamber shall be minimum of 1050^{0}C + or - 50^{0}C.
3. The secondary chamber gas residence time shall be at least two seconds.

b) Emission Standards:

Sl. No.	Parameter	Standards	
		Limiting concentration in mg per Nm^3 unless stated	Sampling Duration in minutes, unless stated
1.	Particulate matter	50	30 or 1NM^3 of sample volume, whichever is more
2.	Nitrogen Oxides NO and NO_2 expressed as NO_2	400	30 for online sampling or grab sample
3.	HCl	50	30 or 1NM^3 of sample volume, whichever is more
4.	Total Dioxins and Furans	0.1ngTEQ/Nm3(at 11%O2)	8 hours or 5NM^3 of sample volume, whichever is more
5.	Hg and its compounds	0.05	2 hours or 1NM3 of sample volume, whichever is more

c) Minimum stack height shall be 30 meters above the ground and shall be attached with the necessary monitoring facilities as per requirement of monitoring of 'general parameters' as notified under the Environment (Protection) Act, 1986 and in accordance with the Central Pollution Control Board Guidelines of Emission Regulation Part-III

G. **STANDARDS FOR LIQUID WASTE**:

1. The effluent generated or treated from the premises of occupier or operator of a common biomedical waste treatment and disposal facility, before discharge into the sewer should conform to the following limits.

PARAMETERS	PERMISSIBLE LIMITS
P^H	6.5-9.0
Suspended solids	100 mg/l
Oil and grease	10 mg/l
BOD	30 mg/l
COD	250 mg/l
Bio-assay test	90% survival of fish after 96 hours in 100% effluent.

2. Sludge from Effluent Treatment Plant shall be given to common bio-medical waste treatment facility for incineration or to hazardous waste treatment, storage and disposal facility for disposal.

Member Secretary
Pollution Control Board, Assam

-Annexure A/5 Colly-

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Government of India

Ministry of Environment, Forest and Climate Change

(Issued by the State Level Expert Appraisal Committee(SEAC), ASSAM)

28th SEAC Meeting (2nd Sitting) Part A

Agenda ID	EC/AGENDA/SEAC/268918/7/2025
Agenda Creation Date	19/07/2025
Title of Meeting	28th SEAC Meeting (2nd Sitting) Part A
Meeting Mode	Hybrid
Meeting Venue	3rd Floor, Conference Hall, PCBA Building
Meeting Date	**Start Date :** 21/07/2025 **End Date :** 21/07/2025
State	ASSAM

	Meeting Date	Meeting Mode	Start Time	End Time
Day 1	21/07/2025	Hybrid	12:30 PM	02:30 PM

List of Proposals

Sr. No.	Proposal Details	Location	Meeting Date	Proponent
1	**Proposal No :**SIA/AS/INFRA2/540631/2025 **File No :**SEAC/SEIAA. 4198/2025 **Project Name :**M/s. Kaziranga Biotech Private Limited **Proposal For:** Fresh ToR **Activity:** 7(da) Bio-Medical Waste Treatment Facilities	**State:** ASSAM **District:** JORHAT	21/07/2025	KAZIRANGA BIOTECH PRIVATE LIMITED

	Sector: INFRA2			
2	**Proposal No :**SIA/AS/INFRA2/541942/2025 **File No :**SEAC/SEIAA.4194/2025 **Project Name :**Residential Project “Shristi Ananta” **Proposal For:** Fresh EC **Activity:** 8(a) Building / Construction **Sector:** INFRA2	**State:** ASSAM **District:** KAMRUP METRO	21/07/2025	shristi developers
3	**Proposal No :**SIA/AS/INFRA2/542955/2025 **File No :**SEAC/SEIAA.4192/2025 **Project Name :**Common Bio Medical Waste Treatment Facility proposed by M/s Ksepya Environment Management Private Limited **Proposal For:** Fresh ToR **Activity:** 7(da) Bio-Medical Waste Treatment Facilities **Sector:** INFRA2	**State:** ASSAM **District:** JORHAT	21/07/2025	KSEPYA ENVIRONMENT MANAGEMENT PRIVATE LIMITED
4	**Proposal No :**SIA/AS/IND3/465123/2024 **File No :**SEAC/SEIAA. 4193/2025 **Project Name :**Regularisation of existing manufacturing unit PIONEER TIMBER SEASONERS that produces plywood and block board of capacity 819.409 cm , veneer of capacity 755.81 cm and resin of capacity 155 MTPA. **Proposal For:** Fresh EC **Activity:** 5(f) Synthetic organic chemicals industry **Sector:** IND3	**State:** ASSAM **District:** TINSUKIA	21/07/2025	PIONEER TIMBER SEASONERS
5	**Proposal No :**SIA/AS/INFRA2/544479/2025 **File No :**SEAC/SEIAA. 4195/2025 **Project Name :**EMPIRE EXOTICA **Proposal For:** Fresh EC **Activity:** 8(a) Building / Construction **Sector:** INFRA2	**State:** ASSAM **District:** KAMRUP METRO	21/07/2025	empire developers
6	**Proposal No :**SIA/AS/INFRA2/544733/2025 **File No :**SEAC/SEIAA.4197/2025 **Project Name :**JDB Pride **Proposal For:** Fresh EC **Activity:** 8(a) Building / Construction **Sector:** INFRA2	**State:** ASSAM **District:** KAMRUP METRO	21/07/2025	Ganapati builds and trade
7	**Proposal No :**SIA/AS/INFRA2/543842/2025 **File No :**SEAC/SEIAA.4196/2025 **Project Name :**Construction of New Assembly Complex and MLA Hostel at Dibrugarh, Assam **Proposal For:** Fresh EC **Activity:** 8(a) Building / Construction **Sector:** INFRA2	**State:** ASSAM **District:** DIBRUGARH	21/07/2025	LOKESH MAZUMDAR
8	**Proposal No :**SIA/AS/INFRA2/542719/2025 **File No :**SEAC/SEIAA. 4199/2025 **Project Name :**Proposed Kanaklata Baruah University at Gohpur Bholaguri, Biswanath, Assam **Proposal For:** Fresh EC **Activity:** 8(a) Building / Construction	**State:** ASSAM **District:** Biswanath	21/07/2025	RATAN CHANDRA MOCHAHARY

	Sector: INFRA2			

Any Other Item(s)

Sr. No.	Proposal Name.	Proposal Details	Location

SEAC Members Details

Sr. No.	Name	Designation	Email ID
1	Dr Apurba Kumar Das	SEAC MEMBER	apu***@tezu.ernet.in
2	Dr Bijoy Sankar Goswami	SEAC MEMBER	bij**********@gmail.com
3	Dr Rahul Mahanta	SEAC MEMBER	rah*********@gmail.com
4	Shri Arup Barpujary	SEAC MEMBER	abc*****@gmail.com
5	Dr Raza Rafiqul Houque	SEAC MEMBER	rrh@tezu.ernet.in
6	Shri Shantanoo Bhattacharyya	SEAC MEMBER	sha******************@yahoo.com
7	Jatindra Sarma	Chairman, SEAC	chs*****@gmail.com
8	Dr Gautam Krishna Misra	Member Secretary, SEAC	mem************@pcbassam.org

Remarks	28th SEAC Meeting (2nd Sitting) PART 1

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Government of India
Ministry of Environment, Forest and Climate Change
(Issued by the State Level Expert Appraisal Committee(SEAC), ASSAM)
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Minutes of 28th SEAC Meeting (2nd Sitting) Part A State Level Expert Appraisal Committee meeting held from 21/07/2025 to 21/07/2025

Date: 01/08/2025

MoM ID: EC/MOM/SEAC/268918/7/2025

Agenda ID: EC/AGENDA/SEAC/268918/7/2025

Meeting Venue: 3rd Floor, Conference Hall, PCBA Building

Meeting Mode: Hybrid

Date & Time:

21/07/2025	12:30 PM	02:30 PM

1. Opening remarks

At the very outset, the Member Secretary, SEAC welcomed the Hon'ble Chairman, SEAC and all the Members of the Committee. He briefed the house about the agenda for the meeting as circulated and requested the esteemed members for their thorough participation and deliberation to expedite the process of disposal of the pending cases.

2. Confirmation of the minutes of previous meeting

As per the agenda, the august committee duly reviewed the Minutes of the Meetings (1st Sitting and 2nd Sitting) held on 23rd June 2025 and ratified the minutes.

3. Details of proposals considered by the committee

Day 1 -21/07/2025

3.1. Agenda Item No 1:

3.1.1. Details of the proposal

M/s. Kaziranga Biotech Private Limited by **KAZIRANGA BIOTECH PRIVATE LIMITED** located at **JORHAT, ASSAM**			
Proposal For		Fresh ToR	
Proposal No	**File No**	**Submission Date**	**Activity (Schedule Item)**

SIA/AS/INFRA2/540631/2025	SEAC/SEIAA. 4198/2025	21/06/2025	Bio-Medical Waste Treatment Facilities (7(da))

3.1.2. Project Salient Features

The Project Proponent representing the **M/s. Kaziranga Biotech Pvt. Ltd** has applied for grant of ToR for **Common Bio Medical Waste Treatment Facility (CBMWTF).**

M/s. Kaziranga Biotech Pvt. Ltd. proposes to establish a new Common Bio-Medical Waste Treatment Facility (CBMWTF) at Plot - 1B, Titabor Industrial Estate, Mouza - Thengal, Village - Kundorgaon, District - Jorhat, Assam in accordance with the BMWM Rules and the guidelines issued by the Central Pollution Control Board (CPCB).

In accordance with the EIA Notification, 2006 & subsequent amendment made by MoEF & CC vide **S.O.1142 (E) dated 17.04.2015** the Common Bio-Medical Waste Treatment Facilities are included in **Schedule 7(da)** falling under **Category B1**.

The total area provided/allotted for the facility is **4,050 Sq m** out of which an area of about **1608.9 Sq m** (39.7 % of the total plot area) will be allocated for Green Belt development with plantation of indigenous species.

The instant Project is for amelioration and betterment of the prevailing environment as it would treat the untreated Bio-Medical Waste in a scientific way which shall aid in remarkable improvement in hygienic conditions of nearby areas. The Unit has proposed to spend 2% of the total project cost for the CER activities, which will indirectly improve the quality of life of nearby people as well besides its stake in Climate Change Mitigation measure.

It is proposed that Bio-medical wastes shall be collected from healthcare units/facilities, transported to the Common treatment site, and treated as per the prescribed procedure & norms laid down in the regulation following due protocols as envisaged for the purposes.

As per submitted land record, total project area is **0.405 Ha**. Location of the project is within **Titabor Industrial Estate.** Land has been allotted by the Assam Industrial Development Corporation Ltd. (AIDC Ltd.) for the establishment of CBWTF. Total cost of the project is estimated at **Rs 1,000 Lakh.**

The applicant of the project is Sri Ripunjit Dutta (Director), **M/s. Kaziranga Biotech Pvt. Ltd.**

The PP has proposed for development of Green Belt area of **0.1608 Ha** in confirmation with the **39.7 %** of the total plot area by planting of **410 numbers** of saplings and estimated cost of **INR 7.0 Lakh** is earmarked for the purposes

3.1.3. Deliberations by the committee in previous meetings

N/A

3.1.4. Deliberations by the SEAC in current meetings

Requisite documents requiring clearances from the statutory bodies are uploaded including the Form 1, Pre-feasibility Report, proposed ToR etc. The documents as submitted and uploaded by the project Proponent in support of the proposal are scrutinized and placed before the Committee.

The project proponent assisted by other authorized stakeholders and the NABET Accredited Consultant for **Enpro Enviro Tech and Engineer Pvt. Ltd.** has made detailed presentation before the Committee.

It is submitted that since the location of the proposed Project is at **Titabor Industrial Estate, Public Hearing (PH) is exempted as per the EIA Notification, 2006.**

Upon hearing the party and due deliberation the Committee deemed it appropriate to invoke certain conditions in the Standard Terms of Reference (ToR) as under :

Recommendation:

The Committee is of the considered opinion to recommend issue of the ToR by the SEIAA to the project Proponent with the above special conditions in the standard ToR.

3.1.5. Recommendation of SEAC

Recommended

3.1.6. Details of Terms of Reference

3.1.6.1. Specific

	SPECIFIC CONDITIONS BY SEAC
1.	1) For development of Green Belt, the plant species to be planted being tolerant to the air pollution in the area which should invariably be given priority. Preferred plant species, so suitable for the area shall be Safed Siris (*Albizzia procera*), Kadam (*Neolamarckia cadamba*), Ow tenga *(Dillenia indica*), Thekera (*Garcinia morella*), Tepor tenga (*Garcinia xanthochymus*), Bor Thekera (*Garcinia pedunculata*), Cham (*Artocarpus chaplasha*), Bot gos (*Ficus benjamina*), Uriam (*Bischofia javanica*), Ajhar (*Lagerstroemia speciosa*), Chatiana (*Alstonia scholaris*), Hollock (*Termianlia myriocarpa*), Hilikha (*Terminalia chebula*), Leteku (*Baccaurea rammiflora*) etc etc. This shall also be in addition to the local and endemic species of broad leaved evergreen plants of Upper Assam which need to be considered for the purposes. 2) Use of Green Energy around the Project area needs to be proposed. 3) The Company shall tie up with the AEGCL for the CNG under guidance and advice of the PCB to discard use of Fuel wood, Coal etc . 4) Environment Management Plan is required to ensure support by way of livelihood generation to nearby community residing in villages, skill development programme etc. 5) CER activities as committed in the meeting while deliberation for installation/purchase of a special machinery namely MPAES (50% of the total cost not exceeding an amount of **Rs 12.50 Lakh**) required for the purposes of environmental monitoring and management, Hazardous Waste and Solid Waste management monitoring, food and beverage quality monitoring, heavy metal content in tree leaf, tree bark, air particulate, water and soil quality monitoring which shall boost the laboratory activity in the Department of Chemistry and the students shall immensely be benefited in their endeavour and pursuit for environmental studies etc in B Borooah College(Autonomous), Guwahati where in the two Bharat Ratna Awardee of entire Northeast, Sri Gopinath Bordoloi was the founder Principal of the College while Dr Bhupen Hazarika, the legendary personality of Assam was also a former faculty of the College. For the purpose of execution of the CER activity the PP shall contact the Principal, B Borooah College, Guwahati. 6) For the purpose of the EMP budget indicating the activities under the CSR , CER, etc, all the details with the proposed targets in physical terms showing financial expenditures are to be accordingly reflected for each year keeping in view the public demand / requirement for due consideration, deliberation and reasonable pragmatic decisions by the SEAC in due course.

3.2. Agenda Item No 2:

3.2.1. Details of the proposal

Residential Project "Shristi Ananta" by **shristi developers** located at **KAMRUP METRO,ASSAM**			
Proposal For		Fresh EC	
Proposal No	**File No**	**Submission Date**	**Activity (Schedule Item)**
SIA/AS/INFRA2/541942/2025	SEAC/SEIAA.4194/2025	23/06/2025	Building / Construction (8(a))

3.2.2. Project Salient Features

The proposed project is for EC for **Commercial and Residential Building Apartment "Shristi Ananta" located at Jyotikuchi, Guwahati** Assam is proposed by **Shristi Developers**.

The applicant of the project is Amit Kumar Jain (Partner), **Shristi Developers**. The plot area of the proposed project is **1.34 Ha**. The **Built-up Area is 42,829.38 Sq m.** As the Plot area is **1.34 ha** and the Built up Area of the project is **42,829.38 Sq m** apparently **above 20,000 Sq m** but **below 1,50,000 Sq m** and therefore the project is considered under **Schedule 8(a)** of **Category-B** of the EIA Notification, 2006 as amended.

Distance from the boundary of Deepor Beel Wildlife Sanctuary is **6 KM** and the project is apparently free from **Wildlife angle** as falling under th**e Regulated activity**. The total estimated cost of the project is **Rs 8,500 Lakh**.

The PP has submitted the planning permission from the GMDA, NOC from the GMC, land documents, conceptual plan, Form I-A etc. Application has been filed to the competent authority in CGWA vide Application No: 21-4/3523/AS/INF/2024 **dated 08/08/2024.**

The proposed Green Belt to be established is earmarked with an area of **0.2685 Ha** (20.03% of plot area), which will include Green belt, Avenue plantation and lawn to enhance the aesthetic beauty of site and help combat air and noise pollution. Numbers of trees proposed to be planted in the green belt development is **168** trees where in an amount of **Rs 10.00** Lakh is proposed.

3.2.3. Deliberations by the committee in previous meetings

N/A

3.2.4. Deliberations by the SEAC in current meetings

Requisite documents requiring clearances from the statutory bodies are uploaded including the EMP, Waste Water Management details, Solid Waste Management Plan, E-waste generation details, Rain Water Harvesting (RWH) system, Drainage Plan, Parking Plan, Disaster Management Plan etc. The NABET accredited consultant for "*Oceao Enviro Management Solutions* (India) Pvt. Ltd" Sri Krishna Panda in presence of the project Proponent has made detailed presentation before the Committee.

Environmental Management Plan with Capital Cost of **Rs 139.50 Lakh** and recurring cost of **Rs 31.00 Lakh** have been proposed involving dust mitigation measures, environmental monitoring, occupational health and safety, greenbelt development, rain water harvesting and awareness programme for environment conservation.

The Committee deliberated upon the matter and also discussed on each of the relevant issues after presentation and under consideration. The Committee after having point-wise clarifications on all the issues relating to environment management and mitigation measures was convinced that on the site inspection for appraisal is not necessary at this stage which could however be taken up by the competent authority in due course of time while issue of CTE/CTO by the PCBA. Considering the above facts and Office Memorandum issued by the Ministry of Environment, Forest and Climate Changes, New Delhi, Govt. of India vide N**o. 21-270/2008-IA.III** dated **19.06.2013** which *inter alia* states that

SEIAA/SEAC need not to focus on the other issues which are normally looked after by the concerned local bodies / State Government Departments / SPCBs and, therefore, the SEAC is convinced to recommend for grant of the EC by the SEIAA for the project under the special Specific Conditions stipulated here under.
Recommendation: Recommended for grant of EC.

3.2.5. Recommendation of SEAC

Recommended

3.2.6. Details of Environment Conditions

3.2.6.1. Specific

SPECIFIC CONDITIONS BY SEAC	
1.	I) For raising of Green Belt around the plot area the PP shall consider and take in to account the species of plants being endemic with evergreen in nature, being of aesthetic value, medicinal value comprising of trees, shrubs, liana with proper labelling for appreciation of the importance of these plants by inmates, occupants, visitors etc. II) The plant species as may be preferred are Cheni chompa (***Artabotrys hexapetalus***), Shatamool (***Asparagus racemosus***), Jasmine (***Cestrum nocturnum***), Kamini Kusum (***Murraya paniculata***), Ashok (***Saraca asoca***), Bakul (***Mimosups elengi***), Nahor (***Mesua ferrea***), Sewali (***Nyctanthes arbor tris tis***), Bael (***Aegle marmelos***), Thuja (***Thuja compacta***), Putranjiba (***Putranjiva roxburghii***), Debadaru (***Polyalthia pendula***), Cycas (***Cycas pectinata***), Haguni lota (***Tinospora cordifolia***) etc etc. III) CER activities as committed in the meeting while deliberation for installation/purchase of a special machinery namely MPAES (50% of the total cost not exceeding an amount of **Rs. 12.50 Lakh**) required for the purposes of environmental monitoring and management, Hazardous Waste and Solid Waste management monitoring, food and beverage quality monitoring, heavy metal content in tree leaf, tree bark, air particulate, water and soil quality monitoring which shall boost the laboratory activity in the Department of Chemistry and the students shall immensely be benefited in their endeavour and pursuit for environmental studies etc in B Borooah College(Autonomous), Guwahati where in the two Bharat Ratna Awardee of entire Northeast, Sri Gopinath Bordoloi was the founder Principal of the College while Dr Bhupen Hazarika, the legendary personality of Assam was also a former faculty of the College. For the purpose of execution of the CER activity the PP shall contact the Principal, B Borooah College, Guwahati. IV) All the above conditions shall form part of the CER activities and shall be complied with in a time bound manner and Half Yearly Compliance Reports (HCR) are mandatory on the part of project Proponent which need to be uploaded on or before 1st June and 1st December of the calendar year in **PARIVESH 2.0 portal**. V) The Proponent shall comply with the conditions of Indian Green Building Council (IGBC) or *GRIHA* (Green Rating for Integrated Habitat Assessment) / LEEDS (Leadership in Energy and Environmental Development Systems). VI) Further, the STP is to be managed by the project Proponent for the period even after handing over the projects to the stakeholders. The PP shall have the necessary AMC with the STP provider for operation and maintenance for a period of at least 10 years at the initial / 1st instance and their maintenance shall be ensured by the PCB, Assam. VII) The Committee felt it expedient that the proponent shall make provision for a ***YOGA Hall*** (Yoga

	Centre for the inmates specially for the Children, the Women and as well for the ***elderly*** inmates). VIII) Certificate from the Central Ground Water Authority for use of water in the Operational phase needs to be obtained by the Proponent. IX) The cost earmarked for the environmental safeguards contained in the Environment Management Plan (EMP), as approved against the Environment Management Plan, amounting to **Rs 139.50** Lakh as Capital Cost and **Rs 31.00** Lakh as recurring cost per year against each of the components and the Fund for Social aspects under the EMP amounting to **Rs 170.50 Lakh** shall have to be utilized and shall not be diverted for any other purposes and year wise expenditures both in constructional and operational phases shall be reported to the PCB, Assam, the SEIAA and the Regional Office, MoEF & CC, GoI, Guwahati along with the break up of expenditures for record and monitoring. X) The PP shall obtain Consent to establish (CTE) and Consent to Operate (CTO) from Pollution Control Board, Assam under the provisions of the Water (Prevention and Control of Pollution) Act, 1974 and Air (Prevention and Control of Pollution) Act, 1981, as applicable before starting of the construction activities and during the construction activities respectively. XI) It shall be bounden on the project Proponent to upload the Half Yearly Compliance Report (HCR) in terms of the guidelines circulated under OM No. IA3-22/1/2022-IA.III Dated 14.06.2024 by the Ministry in the MoEF & CC, GoI.

3.3. Agenda Item No 3:

3.3.1. Details of the proposal

Common Bio Medical Waste Treatment Facility proposed by M/s Ksepya Environment Management Private Limited by **KSEPYA ENVIRONMENT MANAGEMENT PRIVATE LIMITED** located at **JORHAT,ASSAM**			
Proposal For		Fresh ToR	
Proposal No	**File No**	**Submission Date**	**Activity (Schedule Item)**
SIA/AS/INFRA2/542955/2025	SEAC/SEIAA.4192/2025	01/07/2025	Bio-Medical Waste Treatment Facilities (7(da))

3.3.2. Project Salient Features

The Project Proponent representing the **Ksepya Environment Management Private Limited** has applied for ToR for **Common Bio Medical Waste Treatment Facility**.

M/s Ksepya Environment Management Pvt. Ltd. proposes to setup a Common Bio Medical Waste Treatment Facility at Village: Phukon Khat, Choukhat, District: Jorhat, Assam in accordance with the prevailing BMWM Rules and the guidelines issued by the Central Pollution Control Board (CPCB).

In accordance with the EIA Notification, 2006 & subsequent amendment made by the MoEF & CC vide S.O.1142 (E) dated 17.04.2015, the Common Bio-Medical Waste Treatment Facilities are included under **Schedule 7(da) of Category B1**.

The project Proponent proposes to collect and transport, Biomedical waste to CBMWTF for treatment and disposal from different districts namely Jorhat, Golaghat, Sivasagar, Lakhimpur and Charaideo.

Bio-medical waste shall be collected from the healthcare units / facilities, transported to the Common treatment site, and treated as per the prescribed procedures & norms laid down in the Regulation.

Consent to Establish (CTE) was **granted** vide Consent No. PCBA/SVR/T-2005/24-25/7 **Dated 25.02.2025** by the

PCB, Assam. The NOC from the competent authority in the Central Ground Water Authority **(CGWA)** is found wanting.

As per the submitted land record, total project area is **0.607 Ha**. Lease Agreement in respect of the piece of land is uploaded. Name of the applicant of the project is Sri Raju Saikia (Director), **Ksepya Environment Management Private Limited**.

Total project **cost is estimated at Rs 950 Lakh.**

The PP has proposed for development of Green Belt with an area of **0.2 Ha** in confirmation with the **33 %** of the total plot area by planting of **250 numbers** of saplings and the estimated cost of **INR 5.0 Lakh** is remarked for the purposes.

3.3.3. Deliberations by the committee in previous meetings

N/A

3.3.4. Deliberations by the SEAC in current meetings

Requisite documents requiring clearances from the statutory bodies are uploaded including the Form 1, Pre-feasibility Report (PFR), proposed standard ToR containing the conditions required for compliance etc. The documents as submitted and uploaded by the project Proponent in support of the proposal are scrutinized. **Land conversion and Jamabandi copy of land in question are not submitted/uploaded.**

The project Proponent and the NABET Accredited Consultant for **M/s Shivalik Solid Waste Management Limited** has made a detailed presentation before the Committee.

It is categorically submitted that the parcel of land in question is an Agricultural land and necessary classification of land befitting establishment of the proposed unit is found wanting. Further, the proponent failed to justify the cogent reasons of obtaining the CTE from the PCBA prior to obtaining the necessary EC from the SEIAA.

Following documents are required to be submitted as under:

1. Jamabandi copy of proposed parcel of land under Lease Agreement including all Dag No & Patta No for the proposed site (plot).
2. NOC from the Circle Office / Revenue Office showing that the proposed parcel of land is a piece of **non agricultural land.**
3. NOC from the local authority/ Gram Panchayat is to be uploaded in the P**arivesh 2.0 portal**.
4. The Proponent shall upload the permission of the CGWA.
5. Cogent reasons are to be furnished by the PCBA for grant of **CTE dated 25.02.25** in favour of the PP much prior to grant of the EC by the SEIAA and appraisal by the SEAC for issue of ToR.

Decision:

ADS on above mentioned points are to be uploaded for further processing of the proposal.

3.3.5. Recommendation of SEAC

Deferred for ADS

3.4. Agenda Item No 4:

3.4.1. Details of the proposal

Regularisation of existing manufacturing unit PIONEER TIMBER SEASONERS that produces plywood and blo ck board of capacity 819.409 cm , veneer of capacity 755.81 cm and resin of capacity 155 MTPA. by **PIONEER T IMBER SEASONERS** located at **TINSUKIA,ASSAM**	
Proposal For	Fresh EC

Proposal No	File No	Submission Date	Activity (Schedule Item)
SIA/AS/IND3/465123/2024	SEAC/SEIAA. 4193/2025	09/07/2025	Synthetic organic chemicals in dustry (5(f))

3.4.2. Project Salient Features

M/s Pioneer Timber Seasoner is a Plywood Manufacturing Industry that produces and consumes **resins, i.e., (155 MTPA)** and as such it needs prior Environmental Clearance (EC) for setting up of such an industry. As per the order of the MoEF & CC contained in F. No. 22-93/2017-IA.III **dated 10.04.2019** a resin producing unit of less than **1000 MTPA** needs to obtain prior EC under the **B-2 Category** included in **Schedule 5(f).** Accordingly, the PP has applied for regularization of the project by obtaining the **EC** that was established and commissioned in **April, 2019.**

As per submitted land record, total project area is **0.305 Ha**. Undertaking for ownership of land is uploaded. Total project **cost** is estimated at **Rs 58.4 Lakh.**

The PP has proposed for development of **Green belt** area of **0.0305 Ha** in confirmation with the **10 %** of the total plot area with planting of **3,000 numbers** of saplings and estimated cost of **INR 3.0 Lakh** is earmarked for the purposes**.** Details of the species proposed for plantation are Neem, eucalyptus, mango, guava, false ashoka etc

3.4.3. Deliberations by the committee in previous meetings

N/A

3.4.4. Deliberations by the SEAC in current meetings

The project Proponent Sri Dhananjay Singh (Partner), M/s **Pioneer Timber Seasoners** has applied for the EC and the documents relevant to the case are furnished. The NOC from the Makum Town Committee, Tinsukia and Pre Feasibility Report (PFR), EMP, land documents, Affidavit/ undertaking of ownership of land, Registered Deed of Partnership etc are uploaded. The PP has furnished the requisite **Forest Licence vide Letter No B/G-38(a)/WBI/2024/1845-46 dated: 21.06.2024 with validity up to 31.12.2027** as uploaded.

Records were placed before the Committee in its meeting for deliberation and appraisal. The Committee was of the opinion to have a ground truth verification of the Project as to its status as on date.

It is suggested that in pursuance to the EIA Notification, 2006 and as envisaged under the Clause 5(d) of the said Notification, 2006 dated 14th September, 2006 by the MoEF & CC in the Govt. of India a sub-committee of the SEAC, Assam is constituted comprising of the Hon'ble Members to conduct physical field inspection of the project site for adequate appraisal of the project proposal. The mandate of the sub-committee is to inspect the proposed site, assess the present status of operation of the plant and also to assess the existing environmental status, appraisal on the probable environmental impact that may generate on the natural environment in the surroundings. The sub-committee will submit their report and will be placed for deliberation before the Committee.

Decision:

A sub-Committee will conduct inspection of the project site in presence of the Proponent, and they shall submit their site inspection report in terms of the format accordingly with suggestions, with their valued opinion in terms of the powers vested under the provisions made in the Environment Clearance Regulation, 2006.

3.4.5. Recommendation of SEAC

Deferred for SiteVisit

3.5. Agenda Item No 5:

3.5.1. Details of the proposal

EMPIRE EXOTICA by **empire developers** located at **KAMRUP METRO,ASSAM**			
Proposal For		Fresh EC	
Proposal No	**File No**	**Submission Date**	**Activity (Schedule Item)**
SIA/AS/INFRA2/544479/2025	SEAC/SEIAA. 4195/2025	14/07/2025	Building / Construction (8(a))

3.5.2. Project Salient Features

The proposed Project is for grant of EC for Residential cum Commercial project "**Empire Exotica**" located at Kahilipara Dakhingaon, Dakhingaon Main Road, Ward No 41,Village: Dakhingaon, Mouza: Beltola, Dist.: Kamrup (M), Assam by Empire Developers.

The applicant of the project is Madhurjya Nath (Authorized Signatory), **Empire Developers**. The plot area of the proposed project is **0.85 Ha**. The project had earlier obtained approval for the building plan **Phase-I** with a Built-up Area (BUA) of 1**5,102.18 Sq m** for **Block A** and **Block B** from the GMDA vide letter No. GMDA/PP/1608/27032019/19 **dated 27/3/2019.** At this stage requirement of prior Environmental Clearance (EC) and Consent to Establish (CTE) were not required as the BUA area was much below the threshold limit of **20,000 Sq m.** Constructional works had started accordingly prior to the ***Covid*-19** Pandemic.

PHASE-I		
COMPONENTS	**FAR+NONFAR**	**Phase I : Approved in year 2020 (Sqm)**
Building 1	Basement	784.73
	G.F	784.73
	1st to 8th Floor	5932.58
	Sub - total	**7502.04**
Building 2	Basement	784.73
	G.F	784.73
	1st to 8th Floor	5932.58
	Sub - total	**7502.04**
	TERRACE	118
	GRAND TOTAL	**15,122.08**

Subsequently, there has been a revision in the project planning, and the project Proponent had obtained a revised Building Plan approved under **Phase-II** from the GMDA vide letter No. GMC/W27/0004/06042019 **dated 15/9/2023** for a total built-up area (BUA) of **23,646.72 Sq m.**

PHASE-- II		
COMPONENTS	**FAR+NONFAR**	**Phase II : APPROVED IN YR 2024 (S qm)**
Building 1	Basement	791.24
	G.F	791.25
	1st to 8th Floor	6325.02
	Extension (9th Floor)	769.68
	Sub - total	**8677.19**
Building 2	Basement	791.24
	G.F	791.25
	1st to 8th Floor	6348.96
	Extension (9th, 10th & 11th Floor)	2332.98
	Sub - total	**10264.43**
Building 3	Basement	0
	G.F	511.55
	1st to 6th floor	3537.75
	Sub - total	**4049.3**
Building 4	Basement	0
	G.F	199.3
	1st & 2nd Floor	456.5
	Sub - total	655.8
	TERRACE	-
	GRAND TOTAL	**23,646.72**

As the Plot area is **0.85 Ha** and the Built up Area of the project is **23,646.72 Sq m** apparently **above 20,000 Sq m** but **below 1,50,000 Sq m,** therefore, the project is considered under **Schedule 8(a) of Category-B** of the EIA Notification, 2006 as amended.

Current Construction status : The current status of construction is 19,450 Sq m which remains below **20,000 Sq m**.

The total estimated cost of the project is **Rs 4,500 Lakh**.

PP has submitted the planning permission from GMDA, NOC from the GMC, Land documents, conceptual plan, Form I-A etc. The PP has filed application vide letter No: CGWA/NOC/INF/ORIG/2024/19776 **dated 16.12.2023 s**eeking

NOC from the CGWA.
The proposed Green Belt to be established is earmarked with an area of **0.13 Ha** (15.53% of plot area), which will include Green belt, Avenue plantation and lawn to enhance the aesthetic beauty of site and help combat air and noise pollution.
Numbers of trees proposed to be planted in the green belt development is **110** trees where in an amount of **Rs 10.00** Lakh is proposed.

3.5.3. Deliberations by the committee in previous meetings

N/A

3.5.4. Deliberations by the SEAC in current meetings

Requisite documents requiring clearances from the statutory bodies are uploaded including the EMP, Waste Water Management details, Solid Waste Management Plan, E-waste generation details, Rain Water Harvesting (RWH) system, Drainage Plan, Parking Plan, Disaster Management Plan etc. The NABET Accredited consultant for ***"Oceao Enviro Management Solutions* (India) Pvt. Ltd**" Sri Krishna Panda on behalf of the project Proponent has made detailed presentation before the Committee.
The Committee deliberated upon the matter and felt it expedient to have an inspection of the site in presence of the project Proponent, the Consultant engaged for the purposes and the sub Committee shall furnish their suggestions, views specially in respect of maintenance of the STP sustainably, provision for establishment of a Yoga Hall besides other environmental aspects from environmental angle as proposed.
Decision:
1. A sub-Committee will conduct inspection of the project site in presence of the Proponent, Developer and the Consultant and they shall submit their site inspection report in terms of the format accordingly with suggestions, with their valued opinion in terms of the powers vested under the provisions made in the Environment Clearance Regulation, 2006.

3.5.5. Recommendation of SEAC

Deferred for SiteVisit

3.6. Agenda Item No 6:

3.6.1. Details of the proposal

JDB Pride by **Ganapati builds and trade** located at **KAMRUP METRO,ASSAM**			
Proposal For		Fresh EC	
Proposal No	**File No**	**Submission Date**	**Activity (Schedule Item)**
SIA/AS/INFRA2/544733/2025	SEAC/SEIAA.4197/2025	14/07/2025	Building / Construction (8(a))

3.6.2. Project Salient Features

The proposed Project **"JDB Pride"** is for development of a Residential Apartment Building at Village: Hengrabari Mouza : Beltola Dag No.- 3170, Patta No. – 2420 of Satgaon, Kochpara, Budh Bazar Road, Guwahati, Assam. The promoters and Developers of the project is **M/s Ganapati Builds and Trade**.

JDB group, as **Developer**, has entered into a partnership and acquired plot of land from Mrs Sagarika Basumatary at one of the preferred residential localities of Guwahati to develop an **economy category** residential complex with **176 apartments** of different sizes.

The proposed JDB Pride aims to construct residential towers along with a club.

It is to build the project over an area of **5 Bigha 0 katha 10 lechas** covered by Dag No- 565(Old)/3036(Middle)/3170(new) and KP Patta No- 32(Old)/129(Middle)/2420(new) located at Satgaon Kochpara, Budh Bazar Road, Opp. Ganesh Mandir, Kamrup (M).

The plot area of the proposed project is **6,825.11 Sq m**. The **Built-up Area (BUA) is 24,263.71 Sq m.** The total estimated cost of the project is **Rs 67.0 Crore**.

PP has submitted the application of planning permission from GMDA, Geo-Technical investigation report, along with the copy of Development Agreement.

The proposed Green Belt to be established is earmarked with an area of **0.1335 ha** (19% of plot area), which will include Green Belt, Avenue plantation and lawn to enhance the aesthetic beauty of site and help combat air and noise pollution. Numbers of saplings proposed to be planted in the Green Belt development is **120** where in an amount of **Rs 4.00** Lakh is proposed.

PP submitted that total water demand will be **97 KLD** and proposed **STP of 100 KLD**.

3.6.3. Deliberations by the committee in previous meetings

N/A

3.6.4. Deliberations by the SEAC in current meetings

Requisite documents requiring clearances from the statutory bodies are uploaded including the EMP, Waste Water Management details, Solid Waste Management Plan, E-waste generation details, Rain Water Harvesting (RWH) system, Drainage Plan, Parking Plan, Disaster Management Plan etc.

The NABET accredited consultant for ***In Situ Enviro Care*** Sri Ashish Kumar on behalf of the project Proponent has made detailed presentation before the Committee.

Considering the above facts and Office Memorandum issued by the Ministry of Environment, Forest and Climate Changes, New Delhi, Govt. of India vide N**o. 21-270/2008-IA.III** dated **19.06.2013** which *inter alia* states that SEIAA/SEAC need not to focus on the other issues which are normally looked after by the concerned local bodies / State Government Departments / SPCBs.

The Committee deliberated upon the matter and felt it expedient to have an inspection of the site in presence of the project Proponent, the Consultant engaged for the purposes. The sub Committee shall furnish their suggestions, views specially in respect of maintenance of the STP sustainably, provision for establishment of a Yoga Hall besides other environmental aspects from environmental angle as proposed.

Decision:

1. A sub-Committee will conduct inspection of the project site in presence of the Proponent, Developer and the Consultant and they shall submit their site inspection report in terms of the format accordingly with suggestions, with their valued opinion in terms of the powers vested under the provisions made in the Environment Clearance Regulation, 2006.
2. NOC from the CGWA need to be submitted.
3. Planning permit from GMDA and NOC from GMC need to be submitted.

3.6.5. Recommendation of SEAC

Deferred for SiteVisit

3.7. Agenda Item No 7:

3.7.1. Details of the proposal

Construction of New Assembly Complex and MLA Hostel at Dibrugarh, Assam by **LOKESH MAZUMDAR** located at **DIBRUGARH,ASSAM**			
Proposal For		Fresh EC	
Proposal No	**File No**	**Submission Date**	**Activity (Schedule Item)**
SIA/AS/INFRA2/543842/2025	SEAC/SEIAA.4196/2025	16/07/2025	Building / Construction (8(a))

3.7.2. Project Salient Features

The proposed project is for **"Construction of New Assembly Complex and MLA Hostel at Dibrugarh, Assam**" and is proposed by the Public Works Department, Government of Assam.

The proposed project serves multiple strategic objectives aimed at enhancing governance, regional development, and administrative efficiency. The initiative is part of a broader plan to develop Dibrugarh Township as Assam's second capital. This development aims to distribute administrative activities more evenly across the state, reducing the concentration in Guwahati and promoting balanced regional growth.

The proposed project comprises of Assembly building block with canteen, MLA Hostel with 126 units, Auditorium block and Service block. The proposed Police Barracks have been clubbed along with the other barracks for security personnel located in the adjacent Police Fields. The Police field land is under the jurisdiction of local district administration.

There are in total 3 towers comprising of Assembly building block with canteen (G+2), MLA Hostel block (G+8) and Auditorium block (G+2) along service block. The entrance gate complex with pass office has been provided along with engineering services like Electric Sub Station, UGT, STP, etc.

It is proposed to build the project over an area of 63B - 2K - 7Ls located at Dag No. 515 (pt) and 445 (pt) of Village: Tepor Gaon and Mouza: Mancotta Khanikar at Dibrugarh, Assam. The Certificate of the handing over / taking over of advance possession of land is issued by the Circle officer: Dibrugarh West Revenue Circle, Dibrugarh, Govt. of Assam vide **Letter No. DRDW/LA/37/pt/2023/2019 dated 18.07.2025.** The land is handed over to the Executive Engineer, P.W.D. (B) Division, Dibrugarh, and the possession in favour of the Home & Political Department for the construction of the proposed Project.

The plot area of the proposed project is **91,780 Sq m.** The Built-up Area (BUA) is **35,975.13 Sq m**. The total estimated cost of the project is **Rs 28,403 Lakh**.

PP has submitted the Administrative Approval, Soil Investigation Report, Structure Stability Certificate along with Certificate of the handing over / taking over of advance possession of land.

The proposed Green Belt to be established is earmarked with an area of **46,686.5 Sq m** (50.86% of plot area), which will include Greenbelt, Avenue plantation and lawn to enhance the aesthetic beauty of site and help combat air and noise pollution. Numbers of saplings proposed to be planted in the green belt development is **1,440** where in an amount of **Rs 10.00** Lakh is proposed. The PP has submitted that total water demand will be **186 KLD and proposed STP of 210 KLD.**

AREA STATEMENT

Description	Assembly Building & Canteen	MLA Hostel Block (126 Capacity)	Auditorium Block	Barrack Block (480 Capacity)	Service Block (Pass of fice, ESS, Gate & Guard room)
No. of Floors	GF+2	GF+8	GF+2	GF+2	GF
Ground Floor	6417.00	1568.01	3059.44	1450.00	1375.00
First Floor	4356.00	1395.15	867.37	1497.00	-
Second Floor	1771.44	1455.59	904.32	1315.59	-
Third Floor	-	1423.87	-	-	-
Fourth Floor	-	1423.87	-	-	-
Fifth Floor	-	1423.87	-	-	-
Sixth Floor	-	1423.87	-	-	-
Seventh Floor	-	1423.87	-	-	-
Eighth Floor	-	1423.87	-	-	-
TOTAL	**12544.44**	**12961.97**	**4831.13**	**4262.59**	**1375.00**
Total Built-up Area	**35,975.13**				

PROJECT SALIENT FEATURES

Sl No	Description	Particulars	Unit
	GENERAL		
1	Total Plot area	91,780	Sq.m
2	Proposed Built Up Area	35,975.13	Sq.m
3	Max No of Floors	G+8	--
	WATER		
4	Total Water Requirement	186.0	KLD
5	Fresh water requirement	116.0	KLD
6	Waste water Generation	170.0	KLD
7	Proposed STP	210.0	KLD

8	Recycled Water	136.0	KLD
PARKING			
9	Total parking area proposed within the project site is 1419.77 Sq.m. comprising of 64 parking units.		
GREEN AREA			
10	Proposed Green area	46,686.5	Sq.m
POWER DETAILS			
11	Total power requirement	1378	KW
12	DG Sets backup (3 x 625 KVA + 1 x 125 KVA)	2000	KVA

3.7.3. Deliberations by the committee in previous meetings

N/A

3.7.4. Deliberations by the SEAC in current meetings

Requisite documents requiring clearances from the statutory bodies are uploaded including the EMP, Waste Water Management details, Solid Waste Management Plan, E-waste generation details, Rain Water Harvesting (RWH) system, Drainage Plan, Parking Plan, Disaster Management Plan etc. The NABET accredited consultant for ***In Situ Enviro Care*** Sri Ashish Kumar on behalf of the project Proponent has made detailed presentation before the Committee.

The Committee deliberated upon the matter and also discussed on each of the relevant issues after presentation and under consideration.

Considering the above facts and Office Memorandum issued by the Ministry of Environment, Forest and Climate Changes, New Delhi, Govt. of India vide N**o. 21-270/2008-IA.III** dated **19.06.2013** which *inter alia* states that SEIAA/SEAC need not to focus on the other issues which are normally looked after by the concerned local bodies / State Government Departments / SPCBs and, in view of the above proposition the SEAC is convinced to recommend for grant of the EC by the SEIAA for the project involving public welfare and of paramount importance for the state administrative sector in the remote part of the country under the Specific Conditions stipulated here under.

Recommendation: Recommended for grant of EC.

3.7.5. Recommendation of SEAC

Recommended

3.7.6. Details of Environment Conditions

3.7.6.1. Specific

SPECIFIC CONDITIONS BY SEAC		
1.	I)	For raising of Green Belt around the plot area the PP shall consider and take in to account the

species of plants being endemic with evergreen nature, being of aesthetic value, medicinal value comprising of trees, shrubs, liana with proper labelling for appreciation of the importance of these plants by visitors, officials, dignitaries.

II) The plant species as may be preferred are Cheni chompa (***Artabotrys hexapetalus***), Nahor (***Mesua ferrea***), Jasmine (***Cestrum nocturnum***), Kamini Kusum (***Murraya paniculata***), Ashok (***Saraca asoca***), Bakul (***Mimosups elengi***), Hilikha (**Terminalia chebula**), Sewali (***Nyctanthes arbor tris tis***), Thuja (***Thuja compacta***), Kuji Thekera (**G*arcinia morella***), Kao Thekera (***Garcinia cowa***), Putranjiba (***Putranjiva roxburghii***), Debadaru (***Polyalthia pendula***), Amlokhi (***Phyllanthus acidus***), Cycas (***Cycas pectinata***), Saguni lota/Amar lota (***Tinospora cordifolia***) besides other indigenous species of plants of the locality etc etc.

III) As a part of Climate Change mitigation measure the PP shall undertake CER activity by way of activation of the **Timber Treatment and Seasoning Plant** at Makum, Forest Guards' Training School and for the purpose contribute an amount of **Rs 50 Lakh** in consultation with the DFO, Digboi Division (Nodal Officer for the purpose).

IV) All the above conditions shall form part of the CER activity and shall be complied with in a time bound manner and Half Yearly Compliance Reports (HCR) are mandatory on the part of project Proponent which need to be uploaded on or before 1st June and 1st December of the calendar year in PARIVESH 2.0 portal.

V) The Proponent shall comply with the conditions of Indian Green Building Council (IGBC) or *GRIHA* (Green Rating for Integrated Habitat Assessment) / LEEDS (Leadership in Energy and Environmental Development Systems).

VI) The STP is to be managed by the project Proponent for the period even after handing over the projects to the stakeholders. The PP shall have the necessary AMC with the STP provider for operation and maintenance for a period of at least 10 years at the initial / 1st instance and their maintenance shall be ensured by the PCB, Assam.

VII) The Committee felt it expedient that the proponent shall make provision for a ***YOGA Hall*** (Yoga Centre for use by the visitors, officials, specially the Women folk).

VIII) Certificate from the Central Ground Water Authority for use of water in the Operational phase needs to be obtained by the Proponent.

IX) The cost earmarked for the environmental safeguards contained in the Environment Management Plan (EMP), as approved against the Environment Management Plan, amounting to **Rs 100.0** Lakh as Capital Cost and **Rs 45.0** Lakh as recurring cost per year against each of the components and the Fund for Social aspects under the EMP amounting to **Rs 140.0 Lakh** shall have to be utilized and shall not be diverted for any other purposes and year wise expenditures both in constructional and operational phases shall be reported to the PCB, Assam & SEIAA, the Regional Office, MoEF & CC, GoI, Guwahati along with the break up of expenditures for record and monitoring.

X) The PP shall obtain Consent to establish (CTE) and Consent to Operate (CTO) from Pollution Control Board, Assam under the provisions of the Water (Prevention and Control of Pollution) Act, 1974 and Air (Prevention and Control of Pollution) Act, 1981, as applicable before starting of the construction activities and during the construction activities respectively.

XI) The copy of the EC shall be made available/marked to the DFO, Digboi Division for the purpose of implementation and execution of the CER activity within the 1st 6(six) months.

XII) It shall be bounden on the project Proponent to upload the Half Yearly Compliance Report (HCR) in terms of the guidelines circulated under OM No. IA3-22/1/2022-IA.III Dated 14.06.2024 by the Ministry in the MoEF & CC, GoI.

3.8. Agenda Item No 8:

3.8.1. Details of the proposal

Proposed Kanaklata Baruah University at Gohpur Bholaguri, Biswanath, Assam by **RATAN CHANDRA MOC HAHARY** located at **Biswanath,ASSAM**			
Proposal For		Fresh EC	
Proposal No	**File No**	**Submission Date**	**Activity (Schedule Item)**
SIA/AS/INFRA2/542719/2025	SEAC/SEIAA. 4199/2025	18/07/2025	Building / Construction (8(a))

3.8.2. Project Salient Features

Kanaklata Baruah University at Gohpur (Bholaguri), Biswanath district in Assam is proposed by the Executive Engineer, PWD, Building Division, Biswanath as the implementing agency for the project.

The project is owned by the Government of Assam.

The project aim at developing a new State University named after the legendary Kanaklata Baruah which is expected to be an emerging Academic Institution located in northern part of Assam, India. The project aims to honour the legacy of Kanaklata Baruah, a brave freedom fighter from Gohpur. The University will have both academic facilities (Academic Block & Common Lecture Hall) and Residency facilities in terms of Hostel Blocks, Student Facility, Mega Mess, V.C Residence, Registrars' Residence, Guest House and Type IV & III Residential quarters.

Once operational, Kanaklata Baruah University will be the Assam's first institution with a strong industry-oriented academic approach. The university will offer specialized programs in emerging fields such as Artificial Intelligence, Quantum Computing and Robotics.

SALIENT FEATURES OF THE PROJECT

S. No.	**Description**	**Particulars**	**Unit**
GENERAL			
1	Total Plot area	1177170.29	Sq.m
2	Proposed Built Up Area	68111.42	Sq.m
3	Max No of Floors	G+7	--
WATER			
4	Total Water Requirement	407	KLD
5	Fresh water requirement	248	KLD
6	Waste water Generation	358	KLD
7	Proposed STP	410	KLD
8	Proposed ETP	18	KLD
9	Recycled Water	286	KLD

PARKING				
10	Surface Parking Area is 18,043.92 Sq.m. Proposed parking spaces are: 620 ECS			
GREEN AREA				
11	Proposed Green area	1079561.82	Sq.m	
POWER DETAILS				
12	Total power requirement	3182	KW	
13	DG Sets backup (2 x 700 KVA & 1 x 380 KVA))	1780	KVA	

The entire **plot of land** on which the project construction is proposed for Kanaklata Baruah University is handed over to the Executive Engineer, PWD, Biswanath by the Revenue Department, **Government of Assam**. The plot area of the proposed project is **11, 77,170.29 Sq m.** The Built-up Area is **68,111.42 Sq m**. The total estimated cost of the project is **Rs 554 Crore**.

AREA STATEMENT

Phase - 1					
S.No.	**Description**	**No of Blocks**	**No of Floor**	**Area (In Sq.m)**	**Total Area (In Sq.m)**
A	Building Work				
1	Academic Block (600 Student)	3	G+3	5007.88	15,023.64
2	Common Lecture Hall Complex (1100 Students)	1	G+1	3753.45	3753.45
3	Double Seater Hostel Block (540 Bed)	3	G+7	9944.56	29833.68
4	Mega Mess	1	G+1	2702.74	2702.74
5	Student Facility Centre	1	G	1250.00	1250.00
6	Vc Residence	1	G+1	554.00	554.00
7	Registrar Residence	1	G+1	376.00	376.00
8	Guest House (36 Bed)	1	G+1	1677.00	1677.80
9	Type IV Residential Quarters (24)	2	G+5	5265.08	10530.16
10	Type III Residential Quarters (24)	1	G+5	2109.95	2109.95
11	Service Block	1	G. F	300.00	300.00

	Total-A _ (Building Works)			**33011.46**	**68111.42**

The PP has submitted the copy of approval of the project including the sanction accorded in the **Assam Budget 2024-25**, Geo-Technical investigation Report, Architectural Drawings and Land documents.

The proposed Green Belt to be established is earmarked with an area of **107.956 ha** (91.7 % of plot area), which will include Green belt, Avenue plantation and lawn to enhance the aesthetic beauty of site and help combat air and noise pollution. Numbers of trees proposed to be planted in the green belt development is **800** trees where in an amount of **Rs 6.00** Lakh is proposed.

PP submitted that total water demand will be **407** KLD and proposed STP of **410** KLD & **18** KLD ETP.

3.8.3. Deliberations by the committee in previous meetings

N/A

3.8.4. Deliberations by the SEAC in current meetings

Requisite documents requiring clearances from the statutory bodies are uploaded including the EMP, Waste Water Management details, Solid Waste Management Plan, E-waste generation details, Rain Water Harvesting (RWH) system, Drainage Plan, Parking Plan, Disaster Management Plan etc. The NABET accredited consultant for I***n Situ Enviro Care*** Sri Ashish Kumar on behalf of the project Proponent has made detailed presentation before the Committee.

The Committee deliberated upon the matter and also discussed on each of the relevant issues after presentation and under consideration. Considering the above facts and Office Memorandum issued by the Ministry of Environment, Forest and Climate Changes, New Delhi, Govt. of India vide N**o. 21-270/2008-IA.III** dated **19.06.2013** which *inter alia* states that SEIAA/SEAC need not to focus on the other issues which are normally looked after by the concerned local bodies / State Government Departments / SPCBs and, therefore, the SEAC is of the considered opinion to recommend grant of EC in favour of the Proponent.

In view of the above proposition the SEAC is convinced to recommend for grant of the EC by the SEIAA for the project involving the higher Academic Curriculum for the aspiring student community and of priority for the state education sector in the remote part of the country under the Specific Conditions stipulated here under.

Decision : Recommended for grant of EC.

3.8.5. Recommendation of SEAC

Recommended

3.8.6. Details of Environment Conditions

3.8.6.1. Specific

SPECIFIC CONDITIONS BY SEAC	
1.	I) For raising of Green Belt around the plot area the PP shall consider and take in to account the species of plants being endemic with evergreen nature, being of aesthetic value, medicinal value comprising of trees, shrubs, liana with proper labelling for appreciation of the importance of these plants by visitors. II) The plant species as may be preferred are Cheni chompa (***Artabotrys hexapetalus***), Shatamool

(*Asparagus racemosus*), Jasmine (***Cestrum nocturnum***), Kamini Kusum (***Murraya paniculata***), Ashok (***Saraca asoca***), Bakul (***Mimosups elengi***), Nahor (***Mesua ferrea***), Sewali (***Nyctanthes arbor tris tis***), Thuja (***Thuja compacta***), Putranjiba (***Putranjiva roxburghii***), Debadaru (***Polyalthia pendula***), Cycas (***Cycas pectinata***), Haguni lota (***Tinospora cordifolia***) etc etc

III) As a part of the CER activity, for the benefit of the student community an Herbal Garden within the premises should be developed with Thematic plantations as huge area is reserved for plantation. An amount of **Rs 30 Lakh @ Rs 10 Lakh per Ha** of area for developing the Garden within an area of **3 Ha** should be earmarked. For this purpose assistance of the local DFO of the District should be sought or any other person who is a domain expert in the field.

IV) As a part of Climate Change mitigation measure the PP shall undertake CER activity by way of activation of the **Timber Treatment and Seasoning Plant** at Makum, Forest Guards' Training School and for the purpose contribute an amount of **Rs 50 Lakh** in consultation with the DFO, Digboi Division (Nodal Officer for the purpose).

V) All the above conditions shall form part of the CER activities and shall be complied with in a time bound manner and Half Yearly Compliance Reports (HCR) are mandatory on the part of project Proponent which need to be uploaded on or before 1st June and 1st December of the calendar year in PARIVESH 2.0 portal.

VI) The Proponent shall comply with the conditions of Indian Green Building Council (IGBC) or *GRIHA* (Green Rating for Integrated Habitat Assessment) / LEEDS (Leadership in Energy and Environmental Development Systems).

VII) Further, the STP is to be managed by the project Proponent for the period even after handing over the projects to the stakeholders. The PP shall have the necessary AMC with the STP provider for operation and maintenance for a period of at least 10 years at the initial / 1st instance and their maintenance shall be ensured by the PCB, Assam.

VIII) The Committee felt it expedient that the proponent shall make provision for a ***YOGA Hall*** (Yoga Centre for the students, the inmates and other personnel, Teachers and as well for the elderly inmates).

IX) Certificate from the Central Ground Water Authority for use of water in the Operational phase needs to be obtained by the Proponent.

X) The cost earmarked for the environmental safeguards contained in the Environment Management Plan (EMP), as approved against the Environment Management Plan, amounting to **Rs 80.0** Lakh as Capital Cost and **Rs 40.0** Lakh as recurring cost per year against each of the components and the Fund for Social aspects under the EMP amounting to **Rs 435.0 Lakh** shall have to be utilized and shall not be diverted for any other purposes and year wise expenditures both in constructional and operational phases shall be reported to the PCB, Assam & SEIAA, the Regional Office, MoEF & CC, GoI, Guwahati along with the break up of expenditures for record and monitoring.

XI) The PP shall obtain Consent to establish (CTE) and Consent to Operate (CTO) from Pollution Control Board, Assam under the provisions of the Water (Prevention and Control of Pollution) Act, 1974 and Air (Prevention and Control of Pollution) Act, 1981, as applicable before starting of the construction activities and during the construction activities respectively.

XII) The copy of the EC shall be made available/marked to the DFO, Digboi Division for the purpose of implementation and execution of the CER activity within the 1st 6(six) months.

XIII) It shall be bounden on the project Proponent to upload the Half Yearly Compliance Report (HCR) in terms of the guidelines circulated under OM No. IA3-22/1/2022-IA.III Dated 14.06.2024 by the Ministry in the MoEF & CC, GoI.

4. Any Other Item(s)

N/A

5. List of Attendees

Sr. No.	Name	Designation	Email ID	Remarks
1	Dr Apurba Kumar Das	SEAC MEMBER	apu***@tezu.ernet.in	
2	Dr Bijoy Sankar Goswami	SEAC MEMBER	bij**********@gmail.com	
3	Dr Rahul Mahanta	SEAC MEMBER	rah*********@gmail.com	
4	Shri Arup Barpujary	SEAC MEMBER	abc*****@gmail.com	
5	Dr Raza Rafiqul Houque	SEAC MEMBER	rrh@tezu.ernet.in	
6	Shri Shantanoo Bhattacharyya	SEAC MEMBER	sha******************@yahoo.com	
7	Jatindra Sarma	Chairman, SEAC	chs*****@gmail.com	
8	Dr Gautam Krishna Misra	Member Secretary, SEAC	mem**********@pcbassam.org	

Signature Not Verified

Digitally Signed by : Dr Gautam Krishna Misra
Member Secretary, SEAC

Date: 01/08/2025

-Annexure A/6 Colly-

GOVERNMENT OF INDIA
MINISTRY OF CORPORATE AFFAIRS

Central Registration Centre

Certificate of Incorporation

[Pursuant to sub-section (2) of section 7 of the Companies Act, 2013 (18 of 2013) and rule 18 of the Companies (Incorporation) Rules, 2014]

I hereby certify that KSEPYA ENVIRONMENT MANAGEMENT PRIVATE LIMITED is incorporated on this First day of April Two thousand nineteen under the Companies Act, 2013 (18 of 2013) and that the company is limited by shares.

The Corporate Identity Number of the company is U90001AS2019PTC019132.

The Permanent Account Number (PAN) of the company is **AAHCK5714B**

The Tax Deduction and Collection Account Number (TAN) of the company is **SHLK02860E***

Given under my hand at Manesar this First day of April Two thousand nineteen .

Digital Signature Certificate
Mr Sanjaya Kumar Verma
Deputy Registrar Of Companies
For and on behalf of the Jurisdictional Registrar of Companies
Registrar of Companies
Central Registration Centre

Disclaimer: This certificate only evidences incorporation of the company on the basis of documents and declarations of the applicant(s). This certificate is neither a license nor permission to conduct business or solicit deposits or funds from public. Permission of sector regulator is necessary wherever required. Registration status and other details of the company can be verified on www.mca.gov.in

---

Mailing Address as per record available in Registrar of Companies office:

KSEPYA ENVIRONMENT MANAGEMENT PRIVATE LIMITED
VILL: HELANARPAM, P.O. HOWLY, HOWLY, DIST. BARPETA,
Barpeta, Assam, India, 781316

* as issued by the Income Tax Department

FROM NO. 4602 **LICENCE No**

(Under Section- 25,57 & 95 of the Assam Panchayat Act. 1994)

For the year/half year ending .....

Period from 1st July 2025 To 30th June 2026

* **The Gaon Panchayat:**
The Anchalik Panchayat of East Teok
Zilla Parishad

Hereby grants upto Ksetpya Environment Management Pvt Ltd Son of Prop. Mr. Raju Saikia residing at Phukan Khat Chaukhat

Village ..... Mauza Chaukhat

This licence will be valid within the jurisdication of .....

* **The Gaon Panchayat:** .....
The Anchalik Panchayat of East Teok
Zilla Parishad

For the under mentioned purposes .....

Description of iten for Which Licence is granted	Rate	Amount of fees received
Trade licence issued for Ksetpya Environment Management Pvt Ltd deals in Common Bio Medical Waste Treatment Facilities.	Rs. 1000/-	One Thousand Only

The 08/08/ 20.25

Score out word or words which is not applicable.

Signature of the Officer with Seal

Block Development Officer
East Teok Development Block
Nagarchuk, Jorhat

-Annexure A/7 Colly-

Pre-Feasibility Report

For

Proposed New Project of Common Bio-Medical Waste Treatment Facility (CBMWTF) Consisting of Incineration System having Capacity of (250 kg/hr. x 1 Nos.), Autoclave having Capacity of (150 kg/batch. x 2 Nos.), Shredder having Capacity of (125 kg/hr. x 2 Nos.), ETP having Capacity of 20 KLD & Sharp Pit Having Capacity of 1.5 m^3

At

Plot - 1B, Titabor Industrial Estate, Mouza - Thengal, Village - Kundorgaon, District - Jorhat, Assam

Plot Area - 4050 m^2

[Category "B1", Project or Activity 7(da)]



Applicant

M/s. Kaziranga Biotech Pvt. Ltd.

Plot – 1B, Titabor Industrial Area, Mouza - Thengal, Village - Kundorgaon, District - Jorhat, Assam, India.
Ph.: +91-81604-83760
E-mail: kaziranga.biotech@gmail.com

Consultant

ENPRO Enviro Tech and Engineers Pvt. Ltd.

[QCI-NABET ACCREDITATION NO. NABET/EIA/25-28/RA 0388 (Valid till 11th January 2028)]
Plot No. D/29/16-17, Hojiwala Industrial Estate, Gate No. 3, Sachin Palsana Road, Sachin, Surat – 394230.
Ph.: +91-81604-83760
E-mail: enpro.eia@gmail.com, enpro.eia@enpro.co.in

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LIST OF ANNEXURES

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1	Land Allotment Document
2	Tentative Plant Layout
3	CPCB Annual Reports for Bio-Medical Waste Management 2018 to 2023

1. EXECUTIVE SUMMARY

According to Bio-Medical Waste Management Rules 2016, Bio-Medical Waste (BMW) means "any waste, which is generated during the diagnosis, treatment or immunization of human beings or animals or research activities pertaining there to or in the production or testing of biological or in health camps". Improper management of waste generated in health care facilities causes a direct health impact on the community, the health care workers and on the environment. All such generators of Bio-Medical waste are required to treat and dispose Bio-Medical waste as per Bio-Medical Waste Management Rules 2016.

M/s. Kaziranga Biotech Pvt. Ltd. proposes to establish a new Common Bio-Medical Waste Treatment Facility at Plot - 1B, Titabor Industrial Estate, Mouza - Thengal, Village - Kundorgaon, District - Jorhat, Assam having a total plot area of 4050 m^2. Unit has also obtained land allotment letter which is attached in **Annexure-1.** The land is in the possession of **M/s. Kaziranga Biotech Pvt. Ltd**. Proposed facility will have following treatment components:

TABLE 1 – PROPOSED TREATMENT COMPONENTS FOR THE PROJECT

Sr. No.	Equipment	Capacity
1	Incinerator	250 kg/hr. x 1 nos.
2	Autoclave	150 kg/batch x 2 nos.
3	Shredder	125 kg/hr. x 2 nos.
4	Sharp Pit	1.5 m^3
5	Effluent Treatment Plant	20 KLD

For the proposed project, total water requirement will be 40.1 KLD (33.8 KLD Industrial + 1.5 KLD Domestic + 4.8 KLD Gardening) and wastewater generation will be 17.9 KLD (16.5 KLD Industrial + 1.4 KLD Domestic). Out of 40.1 KLD total water, 22.2 KLD water will be fresh water and the rest 17.9 KLD water will be recycled water. Industrial effluent (i.e. 16.5 KLD) and Domestic sewage (i.e. 1.4 KLD) will be treated into in-house ETP consisting of Primary, Secondary and Tertiary treatment units and recycled back into plant premises for different activities. So, the entire plant will be designed based on Zero Liquid Discharge (ZLD) technology and no effluent will be discharge outside plant premises or any of the surface bodies.

Required fresh water will be sourced through AIDC Titabor water supply network. No ground water will be extracted for any of the project activities.

The power requirement for project will be 78 KVA and it will be sourced from Assam Power Distribution Company Limited. DG Set having capacity 50 KVA will be installed as backup power supply and used only during emergency power backup. Low Sulphur fuel like Light Diesel Oil (~12 Liter/hr.) will be used in D.G set.

During plant operation, facility will generate hazardous wastes such as Ash from Incineration operation, ETP sludge, Plastic waste after autoclave and shredding, Glass and metallic body implants after autoclave, Metal sharps after autoclave and shredding and waste oil. Ash and ETP sludge will be sent to approved nearest TSDF site for landfilling. Plastic Waste after Autoclave and shredding and Glass and metallic body implants after Autoclave will be sent to authorized recycler. Metal Sharps after Autoclave and Shredding will be either sent to foundry for metal recovery or TSDF site or Sharp Pit.

Total land area proposed for the facility is 4050 m^2. Tentative Plant layout is attached in **Annexure-2.** It is proposed to provide 1608.9 m^2 (39.7 % of the Total plot area) for greenbelt plantation.

Proposed Project will generate direct as well as indirect employment. During construction and operation phase it will need skilled, semi-skilled and unskilled workers which will be sourced from the local area on maximum basis based on merit. It is estimated that about 26 people will get employment opportunities during the operation phase of the plant. The total estimated cost of the project is Rs. 10 Crores.

1.1 Regulatory Compliances & Applicable Laws / Regulations

Following will be applicable laws and regulations:

TABLE 2 – APPLICABLE LAWS AND REGULATIONS

Sr. No.	Rule/Law	Applicability
1	The Petroleum Rules, 2002 and its amendments	Yes
2	The Assam Factories Rules, 1950 and its amendments	Yes
3	The Water (Prevention and Control of Pollution) Rules, 1975 and its amendments	Yes
4	The Air (Prevention and Control of Pollution) Rules, 1982 and its amendments	Yes
5	The Explosives Rules, 2008 and its amendments	Yes
6	The Environmental (Protection) Rules, 1986 and its amendments	Yes
7	The Central Motor Vehicle Rules, 1989 and its amendments	Yes
8	Manufacture, Storage and Import of Hazardous Chemicals Rules, 1989 and its amendments	Yes
9	Public Liability Insurance Rules, 1991 and its amendments	Yes
10	Chemical Accidents (Emergency Preparedness and Response) Rules, 1996 and its amendment	Yes
11	The Noise Pollution (Regulation and Control) Rules, 2000 and its amendments	Yes
12	EIA Notification, 2006 and its amendment	Yes
13	Fly Ash Notification, 2009 and its amendments	Yes
14	The National Green Tribunal (Practices and Procedure) Rules, 2011.	Yes
15	Plastic Waste Management Rule, 2016 and its amendments	Yes
16	E-waste (Management) Rules, 2016 and its amendments	Yes
17	Bio-Medical Waste Management Rules, 2016 and its amendments	Yes
18	Construction and Demolition Waste Management Rules, 2016 and its amendments	Yes
19	Hazardous and Other Waste (Management and Transboundary Movement) Rules, 2016 and its amendments	Yes
20	Solid Waste Management Rules, 2016 and its amendments	Yes

2. INTRODUCTION OF THE PROJECT

2.1 Project Proponent

M/s. Kaziranga Biotech Pvt. Ltd is now proposing to establish a new Common Bio-Medical Waste Treatment Facility at Assam District. Location of the site is Plot - 1B, Titabor Industrial Estate, Mouza - Thengal, Village - Kundorgaon, District - Jorhat, Assam. The facility will consist of Incinerators, Autoclaves, Shredders along with ETP and other utilities for ease of the operation of the plant. It is proposed to cater and treat BMW generated from different HCFs within Assam district.

2.2 Description of Project

The proposed project is to set up a new Common Bio-Medical Waste Treatment Facility (CBMWFT). Major components of the facility are provided in the table below:

TABLE 3 – PROPOSED COMPONENTS

Sr. No.	Equipment	Number	Capacity
1	Incinerator	1	250 kg/hr.
2	Autoclave	2	150 kg/batch
3	Shredder	2	125 kg/hr.
4	Sharp Pit	1	1.5 m^3
5	Effluent Treatment Plant	1	20 KLD

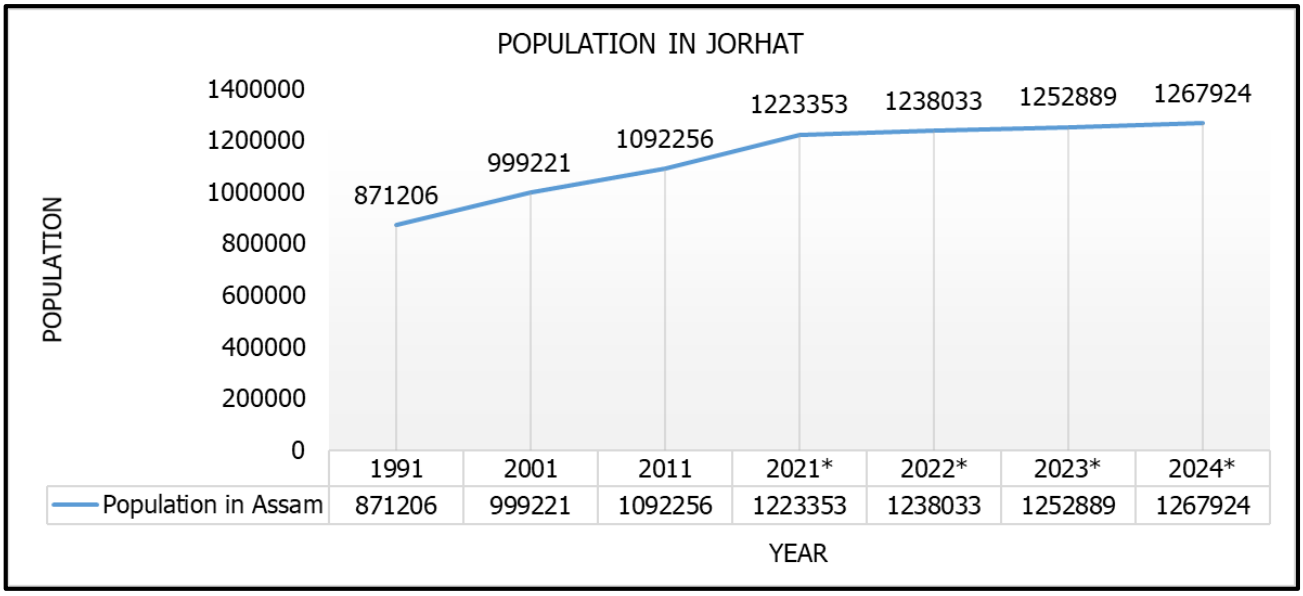
2.3 Need of Project

Jorhat is well known for its extensive tea gardens, and is the nerve centre of the tea industry. Jorhat has the world famous Tocklai Experimental Centre. In this place research work is carried out to find new varieties of tea and also the curative effects of green tea.

TABLE 4 – POPULATION DETAILS IN NAGPUR DISTRICT

Year	Population in Jorhat	% Increment	Average
1991	871206	-	12 %
2001	999221	14.69 %	
2011	1092256	9.31 %	
Average Decadal Growth is 12 % (Yearly 1.2 %)			
2021*	1223353	12 %	1.2 %
2022*	1238033	1.2 %	
2023*	1252889	1.2 %	
2024*	1267924	1.2 %	

(Source: District Handbook, Jorhat**)**
Note: *Expected population considering average decadal & Yearly growth rate.



(**Sources:** District Handbook, Jorhat)

GRAPH 1 – POPULATION IN JORHAT

Based on above details of Jorhat, there is a continuous development of the city in terms of development of new infrastructure, new health care facilities, new medical colleges along with development of industrial units.

A prediction on rate of increase of HCFs and number of beds for Jorhat district can be summarised based on authenticated details available for the entire Assam state.

TABLE 5 – INCREMENT IN HCF AND BEDS IN ASSAM STATE FROM 2018 TILL 2023

Year	Total No. of HCF	% increment in HCF	Total No. of Beds	% increment in Beds
2018	1408	-	25667	-
2023	1558	10.7%	29265	14.0
	Average	**10.7%**	**Average**	**2.8**

(**Source:** CPCB Annual Reports)

As per CPCB Annual Reports it can be observed that, there is a considerable amount in increment of beds in entire state. An average growth rate in number of beds is **observed as 2.8 %.** Since, number of beds are increasing; it directly increases the amount of generation of Bio-Medical Waste.

Considering projection for next 10-12 years and considering development in infrastructure and HCFs, it is expected to increase the waste quantum by 3 % each year. In view of 0.277 kg/bed/day, waste projection is presented as under in Table 6.

TABLE 6 – PROJECTION OF BIO-MEDICAL WASTE GENERATION DURING NEXT 12 YEARS

Year	Increment in Beds	Increment in Beds considering 3 % growth	Waste quantity in kg/bed/day	Increment in Waste considering 0.277 kg/bed/day	BMW Treated by existing Facility kg/day	Gap in kg/day
2023	3%	29265	0.277	8106	4044	4062
2024		30143		8350		4306
2025		31047		8600		4556
2026		31979		8858		4814
2027		32938		9124		5080
2028		33926		9398		5354
2029		34944		9679		5635
2030		35992		9970		5926
2031		37072		10269		6225
2032		38184		10577		6533
2033		39330		10894		6850
2034		40510		11221		7177
2035		41725		11558		7514

(**Source:** CPCB Annual Report)

Additionally, there are no other existing facility available within a 75 km radius of the proposed project site.

In addition to above matter, MoEFCC has notified the BMW rules 2016. In accordance with the rule, every occupier of the HCF shall either set up requisite Bio-Medical waste treatment facilities on site or ensure requisite treatment of BMW at the approved CBMWTF. No untreated waste shall be kept stored beyond the period of 48 hours. Most of the hospitals and HCFs do not have adequate facility to disposal BMW by their own and financially it is not possible to treat this waste by their own.

Considering the existing gap and future demand, M/s. Kaziranga Biotech Pvt. Ltd. is now proposing to establish new CBMWTF with different treatment units.

2.4 Employment Generation due to the Project

Proposed Project will generate direct as well as indirect employment. The project is expected to generate employment for around 26 people during operational phase.

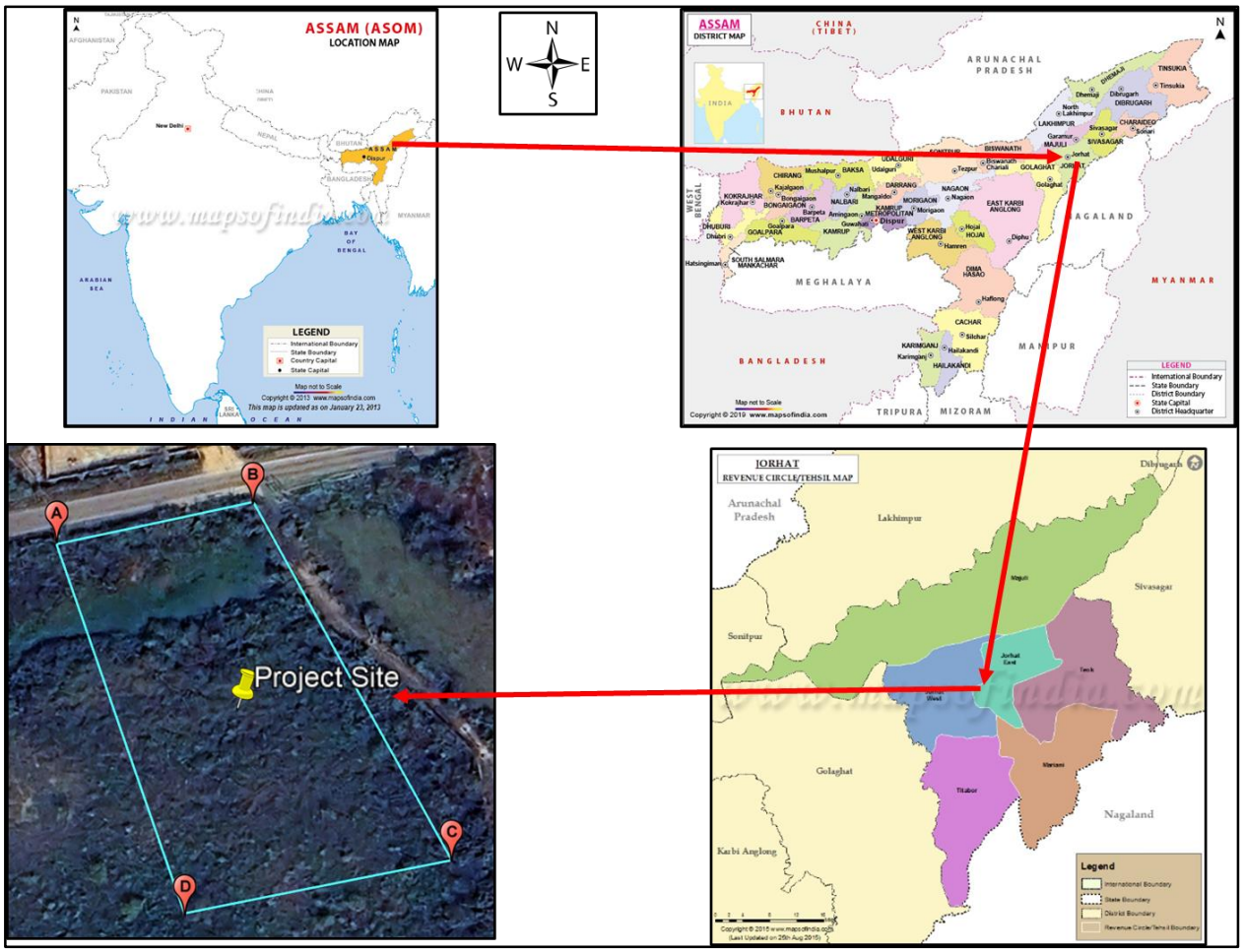
3. PROJECT DESCRIPTION

3.1 Type of Project

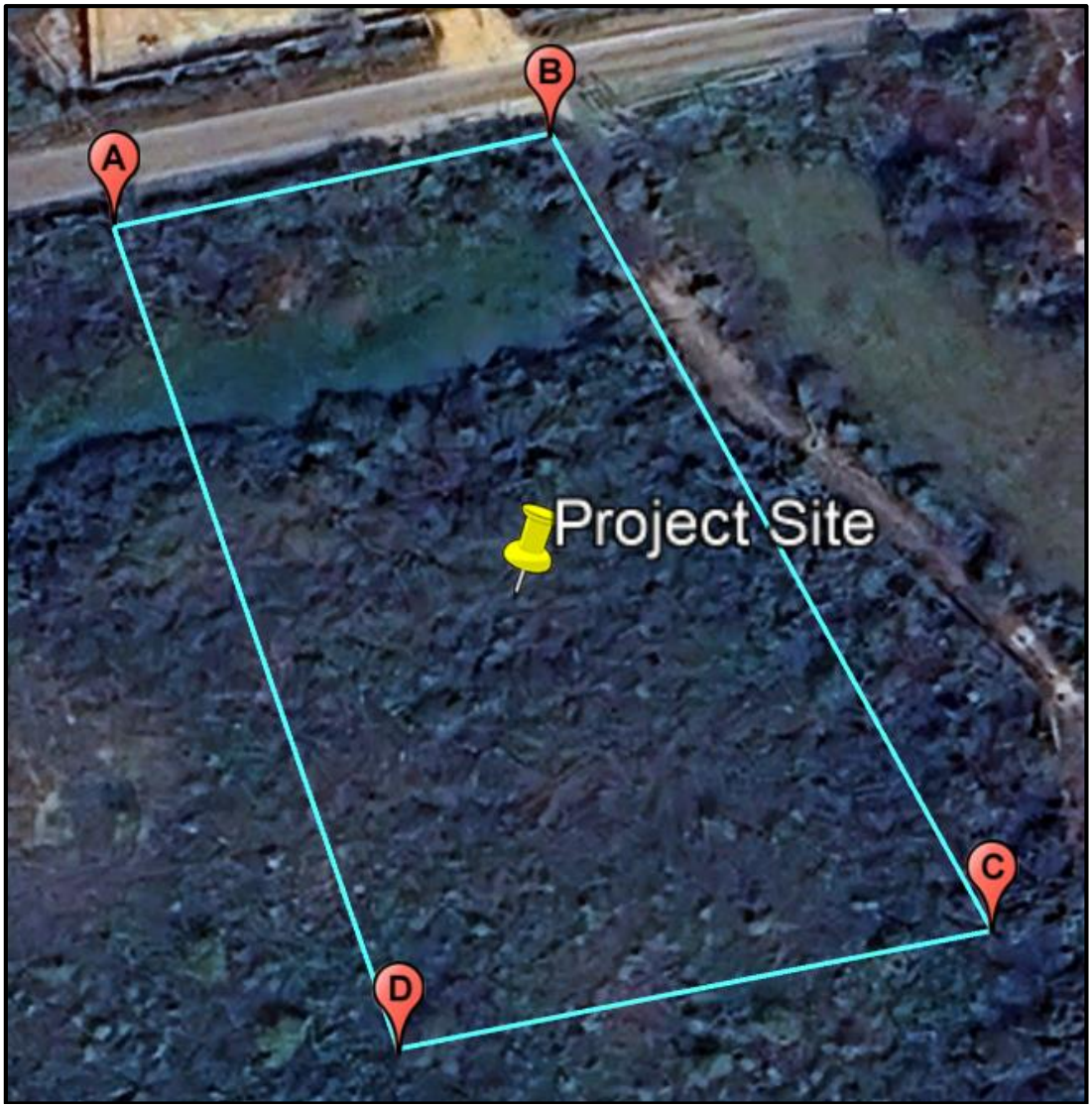
The proposed project falls under 7(da), category "B1" (as all CBMWTF projects falls under "B1" category) as per Schedule of EIA Notification dated 14th September 2006 and amendment till date.

3.2 Location of the Project

The proposed project is located at Plot - 1B, Titabor Industrial Estate, Mouza - Thengal, Village - Kundorgaon, District - Jorhat, Assam. Geographical co-ordinates of the project site are Latitude: 26°38'15.38"N Longitude: 94° 9'47.67"E.



MAP 1 – GENERAL LOCATION MAP OF PROJECT SITE



MAP 2 – EXACT SITE LOCATION OF PROPOSED PROJECT

TABLE 7 – BOUNDARIES OF PROJECT SITE

Points	Latitude	Longitude
A	26°38'16.51"N	94° 9'46.32"E
B	26°38'16.78"N	94° 9'47.79"E
C	26°38'14.35"N	94° 9'49.29"E
D	26°38'13.98"N	94° 9'47.26"E

3.3 Criteria for Site Selection

Major factors involved in the selection of site are listed below:

- The site is meeting site specific criteria for BMW as per CPCB guidelines.
- Site is in Notified Industrial Estate which is Titabor Industrial Area.
- Site is 2.32 km away from SH-32 Titabor.
- Site is 160 m away from the nearest habitation Atapam Gaon Village.
- Site is 6.46 km away from Kakodonga River.

3.4 Size/Magnitude of Operation

TABLE 8 – LIST OF TREATMENT UNITS WITH CAPACITY

Sr. No.	Equipment	Number	Capacity
1	Incinerator	1	250 kg/hr.
2	Autoclave	2	150 kg/batch
3	Shredder	2	125 kg/hr.
4	Sharp Pit	1	1.5 m^3
5	Effluent Treatment Plant	1	20 KLD

3.5 Process Details / Project Components

Bio-Medical wastes are defined as wastes "generated during diagnosis, treatment or immunisation of human beings or animals or research activities pertaining thereto or in the production or testing of biological or in health camps, including the categories mentioned in the Schedule I of Bio-Medical Waste Management Rules, 2016".

3.5.1 Waste classification

Wastes generated by the hospitals can primarily be classified into 3 groups:

I. Conventional waste / Municipal solid waste
II. Hazardous waste
III. Bio-Medical waste

Bio-Medical waste commonly referred to as Clinical and pathological Wastes and includes: isolation wastes (refuse associated with infectious patients), cultures and stocks of infectious agents and associated biological, human blood and blood products, pathological wastes, contaminated sharps, amputated body parts, placenta and others.

The Bio-Medical waste management rules 2016 provides schedule of wastes, their colour coding, storage, treatment and disposal practice which is described in below section.

3.5.2 Collection and Transportation

I. Collection:

The waste is segregated and collected as per the provisions of the Bio-Medical Waste (Management & Handling) Rules, 2016. Temporary storage at healthcare unit is designated and the colored bags handed over by the healthcare units are collected in similar colored containers with cover.

The colored containers are labeled as per Schedule IV of the BMW rules. Sharps are collected in puncture proof, leak proof and tamper proof containers.

The person responsible for collection of Bio-Medical wastes is also carry a register with him to maintain the records such as name of the healthcare unit, the type and quantity of waste received, signature of the authorized person from the healthcare unit, day and time of collection etc. The color coding for Bio-Medical waste and Segregation of Bio-Medical waste is presented in below table.

TABLE 9 – COLOR CODING AND SEGREGATION OF WASTE

Sr. No.	Category	Type of waste		Collection Method
1	Yellow	a	Human Anatomical Waste	Yellow colored non-chlorinated plastic bags
		b	Animal Anatomical Waste	
		c	Soiled Waste	
		d	Expired Discarded Medicines	
		e	Chemical Waste	
		f	Chemical Liquid Waste	
		g	Discarded linen mattresses, Bedding contaminated with blood or body fluid	
		h	Microbiology, Biotechnology and other clinical laboratory waste.	
2	Red	Contaminated waste (Recyclable)		Red colored non-chlorinated plastic bags
3	White (translucent)	Waste sharps		Puncture proof, leak proof, temper proof containers.
4	Blue	a	Glass wares	Card board boxes with blue colored marking.
		b	Metallic body implants	

- **Bar Code Labelling**

There are two types of bar code labelling:

1. Bar code or QR code label is pre-printed directly on the designated colour coded bags /containers, which may be procured by HCF through the Operator of a CBMWTF or through any vendor, fulfilling the specifications stipulated under CPCB guidelines; or

2. Bar code or QR code labels are pasted on the designated colour coded bags/ containers, which can be procured by the HCF either through the Operator of a CBMWTF or through Vendor.

The charges for bar code labels or pre-printed bar-coded label or QR code label are levied by the Operator of a CBMWTF or a Vendor as per the prevailing rates to the Occupier or as per the agreement between the Occupier and Operator of CBMWTF/Vendor. Vendors are consult the CBMWTF and the Software Provider so as to ensure compatibility with software system being adopted by Operator of CBMWTF.

Specifications of Bar-code or QR Code label:

The Bar code label for use on the colour coded bags or containers for handling Bio-Medical waste have following specifications.

Colour mark on the label: A colour mark or text is required on bar code label for easy identification of the bar code (by the workers handling Bio-Medical waste) with designated colour coded bag or container. The bar code has a colour mark (in Yellow/Red/White/Blue) in the form of block of size at least 7 mm X 7 mm or Text of font size 12 specifying the colour of the BMW in the bags or containers. The colour mark or Text is placed at the top left corner of the bar code label.

OR OR OR OR C

In case of cytotoxic drugs, the alphabet 'C' is printed on yellow colour block. In case of B/W label, colour mark can be specified in the form of 'Text' specifying the colour of BMW waste as "YELLOW" / "RED" / "WHITE" / "BLUE" printed on top left side of the bar code label.

YELLOW OR RED OR WHITE OR BLUE OR YELLOW C

Unique Number of the HCF and its specification: Unique number to each HCF has developed and provided by concerned SPCB/PCC/DGAFMS. Unique number can be produced based on following criteria: -

i. Name of the Health Care Facility (HCF): The name of the HCF is indicated by first five alphabets in the name of the by the HCF. In case the name of HCF is less than 5 letters, the rest of spaces may be filled with *. (E.g., All India Institute of Medical Sciences-ALLIN). Followed by;

ii. Name of the Place where HCF is located: Name of the place where HCF is located which is indicated by 6 digits local Pin code provided by Postal department. Followed by;

iii. Name of the State/UT: Name of the State/UT is in the form of two digits' alphabetical number (as given at Annexure-I). Followed by;

iv. Type of HCF: Type of HCF is in the form of alphabetical number in capital but not more than two letter i.e., first two letters of a type of HCF/first letter in two words of an HCF) as given below:

BH - **B**edded **H**ospital
CL - **C**linic
DI - **D**ispensary
HO - **H**omeopathy
MH - **M**obile **H**ospital
SI - **S**iddha
UN - **U**nani
VH - **V**eterinary Hospital
YO - **Y**oga
AH - **A**nimal **H**ouse
BB - **B**lood **B**ank,
DH - **D**ental **H**ospital
NH - **N**ursing **H**ome,
PL - **P**athological **L**aboratory
FA - **I**nstitutions/Schools/Companies etc. with First Aid facilities
HC - **H**ealth **C**amp

and followed by;

Numerical Number of the HCF: Numerical number of the health care facility shall not be more than five numerical numbers to be assigned to the HCF in between i.e., 00001 to 99999.

Concerned SPCB/PCC upload a list of HCFs along with their unique number of HCF at their website. In case of long list, SPCBs may provide search option on their website for retrieving unique code vis-à-vis name of HCF.

Label sequence Number: CBMWTFs are using central software to generate unique label sequential

number. The operator of CBMWTF provides range of such sequence numbers to label vendors to produce labels or produce labels by themselves. The records of label sequence numbers and to whom allotted is maintained for verification of SPCBs/PCCs.

Specifications for the bar code label: In addition to the specification of Bar code, the bar code label has following specifications as detailed below:

i. The bar code label should be pasted only at the centre or close to centre of the colour coded bag or container prescribed under the BMWM Rules, 2016 and further amendments made thereof.
ii. Size of bar code label should be such that it should be able to accommodate desired information specified in this section.
iii. The bar code / QR code should be black in colour and its back ground should be white colour and it should be clearly legible on the label.
iv. The bar code label should be tamper proof, water proof and its colour should not be faded in due course of at least for 48 hours after its use.
v. The bar code label should be able to resist the prevailing atmospheric temperatures and should not fade its colour till its end of life.
vi. Bar code labels should not have any traces of heavy metals or any other objectionable chemical constituent.
vii. All bar code labels should be of good quality preferably a very chromo paper label having specifications prescribed under these guidelines.
viii. The adhesive used for bar code label should be pressure sensitive, tear resistance and should be of acrylic based adhesive and after use of labels on the colour coded bag (s) or container (s), the label should not peel off on its own or by normal abrasion during handling.

II. Transport:

The Bio-Medical waste collected in colored containers are transported to the new facility in a fully covered dedicated vehicle only. It will be ensured that the total time taken from generation of Bio-Medical waste to its treatment, including collection, transportation and treatment will not exceed 48 hours. Vehicles used for collection of Bio-Medical Waste from member units are registered with state pollution control board. The vehicles are provided with;

- Separate cabins for driver/staff and the Bio-Medical waste containers.
- The base of the waste cabin is leak proof to avoid pilferage of liquid during transportation.
- The waste cabin is well designed that it is easy to wash and disinfect.
- The vehicle is labeled with the Bio-Medical waste symbol (as per the Schedule III of the rules) and is display the name, address and telephone number of the CBMWTF.
- Each vehicle is provided with GPS system for tracking and recording of vehicle movement centrally from facility.

III. Disinfection & Destruction:

Upon receipt at the facility, wastes containers are unloaded. Wastes based on their color codes are separated and properly treated and disposed off. Category – Yellow (as per Bio-Medical Waste (Management & Handling) Rules, 2016) is directly loaded into the incinerator while categories Red and White are loaded into the autoclave and category Blue is subjected for dis-infection. Residue from these units is disposed into a landfill. Detailed process description of the treatment technologies is presented in the subsequent sections.

3.5.3 Storage, Treatment and Disposal

A. Storage:

Storage of Bio-Medical waste shall be provided to unload and store all Bio-Medical wastes that have been transported to the facility by vehicle. Separate area will be provided for collection, weighing and segregation. The unloading area will be made impermeable with a garland drain connected to ETP, to carry liquid spillages during unloading. The liquid generated during handling of waste and washing, will be diverted to the inlet of ETP. The storage room will have provisions such as well ventilation, easy to wash floors and walls, smooth and fine surfaces etc. A schematic diagram of Bio-Medical waste treatment is presented in below figure.

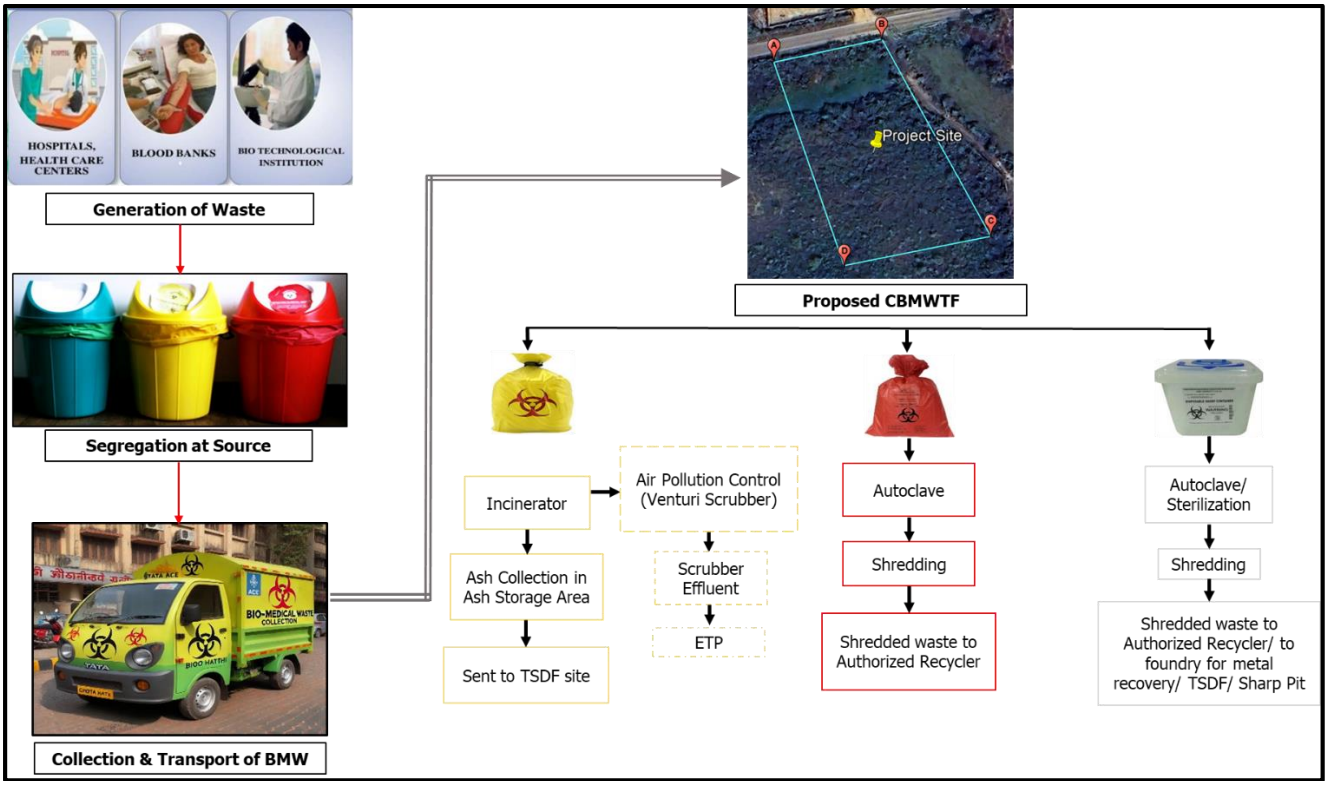


FIGURE 1 – SCHEMATIC DIAGRAM OF BIO-MEDICAL WASTE TREATMENT

B. Treatment

The primary methods of treatment and disposal of medical waste are:

1. Incineration
2. Autoclaving
3. Shredding

Medical waste incineration involves the burning of wastes produced by hospitals, veterinary facilities, and medical research facilities. These wastes include both infectious ("red bag") medical wastes as well as non-infectious, general housekeeping wastes.

The waste, which requires incineration, is stored in yellow non-chlorinated HDPE bags in storage area. The incinerator is selected considering the following operating parameters;

- Combustion efficiency will be minimum 99 %.
- Primary Combustion chamber shall be maintained at minimum of 800°C (± 50°C) and secondary combustion chamber shall be maintained at minimum of 1050°C (± 50°C) in secondary chamber.
- Flue gas residence time in secondary chamber shall be minimum of 2 sec.
- TOC content of Ash collected at bottom of furnace shall be less than 3% or their loss on ignition shall be less than 5% on dry weight basis.
- For online monitoring of flue gas emissions online monitoring system (CEMS) system shall be provided as per CPCB guideline.
- In general incineration system shall be provided as per CPCB guideline.

    - Notification of compliance: The operator of the incinerator shall undertake comprehensive performance test. Within 90 days of completion of comprehensive performance test, the operator shall issue a notification of compliance documenting compliance or non-compliance, as the case may be, for public information / notice.

Process Description of Incineration System:

The waste generally passes through the incinerator on a belt into the Primary Chamber through the charging door. The primary chamber is lined with refractory and insulation bricks of IS - 2042 standards. The air required for volatilization is supplied through an air duct and introduced through equally placed nozzles. Airflow is controlled with the help of air dampers provided. The primary chamber is fitted with a fuel oil burner, which has necessary instrumentations to function automatically. A forced draft fan is used to provide for combustion/volatilization air. This fan also supplies air required for the dilution of flue gases before Venturi scrubber. The combustion air is controlled to have minimum turbulence, restricting fly ash. The fly ash collected in Primary Chamber is removed from the dashing door. Inside primary chamber a min. of 800 % ± 50 % temperatures is maintained.

The volatiles/gases emitted from the primary chamber pass through the neck of the secondary chamber, which is also lined with refractory and insulation bricks. The secondary chamber will be designed to ensure the flue gas residence time of min. two seconds is provided. The secondary chamber will operate at a temperature of 1050 % ± 50 %. The gases will be completely burnt and safe gases then shall be let out of the incinerator unit.

The volatile matter has a low flash point and hence gets liberated in the primary combustion chamber. This is later burnt in the secondary chamber at a high temperature and in the presence of excess air in the secondary chamber. Fixed carbons are the non-volatile portion of the waste and are completely incinerated in primary chamber only. The moisture present in the waste is evaporated in the primary chamber and passes through the secondary chamber and gets releases as superheated water vapour. Sterilized ash and non-combustible material remain in the primary chamber. To prevent them from flying out along with gases, non-turbulent conditions are maintained in the primary chamber. Depending upon the type of waste destroyed in the incinerator the sterile ash content ranges between 5-10 %.

The flue gases then pass through the downstream air pollution control system, consisting of gas quencher, high pressure drop Venturi Scrubber for removal of particulate matter and partially acidic gases by absorption with caustic solution and removal of balance acidic gases in packed bed scrubber. A provision of Activated Carbon Adsorption system is given to adsorb organic constituents if present in the incineration flue gas. These components will get adsorb in on Activated Carbon surface. Then gases are let out through an I.D. fan followed by 30 m height stack.

Air Pollution Control Section

Three stage flue gas cleaning system is provided to meet the final emission limit.

Stage 1: Gas Quencher with High Pressure Drop Variable Throat Venturi Scrubber for Particle Capture
Stage 2: Counter Current Packed Bed Scrubber for Capturing HCl gases in Caustic Solution
Stage 3: Activated Carbon Adsorption Column for capturing any skipped VOCs / Organics.

1. Gas Quencher with Variable Throat Venturi Scrubber

Hot flue gas from secondary combustion chamber at 1100 °C is taken at the inlet of variable throat Venturi scrubber. Here incineration flue gas at high velocity contacted with circulating scrubber liquor in Venturi throat to effect intense contact between liquid and gas. High velocity contact in Venturi throat results in high efficiency particulate matter removal in Venturi scrubber. Pressure Drop across Venturi throat is maintained all the time at 450 mmwc using variable throat arrangement to ensure that desired particulate matter removal efficiency of 98-98.5% is attained in Venturi scrubber. At Venturi scrubber incineration flue gas is cooled down to saturation temperature.

Outlet circulating liquor from Venturi scrubber is first taken to circulation tank provided with particle settlement compartment for separation of captured particles under gravity. Overflow from settling compartment is taken at the inlet of scrubber circulation tank. Separate Venturi scrubber circulation pump shall be provided for circulating scrubber liquor through Venturi scrubber.

2. Alkali Scrubber

Venturi Scrubber incinerator gas is taken at the inlet of alkali scrubber. Here alkali scrubber is provided with packing where incoming gases from Venturi scrubber is contacted under counter current mode with the alkaline scrubber liquor for scrubbing of balance HCl present in flue gas.

Scrubber liquor circulation system consists of scrubber liquor circulation tank, scrubber liquor circulation pump. In order to ensure efficiency of scrubbing of HCl gas, free alkalinity in form of free NaOH is always maintainedin scrubber liquor. This is controlled by measuring online pH of scrubber liquor and auto make of NaOH solution in the scrubber liquor tank.

Part of scrubber liquor is required to bleed off on continuous basis which is sent to effluent treatment plant. Treated wastewater from effluent treatment plant is used for makeup in scrubber liquor and gas quencher feed tank.

3. Activated Carbon Adsorption

Proposed incineration is designed for operating at 800 +°C in rotary incinerator and 1100 +°C in post combustion chamber with min 2.5 sec retention time for flue gas and at this operatingcondition it will ensure complete destruction of organic component present in Bio-Medical waste.However, in any rarest circumstances' carryover of traces of unburnt organic possibility cannot be denied. There may be rare possibility of reformation of dioxin and furans in air pollution control system. In order to remove such rare possible hydrocarbons and dioxin and furan content from flue gas Activated Carbon Adsorption treatment is incorporated after Alkaliscrubber. Gases after alkali scrubber will be passed through Activated Carbon Column to adsorb organic constituents if present in the incineration flue gas. These components will get adsorb in on Activated Carbon surface.

4. ID Fan

A centrifugal fan is provided to maintain negative draft in the system and to overcome pressure drop in the entire system. Negative pressure in rotary kiln is controlled automatically by controlling speed of the fan through inverter drive.

5. Stack

Rubber lined stack shall be used after the scrubber system with flue gas sampling port, platform, ladder with safety ring.

6. Emergency Stack

The emergency stack is located on top of the Secondary chamber is provided to vent of gas in case of power failure or over pressure of system due to failure of ID Fan or due to sudden explosion of waste in furnace. Emergency valve is provided perform this task. Emergency valve get signal from pressure transmitter in Primary and Secondary Combustion Chamber.

7. Emergency Overhead Tank

Though emergency stack vents the gas to atmosphere during power failure, additional safety system consisting of overhead tank is provided to quench the residual flue gas present in the quencher. This can cause damage to downstream equipment because of overheating. In order to protect the same, water from emergency overhead tank floods the quencher allowing cooling of flue gas.

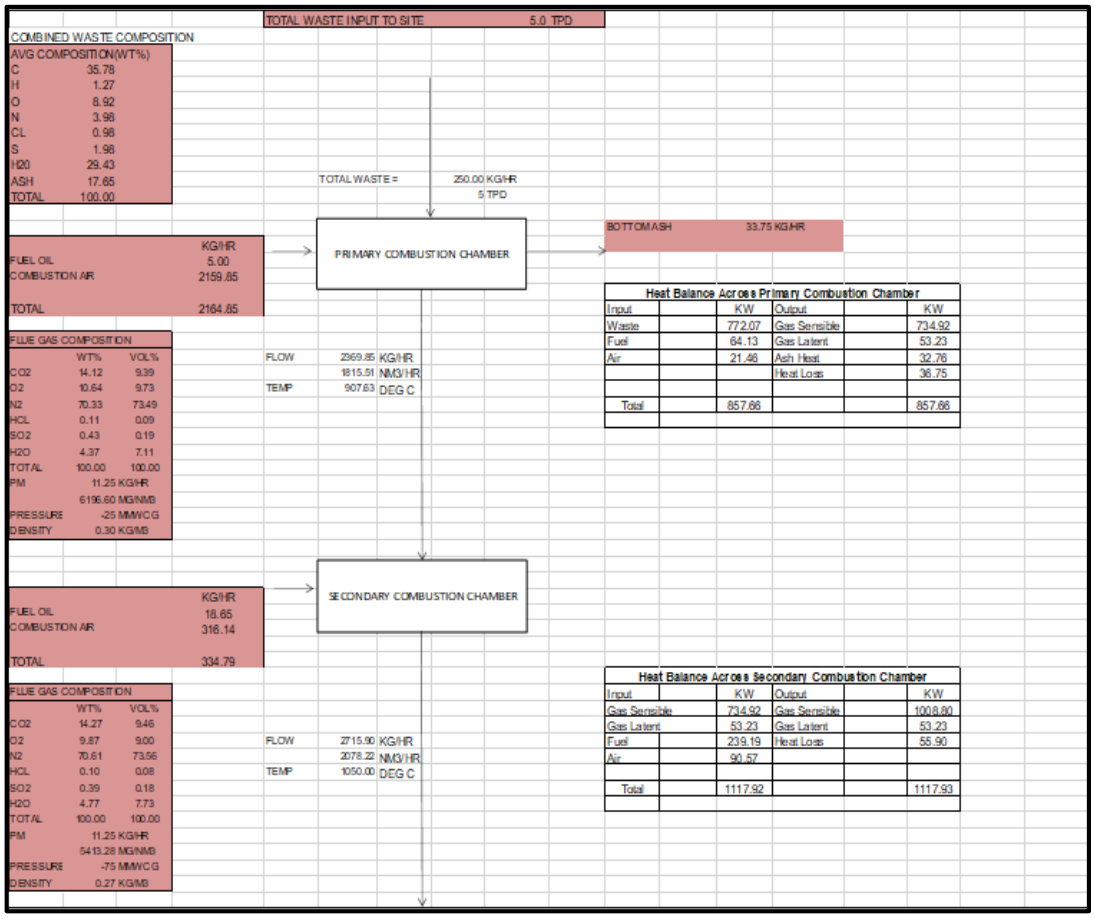
Technical Specifications of Incinerator is presented in below table.

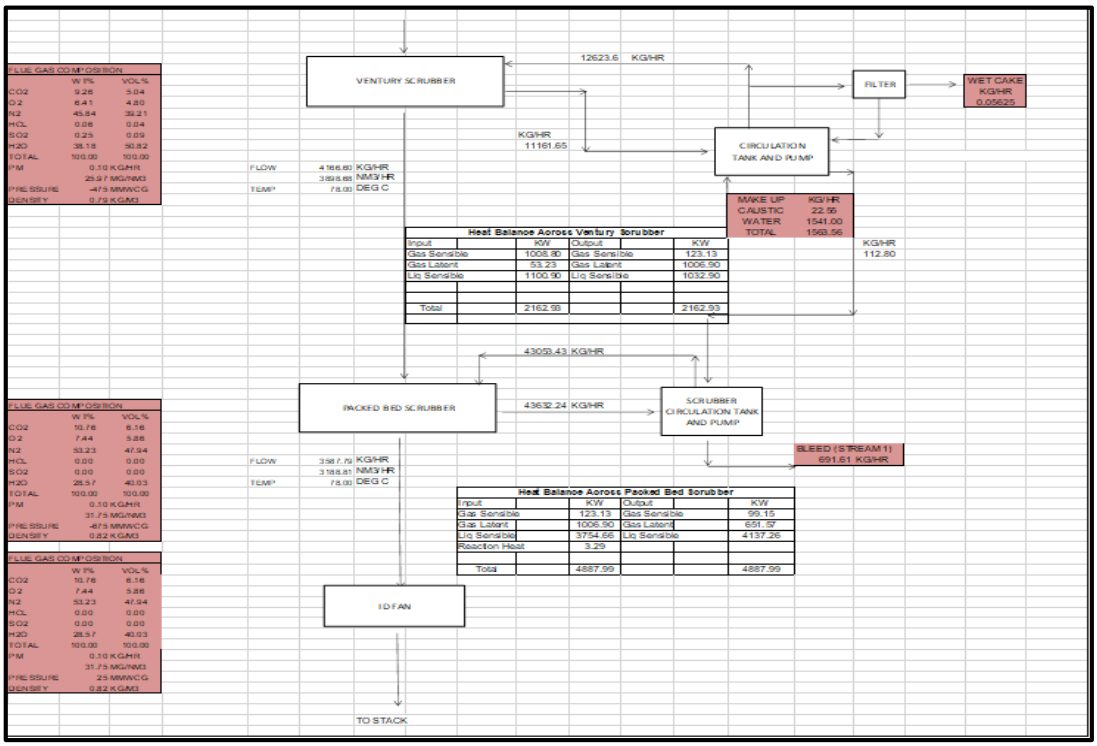
TABLE 10 – TECHNICAL SPECIFICATIONS OF INCINERATOR

Incinerator		
1	Type of Incinerator	"ALFA-THERM" or Equivalent controlled air LDO Fired Incinerator Model BMW-250
2	Type of Waste	Bio-Medical Waste
3	Burning Capacity	250 kg/hr. x 1 Nos.
4	Auxiliary Fuel	LDO
5	Type of Burner Operation	Monoblock / Split type fully automatic burners
6	Temperature ➢ Primary Chamber ➢ Secondary Chamber	 800 ± 50°C 1050 ± 50°C
Primary Chamber		
1	Type	Static Solid Hearth
2	Material of Construction	Mild Steel, 12-16 mm thick
3	Refractory thickness	300 mm thick
4	Temperature resistance	1400°C
5	Insulation thickness	115 mm thick
6	Material	Insulation bricks confirming to IS-2042
7	Waste Charging	Automatic through Hydraulic Ram Pusher.
8	Ash Removal	Manual
Secondary Chamber		
1	Type	Static Furnace connected to primary furnace

2	Material of Construction	Mild Steel, 10 mm thick
3	Refractory thickness	115 mm Thick insulation brick and 115 mm x 2 layer of fire brick.
4	Material	Refractory bricks confirming to IS-8
5	Temperature resistance	1200 °C
6	Insulation thickness	115 mm
7	Material	Insulation bricks confirming to IS-2042
8	Residence time for flue gases	2 seconds
Venturi Scrubber		
1	Type	High Pressure Drop Type
2	Material of Thickness	Stainless Steel 316L, 5mm thick
3	Refractory Thickness	115 mm thick
4	Material	Refractory bricks confirming to IS-8
5	Temperature resistance	78-80 °C
6	Scrubbing Media	Water with 5% Caustic
Packed Bed Scrubber		
1	MOC	Mild Steel rubber lined
2	Water re-circulation pump with motor	Provided
3	Interconnecting piping	PPR
4	Packing media	Intalox Saddles/Pall rings
5	Interconnecting ducting	Mild Steel Rubber lined
6	Scrubbing Media	Water
I.D. Fan		
1	Type	High Pressure Centrifugal type
2	MOC	Stainless Steel Impeller and Mild Steel Rubber lined casing
3	Drive	Belt Driven
Combustion Fan		
1	Type	Centrifugal
2	Modulation	Manual damper control
3	MOC	Mild Steel / SS316
4	Drive	Direct drive
Burners		
1	No. of burners	As per standard design of incinerator
2	Type	Monoblock fully automatic
3	Fuel	LDO
4	Make	"Alfa-Therm" or Equivalent
Height of chimney 30 m		
1	MOC	Mild Steel
2	Type	Self-supporting
3	Height	30 m from ground level
4	Other Standard Accessories	Aviation lamp, lightening arrestor, stack drain, inspection platform, sampling port
5	Paint	The chimney is painted externally with two coats of heat resistant aluminum paint
6	Ladder	To be provided

Mass Balance of Incineration system is provided as under





Autoclave:

The primary purpose of autoclave is to sterilize / disinfect the waste with steam. Microorganisms which contribute to infection do not survive beyond 80 °C. However, as a precaution Bio-Medical Waste (Management & Handling) Rules, 2016 has stipulated a temperature of 121 °C with 15 psi pressure and 60 min. duration to ensure distribution of temperature. At this temperature and pressure, microorganisms are completely destroyed and thus render the wastes infection free. The disinfected waste shall then be segregated into HDPE, PP, rubber, latex, glass and metal. The segregated materials shall then be shredded completing the process of disinfection and ensuring non-recycling of the waste materials for medical / food grade purposes. All the process control conditions will be as per the applicable Bio-Medical rules. It is proposed to install Horizontal rectangular autoclave, single hinge door Autoclave. Technical Specifications of Autoclave is presented in below table.

TABLE 11 – TECHNICAL SPECIFICATIONS OF AUTOCLAVE

1	Model	Single Hinge Door, Automatic Standard model Vacuum Pump with Condenser, Pressure transmitter along with SS Carriage & Trolley
2	Capacity	150 kg/batch x 2 Nos. 4800 kg/day 200 kg/hr.
3	Size	630 x 630 x 1250 mm each
Working parameter		
1	Chamber Working Pressure	1.06 kg/cm^2.
2	Jacket Working Pressure	1.5 kg/cm^2.
3	Chamber Working Temperature	121^{O}C.
Hydro Test		
1	Chamber	One & half time the working Pressure
2	Jacket	Twice the Working Pressure
3	Chamber and Back plate	The Sterilizing Chamber is fabricated from S.S.304 Quality with full argon welding.
4	Jacket	The jacket is fabricated from M.S Quality
5	Insulation	Resin Bonded Rock wool insulation of 50mm thickness
6	Sensor	PT 100 sensors are used for PLC and manual control
7	Manual Backup	The Control System is provided with a manual backup in case of PLC Failure. Here all Valves, Pumps, etc. can be operated with individual Switches

Shredding:

Medical waste that is subjected to an autoclave is often also subjected to a compaction process, such as shredding, after treatment so that it is no longer recognizable and cannot be re-used for other purposes. The compaction process reduces the volume of the treated waste significantly. After treatment and compaction, the treated waste is combined with general waste and disposed to landfill. Waste that is treated using an autoclave is still recognizable after treatment, and therefore must be shredded after treatment to allow for disposal with general waste. Shredder is equipped with hopper of adequate size to accept the material to be shredded. The hopper is also provided with a lid, which can be locked during operation. The hopper is well designed to take care of volume and weight of the material. The hopper directs the materials to the cutting chamber. The shredded waste is then packed in a black-coloured HDPE bags. Technical Specifications of shredder is presented in below table.

TABLE 12 – TECHNICAL SPECIFICATIONS OF SHREDDER

1	Nos.	2
2	Capacity	125 kg/hr.
3	Blades	Combined Hook/Shear Blades
4	Safety Features	a. Auto Reverse System b. Interlocks to avoid aerosolizing. c. Low Noise, Non-Ballistic. d. Auto Shut Off.

3.5.4 Environment Management and Pollution Control

Due to proposed project various sources of air pollution are identified during operation phase.

Identified sources of gaseous emissions are as follows:

During operational phase, gaseous emissions shall occur from operation of incinerator and stand by DG set. Likely major air pollutants from incineration system for the project is PM, HCl and NO_X from stacks attached to incinerator and PM, SOx and NOx from DG set stack.

1 Nos. of Incinerators having capacity of 250 kg/hr. with APC System Consisting of Gas quencher, High Pressure Drop Venturi scrubber, Packed bed scrubber and activated carbon column followed by ID Fan and stack of 30 m height will be provided as per APCB norms. DG set having capacity of 50 KVA with adequate stack height of 5 m will be provided.

Details of the proposed stacks, fuel to be used and quantity of fuel used, process emissions air pollution control measures (APCM) and expected pollutants are tabulated in below table.

TABLE 13 – AIR POLLUTION CONTROL MEASURES

Sr. No.	Stack Attached to	Stack Height and Diameter	Fuel Consumption	Air pollution control system
1	Incinerator: 250 kg/hr. x 1 nos.	Stack Height: 30 m Dia: 400 mm	LDO (25 liters/hr.)	APC System Consisting of Gas quencher, High Pressure Drop Venturi scrubber, Packed bed scrubber and activated carbon column followed by ID Fan and stack with height of 30 m
2	DG set (50 KVA x 1 nos.)	Height: 5 m Dia: 100 mm	LDO (12 lit/hr.)	Adequate Stack with 5 m height

TABLE 14 – EMISSION STANDARDS

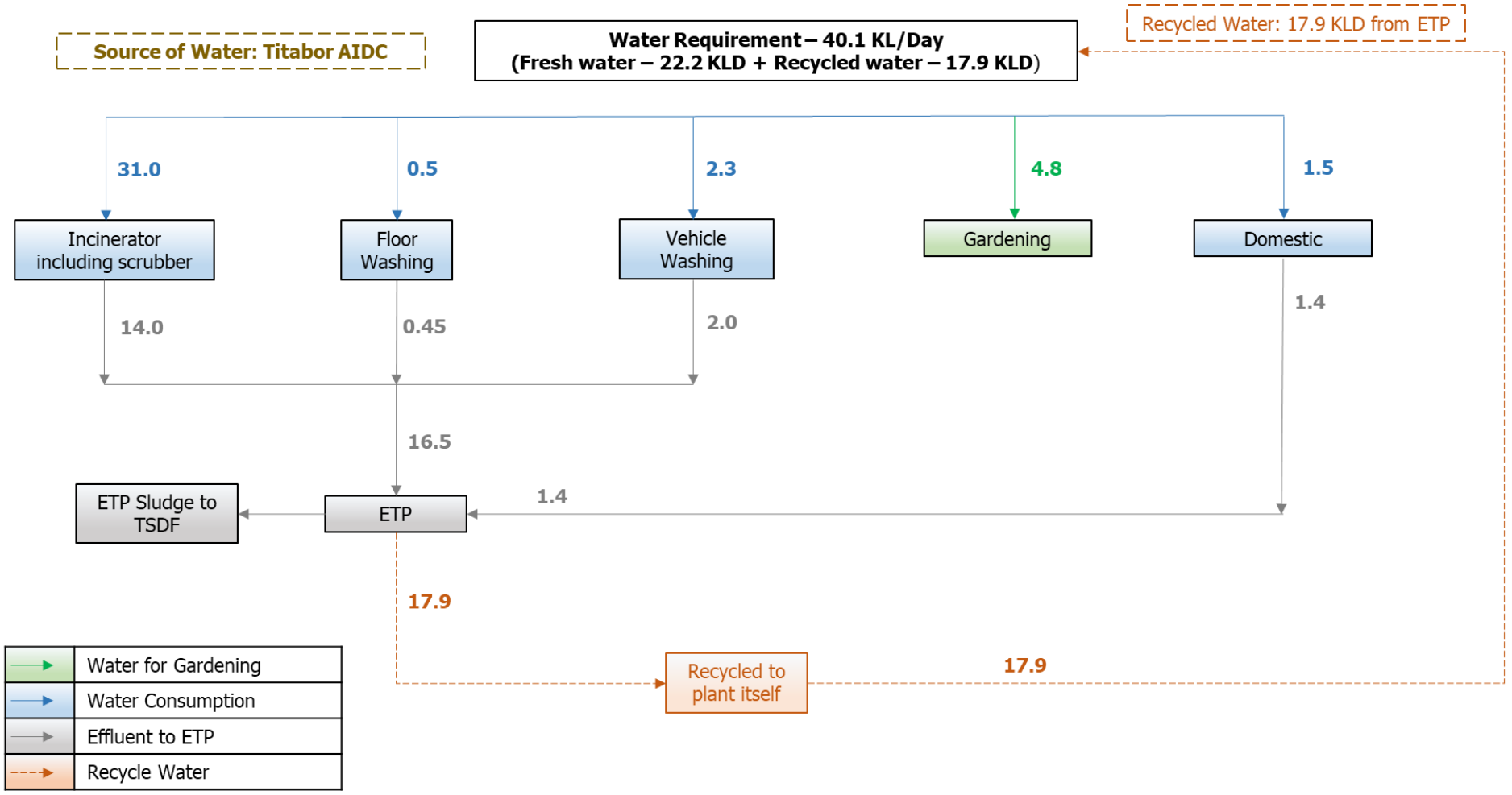
Sr. No.	Parameter	Standards	
		Limiting concentration in mg/Nm^3 unless stated	Sampling Duration in minutes, unless stated
1	Particulate matter	50	30 or 1 Nm^3 of sample volume, whichever is more.
2	Nitrogen Oxides NO and NO_2 expressed as NO_2	400	30 for online sampling or grab sample
3	HCl	50	30 or 1 Nm^3 of sample volume, whichever is more.
4	Total Dioxins and Furans	0.1 ng TEQ/ Nm^3 (at 11% O_2)	8 hours or 5 Nm^3 of sample volume, whichever is more.
5	Hg and its compounds	0.05	2 hours or 1 Nm^3 of sample volume, whichever is more.

(**Reference:** Common BMW Treatment and Disposal Guideline)

3.5.5 Water Consumption and Wastewater Generation

TABLE 15 – DETAILS OF WATER CONSUMPTION AND GENERATION

Sr. No.	Description	Water Consumption (KLD)	Wastewater Generation (KLD)
1	**Domestic**	**1.5**	**1.4**
2	**Gardening**	**4.8**	**0.0**
3	**Industrial**	**33.8**	**16.5**
a	Floor Washing	0.5	0.45
b	Vehicle Washing	2.3	2.0
c	Incinerator including Scrubber	31.0	14.0
	Grand Total	**40.1**	**17.9**



Note: All the Figures are in KLD

FIGURE 2 – PROPOSED WATER BALANCE DIAGRAM

PROPOSED ETP DETAILS & DIAGRAM

Description of Effluent Treatment Plant

The wastewater from the facility is expected to consist of mainly suspended particles collected from air pollution control system and traces of organic matters contaminated due to vehicle and floor washing. In order to treat effluent generated from facility, primary, secondary and tertiary treatment plant is provided.

Effluent generated from the facility is collected in an underground effluent collection tank cum equalization tank. From here effluent is pumped to primary treatment plant consisting of Oil and Grease Trap, Flash Mixer, Flocculation Channel and Primary Settling Tank.

In oil and grease trap is a baffle wall channel where free-floating oil is separated from top. Waste water from oil and grease trap is taken to flash mixer where it is dosed with PAC for flocculation of suspended solids. From flash mixer effluent is taken at the inlet of flocculator where it is dosed with Polyelectrolyte for coagulation and for making large flocs. Flocculator is a baffle wall channel for allowing gentle mixing of waste water stream. From flocculator effluent is taken at the inlet of Primary Settling Tank. Here precipitated solids are settled under gravity. Supernatant from primary settling tank is taken at the inlet of Secondary Treatment Plant consisting of Aeration Tank.

In Aeration Tank, soluble biodegradable component of effluent subjected to biological treatment in presence of Biomass, Nutrient and Oxygen. Air required is supplied through Air Blower and Nutrient required for process is dosed in form of DAP/Urea in Aeration Tank. Mixed liquor from Aeration Tank is taken at the inlet of secondary settling tank. Here suspended biomass is settled at bottom of secondary settling tank and recycled back to aeration tank through sludge recirculation pump. Excess biomass generated is wasted as side stream of the sludge recirculation line on periodic basis. Overflow and supernatant from the secondary settling tank is taken for tertiary treatment.

Tertiary treatment consists of pressure sand filter and activated carbon filter. In pressure sand filter carried over suspended solids are filtered in Multigraded Sand Filter. Traces of organic impurities are adsorbed in Activated Carbon Filter as polishing treatment. Treated waste water from activated carbon is further dosed with 0.5-1 ppm Sodium Hypochlorite solution for disinfection of waste water before it is reused.

Sludge slurry generated from primary settling tank and biological treatment is collected on sludge drying bed. Leachate from sludge drying bed is taken back to equalization tank. Dried sludge will be collected from sludge drying bed on periodic basis, packed in HDPE bags and stored in sludge storage area for disposal to TSDF site.

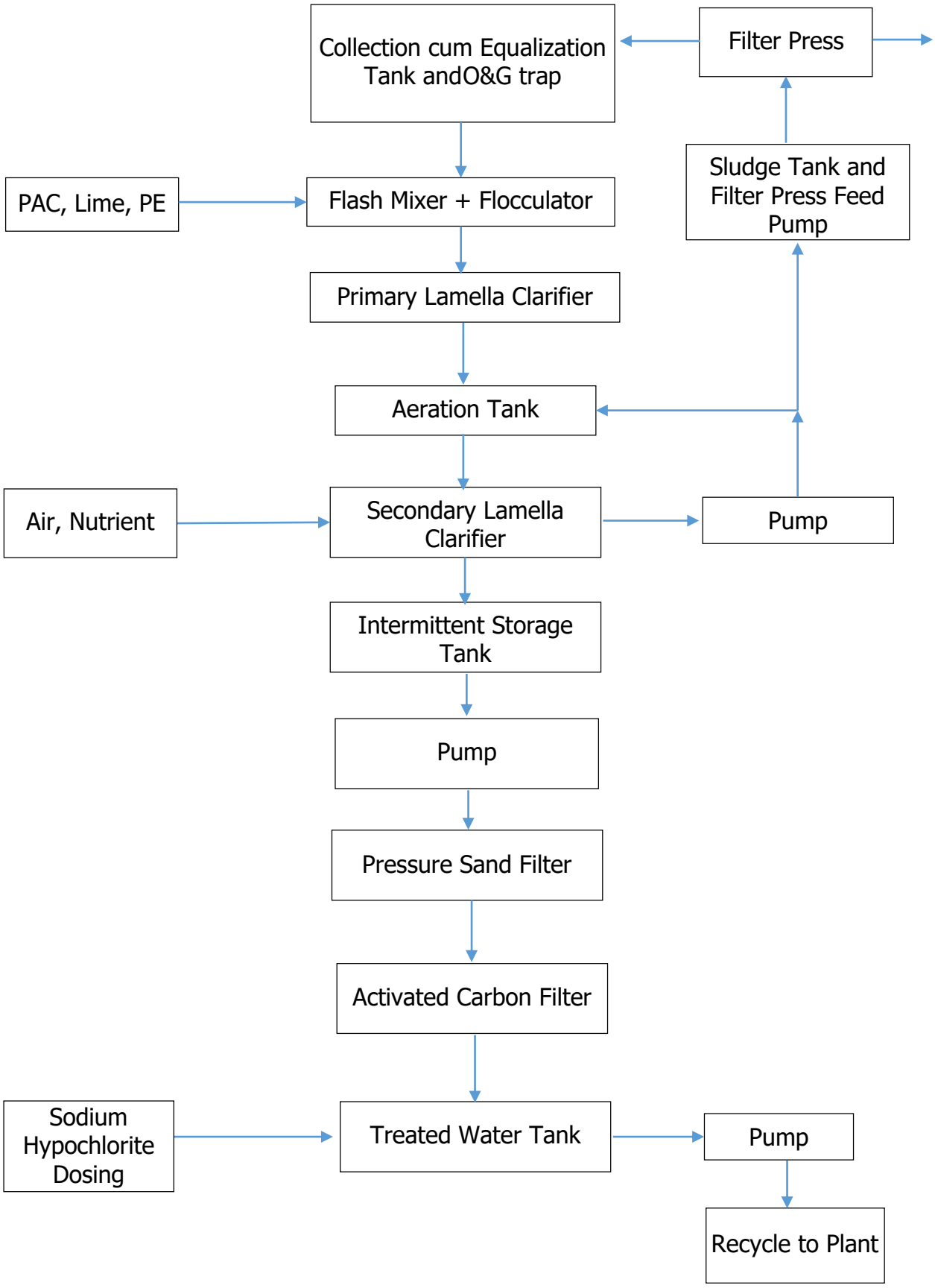


FIGURE 3 – BLOCK DIAGRAM OF EFFLUENT TREATMENT PLANT

TABLE 16 – CHARACTERISTICS OF EFFLUENT

Sr.No	Parameter	Unit	Before Treatment	Design Value for ETP	After Treatment
1	pH	-	6.5 to 8.5	6.5 to 8.5	6.5 to 9.0
2	Biological Oxygen Demand (BOD)	mg/lit	100-200	250	<10
3	Chemical Oxygen Demand (COD)	mg/lit	400-700	800	<250
4	Suspended Solids	mg/lit	200-400	1000	<100
5	Oil and Grease	mg/lit	10-20	20	10

(Source: Based on Pilot study from other similar BMW facility)

Flow: 17.9 KLD
Operating Hour: 20 hr./day
Hourly capacity: 0.9 m^3/hr
Design Capacity of ETP: 20 KLD

TABLE 17 – LIST OF EFFLUENT TREATMENT PLANT UNITS

Sr. No	Equipment	Capacity	Design Basis	Dimension	Qty.	MOC
1	Wastewater collection tank	Flow: 20 m^3/Day	HRT: 24 Hours	Length: 3m Width: 3 m Height: 2.5 m + 0.5 m FB Volume: 30 m^3	1	RCC, provided with baffle wall arrangement for removal of oil and grease
2	Feed Pump	20 m^3/day	Operating Hours: 20 Hours/Day	Capacity: 1 m^3/hr, Head: 10 MLC	2 (1 W + 1 S)	CI/SS316 (2 Ns)
3	Flash Mixer	20 m^3/day	Operating Hours: 12 Hours/Day HRT: 10 Min	Capacity: 500 Litres, Agitated Tank	1	HDPE
4	Flocculator	20 m^3/day	Operating Hours: 12 Hours/Day HRT: 30 Min	Length: 3.5 m, Width: 1 m, Depth: 1 m Baffle wall channel provided peripheral to Primary Settling Tank	1	MS-Epoxy Painted
4	Primary settling tank	Flow: 20 m^3/day	HRT: 4 Hours Based on 1	Length: 2 m Width: 2 m Height: 2 m	1	MS Epoxy Painted / RCC

Sr. No	Equipment	Capacity	Design Basis	Dimension	Qty.	MOC
			m^3/hr Flow Settling Volume: 4 m^3/ Min	+0.5 m FB Hopper depth: 1.0 m Type: Rectangular, Hopper Bottom Settling Tank		
5	Aeration tank	20 m^3/day	F/M Ratio: 0.12, MLSS: 3000 mg/l HRT: 15 Hours	Length: 3 m Width: 2.5 m Height: 3 m Operating Volume: 22.5 m^3	1	RCC
6	Secondary settling tank	Flow: 20 m^3/day	HRT: 4 Hours Based on 1m^3/hr Flow Settling Volume: 4 m^3 /Min	Length: 2 m Width: 2 m Height: 2 m +0.5 m FB Hopper depth: 1.0 m Type: Rectangular, Hopper Bottom Settling Tank	1	MS Epoxy Painted / RCC
7	Intermittent storage tank	20 m^3	HRT: 2 Hours Based on 1m^3/hr Flow	2000 Lit Capacity	1	HDPE
8	PSF Feed Pump	20 m^3/day	Operating Hours: 20 Hours/Day	Capacity: 1.0 m^3/hr, Head: 10 MLC	2 (1 W + 1 S)	CI/SS316 (2 Ns)
9	Pressure Sand Filter	Flow: 2 m^3/hr	Filtration velocity: 12 M/Hr	Diameter: 1 m	1	Media: graded sand
10	Activated Carbon Filter	Flow: 2 m^3/hr	Filtration velocity: 12 m/Hr	Diameter: 1 m	1	Media: Activated carbon on graded sand
11	Treated water tank	20 m^3	HRT: 24 hr	Length: 3 m Width: 3 m Height: 2.5 m + 0.5 m FB Volume: 22.5 m^3	1	RCC
12	Air Blower	20 m^3/Day	Diffuser SOTE 5% per meter depth	Type: Twin lobe Capacity: 40 Nm^3/hr, Head: 3500	2 (1W+1S)	CI

Sr. No	Equipment	Capacity	Design Basis	Dimension	Qty.	MOC
				mmwcg, Motor: 3 HP		
13	Dosing Tanks	20 m^3/Day	One Day	Capacity: 50 Lit each for PAC, PE, DAP/Urea, Hypo, provided with manual stirrer	4	HDPE
14	Sludge Drying Bed	20 m^3/Day, 15 Kg/day sludge on dry basis	7 day drying cycle	Rectangular, Sand Gravity type sludge drying bed (Covered with shed) 2.0 m x 2.0 m x 0.8 m Provided with bottom leachate collection system	2	Masonry Wall with Impervious Bottom, Filled with graded gravel and sand

3.5.6 Hazardous & Solid Waste Management

TABLE 18 – SOLID AND HAZARDOUS WASTE DETAILS

CAT. NO*	TYPE OF HAZARDOUS AND OTHER WASTE	SOURCE	QUANTITY GENERATED (Kg/Day)	METHOD OF DISPOSAL
37.2	Ash	Incinerator	500	Sent to CHWTSDF site/secured landfilling
35.3	ETP Sludge	ETP area	34	Sent to CHWTSDF site/ secured landfilling
-	Plastic Waste after Autoclave and shredding	Shredder	1000	Sent to Authorized Recyclers
-	Glass and metallic body implants After Autoclave	Autoclave	2200	Sent to Authorized Recyclers
-	Metal Sharps after Autoclave and Shredding	Shredding	200	Sent to foundry for metal recovery / TSDF site / Sharp Pit
5.1	Waste oil	From Plant & Machineries	As generated	Sent to Authorized Recyclers
-	Used batteries	-	As generated	Sent to Authorized Recyclers

Note*: Category as per Hazardous and Other Waste (Management and Transboundary Movement) Rules, 2016

3.5.7 Noise Generation

The source of noise pollution from the plant is moving machineries such as Blowers in incinerator and ETP Area, Compressors and Pumps in incinerator and ETP area and Shredderin Shredder room. Following measures are proposed for maintaining noise pollution within prescribed limit.

- Air blowers will be provided with acoustic enclosures and will be installed in covered and enclosed shed or room.
- Pumps which are installed on ground will be selected so that their noise levelgeneration is with the prescribed limit.
- Shredder will be provided in enclosed room with noise control provision. Any personentering shredder room shall be provided with ear plug and PPEs.

3.6 Resource Optimization

The entire wastewater that shall be treated in ETP will be used for floor washing, vehicle washing and scrubber.

3.7 Availability and Source of Water, Power, Fuel

Water Consumption

For the proposed project, total water requirement will be 40.1 KLD (33.8 KLD Industrial + 1.5 KLD Domestic + 4.8 KLD Gardening) and wastewater generation will be 17.9 KLD (16.5 KLD Industrial + 1.4 KLD Domestic). Out of 40.1 KLD total water, 22.2 KLD water will be fresh water and the rest 17.9 KLD water will be recycled water. Industrial effluent (i.e. 16.5 KLD) and Domestic sewage (i.e. 1.4 KLD) will be treated into in-house ETP consisting of Primary, Secondary and Tertiary treatment units

and recycled back into plant premises for different activities. So, the entire plant will be designed based on Zero Liquid Discharge (ZLD) technology and no effluent will be discharge outside plant premises or any of the surface bodies.

Power & Fuel Consumption

The power requirement for project will be 78 KVA and it will be sourced from Assam Power Distribution Company Limited. DG Set with Capacity of 50 KVA will be installed as back up supply and used only during emergency power backup. Low Sulphur fuel like Light Diesel Oil (~12 Liter/hr.) will be used in D.G set.

4 SITE ANALYSIS

4.1 Connectivity

Sr. No.	Feature	Place/ Aerial Distance
1	Project Location	Latitude: 26°38'15.38"N Longitude: 94° 9'47.67"E Titabor AIDC
2	Nearest Habitat	Atapam Gaon at 160 m
3	Nearest Railway station	Titabor Station at 5.3 km
4	Nearest Airport	Jorhat Airport at 9 km

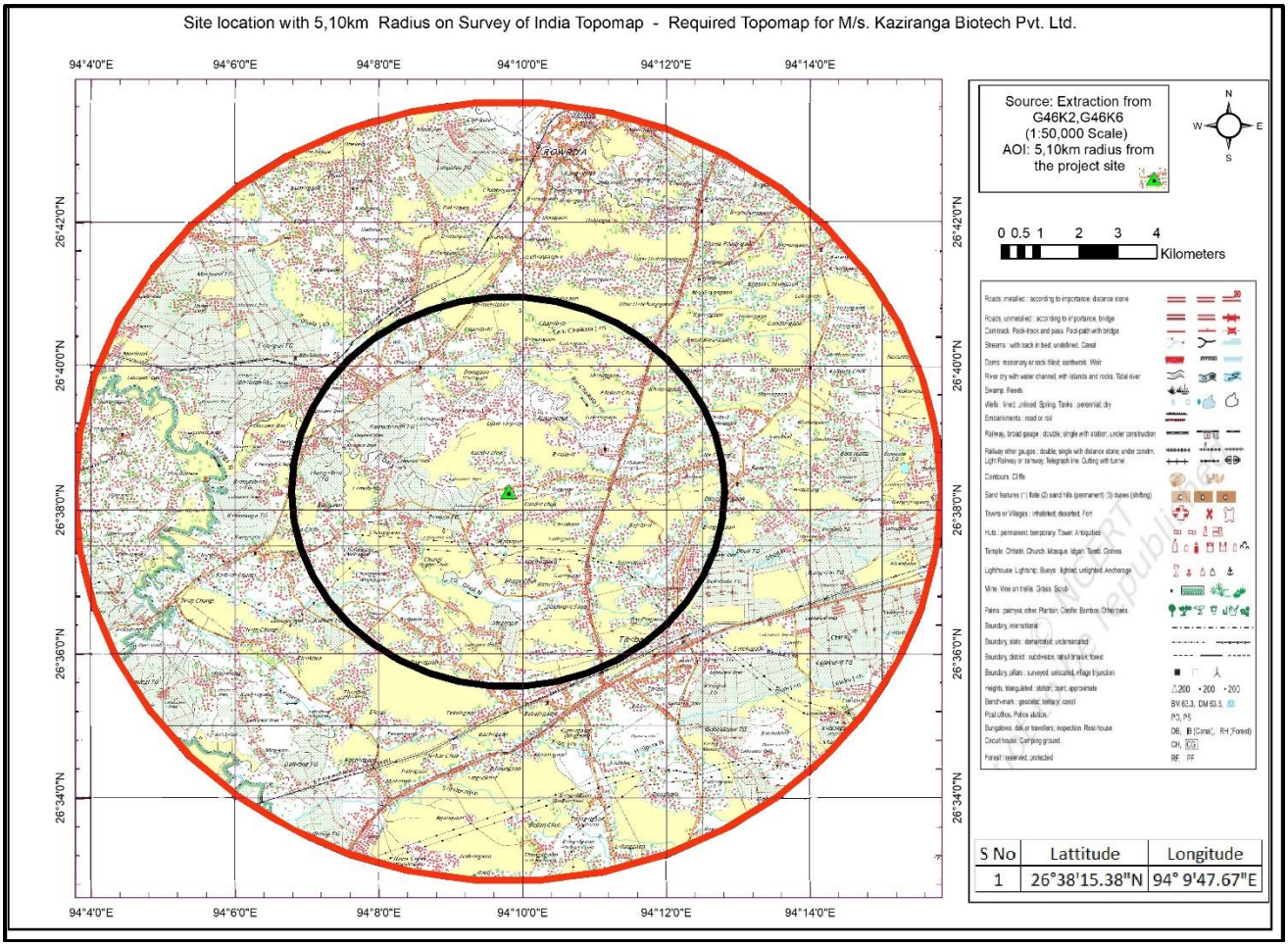
*All the distances are approx. aerial distances.

4.2 Land Form, Land Use and Land Ownership

Total Land Area is 4050 m^2. The proposed land is procured by M/s. Kaziranga Biotech Pvt. Ltd. detailed report on land use, Land Use pattern will be provided in EIA report.

4.3 Topography

Topo map of the proposed study area is given below. Detailed report on topography will be given in EIA report.



MAP 3 – TOPO MAP FRO PROPOSED PROJECT

Proposed project site is located in Jorhat District, Assam.

4.4 Existing Infrastructure

With respect to the proposed project site, no existing infrastructure is available on the site. The project site is well connected by road to nearby city and town. Power supply and adequate water supply is available at project site.

4.5 Soil Investigation

Soil investigation is important because it is related to water, ecology and life in the particular region. It is a measure of the condition of soil relative to the requirements of one or more biotic species as well as any human need or purpose. Soil quality is the capacity of a specific kind of soil to function within natural or managed ecosystem boundaries. To sustain plant and animal productivity and support human health and habitation it is important to do soil investigation. Black Soil is found to occur in most parts of Jorhat district. The detail study of soil at the site area shall be studied and given in the EIA report.

4.6 Climate Data from Secondary Sources

The climate of the Jorhat district is in generally dry with moderately cold winters. The year may be divided into four seasons. The hot season begins in March and extends up to the first week of August.

This is followed by the south west monsoon season which lasts up till the end of September. October and November constitute the post monsoon season and is followed by the cold season which last up till January. August is hottest month of the year with the mean daily maximum temperature at about 29.1 ºC and January is coldest month of the year with the mean minimum temperature at about 9.9 ºC.

5 PLANNING IN BRIEF

5.1 Planning Concept

Proposed Plant Layout is attached in **Appendix-2.** Plant will be consisting of Incinerator area, Autoclave area, Shredder area, Control Room, different storage areas, etc. the detailed breakup of the project site is given in **TABLE 18** below.

5.2 Amenities / Facilities

Please refer **Appendix-2** for plant layout.

6 PROPOSED INFRASTRUCTURE

6.1 Plot Area:

Total Area of the proposed project site is 4050 m^2. Detailed area breakup is shown in below table.

TABLE 19 – AREA BREAKUP OF PROPOSED PROJECT SITE

Sr.No	Description	Area in (m^2)	Area (%)
1	OHC & Admin Building with Staff Parking	135.0	3.3
2	Incinerator Area	286.0	7.1
3	Autoclave	84.0	2.1
4	Shredder Room	84.0	2.1
5	Sharp Pit	1.5	0.04
6	Yellow Waste Storage Area	88.0	2.2
7	Red Waste Storage Area	56.0	1.4
8	Other Waste Storage Area	56.0	1.4
9	Collection & Segregation Area	56.0	1.4
10	Treated Waste Storage Area	42.0	1.0
11	Hazardous Waste Storage Area	42.0	1.0
12	Utility Area	49.0	1.2
13	Fuel Storage Area	42.0	1.0
14	ETP Area	84.0	2.1
15	Vehicle Parking Area	98.0	2.4
16	Vehicle Wash Area	49.0	1.2
17	Fire & Emergency Control Room	56.0	1.4
18	U/G Fire Water Storage Area	35.0	0.9
19	U/G RWH Tank	40.0	1.0
20	Security Cabin	18.0	0.4
21	Greenbelt	1608.9	39.7
22	Open Space & Roads	1039.6	25.7
TOTAL SITE AREA		**4050**	**100.0**

6.2 Residential Area

There will be no residential area within the premises.

6.3 Green Belt

Greenbelts are an effective mode of control of air pollution, where green plants form a surface capable of absorbing air pollutants and forming a sink of pollutants. So, the proponent will develop an effective green belt within the premises and on periphery of the premises. About 1608.9 m^2 (39.7 % of the total plot area) will be allocated for green belt plantation.

6.4 Social Infrastructure

The unit is proposed to be located in Titabor AIDC, Jorhat District. The existing social infrastructure in the study area includes limited schools, hospitals, banks, water supply, electrical supply, transport facilities etc. The AIDC is very well developed and all the facilities are easily available.

6.5 Connectivity (Traffic and Transportation Road / Rail /Metro/ Waterways etc.)

Site is well connected by road. The nearest railway station is Titabor Railway Station which is around 5.3 km from project site. The nearest village is Atapam Gaon which is around 160 m from project site and is well connected by road and rail to all major cities of India.

6.6 Drinking Water Management (Source & Supply of Water)

The drinking water will be supplied through a proper water purification system.

6.7 Sewerage System

Domestic sewage (i.e. 1.4 KLD) will be treated into in-house ETP consisting of Primary, Secondary and Tertiary treatment units and recycled back into plant premises for different activities.

7 PROJECT SCHEDULE & COST ESTIMATES

7.1 Project Schedule

Project completion will take approximately 12 to 15 months from the date of receipt of all clearances.

7.2 Estimated Project Cost

The total cost of the project is **Rs. 10 Crores**. Breakup of the same is provided as under:

TABLE 20 – BREAKUP OF PROJECT COST

Sr. No.	Description	Cost in Crore
1	Equipment & Machinery	4.44
2	Land, Boundary Wall & Building	3.28
3	Other Assets	2.28
Total Project Cost		**10**

8. ANALYSIS OF PROPOSAL

8.1 Conclusion

Bio-Medical waste is required to be treated and disposed off according to BMW Rules, 2016 in proper manner. Exposure to infectious Bio-Medical Waste can result in disease or injury. It may contain infectious agents; toxic or hazardous chemicals or pharmaceuticals wastes and waste sharps.

In the 75 Km radius from proposed project site no other existing facility is located in the region. Hence, Health Care beds are still uncovered in the region of Jorhat and surrounding districts. Therefore, to cover the existing gap of the untreated BMW and by keeping view of future growth in HCFs; there is a need for centralized treatment facility for treatment of Bio-Medical Waste. Thus, M/s. Kaziranga Biotech Pvt. Ltd. proposes to establish a new Common Bio-Medical Waste Treatment Facility (CBMWTF) at Plot - 1B, Titabor Industrial Estate, Mouza - Thengal, Village - Kundorgaon, District - Jorhat, Assam.

The total area provided for the facility is 4050 m^2 out of which about 1608.9 m^2 (39.7 % of the total plot area) will be allocated for green belt plantation.

For proposed project activity, unit has proposed to provide ZLD based Effluent Treatment Plant for complete recycling of effluent. No effluent will be discharged outside plant premises. Air pollution control measures are proposed as per CPCB guidelines to achieve NAAQS. Hazardous waste generated during plant activity will be collected and disposed off as per Solid and Hazardous Waste Rules, 2016.

Proposed Project will generate direct and indirect employment. During the construction and operation phase it will require skilled, semi-skilled and unskilled workers which will be sourced from the local area. It is expected to get employment to 26 people during the operational phase of the project.

Project itself is for betterment of environment as it will treat untreated Bio-Medical Waste in a scientific way which will improve hygienic conditions of nearby vicinity. The estimated cost of the project is 10 crores. Unit has proposed to spend 2% of the total project cost for CER activities, which will indirectly improve the quality of life of nearby people as well.

Annexure - 1
Land Allotment Document

ASSAM INDUSTRIAL DEVELOPMENT CORPORATION LTD.
(A Govt. of Assam Undertaking)
R. G. Baruah Road, Guwahati - 781024
CIN: U75112AS1965SGC001246
GSTIN: 18AACCA4720A1ZC

অসম ঔদ্যোগিক উন্নয়ন নিগম সীমিত
(অসম চৰকাৰৰ প্ৰতিষ্ঠান)
ৰাধাগোবিন্দ বৰুৱাপথ, গুৱাহাটী -৭৮১০২৪
www.aidcltd.com

ECF No 644052/7 Date: 04.06.2025

To

M/s. Kaziranga Biotech Private Limited,
39 pub, Narakasur Path, Kahilipara,
Guwahati, Kamrup – 781019, Assam.
Email: kaziranga.biotech@gmail.com

Sub: Your proposal for allotment of land measuring 4050Sqm at Industrial Estate, Titabor,Jorhat, Assam.

Ref:

1. Your Letter dtd.11.04.2025.
2. AIDC letter No. ECF No.644052/3 dated 30-04-2025

Sir,

With reference to the above, this is to inform you that your proposal for allotment of Plot-1B, measuring 4050 Sqm at Industrial Estate, Titabor, Jorhat (Mouza: Thengal, Village: Kundorgaon, Revenue Circle: Thengal, District: Jorhat), has been accepted by the Corporation. Kindly note that the proposed Plot-1B is adjacent to Plot-1A, which has already been allotted to M/s. JMB Green.

We also acknowledge receipt of the payment amounting to ₹2,18,700.00 made on 04.06.2025 through GRN No. AS001412125202526P (Application Ref. No.: DIC-LAAIDC/2025/00038).

Necessary further steps will be initiated for the formal allotment process. The allotment is subject to full payment as mentioned in our letter referenced above.

Thanking you.

Yours faithfully

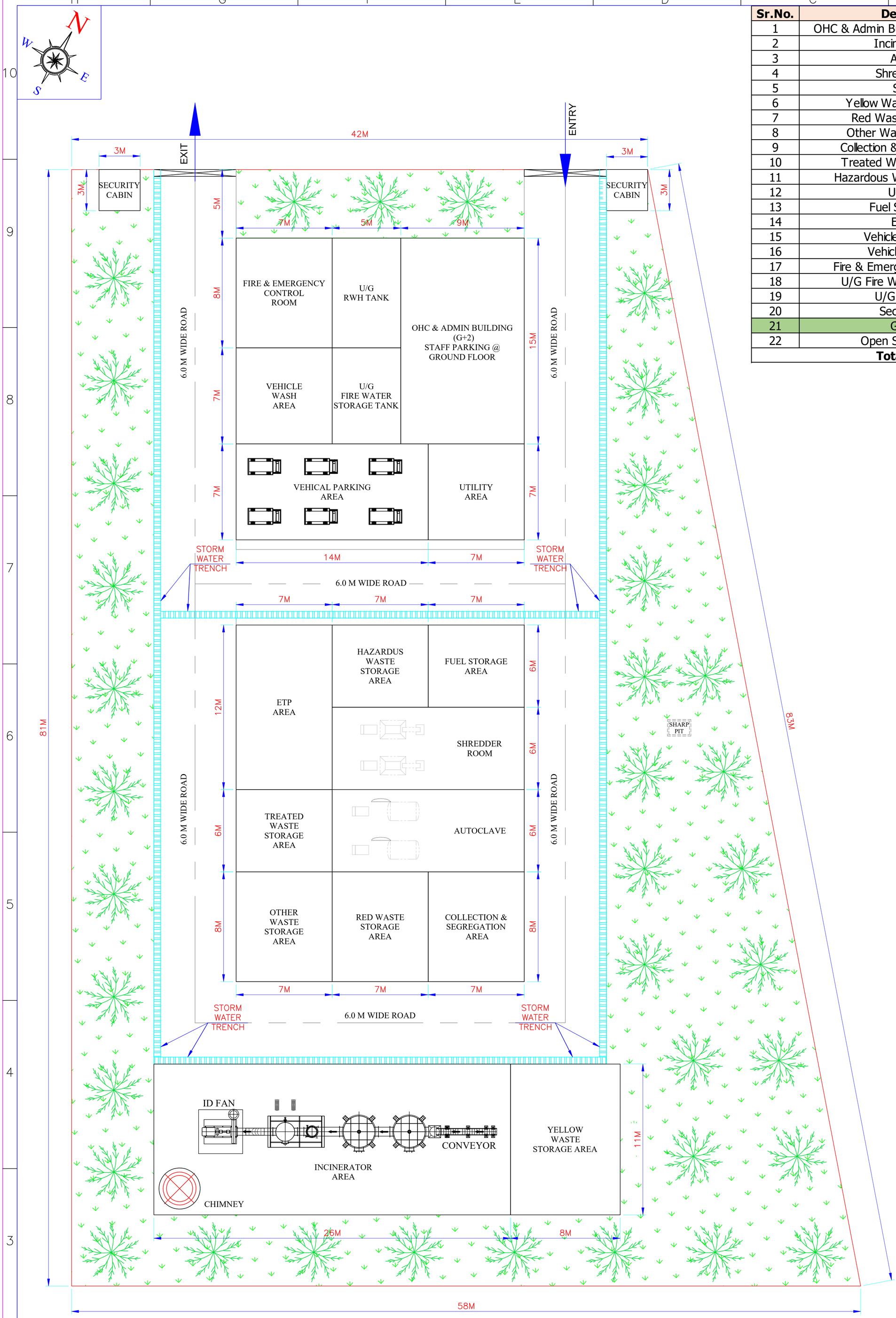
(Tapan Sarma)
Deputy General Manager (T)

Copy to:

1. P.S to the Managing Director, AIDC- for kind appraisal to the MD AIDC.

Annexure - 2
Tentative Plant Layout

Sr.No.	Description	Area (m2)	Area (%)
1	OHC & Admin Building with Staff Parking	135.0	3.3
2	Incinerator Area	286.0	7.1
3	Autoclave	84.0	2.1
4	Shredder Room	84.0	2.1
5	Sharp Pit	1.5	0.04
6	Yellow Waste Storage Area	88.0	2.2
7	Red Waste Storage Area	56.0	1.4
8	Other Waste Storage Area	56.0	1.4
9	Collection & Segregation Area	56.0	1.4
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12	Utility Area	49.0	1.2
13	Fuel Storage Area	42.0	1.0
14	ETP Area	84.0	2.1
15	Vehicle Parking Area	98.0	2.4
16	Vehicle Wash Area	49.0	1.2
17	Fire & Emergency Control Room	56.0	1.4
18	U/G Fire Water Storage Area	35.0	0.9
19	U/G RWH Tank	40.0	1.0
20	Security Cabin	18.0	0.4
21	Greenbelt	1608.9	39.7
22	Open Space & Roads	1039.6	25.7
	Total	**4050**	**100.0**



PLAN

REV.	DESCRIPTION	DATE	REV.BY	APPRD
0	ISSUED FOR REVIEW & COMMENTS	06/06/2025	KHUSHAL	RKM.

NOTE :-

(1). ALL DIMENSION ARE IN m.

HOLD ITEMS DETAIL :-

(1). -

DRAWING NO.	REV.	REFERENCE DRAWING NAME
-	-	-

ENPRO ENVIRO TECH AND ENGINEERS PVT. LTD.
306, The Lenora, New City Light Road, Surat

PROJECT	COMMON BIO-MEDICAL WASTE TREATMENT FACILITY				
CLIENT	KAZIRANGA BIOTECH PVT. LTD.				
TITLE	PROPOSED PLANT LAYOUT				
	DRN.	CHD.	APPRD.	SCALE	SHEET / DRG. SIZE
SIGN	KHUSHAL	SHIVAM	RKM	NTS	1 of 1 / A2
DATE	06/06/2025	06/06/2025	06/06/2025		
DRG. NO.	EIA / KAZIRANGA / LAY :- 101				REV NO. 0

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Annexure - 3
CPCB Annual Reports for Bio-Medical Waste Management 2018 to 2023

Annual Report

on

Biomedical Waste Management

as per

Biomedical Waste Management Rules, 2016

For the year 2018

Central Pollution Control Board
(Ministry of Environment Forest & Climate Change)
Parivesh Bhawan, East Arjun Nagar
Delhi – 110032

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3. Status of Health care facilities in country 2
4. Infrastructure for treatment and disposal of bio-medical waste: 6
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1. Introduction:

Biomedical Waste Management Rules were notified by Ministry of Environment Forests & Climate Change in March, 2016 in suppression of earlier Biomedical Waste (Management & Handling) Rules, 1998. Said Rules were re-notified with an aim to to improve the collection, segregation, processing, treatment and disposal of these bio-medical wastes in an environmentally sound management thereby, reducing the bio- medical waste generation and its impact on the environment. BMWM Rules, 2016 applies to the non-bedded Healthcare Facilities also and mandates them to dispose the biomedical waste through Common Biomedical Waste Treatment Facilities and to obtain the one-time authorization from concerned State Pollution Control Board/Pollution Control Committee.

BMWM Rules, 2016 prescribed specific duties for Occupier and Operator of Common Biomedical Waste Treatment Facilities and also duties for authorities like Ministry of Environment Forest & Climate Change, Ministry of Health & Family Welfare, Ministry of Defence, Central Pollution Control Board, State Government of Health, State Pollution Control Boards/Pollution Control Committees and Municipalities or Corporations or Urban Local Bodies.

Further, the prescribed authorities for implementation of the provisions of BMWM Rules, 2016 are State Pollution Control Boards in respect of States and Pollution Control Committees in respect of Union territories. And in respect of all health care establishments including hospitals, nursing homes, clinics, dispensaries, veterinary institutions, animal houses, pathological laboratories and blood banks of the Armed Forces under the Ministry of Defence, the prescribed authority is the Director General, Armed Forces Medical Services, who shall function under the supervision and control of the Ministry of Defence.

Biomedical Waste Management Rules, 2016 mandates preparation of inventory on biomedical waste management by stakeholders like Healthcare Facilities, Common Biomedical Waste Treatment Facilities, State Pollution Control Boards (SPCBs)/Pollution Control Committees (PCCs) and Central Pollution Control Board. This inventory includes number of Occupiers, quantity of biomedical waste generation, its collection, treatment and disposal. Rules stipulates that SPCBs and PCCs as well as Director General Armed Forces Medical Services (DGAFMS) shall submit this inventory in Annual Report Information on Bio-medical Waste Management of their respective State / Union Territory / Armed Forces Healthcare Establishments (AFHCEs) for the previous calendar year in a compiled form to the Central Pollution Control Board (CPCB), on or before 31st July of every year. Further, CPCB shall submit the compiled, review and analyse the information and send the same to Ministry of Environment Forest & Climate Change.

Inventory will be useful to know current trend of generation, collection, treatment and disposal of biomedical waste, infrastructure for treatment and disposal of bio-medical waste (Captive as well as Common bio-medical waste treatment facility (CBWTF)) and gaps in its management. All this information will help in analysis of the current capacity of treatment and disposal and improvement required for proper management of biomedical waste.

2. Bio-medical Waste Management Scenario

Annual Report Information has been submitted by every SPCB/PCC for the year 2018 and as per the compiled annual report information for the year 2018, there are 2,70,416 no. of Health Care Facilities (HCFs) out of which 97,382 no. of HCFs are bedded and 1,73,831 no. of HCFs are non-bedded. 1,10,356 no. of HFCs are granted authorization under the BMW Rules. 2,01,137 no. of HCF utilises CBWTF and 12,326 No. of HCFs are having captive bio-medical waste treatment and disposal facilities. There are 200 no. of CBWTFs in operation (28 under construction). The total generation of bio-medical waste is about 614 tonnes per day out of which about 534 tonnes per day are treated in CBWTFs and captive treatment facilities. About 57 tonnes per day are treated by captive treatment facilities and about 472 tonnes per day are treated by CBWTF. As reported, 27,301 no. of HCFs/CBWTFs observed to be violating the provisions of the BMW Rules. The detailed bio-medical waste management scenario in the Country **(Annexure-I)** is given below:

- No. of HCFs : 2,70,416
- No. of bedded HCFs : 97,382
- No. of non-bedded HCFs : 1,73,831
- No. of beds : 22,06,362
- No. of CBWTFs : 200* + 28**
- No. of HCFs granted authorization : 1,10,356
- No. of HCFs having Captive Treatment Facilities :12,326
- No. of Captive Incinerators Operated by HCFs :120
- Quantity of bio-medical waste generated in Tonnes/day : 614
- Quantity of bio-medical waste treated in Tonnes/day : 534
- No. of HCFs violated BMW Rules : 27,301
- No. of Show-cause notices/Directions issued to defaulter HCFs : 16,956

Note: (i) * - CBWTFs in operation (ii) ** - CBWTFs under installation

3. Status of Health Care Facilities in the Country

As per Biomedical Waste Management Rules, 2016, inventorization of Healthcare Facilities has been indicated and as a result steady increase in no. of HCFs can be seen since 2007-2018 as shown in ***Figure 1***, Inventorization of Healthcare Facilities has also been done with respect to bedded and non-bedded HCFs as categorised under BMWM Rules, 2016. ***Figure 2*** shows increase in number of non-bedded HCFs identified during 2016 -2018. And ***Figure 3*** depicts bedded and non-bedded HCFs of all States/UTs in year 2018. Based on Annual Report information, in 2017 bedded HCFs were 87,938 and non-bedded HCFs were 92,596 whereas in 2018, bedded HCFs are 97,382 and non-bedded HCFs are 1,73,831. Further, since 2016 percentage of total no. of HCFs has been steadily increased. Also, Number of beds available in the States/UTs per thousand population is shown in ***Figure 4.***

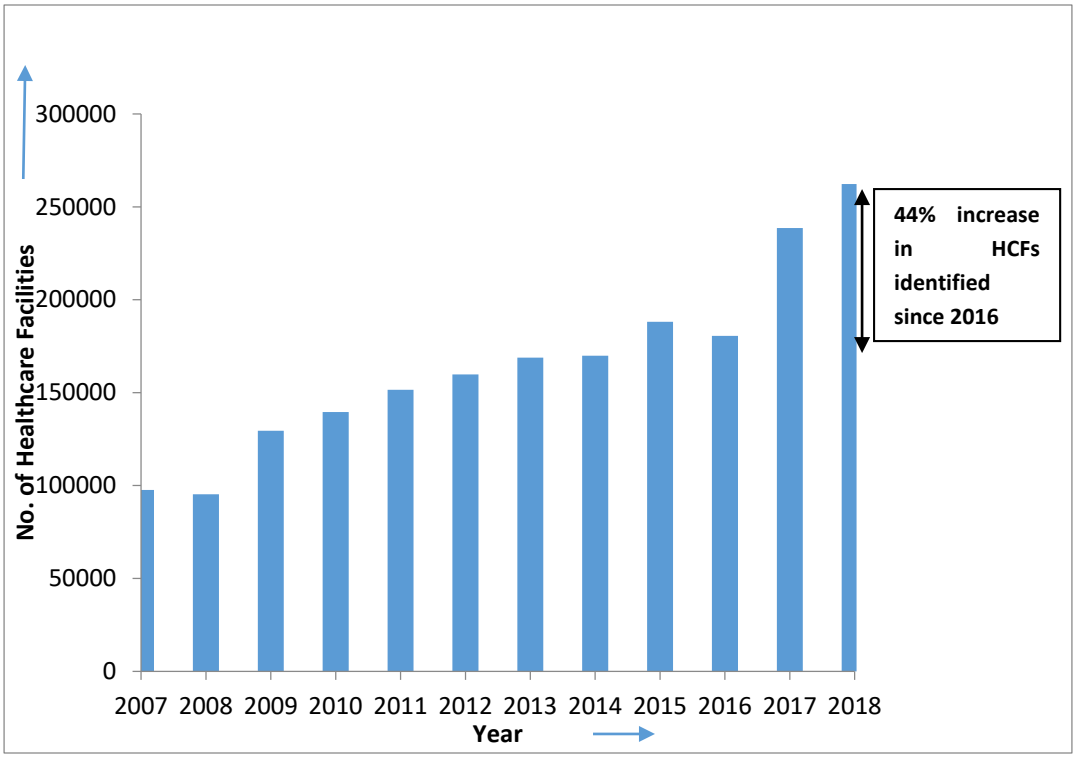


Figure 1: Development of total no. of Healthcare Facilities from 2007 to 2018

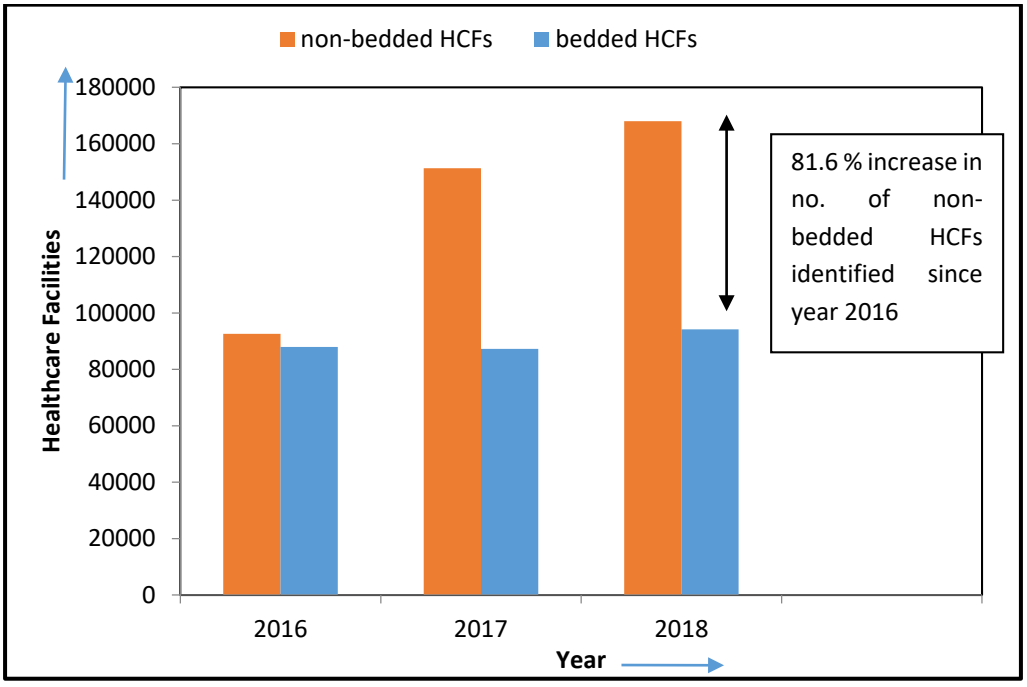


Figure 2: Number of bedded and non-bedded HCFs during 2016 to 2018

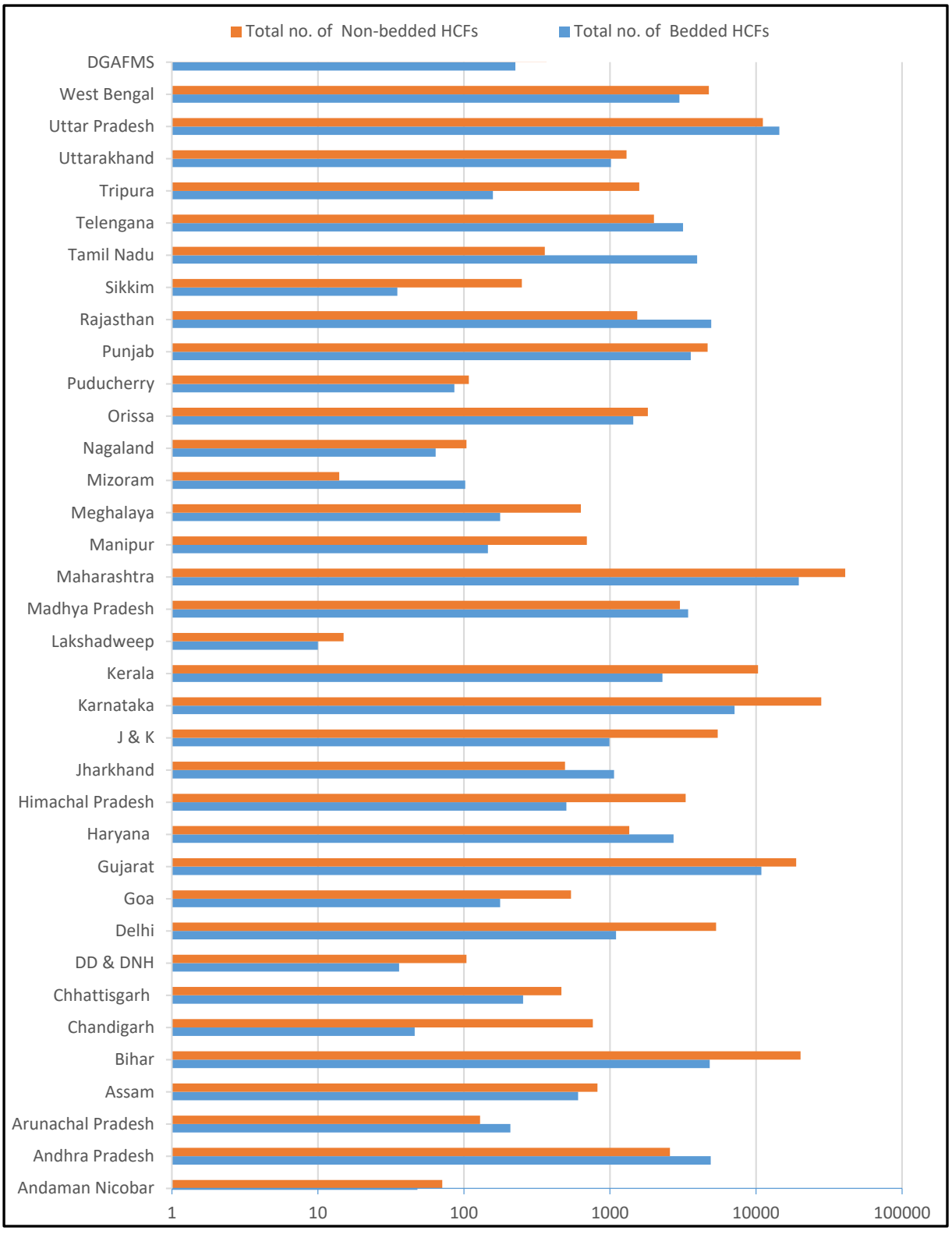


Figure 3: Number of bedded and non-bedded HCFs in States/UTs in Year 2018

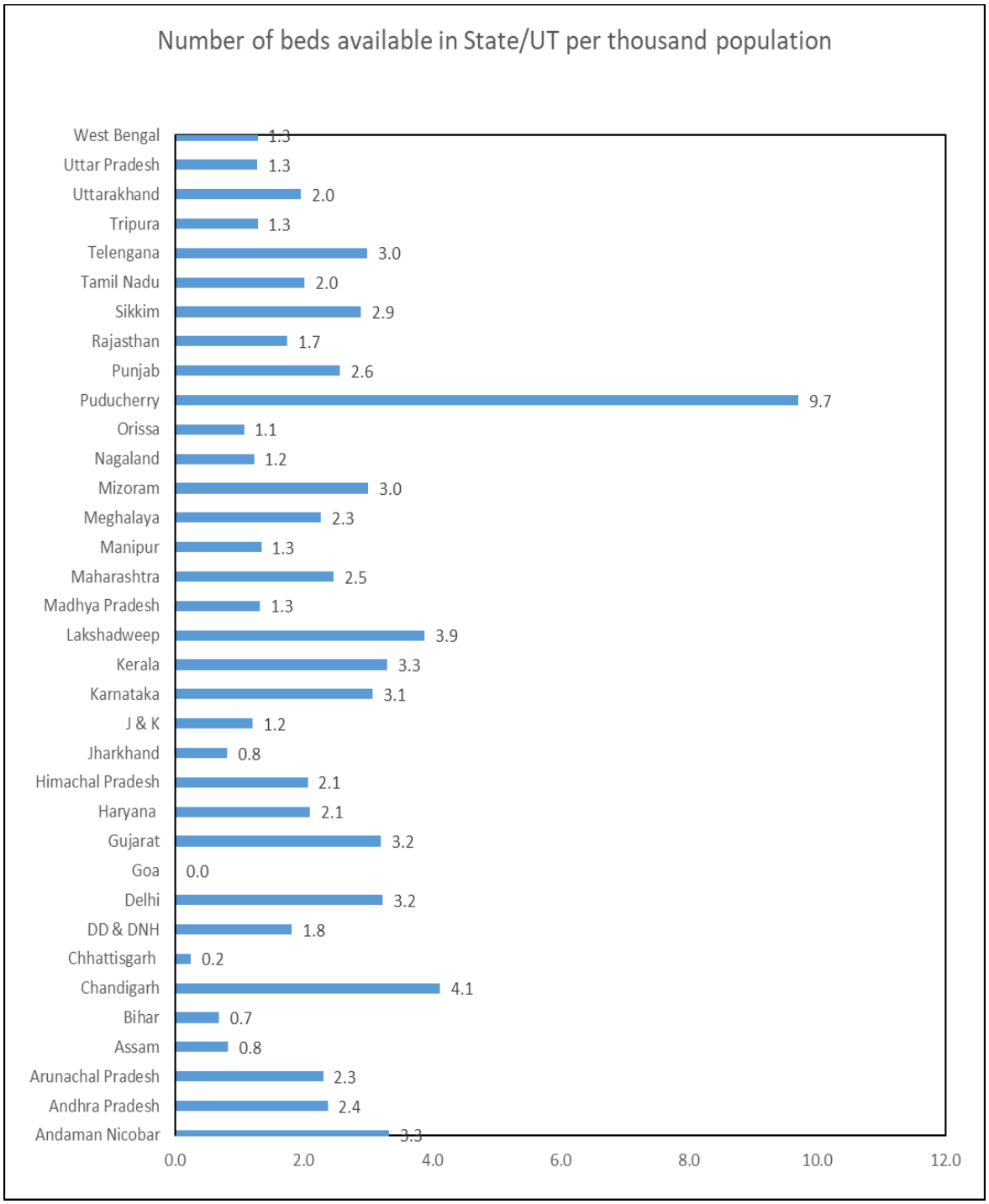


Figure 4: Number of beds available in State/UT per thousand population

As per BMWM Rules, 2016, authorization of Healthcare Facilities is required. Out of 2,70,416 of HCFs, 1,11,122 no. of HCFs have applied for authorization and 1,10,356 HCFs are obtained authorized under BMWM Rules, 2016. Health Care Facilities which are operational without authorization are mostly in states namely Bihar, Andhra Pradesh, Delhi, Gujrat, Himachal Pradesh, Karnataka, Madhya Pradesh, Punjab, Rajasthan, Uttarakhand & Uttar Pradesh.

It can be seen in ***Figure 5*** below that the gap between HCFs applied for authorization and HCFs obtained authorization decreased sharply after BMWM Rules, 2016 came into effect.

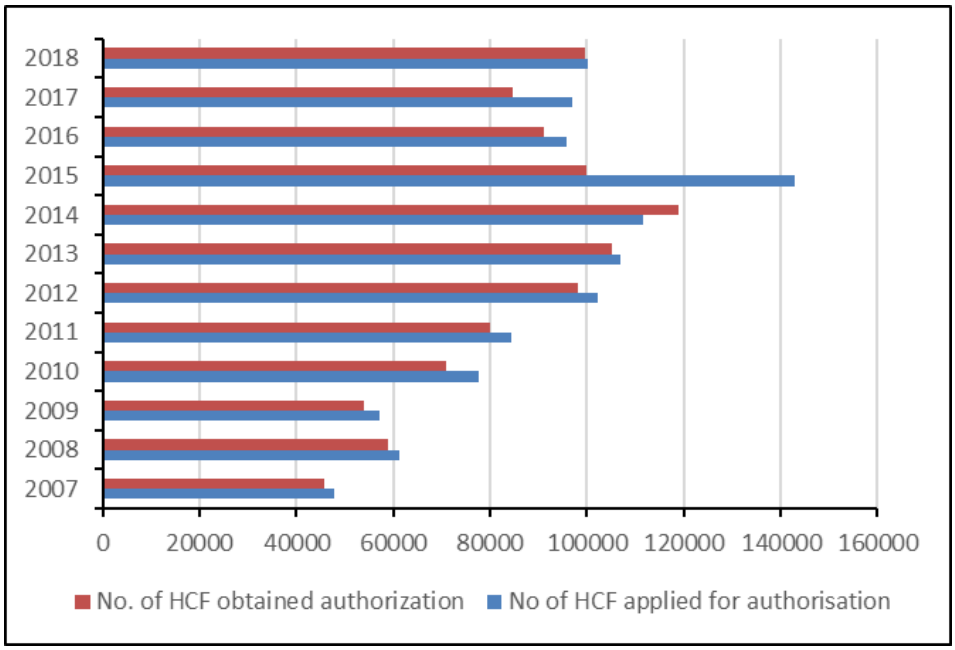


Figure 5. Trend of no. of HCF applied for authorization and obtained authorization during year 2007-2018.

Inventory with respect to Bedded HCFs has been performed by most of the state but inventory with respect to Non-bedded HCFs are still a neglected part. Although non-bedded HCFs generates small amount of Biomedical waste but waste generation is staggered and cannot be neglected. States should act positively to complete authorization of all HCFs which include bedded as well as non-bedded HCFs.

4. Treatment & Disposal Facilities for bio-medical waste:

As per the BMWM Rules, 2016, the generated biomedical waste is required to be treated & disposed off by the treatment & disposal facilities. CPCB is continuously pursuing and requesting all SPCBs/PCCs to take necessary steps to ensure that Bio Medical Waste generated from Hospitals/Nursing Homes and other Health Care Units are disposed off scientifically in line with provisions under BMWM Rules, 2016.

Rules stipulates that the biomedical waste shall be treated & disposed off by Common Biomedical Waste Treatment Facility. However, BMWM Rules, 2016 restricts occupier for

establishment of on-site or captive bio-medical waste treatment and disposal facility, if a service of common bio-medical waste treatment and disposal facility is available within a distance of seventy-five kilometres.

Currently, there are 200 numbers of CBWTFs operated in the Country and 12,326 captive treatment facilities installed by HCFs. ***Figure 6*** shows the sharp decrease in Healthcare Facilities using captive treatment facility after BMWM Rules, 2016. Recent trend shows that CBWTFs are widely accepted by healthcare facilities and increasing in its number continuously because of various advantages such as reduced capital investment, reduced cost of treatment, no operation & maintenance, checks mushrooming of treatment equipment in cities, easy implementation by the regulatory bodies etc. and decrease in use of captive treatment facility by Healthcare Facility. Also use of captive waste treatment incinerator is decreased from 225 to 120 during year 2007-2018 and on the positive note CBWTF is increased from 155 to 200 during 2007-2018 as shown ***Figure 7*** below. Since 2016 to 2017 captive treatment facilities was decreased, but in 2018 captive treatment facilities utilized by HCFs again increased.

Based on the annual report information, there are 200 numbers of CBWTFs which are in operational for the treatment of biomedical waste and 28 numbers of CBWTF are under construction. Since, 2016 no. of CBWTFs were steadily increased. Whereas 23 nos. of States/UTs has Captive waste treatment and disposal facility for the treatment of biomedical waste and hospitals are disposing the generated biomedical waste through incinerators or deep burial and autoclaves/microwaves.

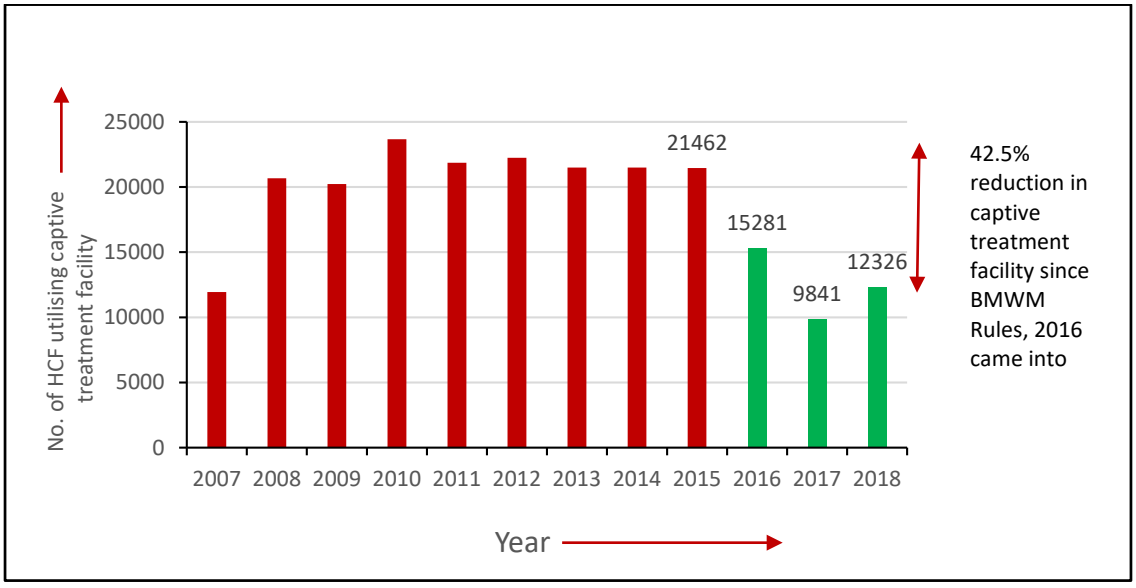


Figure 6. Year-wise Status of No. of HCFs utilizing Captive treatment facilities.

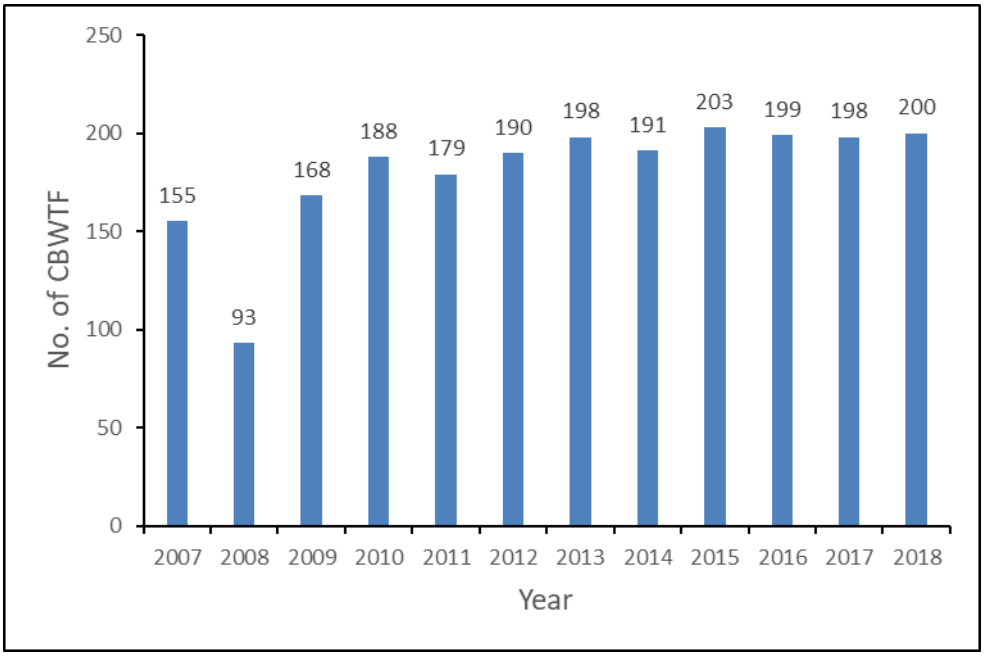


Figure 7. Year-wise Status of Common Bio-medical Waste Treatment Facilities.

5. Bio-medical Waste generation and treatment

Biomedical waste generated should be treated and disposed of in environmental friendly manner. The Bio-medical waste generation as well as treatment & disposal scenario during the years 2007 to 2018 is given in the ***Figure 8*****.** It is found that the gap between the total bio-medical waste generation and the total bio-medical waste treated is reduced significantly after BMWM Rules, 2016. In the year 2018, about 87% of the bio-medical waste in India is reported to be treated as per provisions of BMW Rules.

Total bio-medical waste generation from health care facility is 614 tons/day which is being treated & disposed by 200 no. of CBWTFs and 12,326 captive treatment facility installed by HCFs. About 88 % of treated biomedical waste (534 tons/day) is treated by CBWTF, rest of the waste is treated & disposed by either captive treatment facilities or being disposed of in deep burials. States namely Andaman & Nicobar, Assam, Arunachal Pradesh, Chhattisgarh, Goa, Himachal Pradesh, Jharkhand, Karnataka, Lakshadweep, Manipur, Meghalaya, Sikkim, Mizoram, Nagaland, Odisha, Rajasthan, Kerala, Tamil Nadu, Tripura & Uttarakhand are having deep burials for the disposal of biomedical waste which is not recommended as per CPCB guidelines.

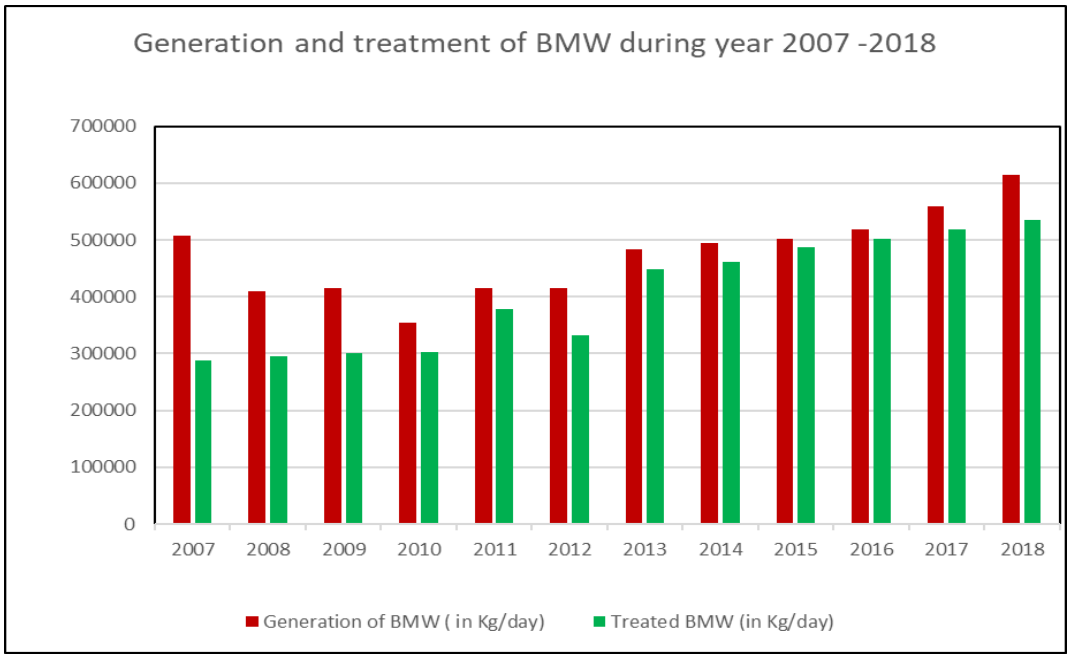
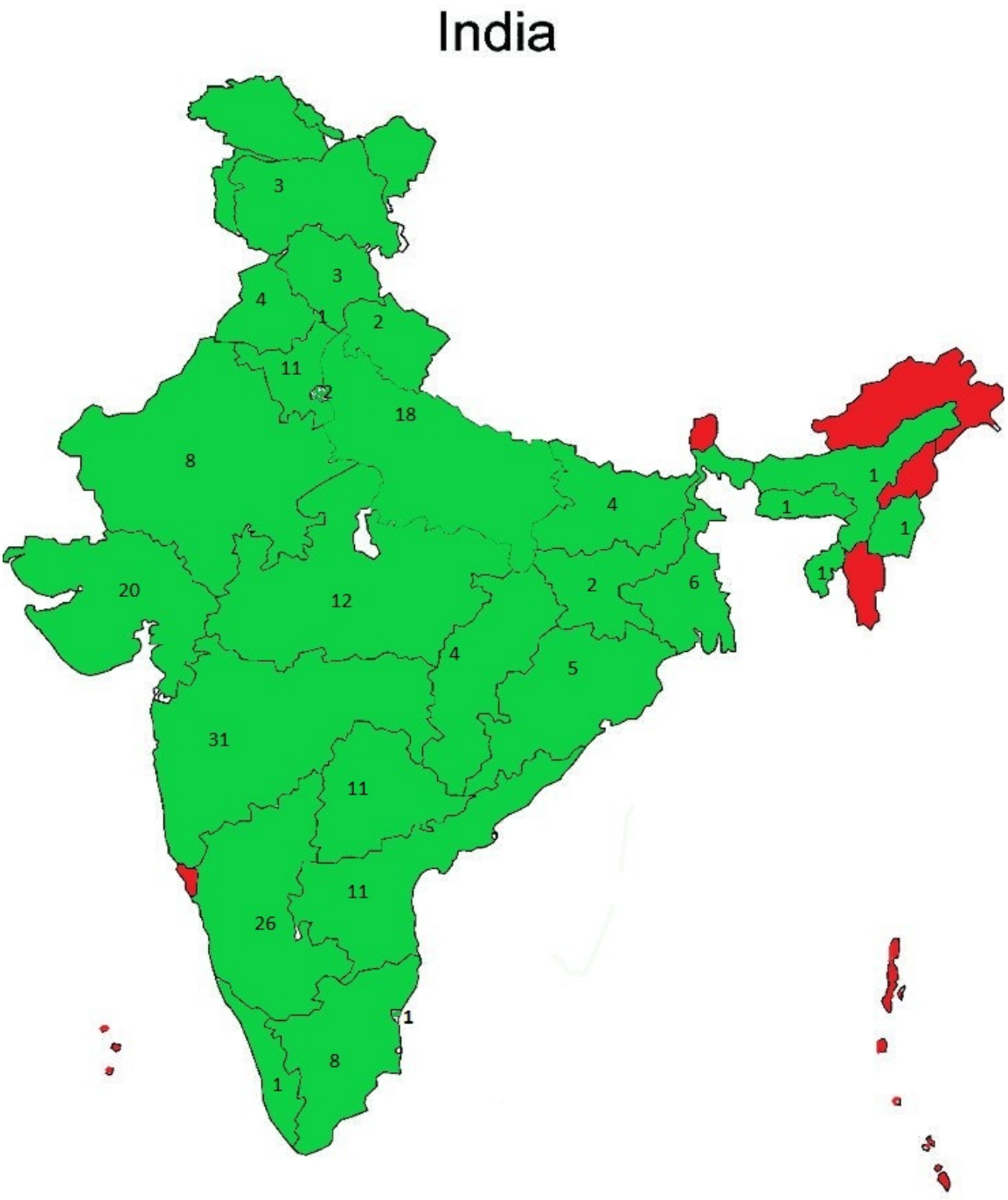


Figure 8. Generation and treatment of BMW during year 2007-2018

For treatment and disposal of biomedical waste setting up of CBWTF in adequate number should be present to cover entire state or all HCFs, States having CBWTF and not having CBWTF is shown in ***Figure 9*****.** States namely Uttar Pradesh, Tamilnadu, Andhra Pradesh, Chandigarh, Madhya Pradesh, Punjab, Haryana has enough number of CBWTF. States namely Mizoram, Nagaland, Tripura, DD & DNH, Chhattisgarh, Goa, Lakshadweep, Himachal Pradesh, Jharkhand, Delhi, Puducherry, West Bengal, Arunachal Pradesh, Rajasthan, Gujarat, Telangana has initiated setting up of adequate number of CBWTFs in their State whereas States namely J&K, Meghalaya, Manipur, Uttarakand needs to facilitate setting up of adequate number of CBWTF to cover all HCFs of state and Sikkim should intiate setting up of CBWTF.



*** Numbers in States/UTs indicate number of CBWTF operational in the respective State/UT.**

Figure 9. Map of India showing CBWTF present in States.

Tracking of biomedical from point of generation to point of treatment is important so as to ensure proper management of biomedical waste. For the same, bar-code system plays an important role. States namely DD & DNH, Punjab, Delhi and Telangana implemented barcode system, States namely Odisha, UP, J& K, Tamilnadu, Andhra Pradesh, Haryana, Chhattisgarh, Chandigarh, Himachal Pradesh, Puducherry, Jharkhand, Arunachal Pradesh, Gujarat, Manipur, Rajasthan, Karnataka, Kerala, Madhya Pradesh, West Bengal, and Bihar has partially implemented bar code system whereas States namely Mizoram, Nagaland, Sikkim, Tripura, Goa, Lakshadweep, Uttarakhand and Meghalaya has not yet implemented bar code system.

OCEMS is a tool to monitor the emissions during incineration of the waste. As per BMWM Rules, 2016, it is required to install OCEMS in incinerators of CBWTF. Out of 200 CBWTFs, only 172 has OCEMS. States namely Manipur, Meghalaya, Tripura and Chandigarh have not installed Online Continuous Monitoring System (OCEMS). All the CBWTF of States namely Andhra Pradesh, Puducherry, Madhya Pradesh, Delhi, Telangana, Kerala and Jharkhand installed OCEMS whereas not all CBWTFs of the States namely Odisha, J& K, Tamilnadu, Haryana, Chhattisgarh, Lakshadweep, West Bengal, Himachal Pradesh, Bihar, Punjab, Uttarakhand, Karnataka, Rajasthan, Gujarat, Uttar Pradesh has installed OCEMS.

6. Biomedical Waste Management by Veterinary Hospitals:

BMWM Rules, 2016 is also applicable to veterinary institutions, animal houses and veterinary hospitals. Segregation of bio-medical waste generated from veterinary hospitals should be in four categories as mentioned in Schedule I of BMWM Rules, 2016 and veterinary hospitals should take membership of CBWTF for collection, treatment and disposal of bio-medical waste generated. Also, as per Rules 9(3) of the BMWM Rules, 2016, following are the duties outlined for state department of Animal Husbandry and Veterinary:

(i) Grant of license to Veterinary Establishments with condition to authorization from prescribed authority i.e. state pollution control boards for biomedical waste management.
(ii) Monitoring, refusal or cancellation of license for veterinary establishments for violation of conditions of authorization or provisions under these BMWM Rules, 2016.
(iii) Publication of list of registered veterinary establishments with regard to biomedical waste generation, treatment and disposal.

To get implementation status of BMWM rules, 2016 in veterinary hospitals/animal houses, CPCB inspected 85 veterinary hospitals and the following observations where made:

- Majority of veterinary Hospitals have not obtained authorization obtained from prescribed authority;
- The Hospitals have not registered with the CBWTFs for treatment and disposal of BMW generated in their veterinary hospitals;

- No segregation of waste at source is practiced through separate color-coded collection bins.;
- No proper records are being maintained about waste generation, collection, transportation, treatment and disposal;
- Awareness has not been created for the waste handling staffs through display of Posters & charts;
- No record is available regarding immunization of workers involved in handling of bio-medical waste as per rule 4(h) and conduction of regular health checkups to these workers as per rule 4(m);
- No committee has been formed to review and monitor the activities related to bio-medical waste management;
- No waste water treatment facility is available and the waste water generated is disposed into public sewer;
- Annual report in Form -- IV is not submitted to the prescribed authority;

Therefore, in view of non-compliance, letter has been issued to Principal secretary, Department of Animal Husbandry of all states, requesting to take immediate action to ensure effective compliance to BMWM Rules, 2016 by the veterinary hospitals located in their states.

7. Director General, Armed Forces Medical Services (DGAFMS) scenario

According to BMWM Rules, 2016, every occupier or operator handling bio-medical waste, irrespective of the quantity is required to obtain authorization from the prescribed authority. In case on healthcare Facilities for Armed Forces prescribed authority is Director General, Armed Forces Medical Services (DGAFMS).

As reported, 593 HCFs are established under DGAFMS that generates about 6350 kg/day bio-medical waste out of which 5736 kg/day of biomedical waste is being treated by captive treatment facilities of HCFs which is not recommended under BMWM Rules, 2016. It is also reported that only 4 no. of incinerators of captive treatment facility is complying with norms. Further, 14 Healthcare Facilities operating under DGAFMS were inspected by CPCB in 2018. The status shows that the biomedical waste disposal infrastructure in armed forces medical establishments does not meet the new rules issued by the government and immediate steps are required to upgrade the facilities to ensure compliance of emission norms.

8. Financial scheme of MoEF &CC for setting up of CBWTF

North-east states of country needs attention with respect to treatment and disposal of bio-medical waste because collection and setting up of CBWTF in hilly areas. As reported, States namely Arunachal Pradesh, Mizoram, Sikkim and Nagaland still lacks in infrastructure for treatment and disposal facilities. In order to develop additional capacities of the CBWTFs in the Country, Ministry of Environment, Forests and Climate Change (MoEF & CC) initiated Scheme namely “Creation of Management Structure for Hazardous Substance” which facilitates the biomedical waste stakeholder for setting up of CBWTF by providing financial assistance to them.

For establishment of CBWTFs, up to 25% of the total project cost would be provided as central subsidy. In case of North-Eastern (NE) States, up to 50 % of the total project cost would be provided as central subsidy, subject to 25% of the project cost is contributed by the State/UT Government concerned and the balance 25% of the project cost is contributed by the Promoter/Investor. The central subsidy would have a ceiling of maximum of Rs.1 crore. In case of NE States, the central subsidy would be limited to a maximum of Rs.2 Crores. The modified ratio proposed in respect of Central: State: Private Sector is 25:25:50. In case of NE States, the proposed modified ratio is 50:25:25.

9. Enforcement of BMWM Rules, 2016.

Repeated and frequent inspection of the Common Bio-medical Facilities and Healthcare Facilities has been done by SPCB/PCCs as well as CPCBs. After identifying defaulting Units (CBWTF/HCF), CPCB under section 5 of Environmental (Protection) Act, 1986 is issuing Show Cause Notices or Technical/Closure Directions or imposing Environmental Compensation against the Unit.

As per order dated 12.03.2019 passed by Hon'ble National Green Tribunal (NGT), Principal Bench in the matter of O.A. No. 710 of 2017 filed by Shailesh Singh of Hon'ble NGT, CPCB prepared Guidelines for Imposition of Environmental Compensation Charges against Healthcare Facilities and Common Biomedical Waste Treatment Facilities which is applicable for violators of BMWM Rules, 2016. Hon'ble National Green Tribunal in its order dated 15.07.2019 in the matter of O.A. No. 710 of 2017, accepted Guidelines for "Imposition of Environmental Compensation Charges (ECC) against Healthcare Facilities (HCFs) and Common Biomedical Waste Treatment Facilities (CBWTFs)";

According to which following cases will be considered for taking cognizance of non-compliance and fit for levying **Environmental Compensation to HCFs:**

- No Authorization under BMWM Rules, 2016;
- No arrangement with CBWTF for disposal of biomedical waste;
- Improper Segregation of generated biomedical waste as per color coded system prescribed under BMWM Rules, 2016;
- No facility for pre-treatment of yellow (h) category waste (microbiology, biotechnology and other clinical laboratory waste);
- Storage facility not provided for segregated biomedical waste (applicable for bedded hospitals);
- Not provided Effluent Treatment Plant for treatment of wastewater, in case when city sewerage network in not connected to terminal STP; and
- Non-compliance to other responsibilities as stipulated for Healthcare Facilities under BMWM Rules, 2016.

In any case minimum Environmental Compensation in respect to Healthcare Facility shall not be less than Rs.1200/- per day.

And following cases will be considered for taking cognizance of non-compliance and fit for levying **Environmental Compensation to CBWTFs**:

- Incinerator emissions not complying with standards notified under BMWM Rules, 2016;
- Treated wastewater not complying with standards prescribed under BMWM Rules, 2016;
- Not complying with standards of autoclave/microwave prescribed under BMWM Rules, 2016;
- Not collecting the biomedical waste from all the member HCFs timely; and
- Other violations to the conditions stipulated under BMWM Rules, 2016 / CPCB guidelines.

In any case minimum Environmental Compensation in respect to Common Biomedical Waste Treatment Facility shall not be less than Rs. 3,000/- per day.

Since 2018, CPCB issued 26 directions to defaulting CBWTF/HCFs and show cause direction to 5 CBWTF/HCFs. CPCB imposed environmental composition to 21 no. of CBWTF/HCFs whereas only 8 CBWTF/HCFs has deposited Environmental compensation.

10. Status of implementation of BMWM Rules, 2016 in States/UTs based on key indicators:

CPCB has identified the following Key Performance Indicators for assessing treatment and disposal of biomedical waste, and effectiveness in implementation of BMWM Rules, 2016;

1. Inventory of all Healthcare Facilities and biomedical waste generation;
2. Authorization to all Healthcare Facilities including non-bedded HCFs;
3. Facilitate setting-up adequate number of Common Biomedical Waste Treatment Facilities (CBWTFs) to cover entire State or all HCFs;
4. Implementation status of Barcode system;
5. Installation of OCEMS by CBMWTs as a self-monitoring tool and transmission of data with servers of SPCBs/ CPCB;
6. Monitoring of Healthcare Facilities and Common Biomedical Waste Treatment Facilities.

States/UTs have submitted progress report on Key performance indicators in compliance to order passed by Hon'ble National Green Tribunal in the matter of O.A. No. 710 – 713 of 2017, filed by Shailesh Singh Vs Sheela Hospitals & Trauma Centre, Shahjanpur & Ors; Kailash Hospital and Heart Institute & Ors.; Ganga Charan Hospital Pvt. Ltd., Bareilly & Ors. and Katiyar Nursing Home, Hardoi & Ors. CPCB has assessed the progress report and observed areas where improvement needs to be done by States/UTs. Following are the observations for States/UTs:

10.1. Andaman and Nicobar

Inventory of HCFs has been completed by UT. Authorization of non-bedded HCFs have been initiated by PCC and authorization is under process. It is required that PCC should identify and complete authorization of all non-bedded HCFs. UT has no CBWTF as of now, whereas 5 sites are identified for installation of incinerators for treatment of biomedical waste. Total 199.3 Kg/day of biomedical waste generated has been treated by captive treatment facility. Some of the Captive treatment facility practices deep burial. However, PCC should facilitate CBWTF and restrict deep burial practice in the UT. Bar code system is not

yet implemented in UT. PCC shall ensure implementation of barcode system once CBWTF becomes operational in the State.

10.2. Assam

Inventory and authorization of HCFs in Assam state is under process. SPCB shall complete inventory for Chhattisgarh State on number of biomedical waste Healthcare Facilities and quantum of biomedical waste generation its collection, treatment and disposal and Authorization of all non-bedded HCFs. Total 7820.67 Kg/day of biomedical waste is generated in the State out of which 5869.26 Kg/day of biomedical waste is treated and disposed of through various modes such as CBWTFs or captive treatment facility or deep burial. However, no detail of treatment and disposal for the remaining waste has been submitted by the State. It is recommended that State should complete the inventory of biomedical generation, its treatment and disposal. And also ensure disposal of biomedical waste through environmentally sound manner. One CBWTF is operational in the state, treating 63.27 %of waste treated whereas 36.72% of biomedical waste is treated in captive treatment facility. However, deep burial is still in practice by HCFs. SPCB should immediately restrict the practice for deep burial by HCFs and if it is necessary than SPCB should ensure that design of the deep burial should be according to BMWM Rules, 2016. As reported, bar coding is not yet implemented by CBWTFs and HCFs, State should ensure implementation of bar code system by all HCFs and CBWTFs and ensure OCEMS data of CBWTF connected to CPCB as well as SPCB server. To ensure compliance by HCFs such as Clinics, veterinary hospitals etc.

Name of the State/UT and	**Total no of District**	**Number of districts covered by CBWTFs**
Assam	33	17

Note : Only 17 districts out of 33 districts has been covered by CBWTFs, Requirement of additional CBWTF needs to be reviewed by SPCB by conducting gap analysis of biomedical waste management in the State and ensure each district should be covered by CBWTF.

10.3. Andhra Pradesh

Inventory of HCFs has been completed by State. Authorization of non-bedded HCFs have been initiated by SPCB and authorization is under process. It is required that SPCB should identify and complete authorization of all non-bedded HCFs. Total 15144 Kg/day has been generated in the State. State has 12 CBWTFs in the State and one is under construction. At present, 66 % of waste treated through CBWTF and 33.95 % waste is treated through captive treatment facility **(as shown in *Figure 10*).** PCC should ensure that every area should be covered by CBWTF. Bar code system is partially implemented by CBWTF and HCFs. SPCB should follow up with all HCFs and CBWTFs for effective implementation of bar code system. As reported, all CBWTFs have installed OCEMS.

Name of the State/UT and	Total no of District	Number of districts covered by CBWTFs
Andhra Pradesh	13	13

Note: as reported in annual report, all districts have been covered by CBWTF however, the generation and treatment data given in the report indicates that CBWTF does not cover all the area of district which includes PHCs, CHCs, Clinics etc.

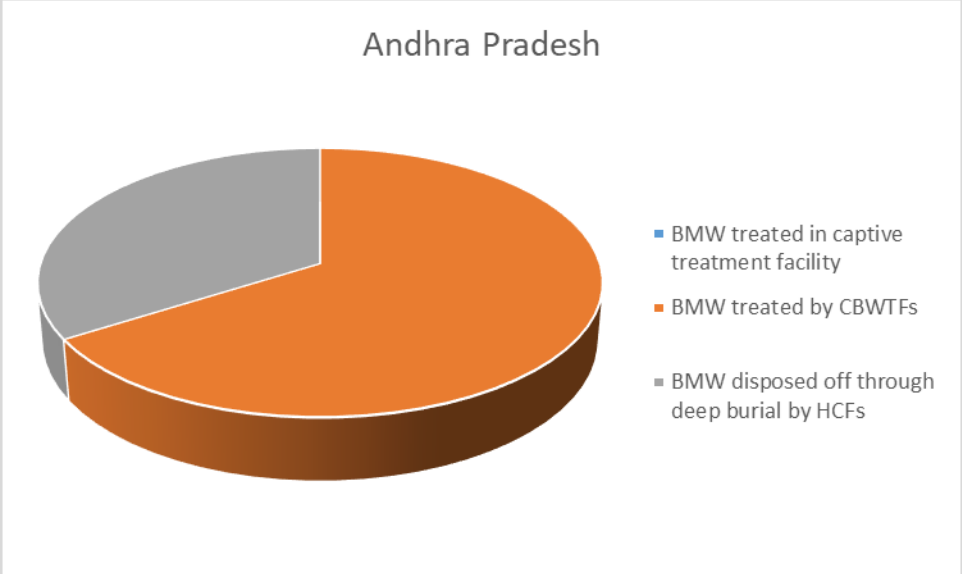


Figure 10: Representation of BMW treated and disposed off through various modes.

10.4. Arunachal Pradesh

Inventory of HCFs has been completed and authorization of non-bedded HCFs is under process. Total 888.67 Kg/day of biomedical waste is generated and treated in captive treatment facility practicing deep burial. State has no CBWTFs in the State as of now**.** State Administration/Arunachal Pradesh SPCB should expedite the process for setting up of CBWTF in Arunachal Pradesh and Deep burial practice should be restricted in the State since it is allowed only in rural or remote areas as per BMWM Rules, 2016. SPCB shall also ensure implementation of barcode system once CBWTF becomes operational in the State. SPCB monitors HCFs to verify compliance to BMWM rules, 2016 in periodic manner.

10.5. Bihar

Inventory of HCFs has been completed by State. Authorization of non-bedded HCFs is under process. It is required that SPCB should identify and complete authorization of all non-bedded HCFs. Total 34812.9 Kg/day of biomedical waste is generated in the State out of which 10038.156 Kg/day of biomedical waste is treated and disposed off. However, no detail of treatment and disposal for the remaining waste has been submitted by the State. It is recommended that State should complete the inventory of biomedical

generation, its treatment and disposal. And also ensure disposal of biomedical waste through environmentally sound manner. At present, 4 CBWTFs are operational and 2 are under construction, treating 97.12 % biomedical waste treated and 2.87 % of biomedical waste is being treated by captive treatment facility practicing deep burial**.** However, deep Burial should be restricted upto rural or remote areas and as per the standards given under BMWM Rules, 2016. As reported, implementation of Bar code system is under process, BSPCB shall ensure implementation of Barcode system by every HCF & CBWTF. State has not provided monitoring mechanism adopted for monitoring of HCFs and CBWTF. To ensure compliance by CBWTFs and HCFs, SPCB shall develop monitoring mechanism.

Name of the State/UT and	**Total no of District**	**Number of districts covered by CBWTFs**
Bihar	38	38

Note: as reported in annual report, all districts have been covered by CBWTF however, the generation and treatment data given in the report indicates that CBWTF does not cover all the area of district which includes PHCs, CHCs, Clinics etc.

10.6. Chandigarh

Chandigarh has completed inventory as well as authorization of HCFs. Total 3188 Kg/day of biomedical waste is generated in the State. At present, 1 CBWTF treating 19.35 % of waste generated and 3 captive treatment facility treating 80.65 % of waste **(as shown in *Figure 11*).** As reported, CBWTF has enough capacity to cater the present need to treatment and disposal of BMW.

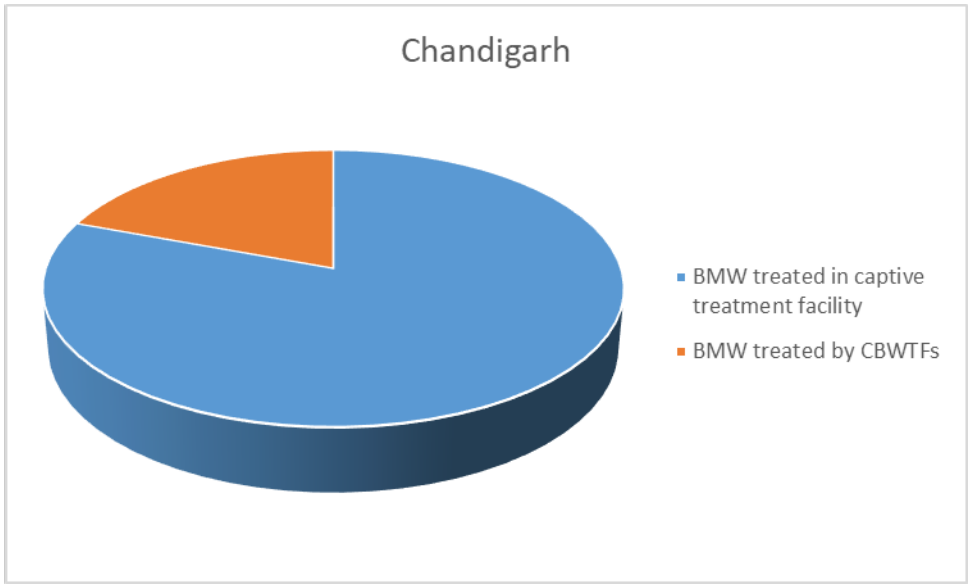


Figure 11: Representation of BMW treated and disposed off through various modes.

10.7. Chhattisgarh

Inventory and authorization of non-bedded HCFs is under process. SPCB shall complete inventory for Chhattisgarh State on number of biomedical waste Healthcare Facilities and quantum of biomedical waste generation its collection, treatment and disposal and Authorization of all non-bedded HCFs. As reported, 16,096 Kg/day of generated in the State whereas only 4596.99 Kg/day of waste is treated and disposed of through CBWTF or captive treatment facility or deep burial. The generation and treatment gap indicates that only 28.56 % of the waste is treated and disposed of whereas State has not submitted any detail regarding the treatment of remaining biomedical waste. At present, 4 CBWTFs are in operation treating 94.51% of biomedical waste treated whereas 5.48 % of biomedical waste treated with captive treatment facility. It is reported that some of the CBWTF and HCFs are practicing deep burial for disposal of biomedical waste State should be restricted such deep burial practices. As reported, State has initiated the process for setting up of additional CBWTF however, State should expedite the process of setting up of CBWTF in State so that biomedical waste shall treat and dispose as per provisions under BMWM Rules, 2016. Bar code system is partially implemented by HCFs and CBWTFs, SPCB should ensure implementation of barcode system in time bound manner by all CBWTFs and every HCF. As reported, only one CBWTF has installed OCEMs. State should ensure installation of OCEMS by all CBWTFs and monitoring mechanism to verify compliance to BMWM Rules, 2016 by HCFs and CBWTFs. To ensure compliance by CBWTFs and HCFs, SPCB shall develop monitoring mechanism.

Name of the State/UT and	**Total no of District**	**Number of districts covered by CBWTFs**
Chhattisgarh	27	26

Note: As reported in annual report, 26 out of 27 districts has been covered by CBWTF which shows that one of the district is still uncovered. Also, the generation and treatment data given in the report indicates that CBWTF does not cover all the area of district which includes PHCs, CHCs, Clinics etc.

10.8. Daman, Diu and Dadra Nagar Haveli (DD &DNH)

Inventory of HCFs and authorization of all non-bedded HCFs has been completed by State. DD & DNH takes the services of CBMWTF located at Surat Gujarat for treatment and disposal of BMW generated**.** CBWTF may not be necessary as long as the State of Gujarat permits the facility located at Surat to receive the waste. Bar code system is effectively implemented by HCFs. PCC monitors HCFs for verification of compliance by HCFs.

10.9. Delhi

DPCC has completed inventory of HCFs. Authorization of non-bedded HCFs is under process, DPCC should ensure complete authorization of non-bedded HCFs. Total 26757.5 Kg/day of biomedical waste is generated in the State. Currently 2 CBWTFs are in operation treating 98.37 % of waste generated in all districts whereas 1.63 % of waste is treated in captive treatment facility. As reported CBWTF are adequate to treat and dispose biomedical waste and covers all 11 districts. Bar code system is partially implemented

by HCFs and OCEMS is installed by both the facilities. DPCC shall ensure implementation of bar code system by all HCFs. DPCC monitors CBWTFs as well as HCFs at regular interval.

10.10. Goa

Invetorization is under process by Goa waste management corporation. However, Goa SPCB should ensure inventorization of all HCFs in a time bound manner. Authorization of non-bedded HCFs is under process, State should expedite the process of authorization based on identified HCF under inventory. Total 1837.1 Kg/day of biomedical waste is generated and treated in captive treatment facility. However, State of Goa has proposed a CBWTF at Kundaim Industrial Estate through Goa Waste Management Corporation, tender has been floated for the same and deep burial is in practice. Goa SPCB and State Health Department should expedite the process of setting up of CBWTF in Goa State so that biomedical waste shall treat and dispose as per provisions under BMWM Rules, 2016. Practice of deep burial by HCFs for disposal of biomedical waste should be restricted. Once CBWTF shall be in operation, bar code system should be implemented as per CPCB guidelines. Goa SPCB shall develop monitoring mechanism for verification of compliance by CBWTFs and HCFs.

10.11. Gujarat

Inventory and authorization of non-bedded HCFs is under process. Inventory on number of biomedical waste generating HCF, quantum of biomedical waste generation, its collection, treatment & disposal may be completed by SPCB in a time bound manner. Further, based on inventory SPCB shall ensure authorisation to identified HCFs also. Total 33706 Kg/day of biomedical waste is generated in the State and the same has been treated and disposed off through CBWTF. Currently 20 CBWTF is operational in State and treating all waste generated in the State. As reported, bar code system implementation is under process, GSPCB shall ensure implementation of Barcode system by every HCF and CBWTF in a time bound manner. GSPCB regularly monitors CBWTFs and HCFs for verification of compliance.

Name of the State/UT and	**Total no of District**	**Number of districts covered by CBWTFs**
Gujarat	33	32

Note: 32 districts out of 33 districts has been covered by CBWTFs, Requirement of additional CBWTF needs to be reviewed by SPCB by conducting gap analysis of biomedical waste management in the State and ensure each district should be covered by CBWTF. However, in the annual report it is submitted that 100 % of biomedical waste generated is treated through CBWTF, the data indicates that inventory is incomplete. It is recommended that State should complete the inventory of biomedical generation, its treatment and disposal. And also ensure disposal of biomedical waste through environmentally sound manner.

10.12. Haryana

Complete inventory detail has not been submitted by Haryana State, however, it was informed that inventory has been completed. State has provided authorization detail of all Government HCFs whereas no data is provided regarding private HCFs. SPCB should ensure authorization to every HCFs including non-bedded HCFs. Total 14217.88 Kg/day of biomedical waste is generated in the State and the same is treated

and disposed of through various modes. At present, 11 CBWTFs is operation in the State and treating all biomedical waste generated in State**.** As reported, bar code system implementation is under process, HSPCB shall ensure implementation of barcode system by CBWTFs and every HCFs in time bound manner. Monitoring mechanism has been provided by Haryana SPCB. SPCB should ensure compliance by CBWTFs and HCFs.

Name of the State/UT and	**Total no of District**	**Number of districts covered by CBWTFs**
Haryana	22	21

Note : 21 districts out of 22 districts has been covered by CBWTFs, Requirement of additional CBWTF needs to be reviewed by SPCB by conducting gap analysis of biomedical waste management in the State and ensure each district should be covered by CBWTF. However, in the annual report it is submitted that 100 % of biomedical waste generated is treated through CBWTF, the data indicates that inventory is incomplete. It is recommended that State should complete the inventory of biomedical generation, its treatment and disposal. And also ensure disposal of biomedical waste through environmentally sound manner.

10.13. Himachal Pradesh

Inventory of HCFs has been completed and authorization is under process. State should expedite the process of authorization based on identified HCF under inventory. Total biomedical waste generation and treatment is 2570.12 Kg/day. Currently 3 CBWTFs are in operation treating 91.96 % of waste and 8.04 % was is treated in HCFs practicing deep burial **(as shown in Figure 12).** SPCB should conduct the gap analysis on biomedical waste management w.r.t. quantum of biomedical waste generation and treatment facilities in the Himachal Pradesh State. As reported by SPCB, deep burial is being practicing by HCFs for disposal of biomedical waste, it is recommended that the same should be restricted upto rural or remote areas with prior authorisation under BMWM Rules, 2016. As reported, bar code system implementation is under process, SPCB shall ensure implementation of barcode system by every CBWTF and HCF in the State.

Name of the State/UT and	**Total no of District**	**Number of districts covered by CBWTFs**
Himachal Pradesh	12	12

Note: as reported in annual report, all districts have been covered by CBWTF however, the generation and treatment data given in the report indicates that CBWTF does not cover all the area of district which includes PHCs, CHCs, Clinics etc.

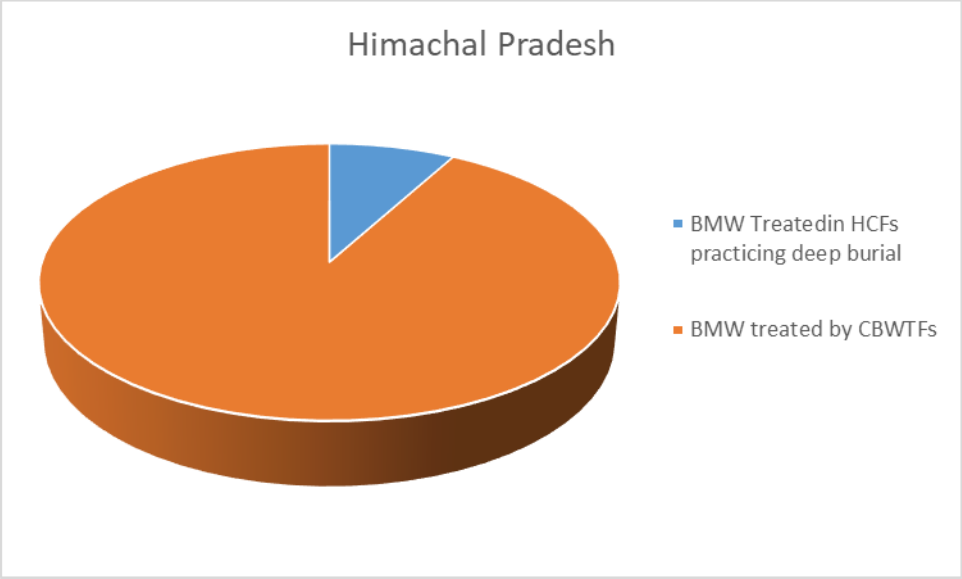


Figure 12: Representation of BMW treated and disposed off through various modes.

10.14. Jammu & Kashmir

Inventory of HCFs has been completed whereas no details has been provided regarding authorization of HCFs. J&K SPCB shall ensure that every HCF is authorized under BMWM Rules, 2016. Total 4482.901 Kg/day of biomedical waste is generated in the State out of which 4279.96 Kg/day is treated and disposed of through CBWTFs and captive treatment facilities. At present, 3 CBWTF is in operation, treating 76.68 % of biomedical waste generated in the State whereas, 18.79 % of waste is treated in captive treatment facility and 4.53 % of waste is disposed off through deep burial **(as shown in *Figure 13*)**. It is recommended that deep burial should be restricted upto rural or remote areas with prior authorisation under BMWM Rules, 2016 and requirement of additional CBWTF needs to be reviewed by J&K SPCB by conducting gap analysis of biomedical waste management in the State. As reported, bar code system is not yet implemented, J&K SPCB should ensure implementation of bar code system by every HCFs and CBWTFs. J&K SPCB shall develop monitoring mechanism for Healthcare Facilities as well as for CBWTFs to verify the compliance status of BMWM Rules, 2016.

Name of the State/UT and	**Total no of District**	**Number of Districts covered by CBWTFs**
J & K	20	20

Note: as reported in annual report, all districts have been covered by CBWTF however, the generation and treatment data given in the report indicates that CBWTF does not cover all the area of district which includes PHCs, CHCs, Clinics etc.

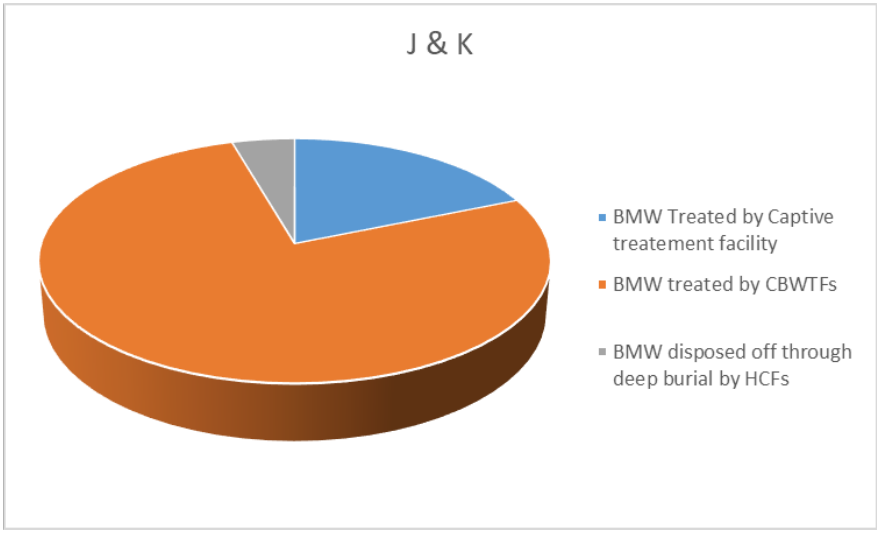


Figure13: Representation of BMW treated and disposed off through various modes.

10.15. Jharkhand

Inventorization is under process. State should complete inventorization in time bound manner. Inventory of district wise biomedical waste generation has not been submitted by the State. It is recommended that State should carry out complete inventory regarding district wise biomedical waste generation. Further, based on inventory SPCB shall ensure authorisation to identified HCFs. Total 12788.2 Kg/day of biomedical waste is generated in the State out of which 6720.62 Kg/day of biomedical waste is treated and disposed of through various modes. However, no detail of treatment and disposal for the remaining waste has been submitted by the State. It is recommended that State should complete the inventory of biomedical generation, its treatment and disposal. And also ensure disposal of biomedical waste through environmentally sound manner. One CBWTF is in operation treating 35.51 % of waste treated and 64.48 % of waste is treated in captive treatment facility. As reported, deep burial is still in practice**.** As reported, setting up of new CBWTF is under process. JSPCB shall expedite the process for setting up CBWTF and practice for deep burial of biomedical waste should be restricted only upto rural or remote areas in compliance with standard given under BMWM Rules, 2016. Bar code system is not yet implemented by HCFs and CBWTFs, Jharkhand SPCB shall ensure Barcode system be implemented by every CBWTF and HCF.

10.16. Karnataka

Inventory has been completed and authorization of non-bedded HCFs is under process. Based on inventory SPCB shall ensure authorisation to identified HCFs also. Inventory of district wise biomedical waste generation has not been submitted by the State. It is recommended that State should carry out complete inventory regarding district wise biomedical waste generation. Total 65621.2 Kg/day of biomedical waste is generated in the State. Currently 15 CBWTFs are in operation, treating 93.29 % of waste and 6.71% of waste is treated through captive treatment facility **(as shown in Figure 14).** As reported, Deep burial being practiced by Veterinary Hospitals should be restricted immediately as the

same is allowed only in remote or rural areas and SPCB should direct Veterinary hospitals also to become member of CBWTF for treatment & disposal of biomedical waste in line with BMWM Rules, 2016. Implementation of bar code system is under process, KSPCB shall ensure implementation of Barcode system by every HCF and CBWTF in a time bound manner. No information regarding monitoring mechanism for verification of compliance has been provided, SPCB shall develop monitoring mechanism for verification of compliance by CBWTFs and HCFs.

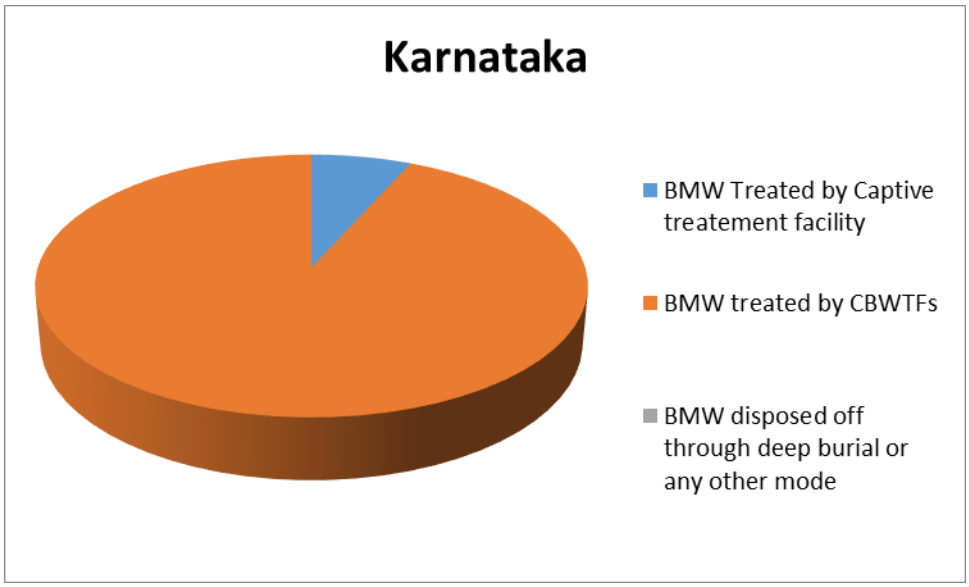


Figure 14: Representation of BMW treated and disposed off through various modes.

10.17. Kerala

Inventory of HCFs and authorization of non-bedded HCFs in under process. SPCB shall complete the inventory on number of biomedical waste generating HCF (bedded & non-bedded), biomedical waste generation, its collection, treatment & disposal. Also, as required under BMWM Rules, 2016 and non-bedded HCF are required to be authorized. Total 71976.14 Kg/day of biomedical waste is generated in the State out of which 42225.8 Kg/day is treated and disposed off through CBWTF or deep burial or captive treatment facility. As there is only one CBWTF operational in the State, treating 87.92 % waste, 12.07 % of biomedical waste is treated in captive treatment facility. However as reported HCFs as well as CBWTF is practicing deep burial**.** State should carry out gap analysis on biomedical waste management and based on gap analysis on biomedical waste management KSPCB shall expedite the process for setting up of new CBWTFs. As deep burial is still in practice, SPCB should restrict deep burial practice for disposal of biomedical waste. Monitoring of CBWTF as well as HCFs has been carried out by Kerala SPCB.

10.18. Lakshadweep

Inventory of HCFs has been completed whereas authorization of non-bedded HCFs is under process. Lakshadweep PCC shall ensure authorisation is obtained by every HCF as required under BMWM Rules, 2016. Total 527 Kg/day of biomedical waste is generated out of which 110 Kg/day of biomedical waste is treated and disposed of through various modes. However, no detail of treatment and disposal for the

remaining waste has been submitted by the State. It is recommended that State should complete the inventory of biomedical generation, its treatment and disposal. And also ensure disposal of biomedical waste through environmentally sound manner. There is no CBWTF in the State. 80.31 % of waste is disposed off through deep burial and 20.87 % of waste is treated through captive treatment facility. UT is under process of installing incinerators for each island. Till CBWTF shall be installed, PCC shall ensure biomedical waste should be disposed through CBWTF at Kerala and State should expedite the process of setting up of incinerators in Lakshadweep for treatment & disposal of biomedical waste in line with said Rules. As deep burial is still me practice, it shall be stopped once incinerators become operational. SPCB shall also ensure implementation of barcode system once CBWTF becomes operational in the State.

10.19. Madhya Pradesh

Inventory of HCFs and authorization has been completed. Total 15846.74 Kg/day biomedical waste is generated in the State out of which 14547.37 Kg/day has been treated in captive treatment facility. Currently, 13 CBWTFs are in operation, treating 98.36% of waste, 1.64 % of waste is treated through captive treatment facility practicing deep burial. MPSPCB shall restrict the practice for deep burial in Madhya Pradesh. As reported, bar code system is partially implemented, SPCB should ensure implementation of bar code system by all HCFs and CBWTFs. At Present, 12 CBWTF has installed OCEMS, SPCB should ensure OCEMS installation by all CBWTFs. State should ensure compliance of BMWM Rules, 2016 by all HFCs and CBWTFs.

Name of the State/UT and	**Total no of District**	**Number of districts covered by CBWTFs**
Madhya Pradesh	52	51

Note: 51 districts out of 52 districts has been covered by CBWTFs, Requirement of additional CBWTF needs to be reviewed by SPCB by conducting gap analysis of biomedical waste management in the State and ensure each district should be covered by CBWTF.

10.20. Maharashtra

As reported, E-tender has been floated for inventorization of HCFs. SPCB shall complete the inventory in time bound manner on number of Healthcare Facility generating biomedical waste, quantum of biomedical waste, its collection, treatment & disposal. SPCB shall ensure that every HCF is authorized under BMWM Rules, 2016. Total 62418 Kg/day of biomedical waste is generated in the State out of which 62314 Kg/day of waste is treated and disposed off through CBWTFs or deep burial. There are 31 CBWTFs in the State treating 95.93 % of 62418 Kg/day biomedical waste and 3.63 % is treated in captive treatment facility (**as shown in *Figure 15***), 2 CBWTFs are having deep burial whereas deep burial should not be allowed by CBWTF and MPCB should take action against such facilities. Out of 31 CBWTFs, 17 have implemented bar code system, SPCB shall ensure that barcode system should be implemented by every CBWTF and HCF in a time bound manner. State should ensure OCEMS installation by all CBWTFs.

Name of the State/UT and	Total no of District	Number of districts covered by CBWTFs
Madhya Pradesh	52	51

Note: 11 out of 36 districts in Maharashtra has been covered by CBWTFs. Requirement of additional CBWTF needs to be reviewed by SPCB by conducting gap analysis of biomedical waste management in the State and ensure each district should be covered by CBWTF. As reported, CBWTFs treats 95.93 % of biomedical waste

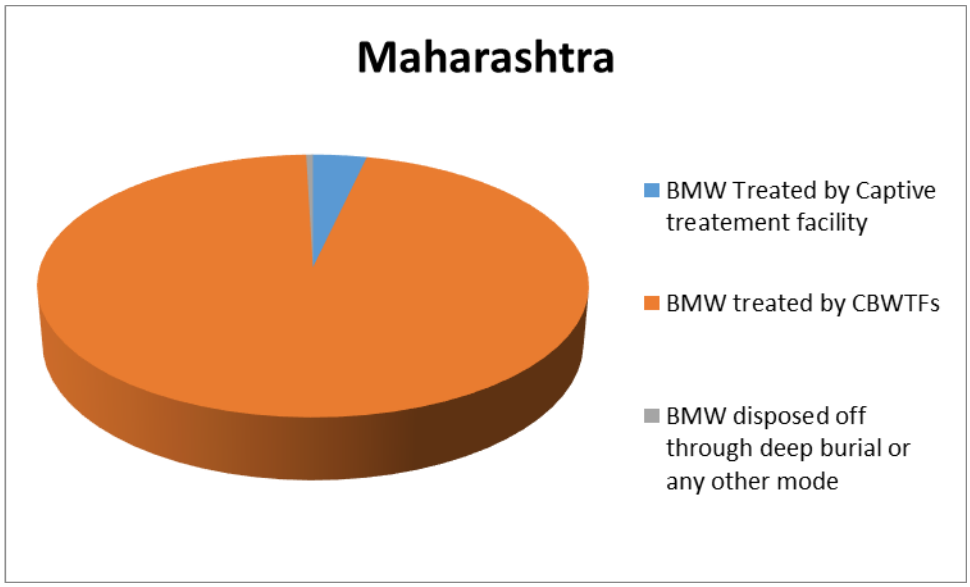


Figure 15: Representation of BMW treated and disposed off through various modes.

10.21. Manipur

Inventory has been completed and authorization is under process. SPCB should ensure authorization to every HCF (bedded & non-bedded). Total 1140.16 Kg/day of biomedical waste is generated in the State out of which 905 Kg/day is treated and disposed off through CBWTF or deep burial. However, no detail of treatment and disposal for the remaining waste has been submitted by the State. It is recommended that State should complete the inventory of biomedical generation, its treatment and disposal. And also ensure disposal of biomedical waste through environmentally sound manner. State has one captive treatment facility treating 41.43 % of waste, one CBWTF treating 58.56 % of waste**.** As reported, Deep burial is in practice by CBWTFs, SPCB shall restrict deep Burial pits should be restricted for disposal of biomedical

waste. No information has been provided regarding monitoring of HCFs and CBWTFs, SPCB shall develop monitoring mechanism for verification of compliance by CBWTF and HCFs.

Inventory of district wise biomedical waste generation has not been submitted by the State. It is recommended that State should carry out complete inventory regarding district wise biomedical waste generation.

10.22. Meghalaya

Inventory has been carried out and authorization is under process. Meghalaya SPCB shall ensure authorisation to every HCFs. SPCB should conduct the gap analysis on biomedical waste management w.r.t. quantum of biomedical waste generation and treatment facilities in the Meghalaya State. Total 1432.87 Kg/day of biomedical waste is generated in the State. 65.70% of which is treated in captive treatment facilities practicing deep burial and 34.30% of waste is treated in CBWTF **(as shown in *Figure 16*).** As reported by SPCB, deep burial is being practicing by HCFs for disposal of biomedical waste, it is recommended that the same should be restricted up to rural or remote areas with prior authorisation under BMWM Rules, 2016. No information has been provided regarding monitoring of HCFs and CBWTFs, SPCB shall develop monitoring mechanism for verification of compliance by CBWTF and HCFs.

Name of the State/UT and	**Total no of District**	**Number of districts covered by CBWTFs**
Meghalaya	11	11

Note: as reported in annual report, all districts have been covered by CBWTF however, the generation and treatment data given in the report indicates that CBWTF does not cover all the area of district which includes PHCs, CHCs, Clinics etc.

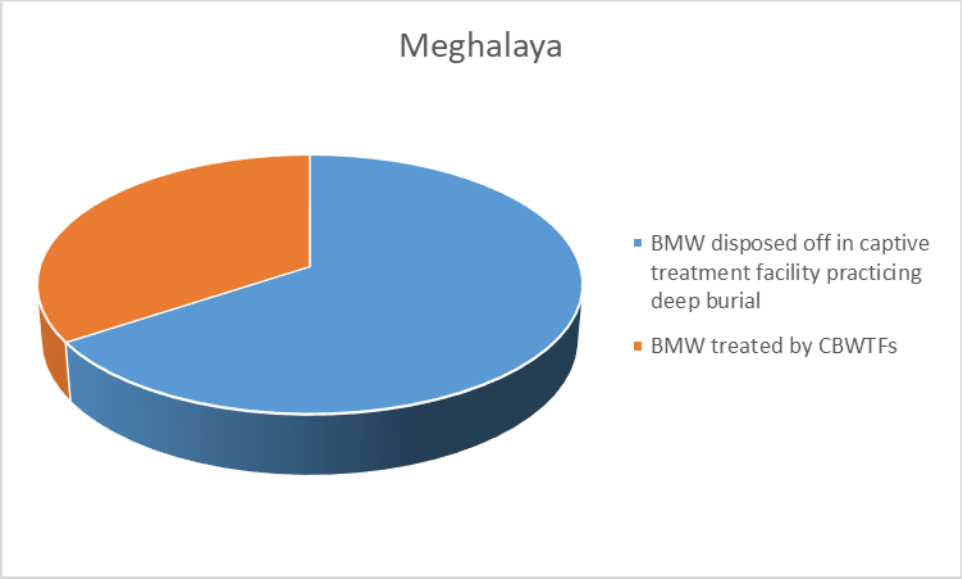


Figure 16: Representation of BMW treated and disposed off through various modes.

10.23. Mizoram

Inventory and authorization is under process. SPCB shall complete the inventory in time bound manner on number of Healthcare Facility generating biomedical waste, quantum of biomedical waste, its collection, treatment & disposal. SPCB shall ensure that every HCF is authorized under BMWM Rules, 2016. Total 830.74 Kg/day of biomedical waste is generated in the State and disposed off through captive treatment facilities which are mostly practicing deep burial. Mizoram State does not have any Common Biomedical Waste Treatment and Disposal Facility (CBWTF). It is recommended that State should expedite the process of setting up of CBWTF so that biomedical waste shall be treated and disposed off as per the provisions under BMWM Rules, 2016. SPCB shall also ensure implementation of barcode system once CBWTF becomes operational in the State.

10.24. Nagaland

Inventory has been completed and authorization in under process. SPCB shall ensure that every HCF is authorized under BMWM Rules, 2016. There is no CBWTF in the State of Nagaland. Deep burial is used by 661 no. of HCFs indicated 100 % of waste disposed off through deep burial whereas use of deep burial is restricted and allowed only in rural and remote areas. Further, Nagaland SPCB may expedite the process of setting up of CBWTF in Nagaland so that biomedical waste is treated and disposed off as per provisions under BMWM Rules, 2016. SPCB shall also ensure implementation of barcode system once CBWTF becomes operational in the State. To ensure compliance by HCFs, SPCB shall develop monitoring mechanism.

10.25. Odisha

Inventory of HCFs has been completed and authorization of HCFs in under process. Having under taken inventory, Odisha SPCB should ensure authorization to all HCFs identified in inventory. Total 14564 Kg/day of biomedical waste is generated in the State. At present, 4 CBWTFs is in operation treating 76.27 % of

biomedical waste generated and 23.28 % of biomedical waste is disposed off through deep burial, SPCB should stop practicing deep burial for disposal of biomedical waste **(as shown in *Figure 17*).** Only one out of 5 CBWTFs has implemented Barcode system. SPCB should ensure implementation of barcode system by all remaining CBWTFs and SPCBs should ensure that all HCFs join the system, in a time bound manner.

Inventory of district wise biomedical waste generation has not been submitted by the State. It is recommended that State should carry out complete inventory regarding district wise biomedical waste generation.

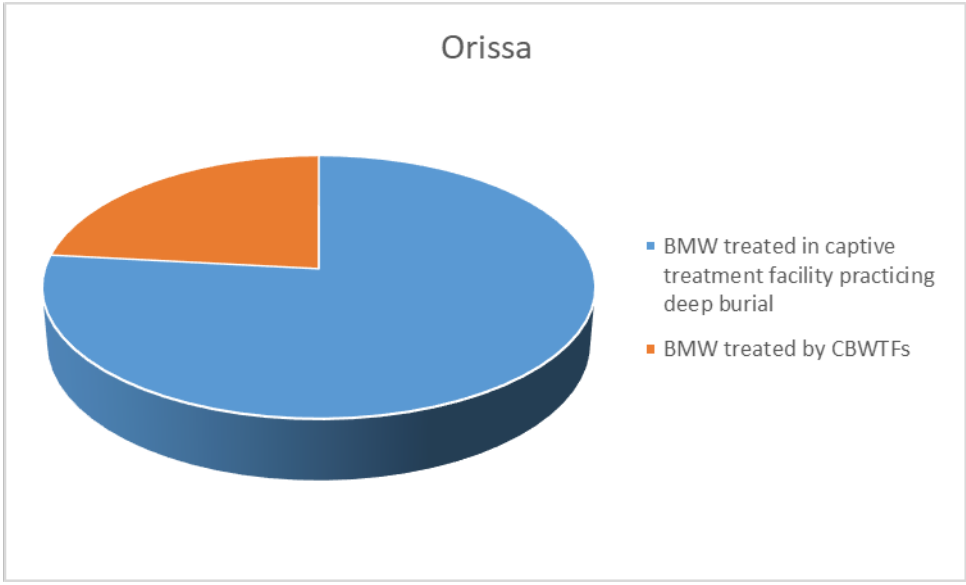


Figure 17: Representation of BMW treated and disposed off through various modes.

10.26. Puducherry

Inventory has been completed and authorization is under process. PCC should ensure authorization to all HCFs identified in inventory. Total 4319.8 Kg/day of biomedical waste is generated in the State whereas data given for treated and disposed of biomedical waste is 5834 Kg/day which is greater than generation of biomedical waste indicates that there is gap in inventory. It is recommended that State should carry out complete inventory regarding biomedical waste generation, treatment and disposal in the State. At present, 01 CBWTF is in operation. PCC may conduct gap analysis on biomedical waste management in Puducherry w.r.t. biomedical waste generation and treatment capacity. Implementation of bar code system is under process, PCC shall ensure Barcode system be implemented by every CBWTF and HCF.

10.27. Punjab

Inventory has been completed and authorization status of non-bedded HCFs is not provided. Punjab SPCB shall ensure authorization to non-bedded HCFs identified in Punjab State. Total 15980.7 Kg/day of biomedical waste is generated and treated in 04 CBWTFs in the State. No information has been provided regarding monitoring of HCFs and CBWTFs, SPCB shall develop monitoring mechanism for verification of compliance by CBWTF and HCFs.

Name of the State/UT and	Total no of District	Number of districts covered by CBWTFs
Punjab	22	22

Note: as reported in annual report, all districts have been covered by CBWTF.

10.28. Rajasthan

Inventory has been completed and authorization is under process. SPCB shall ensure authorization to non-bedded HCFs identified in State. Total 22261.756 Kg/day of biomedical waste is generated in the State out of which 16913.49 Kg/day of biomedical waste is treated and disposed off through various modes such as CBWTFs or captive treatment facility or deep burial. However, no detail of treatment and disposal for the remaining waste has been submitted by the State. It is recommended that State should complete the inventory of biomedical generation, its treatment and disposal. And also ensure disposal of biomedical waste through environmentally sound manner. At present, 07 CBWTFs is in operation treating 86 % of waste, captive treatment plant in the State treats 14.02 % of waste. It is also reported that 3 out of 7 CBWTFs are using deep burial. RSPCB should not allow such option for treatment & disposal of biomedical waste and restrict the same immediately. Implementation of bar code system is under process, RSPCB shall ensure implementation of Barcode system by every CBWTF and HCF. No information has been provided regarding monitoring of HCFs and CBWTFs, SPCB shall develop monitoring mechanism for verification of compliance by CBWTF and HCFs.

Name of the State/UT and	Total no of District	Name of the Areas Covered by CBWTFs
Rajasthan	33	32

Note : 32 districts out of 33 districts has been covered by CBWTFs, Requirement of additional CBWTF needs to be reviewed by SPCB by conducting gap analysis of biomedical waste management in the State and ensure each district should be covered by CBWTF.

10.29. Sikkim

Inventory has been completed and authorization is under process. SPCB shall ensure authorization to non-bedded HCFs identified in State. Total 425.1 Kg/day of biomedical waste is generated in the State out of which 311.82 Kg/day of biomedical waste is treated and disposed off. However, no detail of treatment and disposal for the remaining waste has been submitted by the State. It is recommended that State should complete the inventory of biomedical generation, its treatment and disposal. And also ensure disposal of biomedical waste through environmentally sound manner. There is no CBWTF in the State. As reported, all the waste treated is treated in captive treatment facilities some of the them having treatment equipment and also practicing deep burial. SPCB shall initiate the process of setting up of CBWTFs in the State and also avoid practicing deep burial for disposal of biomedical waste. SPCB shall also ensure

implementation of barcode system once CBWTF becomes operational in the State. Sikkim SPCB should ensure monitoring of HCFs to verify the status of compliance of BMWM Rules, 2016.

10.30. Tamil Nadu

Inventory and authorization has been completed. SPCB shall ensure authorization to non-bedded HCFs identified in State. Total 47,196.9 Kg/ day biomedical waste is generated and the same is treated and disposed of through 11 CBWTFs in the State. Also, three new CBWTFs are under establishment. Bar code system is implemented by CBWTFs and is under process by HCFs. SPCB shall ensure implementation of Barcode system by every HCF.

Name of the State/UT and	Total no of District	Number of districts covered by CBWTFs
Tamil Nadu	**37**	**31**

Note : 31 districts out of 37 districts has been covered by CBWTFs, Requirement of additional CBWTF needs to be reviewed by SPCB by conducting gap analysis of biomedical waste management in the State and ensure each district should be covered by CBWTF. However, in the annual report it is submitted that 100 % of biomedical waste generated is treated through CBWTF, the data indicates that inventory is incomplete. It is recommended that State should complete the inventory of biomedical generation, its treatment and disposal. And also ensure disposal of biomedical waste through environmentally sound manner.

10.31. Telangana

Inventory has been completed and authorization is under process. SPCB shall ensure authorization to non-bedded HCFs identified in State. Total biomedical waste generated in the State is reported as 16,243 Kg/day. Currently 11 nos. Of CBWTFs treating 100 % of waste generated in the State. It is reported that CBWTFs are adequate for treatment & disposal of biomedical waste. Implementation of bar code is under progress, TSPCB should ensure that barcode system should be implemented by every CBWTF and HCF in a time bound manner. All CBWTFs have installed OCEMS and connected to CPCB & TSPCB server. No information has been provided regarding monitoring of HCFs and CBWTFs, SPCB shall develop monitoring mechanism for verification of compliance by CBWTF and HCFs.

10.32. Tripura

Inventory has been completed and authorization is under process. SPCB shall ensure authorization to non-bedded HCFs identified in State. Total 1401.5 Kg/day of biomedical waste is generated. Tripura State does not have common facilities. 83.46 % of biomedical waste is treated in captive treatment facility and 16.54 % of biomedical waste is disposed off through common facility practicing deep burial and improvements are required for effective management of BMW in the State. SPCB should ensure authorization to all HCFs and also restrict the practice of deep burial by HCFs. Tripura SPCB shall ensure installation of CBWTFs and shall also ensure implementation of barcode system once CBWTF becomes operational in the State. SPCB shall develop monitoring mechanism for verification of compliance by all HCFs.

10.33. Uttarakhand

Inventory has been completed but authorization status of non-bedded HCFs is not provided. Based on inventory SPCB shall ensure authorisation to identified HCFs. Total 4111.39 Kg/day of biomedical waste is generated in the State out of which 4075.39 Kg/day of biomedical waste is treated and disposed off. However, no detail of treatment and disposal for the remaining waste has been submitted by the State. It is recommended that State should complete the inventory of biomedical generation, its treatment and disposal. And also ensure disposal of biomedical waste through environmentally sound manner. Currently, 2 CBWTFs are in operation in Uttarakhand State treating 71.45 % of waste, deep burial is used by one of the CBWTF. And 28.55 % of waste in treated and disposed off in HCFs practicing deep burial **(as shown in Figure 18).** SPCB may conduct gap analysis on biomedical waste management in Uttarakhand State w.r.t. biomedical waste generation and treatment capacity. Deep burial should be restricted to be practiced by CBWTF and action may be taken by SPCB against such CBWTFs. No information has been provided regarding monitoring of HCFs and CBWTFs, SPCB shall develop monitoring mechanism for verification of compliance by CBWTF and HCFs.

Name of the State/UT and	**Total no of District**	**Number of districts covered by CBWTFs**
Uttarakhand	13	13

Note: as reported in annual report, all districts have been covered by CBWTF however, the generation and treatment data given in the report indicates that CBWTF does not cover all the area of district which includes PHCs, CHCs, Clinics etc.

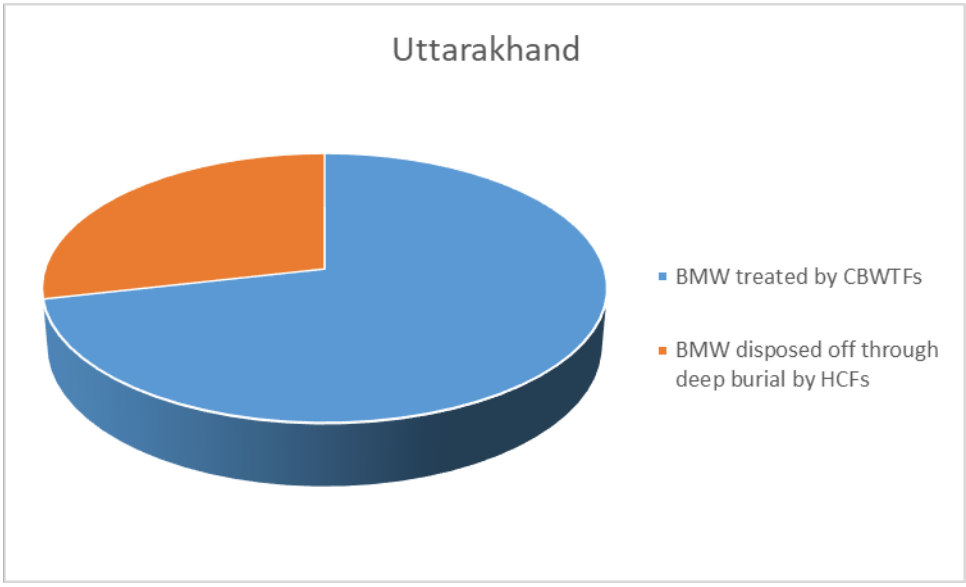


Figure 18: Representation of BMW treated and disposed off through various modes.

10.34. Uttar Pradesh

Inventory has been completed and authorization is under process. SPCB shall ensure authorization to non-bedded HCFs identified in State. Biomedical waste of 52,500 kg/day has been generated in the State. Currently 18 CBWTFs are under operation treating 100 % of biomedical waste generated in the State which are reported to be adequate for treatment and disposal of biomedical waste generated from the State whereas 11.62 % of biomedical waste is treated in captive treatment facility **(as shown in Figure 19**). Implementation of bar code system is under process. As required under BMWM Rules, 2016, UPPCB shall ensure implementation of Barcode system across the UP State.

Name of the State/UT and	**Total no of District**	**Number of Districts Covered by CBWTFs**
Uttar Pradesh	75	75

Note: as reported in annual report, all 75 districts have been covered by CBWTF however, the generation and treatment data given in the report indicates that CBWTF does not cover all the area of district which includes PHCs, CHCs, Clinics etc.

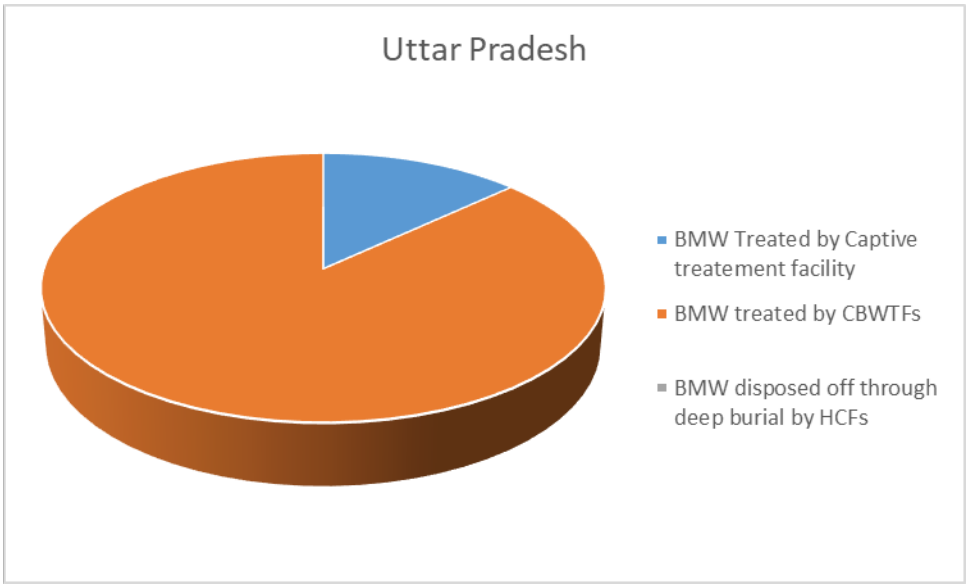


Figure 19: Representation of BMW treated and disposed off through various modes.

10.35. West Bengal

Inventory of HCFs and authorization of non-bedded HCFs is under progress. WBPCB shall complete the inventory in time bound manner, on number of biomedical waste generating HCF, quantum of biomedical waste generation, its collection, treatment and disposal. Based on inventory SPCB shall ensure authorisation to identified non-bedded HCFs. Total 34123.62 Kg/day of biomedical waste is generated in the State. Currently, there are 06 CBWTFs in State treating 99.63 % of biomedical waste generated in the State and 0.37 % of waste is treated through captive treatment facility. As reported, implementation of

bar code system is under process. As required under BMWM Rules, 2016, WPCB shall ensure implementation of Barcode system by all HCFs and CBWTFs in the State.

Name of the State/UT and	**Total no of District**	**Number of districts covered by CBWTFs**
West Bengal	23	23

Note: as reported in annual report, all districts have been covered by CBWTF. however, the generation and treatment data given in the report indicates that CBWTF does not cover all the area of district which includes PHCs, CHCs, Clinics etc.

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Annexure-I

Annual Report Information on Bio-medical Waste Management Scenario in the Country for the Year 2018
(As submitted by SPCBs/PCCs and DGAFMS)

S.No.	Name of the State/UT and	Total no. of Bedded Health Care Facilities (HCFs)	Total no. of Non-bedded Health Care Facilities (HCFs)	Total no. Health Care Facilities (HCFs)	Total no. of Beds	Authorization Status			No. of HCFs utilization CBWTFs	Total Quantity of BMW generated (kg/day)	Total Quantity of BMW Treated and Disposed (kg/day)	Captive BMW Treatment Facilities Operated by the (HCFs		Common Bio-medical Waste Treatment Facilities (CBWTFs)		Deep burial installed by HCF & CBWTFs		Total BMW treated by captive treatment facilities by HCF in Kg/day	Total BMW treated by CBWTFs kg/day)	Total no. of violation by HCFs & CBWTFs	Total No. of show cause notices/Directions issued to defaulter HCFs/CBWTFs	No. of CBWTFs that have installed COEMS
						Total no. of HCFs applied for authorization	Total no. of HCFs granted authorization	Total no. of HCFs in operation without				No. of HCFs having Captive Treatment Facilities	No of Captive Incinerators Operated by HCFs	CBWTFs Operational	CBWTFs under Construction	HCFs	CBWTFs					
I.	II.	III.	IV.	V.	VI.	VII.	VIII.	IX.	X.	XI.	XII.	XIII.	XIV.	XV.	XVI.	XVII.	XVIII.	XIX.	XX.	XXI.	XXII	XXIII
1	Andaman Nicobar	48	71	119	1269	59	51	60	Nil	199.3	199.3	1	1	Nil	Nil	33	0	199.3	Nil	Nil	Nil	Nil
2	Andhra Pradesh	4892	2571	7463	117184	3040	3002	1940	7463	15144	15144	Nil	Nil	11	2	0	0	Nil	10003	2042	1556	11
3	Arunachal Pradesh	208	129	337	3185	261	90	76	Nil	888.67	888.67	337	3	Nil	Nil	164	Nil	888.67	Nil	Nil	Nil	Nil
4	Assam	605	820	1408	25667	352	352	1046	300	7820.67	5869.26	118	10	1	Nil	Nil	Nil	2155.26	3714	1046	780	1
5	Bihar	4821	20175	24996	70653	1336	4135	20484	3364	34812.9	10038.156	3	1	4	Nil	10		288.29	9749.89	1320	1320	4
6	Chandigarh	46	763	809	4347	193	194	471	752	3188	3188	3	2	1	Nil	Nil	Nil	2571	617	Nil	Nil	1
7	Chhattisgarh	254	465	719	6132	455	341	Nil	1428	16096	4596.99	319	2	4	Nil	Nil	9	252.32	4344.67	72	1	1
8	DD & DNH	36	104	140	1061	105	81	INP	181	331	331	Nil	Nil	1	Nil	Nil	Nil	Nil	331	Nil	92	1
9	Delhi	1100	5329	6429	54185	1002	818	2110	6429	26757.5	26757.5	3	Nil	2	Nil	Nil	Nil	436.5	26321	413	413	2
10	Goa	177	541	INP	INP	141	76	582	Nil	1837.1	1837.1	207	Nil	Nil	Nil	128	0	1837.1	Nil	974	974	Nil
11	Gujarat	10882	18840	28960	193599	9460	8973	3365	28496	33706	33706	Nil	Nil	20	2	Nil	Nil	0	33706	2562	2562	20

12	Haryana	2723	1356	4079	53249	3946	3874	133	5376	14217.88	14217.88	Nil	Nil	11	Nil	Nil	1	Nil	14217.9	137	153	11
13	Himachal Pradesh	503	3299	3802	14150	1832	1569	1970	1500	2570.12	2570.12	2302	1	3	1	2301	Nil	206.75	2363.37	228	228	3
14	Jharkhand	1066	492	1558	26550	509	143	106	INP	12788.2	6720.62	INP	17	2	2	576	Nil	4333.62	2387	270	187	INP
15	J & K	992	5463	6445	15135	836	545	5609	718	4482.9	4279.96	2	1	3	NIL	Nil	Nil	842.37	3437.59	5618	311	3
16	Karnataka	7132	27995	35869	187772	15631	15369	9055	22980	65621.2	65621.2	2985	3	26	4	12	13	4406	61215	2837	684	24
17	Kerala	2287	10308	12595	110114	6861	6673	498	13386	71976.14	42225.8	23	24	1	Nil	11	1	5097.8	37128	90	134	1
18	Lakshadweep	10	15	25	250	INP	INP	25	Nil	527	110	25	3	Nil	Nil	5	Nil	110	Nil	Nil	Nil	NIl
19	Madhya Pradesh	3427	3009	6436	95421	3723	3710	2713	4623	15846.74	14547.37	2	2	13	1	144	Mil	238.46	14308.91	1440	1441	11
20	Maharashtra	19647	40763	60410	276985	15939	17037	4704	62960	62418	62134	218	4	31	1		5	2257	59877	48	52	25
21	Manipur	146	694	760	3639	102	102	INP	97	1140.16	905	3	3	1	Nil	Nil	Nil	375	530	1	1	Nil
22	Meghalaya	177	632	809	6716	438	385	371	22	1432.87	1432.87	89	Nil	1	Nil	85	Nil	941.4	491.47	Nil	40	Nil
23	Mizoram	102	14	116	3295	23	23	1	Nil	830.74	830.74	106	4	Nil	Nil	106	Nil	830.74	Nil	1	1	Nil
24	Nagaland	64	104	168	2423	168	168	Nil	Nil	631.75	631.75	168	4	Nil	Nil	168	Nil	631.75	Nil	Nil	Nil	Nil
25	Orissa	1443	1816	3259	44865	860	697	Nil	609	14564	14564	2453	5	5	1	Nil	13	11173	3391	88	198	1
26	Puducherry	86	108	242	12112	208	178	34	437	4319.8	5834	1	1	1	Nil	Nil	Nil	34	5800	36	38	1
27	Punjab	3577	4657	8234	71162	4660	4425	3765	8234	15980.7	15980.7	Nil	Nil	4	2	Nil	Nil	Nil	15980.7	3739	3739	2
28	Rajasthan	4939	1537	6476	119524	1396	1155	1702	3109	22261.756	16913.49	733	INP	8	7	Nil	3	2372.2	14541.49	1233	827	5
29	Sikkim	35	249	284	1766	232	232	52	Nil	425.1	311.82	132	8	Nil	Nil	88	Nil	311.82	Nil	9	9	Nil
30	Tamil Nadu	3949	358	4307	144731	4307	4307	715	4607	47196.9	47196.9	Nil	Nil	8	3	1	2	Nil	47196.9	103	3	8
31	Telengana	3166	1999	5165	105331	1708	1670	475	5181	16243	16243	Nil	Nil	11	Nil	Nil	0	Nil	16243	520	520	11
32	Tripura	158	1585	1743	4701	536	536	Nil	207	1401.5	1401.5	158	4	1	1	Nil	2	1169.76	231.74	Nil	Nil	Nil
33	Uttarakhand	1015	1297	2312	19765	582	328	1730	1341	4111.39	4075.39	1426	3	2	Nil	Nil	2	1137.7	2937.69	1732	102	1
34	Uttar Pradesh	14454	11148	25602	253927	21881	20927	4675	9590	52500	52500	10	10	18	Nil	Nil	Nil	6105	46395	171	27	18
35	West Bengal	2990	4757	7747	116991	7747	7619	Nil	7747	34123.62	34123.62	1	Nil	6	1	Nil	Nil	125	33998.62	571	563	6
36	DGAFMS	225	368	593	38506	593	571	Nil	Nil	6350.64	6350.64	498	4	Nil	Nil	Nil	Nil	5736.13	614.51	Nil	Nil	Nil
	Total	**97382**	**173831**	**270416**	**2206362**	**111122**	**110356**	**68467**	**201137**	**614743.246**	**534278.346**	**12326**	**120**	**200**	**28**	**3832**	**51**	**57063.94**	**472073.45**	**27301**	**16956**	**172**

Annual Report

on

Biomedical Waste Management

as per

Biomedical Waste Management Rules, 2016

For the year 2019

Central Pollution Control Board
(Ministry of Environment Forest & Climate Change)
Parivesh Bhawan, East Arjun Nagar
Delhi – 110032

Introduction:

Biomedical Waste Management Rules, 2016 stipulates that every Occupier and Operator of Common Biomedical Waste Treatment Facility shall submit the Annual Report to concerned State Pollution Control Board. Further, State Pollution Control Boards and Pollution Control Committees shall compile and submit the Annual Report Information to Central pollution Control Board for the preceding year before 31st July of every year. Central Pollution Control Board shall compile, review and analyse the annual data submitted by SPCBs and PCCs and submit the same to Ministry of Environment Forests & Climate Change.

Due to COVID-19 Pandemic there has been a delay in compiling and submitting the information to State Boards and CPCB. However, every State Board has submitted the Annual Report Information on Biomedical Waste Management for the year 2019.

Bio-medical Waste Management Scenario

Annual Report Information has been submitted by 35 SPCBs/PCCs and DGAFMS for the year 2019 and as per the compiled annual report information for the year 2019, there are 3, 22,425 no. of Health Care Facilities (HCFs) out of which 1, 06,796 no. of HCFs are bedded and 2, 15,780 no. of HCFs are non-bedded. 1, 53,885 no. of HFCs are granted authorization under the BMW Rules. 2, 35,571 no. of HCF utilises CBWTF and 18,015 No. of HCFs are having captive bio-medical waste treatment and disposal facilities. There are 202 no. of CBWTFs in operation (35 under construction). The total generation of bio-medical waste is about 619 tonnes per day out of which about 544 tonnes per day are treated in CBWTFs and captive treatment facilities. About 55 tonnes per day are treated by captive treatment facilities and about 489 tonnes per day are treated by CBWTF. As reported, 29,062 no. of HCFs/CBWTFs observed to be violating the provisions of the BMW Rules. State-wise detail of annual data on biomedical waste management is given at Annexure I. The brief bio-medical waste management scenario in the Country is given below:

- No. of HCFs : 3,22,425
- No. of bedded HCFs : 1,06,796
- No. of non-bedded HCFs : 2,15,780
- No. of beds : 24,86,327
- No. of CBWTFs : 202* + 35**
- No. of HCFs granted authorization : 1,53,885
- No. of HCFs having Captive Treatment Facilities : 18,015
- No. of Captive Incinerators Operated by HCFs : 136

- Quantity of bio-medical waste generated in Tonnes/day : 619
- Quantity of bio-medical waste treated in Tonnes/day : 544
- No. of HCFs violated BMW Rules : 29,062
- No. of Show-cause notices/Directions issued to defaulter HCFs : 17,435

Note: (i) * - CBWTFs in operation (ii) ** - CBWTFs under installation

Inventory on number of biomedical waste generating facilities:

As per BMWM Rules, 2016, inventorization of Healthcare Facilities has been done by States/UTs and as per the compiled annual report information for the year 2019, there are 3,22,425 no. of Health Care Facilities (HCFs) out of which 1,06,796 no. of HCFs are bedded and 2,15,780 no. of HCFs are non-bedded. Since renotification of BMWM Rules, 2016, an increase in no. of HCFs has been observed which is because of inclusion of non-bedded HCFs under the purview of said Rules, as shown in ***Figure 1***. As informed by State Boards, Inventorization of Healthcare Facilities is also carried out with respect to bedded and non-bedded HCFs as categorised under BMWM Rules, 2016.

Figure 2 indicates increase in number of non-bedded HCFs identified during 2016 -2019. Based on Annual Report information, in 2018 bedded HCFs were 97,382 and non-bedded HCFs were 1, 73,831 whereas in 2019, bedded HCFs are 1,06,796 and non-bedded HCFs are 2,15,780. Further, since 2016 percentage of total no. of HCFs has been steadily increased.

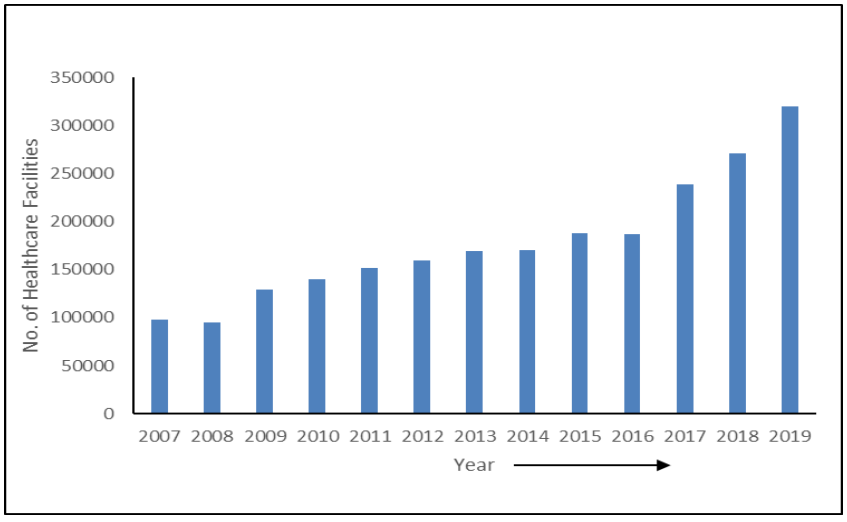


Figure 1: Development of total no. of Healthcare Facilities from 2007 to 2019

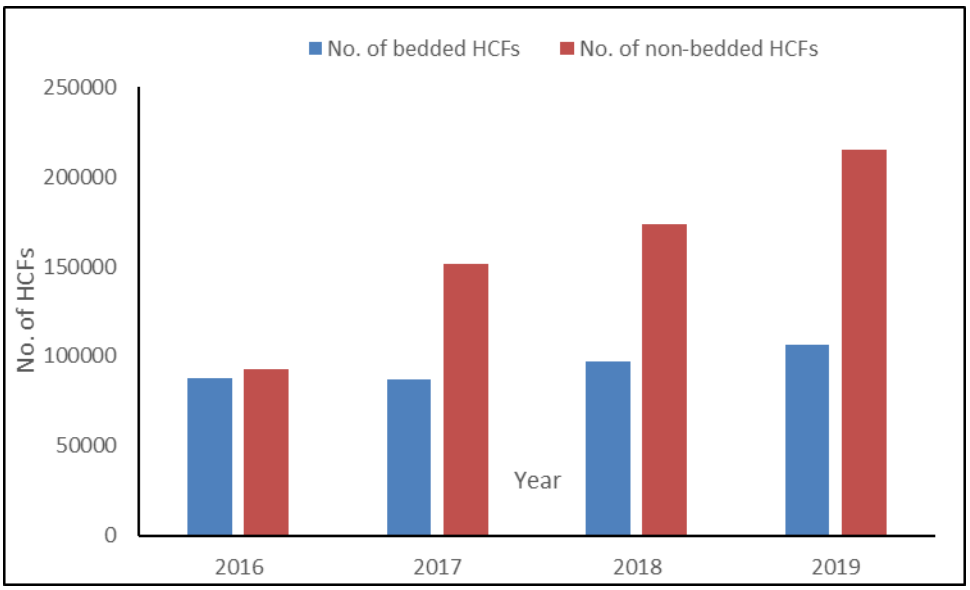


Figure 2: Number of bedded and non-bedded HCFs during 2016 to 2019

Biomedical Waste Generation and Treatment

As reported by State Boards, about 619 tons/day of biomedical waste was generated during the year 2018-2019 by 3,22,425 numbers of Healthcare Facilities. Out of 619 tons/day of biomedical waste only 544 tons/day of biomedical waste is treated and disposed off by 202 CBWTFs and 18,015 nos. of captive treatment facilities installed by Healthcare Facilities. Biomedical waste of about 74 tons/day might get disposed off through deep burials located at isolated places.

States namely Assam, Bihar, Chhattisgarh, Jammu & Kashmir, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Manipur, Nagaland, Odisha and Rajasthan are the States where gap in generation and treatment of biomedical waste has been observed. Hence, concerned State Boards should examine this issue and ensure that biomedical waste is disposed off in line with provisions under BMWM Rules, 2016.

States having Class I cities namely Chennai, Kolkata, New Delhi and Mumbai have minimum of about 28 tons/day of biomedical waste however, States namely Bihar, Gujarat, Karnataka, Kerala, Uttar Pradesh also generates enormous quantity of biomedical waste.

Treatment & Disposal Facilities for bio-medical waste:

BMWM Rules, 2016 stipulates that the biomedical waste shall be treated & disposed of by Common Biomedical Waste Treatment Facility. However, BMWM Rules, 2016 restricts occupier for establishment of on-site or captive bio-medical waste treatment and disposal facility, if a service of common bio-medical waste treatment and

disposal facility is available within a distance of seventy-five kilometres. As per Annual Report Information submitted by SPCBs/PCCs for the year 2019, currently there are 202 numbers of CBWTFs operated in the Country and 35 CBWTFs are under construction. There are 18,015 captive treatment facilities installed by HCFs.

As per BMWM Rules, 2016, CBWTFs operators shall take all necessary steps to ensure that the bio-medical waste collected from the occupier is transported, handled, stored, treated and disposed of, without any adverse effect to the human health and the environment, in accordance with these Rules and guidelines, inform the prescribed authority immediately regarding the occupiers which are not handing over the segregated bio-medical waste in accordance with Rules, establish bar coding and global positioning system for handling of bio- medical waste, comply with emission/discharge standards etc.

The CBWTFs in the country are operating at cumulative treatment and disposal capacity of 1200 MT/day, of which incineration capacity is 814 MT/day. The present generation of 619 MT/day may look adequate at national perspective, however, at individual State's level availability of CBWTFs may vary.

It is evident from the fact that States namely Andaman & Nicobar, Assam, Chhattisgarh, Goa, Himachal Pradesh, Jharkhand, J & K, Karnataka, Kerala, Lakshadweep, Madhya Pradesh, Maharashtra, Meghalaya, Mizoram, Nagaland, Odisha, Puducherry, Rajasthan, Sikkim, Tamil Nadu, Tripura and Uttarakhand use deep burial pits for disposal of BMW, however as per BMWM Rules, 2016 use of deep burials is allowed only in remote or rural areas where there is no access of CBWTF. These States/UTs required to ensure that deep burial pits are authorized by respective SPCB/PCC and as per the standard prescribed under said Rules. SPCBs/PCCs should also strive to facilitate installation of CBTFs wherever possible to cover as many Healthcare facilities so that the burden of landfilling infectious (Yellow category) biomedical waste can be reduced.

Capacity utilization of CBWTFs vary among States/UTs depending on available infrastructure in a specific coverage area of 75Km, number of CBWTFs, geographical distribution in the State, population density in particular coverage area as well as connectivity of HCFs with CBWTFs. Therefore, SPCBs/PCCs should relook at the available infrastructure considering above factors.

In States namely Assam, Jammu Kashmir, Kerala, Odisha, Pondicherry and Tamil Nadu, the capacity utilization of existing common infrastructure has exceeded 75%, therefore these States may examine the need for additional facilities by conducting gap analysis

in each coverage area. While States namely A&N, Arunachal, Goa, Lakshadweep, Mizoram, Nagaland and Sikkim does not have common facilities for treatment & disposal of biomedical waste, should facilitate setting up of new facilities of appropriate capacities.

SPCBs/PCCs namely Assam, Bihar, Chhatisgarh, Delhi, Himachal Pradesh, Haryana, Jammu & Kashmir, Lakshadweep, Madhya Pradesh, Manipur, Mizoram, Pondicherry, , Punjab, Tamil Nadu, Telangana, Tripura, Uttar Pradesh, Uttarakhand and West Bengal have already conducted gap analysis to assess requirement of additional CBWTFs and accordingly they are under process of setting up of additional CBWTFs. All the remaining SPCBs/PCCs are required to require conducting gap analysis for entire State to ensure coverage of common facilities in entire population and State's geographical area so as to minimize usage of deep burial pits for disposal of biomedical waste.

Mizoram SPCB has submitted proposal seeking financial assistance from Ministry of Environment Forest & Climate Change.

State-wise details on Common Infrastructure and capacity utilization

S.No	Name of State	BMW Generation (Tons/day)	No of CBWTFs	BMW Treatment (Tons/day)	Authorized Capacity	CBWTF capacity utilized
1	Andaman and Nicobar Islands	0.7	0	0.7	No CBWTF	NA
2	Andhra Pradesh	15.1	12	15.1	44.4	34%
3	Arunachal Pradesh	0.4	0	0.4	No CBWTF	NA
4	Assam	8.8	1	6.2	7.2	86%
5	Bihar	34.8	4	10.8	45.3	24%
6	Chandigarh	3.9	1	3.9	6.5	60%
7	Chhattisgarh	7.07	4	7.03	22.8	19%
8	Dadar Nagar Haveli	0.3	Sent to Surat CBWTF	0.3	Sent to Surat CBWTF	NA
9	Delhi	28.8	2	28.8	62.8	46%
10	Goa	1.5	0	1.5	No CBWTF	NA
11	Gujarat	36.4	20	36.4	103.9	35%
12	Haryana	14.8	11	14.8	83.4	18%
13	Himachal	3.4	2	3.4	9.2	37%

S.No	Name of State	BMW Generation (Tons/day)	No of CBWTFs	BMW Treatment (Tons/day)	Authorized Capacity	CBWTF capacity utilized
	Pradesh					
14	Jammu and Kashmir	5.9	3	5.9	9.8	79%
15	Jharkhand	7.6	4	7.6	13.1	45%
16	Karnataka	77.5	27	36.3	108.4	33%
17	Kerala	42.9	1	40.3	48.0	84%
18	Lakshadweep	0.1	0	0.1	No CBWTF	NA
19	Madhya Pradesh	17.8	12	17.3	46.5	37%
20	Maharashtra	62.3	31	62.3	130.9	48%
21	Manipur	1.0	1	0.9	2.6	35%
22	Meghalaya	1.2	1	1.2	0.8	Inadequate capacity
23	Mizoram	0.9	0	0.9	No CBWTF	NA
24	Nagaland	0.6	Nil	0.5	No CBWTF	NA
25	Odisha	18.0	5	17.4	14.9	Inadequate capacity
26	Puducherry	5.9	1	5.9	5.9	No additional capacity
27	Punjab	16.05	5	16.05	29.1	55%
28	Rajasthan	20.7	8	18.5	35.3	52%
29	Sikkim	0.48	0	0.48	No CBWTF	NA
30	Tamil Nadu	58.3	8	58.3	72.9	80%
31	Telangana	20.5	11	20.5	118.7	17%
32	Tripura	1.4	1	1.4	0.8	Inadequate capacity
33	Uttarakhand	3.8	2	3.8	7.5	51%
34	Uttar Pradesh	52.5	18	52.5	91.3	58%
35	West Bengal	41.6	6	41.6	79.9	52%
	TOTAL	613	202	539.06	1200	45%

Note: (i) In States where there is no CBWTFs, the biomedical waste is disposed off through captive treatment facilities (incineration or deep burial) installed by HCFs.

(ii) Disposal by incineration is considered as 60% waste generated.

(iii) The capacity of autoclave has been calculated considering 6 batches per day.

Key Performance indicators for assessing implementation of BMWM Rules, 2016:

The issue of non - compliance of the provisions of BMWM Rules, 2016 by the States and UTs has also been reviewed by Hon'ble National Green Tribunal (NGT) in Original Application No. 710 of 2017. Hon'ble NGT observed that unscientific disposal of biomedical waste had potential of serious diseases such as Gastrointestinal infection, Respiratory infection, Eye infection, Genital infection, Skin etc. and such unscientific disposal also causes environmental pollution may lead to the transmission of diseases like typhoid, cholera, hepatitis and AIDS through injuries from syringes and needles contaminated with various communicable diseases.

Hon'ble NGT in its order stated that States/UTs should ensure compliance to BMWM Rules, 2016 and action should be taken by States/UTs as per the action plans made for compliance to BMWM Rules, 2016.

CPCB identified 12 Key Performance Indicators (KPIs) to assess States with respect to effectiveness in monitoring, ensuring compliance and implementation of BMWM Rules, 2016. Following 12 indicators in different in States/UTs, have been monitored and gaps / discrepancies observed for improvement were communicated to State Pollution Control Boards and Pollution Control Committees:

1. Inventory of all Healthcare Facilities and biomedical waste generation
2. Authorization to all Healthcare Facilities including non-bedded HCFs
3. Facilitate setting-up adequate number of Common Biomedical Waste Treatment Facilities (CBWTFs) to cover entire State or all HCFs
4. Constitution of State Advisory Monitoring Committee and District Level Monitoring Committee
5. Implementation status of Barcode system
6. Monitoring of Healthcare Facilities other than hospitals/clinics such as Veterinary Hospitals, Animal Houses, AYUSH Hospitals etc.
7. Monitoring infrastructure of SPCBs/PCCs
8. Training and Capacity Building of officials of SPCBs/PCCs and Healthcare Facilities

9. Installation of OCEMS by CBMWTs as a self-monitoring tool and transmission of data with servers of SPCBs/ CPCB

10. Preparation of Annual Compliance Status Reports

11. Compliance by Common Facilities (emission/discharge standards, barcoding, proper operation, etc.)

12. Compliance by Healthcare Facilities (Segregation, pre-treatment, on-site storage, barcoding and other provisions etc.)

6.1 Inventory of all Healthcare Facilities and biomedical waste generation and their authorisation: Inventory of biomedical waste generating units is an essential requirement to manage biomedical waste. It will help in planning and implementation, through authorization process, thereby waste generated from facilities can be accounted for proper collection and disposal.

As per the information received from States, 32 SPCBs/PCCs have completed the inventory as on 30.11.2020. It is reported that inventory in in process in Maharashtra and Rajasthan.

6.2 Implementation of Barcode System

Rules envisage implementation of barcode system by CBWTFs and HCF to track movement of biomedical waste between points of generation till its disposal at common facilities. As per status reports, only 04 States/UTs namely Bihar, Kerala, Punjab and West Bengal have adopted barcode system for tracking of biomedical waste.

22 States/UTs namely Andaman & Nicobar, Andhra Pradesh, Assam, Chandigarh, Chhattisgarh, Delhi, Gujarat, Haryana, Himachal Pradesh, Jammu & Kashmir, Lakshadweep, Madhya Pradesh, Maharashtra, Manipur, Odisha, Puducherry, Rajasthan, Meghalaya, Tamilnadu, Telangana, Uttar Pradesh and Uttarakhand have reported that they are under process of adoption of Barcode system.

02 States/UTs namely Mizoram, and Sikkim submitted that there is no CBWTFs in operation and hence barcode system is not adopted yet. However, as per CPCB guidelines, in case the areas not covered by CBWTFs, concerned SPCB will be responsible for implementation of barcode system.

Hon'ble Supreme Court while hearing a matter of improper disposal of BMW in WP(C) 13029 of 1985, directed Ministry of Environment Forest & Climate Change and Central Pollution Control Board to implement the Barcode system through Centralized system. Accordingly, CPCB has already submitted technical proposal to MoEF&CC envisaging integration of all barcode systems into a central portal operated by CPCB. Further, as suggested by MoEF&CC, CPCB has constituted a Technical Committee to advise on planning and implementation of Barcode System at Central Level.

6.3 Monitoring of Healthcare Facilities other than Hospitals / Clinics

Healthcare Facilities like Veterinary Hospitals, AYUSH hospitals, Animal Houses etc. also come under the purview of BMWM Rules, 2016 and are responsible for ensuring scientific disposal of biomedical waste. CPCB has advised SPCB/PCCs for carrying out monitoring of such HCFs and also to ensure their authorization.

As per the compliance reports, all SPCBs/PCCs have reported that they have included facilities other than clinics and hospitals in their inventory, except Assam, Kerala and Lakshadweep.

6.4 Monitoring Infrastructure of SPCBs/PCCs and organizing training programs

Andaman & Nicobar, Chhattisgarh, Haryana, Lakshadweep, Manipur, Tripura and Rajasthan have informed that they are under process of upgradation of their laboratories for conducting emission monitoring and effluent analysis. Remaining SPCBs/ and PCCs have adequate infrastructure to conduct monitoring to very compliance to standards / norms prescribed under BMWM Rules, 2016.

Training program is ongoing activity of State Boards and as informed every SPCB and PCC conducts training program regularly for Healthcare workers and State Board officials.

6.5 Installation of Online Continuous Emission Monitoring System

As per rules, every CBWTF with incinerator facility is required install online continuous emission monitoring system (OCEMS) and report the real time emission data to SPCB and CPCB servers. As per status report, 75% of CBWTFs have installed OCEMS systems. States namely Andhra Pradesh, Assam, Chandigarh, Delhi, Haryana, Himachal Pradesh, Puducherry, Punjab, and Telangana, have ensured data transfer from all CBWTFs in respective States.

One or more CBWTFs in the States namely Bihar, Chhattisgarh, Gujarat, Jharkhand, Jammu & Kashmir, Karanataka, Madhya Pradesh, Maharashtra, Rajasthan, Tamilnadu,

Uttarakhand, Uttar Pradesh and West Bengal have yet connected with CPCB server. None of the CWBTFs in Odisha and Manipur have installed OCEMS.

As per information available at CPCB OCEMS server, about 153 out of 202 CBWTFs have installed OCEMS analyzers and transmitting data to CPCB server.

6.6 Submission of Annual Report of Biomedical Waste Management

Every State Board has submitted annual compliance Report on Biomedical Waste Management for the year 2019. Gaps identified in compliance reports have been communicated to concerned SPCB/PCC for clarification.

6.7 Compliance by CBWTFs and HCFs

As per status reports, SPCBs/PCCs have been conducting monitoring of CBWTFs and HCFs for verification of compliance. As per Annual report, SPCBs/PCCs have observed 29062 violations against which 17435 directions / Notices were issued against defaulting HCFs and CBWTFs.

7. Guidelines for COVID-19 Biomedical Waste Management:

In view of pandemic situation, CPCB has prepared seperate guidelines for "Handling, Treatment and Disposal of Waste Generated during Treatment/Diagnosis/ Quarantine of COVID-19 Patients" which gives guidance on segregation, handling, management, storage, collection, treatment and disposal of COVID-19 biomedical waste generated during treatment, diagnosis, or quarantine of COVID-19 patients.

Central; Pollution Control Board has also develop mobile tracking application to be used by COVID-29 waste generator and CBWTF operator to feed daily data on biomedical waste generation.

CPCB has created separate page on its website public awareness related to COVID-19 waste management mentioning about guidelines, posters, Dos and Don'ts, videos and monthly status of waste management

8. Over-all observations and Recommendations

(i) It is noticed that, consequent to directions issued by Hon'ble NGT, there has been 20% increase in number of HCFs identified and 40% increase in number of HCFs brought under the process authorization under BMWM Rules, 2016. This would result in improvement in management of biomedical waste. However, there is no information on about 20% of the identified HCFs since those facilities are yet to be brought under

authorization process. SPCBs/PCCs should therefore, compete the remaining task expeditiously.

(ii) It is observed that out of 3,22,425 no. of HCFs, about 73% of them utilising services of CBWTFs, while 18,015 No. of HCFs, that is 5.5 % of HCFs are having captive bio-medical waste treatment and disposal facilities. Since most of the captive facilities utilize deep burial method of disposal, the objective of the States should be to extent possible minimize disposal of biomedical waste through captive facilities and facilitate availability of CBWTFs for final disposal.

(iii) The data indicates that only 10 States/UTs namely Chhattisgarh, Haryana, Lakshadweep, Manipur, Nagaland, Puducherry, Tamil Nadu, Telangana, Uttar Pradesh and West Bengal have achieved more than 80% authorization of inventoried HCFs. The overall efficiency of authorizations in the country is far from satisfactory at 48%. Therefore all SPCBs/PCCs should expedite the process of authorizing healthcare facilities, so that waste generated from facilities can be verified for proper collection and disposal.

(iv) The present generation of 619 MT/day of biomedical waste may look adequate at national perspective; however, at individual State's level availability of CBWTFs may vary. It is evident from the fact that despite having CBWTFs, States namely Assam, Himachal Pradesh, Jharkhand, J & K, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Meghalaya, Odisha, Puducherry, Rajasthan, Tamil Nadu and Uttarakhand still use deep burial pits for disposal of BMW as the existing CBWTFs fail to cover entire State.

(v) Capacity utilization of CBWTFs vary among States/UTs depending on available infrastructure in a specific coverage area of 75Km, number of CBWTFs, geographical distribution in the State, population density in particular coverage area as well as connectivity of HCFs with CBWTFs. Therefore, SPCBs/PCCs should relook at the available infrastructure and facilitate new CBWTFs to cover entire population and State's geographical area so as to minimize usage of deep burial pits to the extent possible.

(vi) In States namely Assam, Jammu Kashmir, Kerala, Odisha, Pondicherry and Tamil Nadu, where the capacity utilization of existing common

infrastructure has exceeded 75%, these States may examine the need for additional facilities by conducting gap analysis in each coverage area.

(vii) States namely A&N, Arunachal, Goa, Lakshadweep, Mizoram, Nagaland and Sikkim do not have common facilities for treatment & disposal of biomedical waste should facilitate setting up of new facilities of appropriate capacities in consultation with State Governments.

(viii) Having 4 years completed since re-notification of Rules, SPCBs/PCCs may now act strictly against non-complying HCFs. They may consider imposition of ECC as per the guidelines issued by CPCB in compliance with Orders of Hon'ble NGT.

(ix) Incidents of illegal dumping of biomedical waste are reported from time to time, and such incidents were also reported during COVID19 pandemic period. CPCB has prepared separate guidelines for "Monitoring Compliance of Common Biomedical Waste Treatment Facilities by State Pollution Control Boards / Pollution Control Committees" which provide check-lists for monitoring CBWTFs specially to monitor illegal handling of biomedical waste. Said guidelines gives guidance to State Boards to verify Operational Compliance, Adequacy of Infrastructure, Reporting of data and Inspections & Monitoring. SPCBs/PCCs should periodically verify operations of CBWTFs as per said check list.

(x) Compliance of CBWTF is an important factor since CBWTFs release combustion gases and handles highly infectious wastes from multiple hospitals. SPCBs should therefore consider closing down or restrict operation of non-complying CBWTFs till they time it demonstrates compliance, and mean while arrangement should be made to transport waste collected from member HCFs of such non-compliant facilities to another CBWTF nearby. SPCBs should also treat non-complying facilities as inadequate and allow new compliant facilities in same coverage area.

(xi) As per Rules, implementation of barcode system is mandatory to track movement of BMW, this system would also help in daily accounting of BMW. Despite the lapse of 3 years given for implementation of the system, only 04 States/UTs namely Bihar, Kerala, Punjab and West Bengal have adopted barcode system and 22 States/UTs are under process of adoption of the same. While there is some improvement

implementing barcoding system, it is reported that HCFs are not joining the system. This indicates that SPCBs have failed to implement this provision effectively.

(xii) There has been improvement in submission of Annual compliance status reports by SPCBs. SPCBs/PCCS shall continue the same and they may prepare State specific Annual reports and upload the same in respective websites.

(xiii) About 75% of CBWTF have installed online continuous emission monitoring system (OCEMS) and real time emission data transmitted to SPCB and CPCB servers. States namely Bihar, Chhattisgarh, Gujarat, Jharkhand, Jammu & Kashmir, Madhya Pradesh, Maharashtra, Rajasthan, Tamilnadu, Uttarakhand, Uttar Pradesh and West Bengal should ensure that all CBWTFs in their State install OCEMS systems and connected to CPCB and SPCB server. Odisha, Meghalaya, Tripura and Manipur should ensure installation of OCEMS in their States in time bound manner.

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Annexure-I

Annual Report Information on Bio-medical Waste Management Scenario in the Country for the Year 2019 (As submitted by SPCBs/PCCs and DGAFMS)

As on 12-03-2021

S.No.	Name of the State/UT	Total no. of Bedded Health Care Facilities (HCFs)	Total no. of Non-bedded Health Care Facilities (HCFs)	Total no. Health Care Facilities (HCFs)	Total no. of Beds	Authorization Status			No. of HCFs utilization CBWTFs	Total Quantity of BMW generated (kg/day)	Total Quantity of BMW Treated and Disposed (kg/day)	Captive BMW Treatment Facilities Operated by the (HCFs)		Common Bio-medical Waste Treatment Facilities (CBWTFs)		Deep burial installed by HCF & CBWTFs		Total BMW treated by captive treatment facilities (Kg/day)	Total BMW treated by CBWTFs (kg/day)	Total no. of violation by HCFs & CBWTFs	Total No. of show cause notices/Directions issued to defaulter HCFs/CBWTFs	No. of CBWTFs that have installed OCEMS
						Total no. of HCFs applied for authorization	Total no. of HCFs granted authorization	Total no. of HCFs in operation without				No. of HCFs having Captive Treatment Facilities	No of Captive Incinerators Operated by HCFs	CBWTFs Operational	CBWTFs under Construction	HCFs	CBWTFs					
I.	II.	III.	IV.	V.	VI.	VII.	VIII.	IX.	X.	XI.	XII.	XV.	XVI.	XVII.	XVIII.	XIX.	XX.	XXI.	XXII.	XXIII.	XXIV.	XXV.
1	Andaman Nicobar	48	134	182	1466	183	62	104	0	684.62	684.62	1	7	0	0	45	0	546	0	0	0	0
2	Andhra Pradesh	5525	4098	9531	131071	7129	7092	485	9095	15051.22	15051.22	0	0	12	2	0	0	0	15051.22	466	640	12
3	Arunachal Pradesh	190	127	308	2239	261	90	76	0	395	395	308	11	0	0	147	0	395	0	76	76	0
4	Assam	675	905	1579	26069	446	276	1100	204	8819.91	6234.08	362	27	1	0	8	1	4574.08	1660	414	409	1
5	Bihar	4821	20174	24996	70563	5160	2809	17836	7853	34812.9	10777.1	3	1	4	1	0	0	268.1	10509	809	809	4
6	Chandigarh	49	841	890	4442	589	571	1	890	3869	3869	2	0	1	0	0	0	1126	2743	232	412	1
7	Chhattisgarh	1186	1286	2472	23772	2576	2105	12	2446	7071.904	7037.4	1202	3	4	4	INP	8	998.508	6038.9	33	1	2
8	Daman &Diu and Dadra & Nagar Haveli	40	106	146	840	98	93	INP	146	300	300	0	0	waste handover to Gujarat facility	0	0	0	0	300	Nil	92	1
9	Delhi	1225	9052	10227	57653	6033	5444	0	10227	28785.15	28785.15	1	1	2	0	0	0	302.15	28483	3597	1004	2
10	Goa	148	631	779	5051	407	163	582	0	1488.95	1488.95	165	1	0	0	190	0	1488.95	0	0	0	0
11	Gujarat	11440	19846	31286	212105	6665	6286	3613	31286	36421	36421	0	0	20	2	0	0	0	36421	3068	3068	20
12	Haryana	2837	2689	5526	54773	5333	5316	193	5526	14810	14810	0	0	11	0	0	0	0	14810	128	83	11
13	Himachal Pradesh	544	8439	8983	16020	4923	1900	4060	1973	3406.6	3406.6	6141	1	2	1	6140	0	371.23	3035.36	55	55	2
14	Jharkhand	1163	683	1846	28443	601	297	57	8818	7671.45	7671.45	INP	17	4	1	347	0	5819.45	1852	3231	325	2
15	J & K	1541	5065	6606	16972	946	604	5660	1046	5902.62	5896.25	1	0	3	0	INP	0	889.75	5006.05	5693	120	1

S.No.	Name of the State/UT	Total no. of Bedded Health Care Facilities (HCFs)	Total no. of Non-bedded Health Care Facilities (HCFs)	Total no. Health Care Facilities (HCFs)	Total no. of Beds	Authorization Status			No. of HCFs utilization CBWTFs	Total Quantity of BMW generated (kg/day)	Total Quantity of BMW Treated and Disposed (kg/day)	Captive BMW Treatment Facilities Operated by the (HCFs)		Common Bio-medical Waste Treatment Facilities (CBWTFs)		Deep burial installed by HCF & CBWTFs		Total BMW treated by captive treatment facilities (Kg/day)	Total BMW treated by CBWTFs (kg/day)	Total no. of violation by HCFs & CBWTFs	Total No. of show cause notices/Directions issued to defaulter HCFs/CBWTFs	No. of CBWTFs that have installed OCEMS
						Total no. of HCFs applied for authorization	Total no. of HCFs granted authorization	Total no. of HCFs in operation without				No. of HCFs having Captive Treatment Facilities	No of Captive Incinerators Operated by HCFs	CBWTFs Operational	CBWTFs under Construction	HCFs	CBWTFs					
I.	II.	III.	IV.	V.	VI.	VII.	VIII.	IX.	X.	XI.	XII.	XV.	XVI.	XVII.	XVIII.	XIX.	XX.	XXI.	XXII.	XXIII.	XXIV.	XXV.
16	Karnataka	8013	29968	37981	324293	16744	16071	6895	18304	77545.6	36299.81	2976	1	27	2	2976	3	2373.81	33926	3926	905	27
17	Kerala	2126	11743	13869	97794	6986	6735	7108	15310	42932	40270	52	20	1	0	18	1	3417	36853	844	936	1
18	Lakshadweep	10	36	46	140	46	39	0	0	100.5	100.5	0	0	0	0	3	0	45.46	54.94	0	0	0
19	Madhya Pradesh	3817	3860	7677	100401	5629	5616	2048	5701	17846.68	17289	2	2	12	1	27	0	281.92	17007.08	907	907	12
20	Maharashtra	20231	43411	63642	283042	20090	21697	4008	58928	62254.62	62253.18	176	2	31	1	362	1	568	61685.18	273	225	30
21	Manipur	96	641	737	4854	737	737	0	0	953.1	864.8	545	3	1	0	0	0	247.1	617.7	1	0	0
22	Meghalaya	187	687	874	6979	554	533	320	40	1276.24	1276.24	187	0	1	0	187	0	962.32	313.9	0	0	0
23	Mizoram	68	76	144	2593	59	44	18	0	936.37	936.37	144	4	0	0	112	0	936.37	0	0	2	0
24	Nagaland	205	521	726	3486	480	480	Nil	Nil	891.8	652.5	5	5	0	0	245	0	652.5	Nil	246	246	0
25	Odisha	1426	2083	3509	45116	1771	1729	63	694	17993.14	17405.94	2705	0	5	2	2705	13	13546.64	3859.3	47	47	1
26	Puducherry	98	157	255	11635	228	206	27	462	5900	5900	1	1	1	0	1	0	19	5900	50	50	1
27	Punjab	4025	5570	9595	73817	5091	4323	3324	9595	16050.88	16050.88	0	0	5	1	0	0	0	16050.88	3139	3139	5
28	Rajasthan	5667	2433	8100	134090	3702	3154	888	6669	20685.65	18508.527	847	0	8	7	847	3	2187.65	16320.877	364	2573	8
29	Sikkim	34	253	287	2682	244	229	43	0	482.65	482.65	98	8	0	0	90	0	482.65	0	0	0	0
30	Tamil Nadu	6652	16625	23277	179190	21342	21071	1935	23277	58272	58272	0	0	8	2	0	1	0	58272	355	347	8
31	Telengana	3742	2800	6542	118699	5893	5552	649	6538	20472	20472	0	0	11	0	0	0	0	20472	826	826	11
32	Tripura	158	1585	1743	4701	536	536	0	0	1401.5	1401.5	158	4	1	1	141	0	1169.76	231.74	0	0	0
33	Uttarakhand	1121	2064	3185	22807	2252	1849	933	2034	3814.236	3814.24	1734	2	2	0	1154	2	942.05	2872.19	48	48	2
34	Uttar Pradesh	14454	11148	25602	253927	21881	20927	4675	INP	52500	52500	10	10	18	0	INP	INP	6105	46395	171	27	18
35	West Bengal	3008	5501	8509	126143	8509	8488	0	8509	41571.4	41571.4	1	0	6	7	0	0	125	41571.4	63	63	6
36	DGAFMS	226	542	768	38459	768	761	0	0	5748.79	5748.79	188	5	0	0	INP	0	4217.69	1531.104	0	0	0
	Total	**106796**	**215780**	**322425**	**2486327**	**164892**	**153885**	**66713**	**235571**	**619119.48**	**544898.15**	**18015**	**136**	**202**	**35**	**15745**	**33**	**55059.138**	**489843.821**	**29062**	**17435**	**189**

Annual Report

on

Biomedical Waste Management

as per

Biomedical Waste Management Rules, 2016

For the year 2020

Central Pollution Control Board
(Ministry of Environment Forest & Climate Change)
Parivesh Bhawan, East Arjun Nagar
Delhi – 110032

1. Introduction:

The Biomedical Waste has been regulated under Biomedical Waste Management Rules, 2016 as notified under Environment (Protection) Act, 1986 by the Ministry of Environment Forest & Climate Change. These Rules were first notified in the year 1998 and then revamped in the year 2016 to implement these rules more effectively and to improve the collection, segregation, processing, treatment and disposal of bio-medical wastes in an environmentally sound management thereby, reducing the bio- medical waste generation and its impact on the environment.

These Rules has mandate of preparation of Annual Inventory of biomedical waste generation, its collection, treatment and disposal. Under Rule 13, every Occupier and Common Biomedical Waste Treatment Facility Operator is required to prepare annual inventory for biomedical waste management. Further, State Pollution Control Boards and Pollution Control Committees shall compile and submit the Annual Report to Central Pollution Control Board for the preceding year before 31st July of every year. Central Pollution Control Board shall compile, review and analyse the annual data submitted by SPCBs / PCCs and submit the same to Ministry of Environment Forests & Climate Change.

2. Status of Submission of Annual Report:

Biomedical Waste Management Rules, 2016 stipulate format for preparation of Annual Report by the Occupier and Operator of CBWTF in Form IV and format for preparation of Annual Report by State Pollution Control Boards in Form IV(a). Due to COVID-19 pandemic, there has been a delay in submission of Annual Reports by State Boards to CPCB.

All SPCBs/PCCs have submitted the annual reports on biomedical waste management for the year 2020 except Nagaland. SPCBs namely Andhra Pradesh, Bihar , Chandigarh, Daman &Diu and Dadra & Nagar Haveli, Delhi, Goa, Gujarat , Himachal Pradesh , Kerala, Lakshadweep, Madhya Pradesh, Maharashtra, Mizoram, Odisha, Puducherry, Rajasthan, Sikkim, Tamil Nadu, Telangana and Uttarakhand submitted the information before July, 2021 and SPCBs namely Andaman Nicobar, Arunachal Pradesh, Assam, Chhattisgarh, Haryana, J & K, Jharkhand, Karnataka, Ladakh, Manipur, Meghalaya, Punjab, Tripura, Uttar Pradesh, West Bengal submitted the annual report after July, 2021.

3. Evaluation of Annual Report Information:

After scrutiny of annual report data for biomedical waste management as submitted by State Pollution Control Boards, following gaps / discrepancies were communicated to respective State Pollution Control Board for clarification and rectification:

1. HCFs are operational without authorization.
2. no. of HCFs (Bedded/non-bedded) to install liquid waste pre-treatment facilities.
3. Information w.r.to deep burial pits installed by HCFs/CBWTFs
4. district wise numbers of HCFs and district wise treatment and disposal of BMW in Kg/day

SPCBs namely Andhra Pradesh, Andaman & Nicobar, Bihar, Delhi, Chandigarh, Himachal Pradesh, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Meghalaya, Mizoram, Odisha, Puducherry, Sikkim, Telangana, Tamilnadu Tripura, Uttarakhand, West Bengal submitted the clarification on above observations of CPCB. However, SPCBs namely; Arunachal Pradesh, Chhattisgarh, Daman &

Diu and Dadra & Nagar Haveli, Goa, Gujarat, Haryana, Jammu & Kashmir, Ladakh, Lakshadweep, Punjab, Rajasthan, and Uttar Pradesh yet to respond.

4. Bio-medical Waste Management Scenario – a brief:

The total quantum of biomedical waste generation was reported as 774 tons/day of biomedical waste out of which 656 tons/day was non-COVID biomedical waste and 118 tons/day was COVID biomedical waste. There are 3,52,014 no. of Health Care Facilities (HCFs) out of which 1,13,186 no. of HCFs are bedded and 2,37,938 no. of HCFs are non-bedded. 2,44,282 no. of HCF utilises facilities of CBWTFs for collection, treatment & disposal of biomedical waste and 17,206 No. of HCFs are having their own captive bio-medical waste treatment and disposal facilities.

During COVID-19 Pandemic the biomedical waste was also collected from the quarantine centres/camps, home care/home isolation, sample collection centres, laboratories involved in COVID testing etc.

There are 208 no. of CBWTFs in operation and 33 no. of CBWTFs are under construction. The total generation of bio-medical waste is about 774 tonnes per day out of which about 708 tonnes per day of bio-medical waste (both COVID and non-COVID) were treated and disposed off by CBWTFs and captive treatment facilities. During COVID-19 Pandemic, almost every CBWTF was involved in collection, treatment & disposal of COVID-19 biomedical waste.

State-wise detail of annual data on biomedical waste management is given at **Annexure I**. The brief bio-medical waste management scenario in the Country is given below:

- No. of HCFs : 35,20,14
- No. of bedded HCFs : 1,13,186
- No. of non-bedded HCFs : 2,37,938
- No. of beds : 2,5,44,116
- No. of CBWTFs : 208* + 33**
- No. of HCFs granted authorization : 1,60,736
- No. of HCFs having Captive Treatment Facilities : 17,206
- No. of Captive Incinerators Operated by HCFs : 125
- Quantity of bio-medical waste generated in Tonnes/day : 774
- Quantity of bio-medical waste treated in Tonnes/day : 708
- No. of HCFs violated BMW Rules : 22,261
- No. of Show-cause notices/Directions issued to defaulter HCFs :13, 389

Note: (i) * - CBWTFs in operation (ii) ** - CBWTFs under installation

5. Annual Report Information – a comparison with previous year

The number of healthcare facilities have been increased over the period of time. During the year 2019, total number of Healthcare Facilities were reported as 3,22,425 however, the same has increased to 3,52,014 with increase in number of beds. Total number of authorized healthcare facilities have also increased and there are 1,60,736 HCFs are authorised out of 3,52,014 HCFs. However, there is still in number of authorized HCFs which needs to be rectified by State Boards. The total generation of bio-medical waste was about 619 tonnes per day out of which about 544 tonnes per day of bio-medical waste was treated and disposed off in 2019, however the amount of generation is reported as 656 tonnes per day and amount of treatment and disposal is 590

tonnes per day for the year of 2020. For the treatment & disposal of generated biomedical waste, the number of common biomedical waste treatment facilities have also increased from 202 to 208 and number of captive treatment facilities have decreased from 18,015 to 17,206. Detailed comparison on biomedical waste management scenario is given below:

Following gap identified by the CPCB w.r.to AR-2019 and 2020;

Particulars	**Year 2019**	**Year 2020**
No. of HCFs	3,22,425	3,52,014
No. of bedded HCFs	1,06,796	1,13,186
No. of non-bedded HCFs	2,15,780	2,37,938
No. of beds	24,86,327	2,5,44,116
No. of CBWTFs	202	208
No. of HCFs utilizing CBWTFs	2,35,571	2,44,282
No. of HCFs granted authorization	1,53,885	1,60,736
No. of HCFs having Captive Treatment Facilities	18,015	17,206
No. of Captive Incinerators Operated by HCFs	136	125
Quantity of bio-medical waste generated in Tonnes/day	619	774
Quantity of bio-medical waste treated in Tonnes/day	544	708
No. of HCFs violated BMW Rules	29,062	22,261
No. of Show-Cause notices/Directions issued to defaulter HCFs	17,435	13, 389

6. Biomedical Waste Management During COVID-19 Pandemic:

On 11th March, 2020 World Health Organization announced COVID-19 Pandemic worldwide. In order to deal with COVID-19 pandemic, State and Central Governments have initiated various steps, which include setting up of quarantine centres /camps, Isolation wards, sample collection centres and laboratories. Central Pollution Control Board has been reviewing and compiling the COVID-19 biomedical waste data as well. During May, 2020 to March, 2021, the COVID-19 biomedical waste reported to be about 39,725 tons. Month wise average COVID-19 biomedical waste generation in the Country during the period from May, 2020 till March, 2021 is given below:

S.No.	Months	COVID 19 BMW (Tonnes/ Day)
1	May, 2020	20
2	June, 2020	62
3	July, 2020	116
4	August, 2020	147
5	September, 2020	166
6	October, 2020	158
7	November, 2020	122
8	December, 2020	102
9	January, 2021	70
10	February, 2021	50
11	March, 2021	47

Further, State-wise COVID-19 biomedical waste generation during the period from May, 2020 till March, 2021 is given below:

S.No.	Name of States/UTs	COVID 19 BMW (in Tonn)
1	Andaman & Nicobar	3
2	Andhra Pradesh	1693
3	Arunachal Pradesh	79
4	Assam	273
5	Bihar	238
6	Chandigarh	460
7	Chhattisgarh	110
8	DD & DNH	6
9	Delhi	2948
10	Goa	50
11	Gujarat	3513
12	Haryana	2337
13	Himachal Pradesh	196
14	Jharkhand	54
15	Jammu & Kashmir	319
16	Karnataka	2222
17	Kerala	4017
18	Ladak	NIL
19	Lakshadweep	2
20	Madhya Pradesh	1729
21	Maharashtra	6337
22	Manipur	45
23	Meghalaya	58
24	Mizoram	22
25	Nagaland*	25
26	Odisha	1319
27	Puducherry	301
28	Punjab	885
29	Rajasthan	879
30	Sikkim	26
31	Tamil Nadu	3363
32	Telangana	701
33	Tripura	3
34	Uttarakhand	368
35	Uttar Pradesh	2786
36	West Bengal	2331
	Total	39696

6.1 CPCB Guidelines for COVID-19 Biomedical Waste:

To facilitate the waste generators and common disposal facilities for safe collection, transport and disposal of COVID waste, CPCB has prepared guidelines with title "Handling, treatment and disposal of waste generated during treatment, diagnosis and quarantine of COVID-19 Patient". These guidelines were issued in beginning of COVID Pandemic in March, 2020 and the same has been revised four times till date looking at the situation requirement.

CPCB prepared these guidelines for having clear understanding of management of biomedical waste generated during treatment or quarantine of COVID-19 patients. It is pertinent to mention that these guidelines are not different from BMWM Rules, 2016 and the COVID-19 biomedical waste is required to be segregated as defined under Schedule I and treated & disposed off in line with provisions under said Rules.

These guidelines stipulate duties of following stakeholders:

1. Duties for Healthcare Facilities having isolation centers
2. Duties for Sample Collection Centres and Laboratories for COVID-19 suspected patients
3. Responsibilities of persons operating Quarantine Centres/Camps/Home Quarantine or Home Care facilities
4. Duties of Common Biomedical Waste Treatment Facility (CBWTF)
5. Duties of SPCBs/PCCs
6. Duties of Urban Local Bodies

6.2 Tracking Application for COVID-19

In May, 2020 CPCB developed a tracking application namely '**COVID19BWM',** which is available on mobile as well as on web which helps in tracking of COVID-19 biomedical waste as and when generated by waste generator. This application was developed for the purpose of tracking the COVID-19 biomedical waste from waste generator to common treatment facility. The application was mandatory to be used by every COVID-19 biomedical waste generator like healthcare facility having COVID ICUs, quarantine centres/camps, home isolation/home care etc. and Common Biomedical Waste Treatment Facility. 8,584 no. of waste generators were registered during the period of May, 2020 to March, 2021 on said tracking app. to feed daily data related to COVID-19 biomedical waste generation and its treatment & disposal.

During the period, from May 2020 till March, 2021, about 118 Tons/day of COVID-19 biomedical waste was generated. During first wave of COVID, the highest generation of COVID-19 biomedical waste was reported during October, 2020 which was about 181 Tons/day and during second wave the peak was in the month of May, 2021 which was about 315 Tons/day. This waste has been treated and disposed off through Common Biomedical Waste Treatment Facilities. 202 no. of CBWTFs were engaged in treatment & disposal of COVID-19 biomedical waste.

6.3 CPCB Initiatives

Other than issuing separate guidelines for COVID-19 medical waste, CPCB has been regularly reviewing its management with State Boards and State Governments. CPCB constituted High Level Task Team (HLTT) under the Chairmanship of Chairman, CPCB with members from Ministry of Environment Forest & Climate Change, Ministry of Health & Family Welfare, Ministry of Jal Shakti, Ministry of Defence and Ministry of Housing & Urban Affairs. Meetings of HLTT were held

wherein Chairman, CPCB discussed and reviewed the status of COVID waste management and gaps were communicated to States.

For Public awareness, CPCB has created a separate page on website wherein information like technical guidelines, Dos and Don'ts, Posters, videos etc. have been placed.





7. Number of biomedical waste generating facilities:

As per the annual report data, there are 3, 52,014 no. of Health Care Facilities (HCFs), out of which 1,13,186 no. of HCFs are bedded and 2,37,938 no. of HCFs are non-bedded. Details of number of HCFs of SPCBs/PCCs and DGAFMs is given below in Fig. 1 and Fig.2.

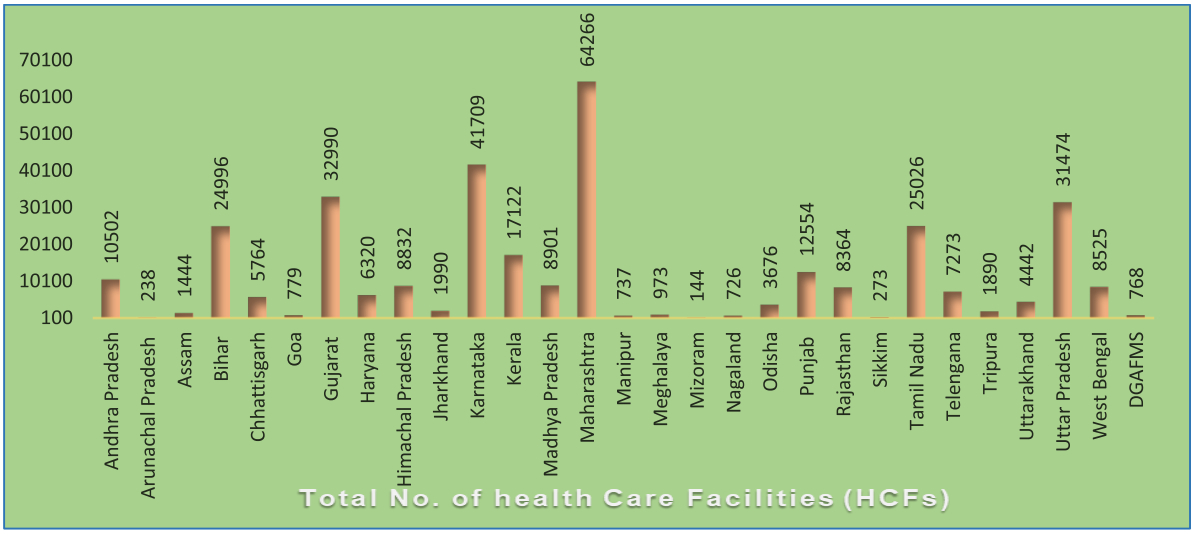


Fig.1: No. of Health Care Facilities of SPCBs/ DGAFMs

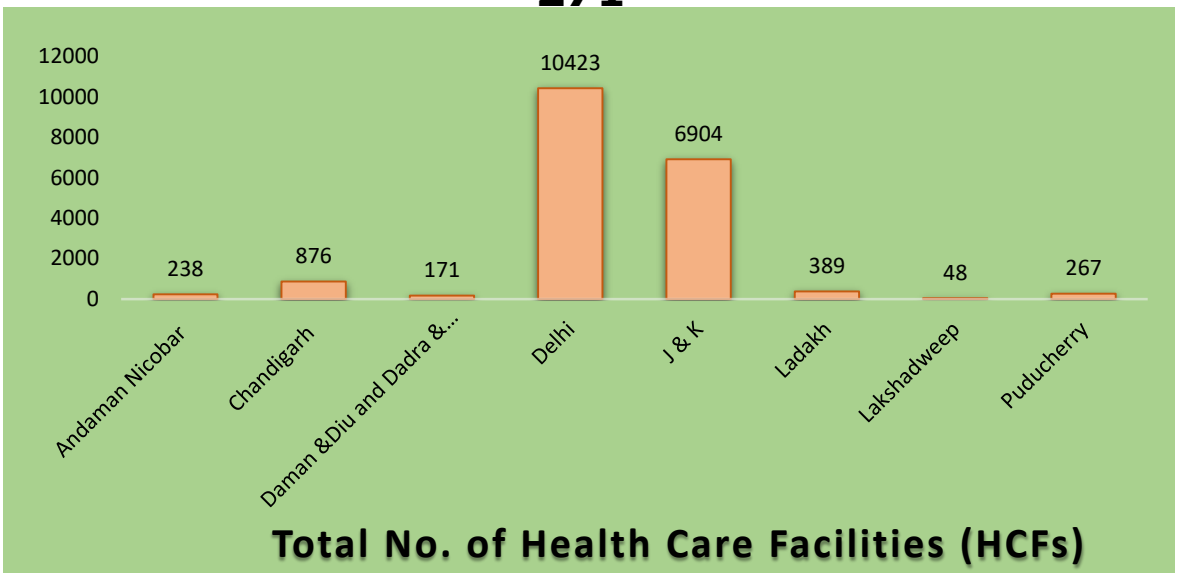


Fig.2: No. of Health Care Facilities of PCCs

There has been a continuous increase in number of Healthcare Facilities since 2007 up to 2015, however number of HCFs reduced in 2016 and increased again in 2017 up to 2020. A graph showing increase in number of HCFs is given below in Fig.3:

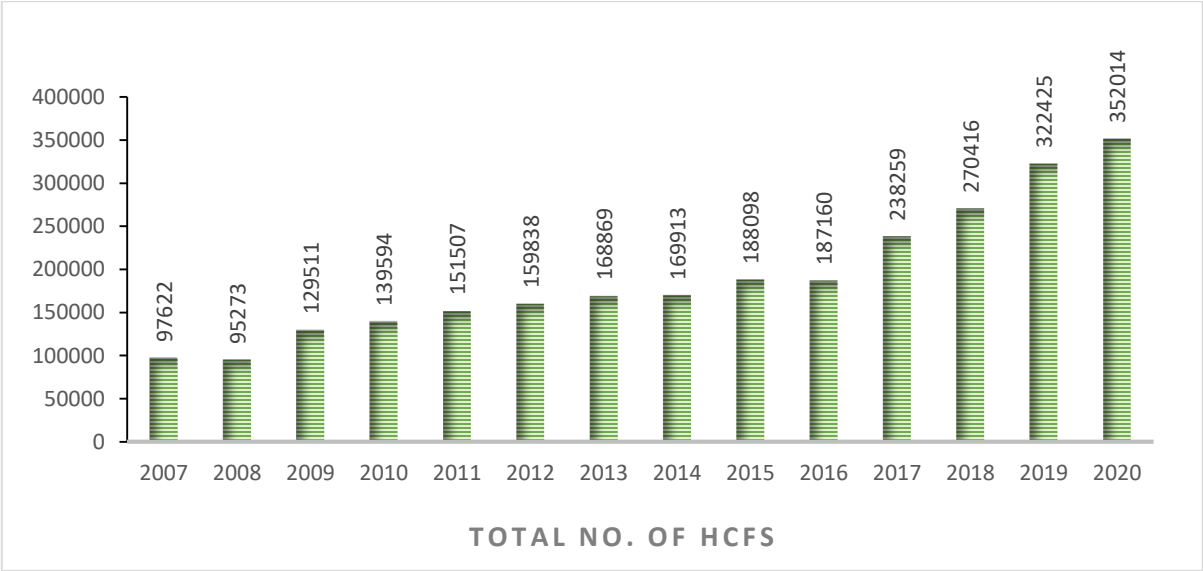


Fig.3: Increased number of Healthcare Facilities from 2007 to 2020

8. Status of authorization of Healthcare Facilities:

BMWM Rules, 2016 stipulate that every healthcare facility (bedded & non-bedded) require to obtain authorization from concerned State Pollution Control Board/Pollution Control Committee and DGAFMs. Authorization is a tool to capture the information regarding biomedical waste management by the healthcare facilities as well as by CBWTF operators. It has been observed that there are many healthcare facilities which are not yet authorized under BMWM Rules, 2016 and the same has been communicated to concerned State Board for ensuring authorization of every healthcare facility.

State wise details of authorization is given below:

S.No.	Name of States/UTs	Total no. Health Care Facilities (HCFs)	Total no. of HCFs in operation without Authorization
1	Andaman & Nicobar	238	Nil

S.No.	Name of States/UTs	Total no. Health Care Facilities (HCFs)	Total no. of HCFs in operation without Authorization
2	Andhra Pradesh	10502	428
3	Arunachal Pradesh	238	Nil
4	Assam	1444	946
5	Bihar	24996	15027
6	Chandigarh	876	Nil
7	Chhattisgarh	5764	Nil
8	DD & DNH	171	Nil
9	Delhi	10423	Nil
10	Goa	779	419
11	Gujarat	32990	3552
12	Haryana	6320	157
13	Himachal Pradesh	8832	1143
14	Jharkhand	1990	39
15	Jammu and Kashmir	6904	5813
16	Karnataka	41709	6021
17	Kerala	17122	2471
18	Ladakh	389	333
19	Lakshadweep	48	Nil
20	Madhya Pradesh	8901	1668
21	Maharashtra	64266	75
22	Manipur	737	Nil
23	Meghalaya	973	142
24	Mizoram	144	18
25	Nagaland	726	Nil
26	Odisha	3676	56
27	Puducherry	267	Nil
28	Punjab	12554	2314
29	Rajasthan	8364	811
30	Sikkim	273	Nil
31	Tamil Nadu	25026	518
32	Telangana	7273	238
33	Tripura	1890	Nil
34	Uttarakhand	4442	521
35	Uttar Pradesh	31474	5444
36	West Bengal	8525	Nil
37	DGAFMS	768	Nil
	Total	352014	48154

9. Biomedical Waste Generation and Treatment:

As reported by State Boards, about 656 tons/day of biomedical waste was generated during the year 2019-2020 by 3,52,014 numbers of Healthcare Facilities. Out of 656 tons/day of biomedical waste, only 590 tons/day of biomedical waste is treated and disposed of by 208 CBWTFs and 17,206 nos. of captive treatment facilities installed by Healthcare Facilities.

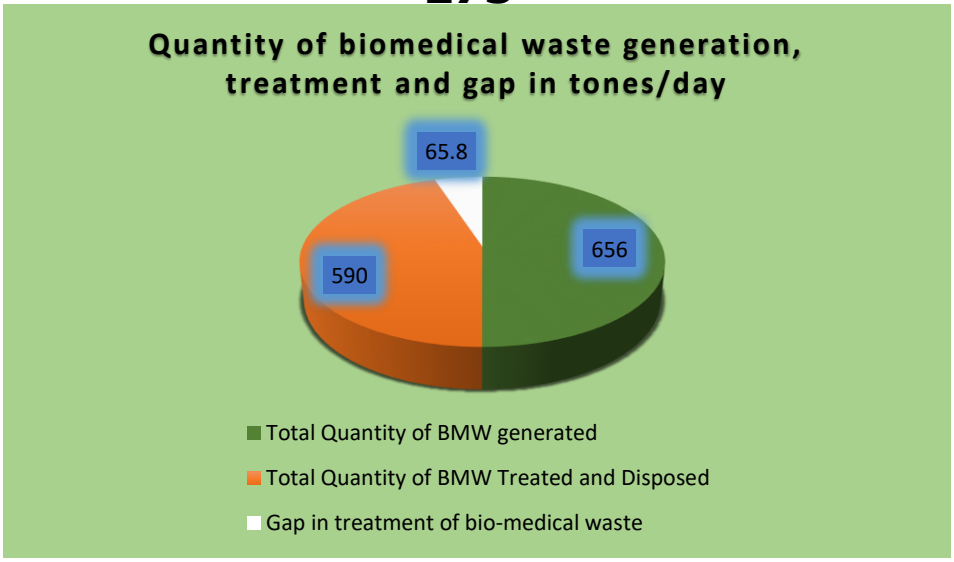


Fig.4: Quantity of BMW generation and treatment

It is observed that there is a gap between biomedical waste generation and its treatment. CPCB has identified this gap and communicated to respective State Board to rectify the issue and ensure disposal of biomedical waste in line BMWM Rules, 2016.

State-wise details are shown in given below figures:

S.No.	Name of the State/UT	Total Quantity of BMW generated (kg/day)	Total Quantity of BMW Treated and Disposed (kg/day)	Gap in treatment and disposal of bio-medical waste (kg/day)
1	Andaman Nicobar	536.36	536.36	0
2	Andhra Pradesh	25029.3	25029.3	0
3	Arunachal Pradesh	353.63	353.63	0
4	Assam	8235.97	5314.22	2921.75
5	Bihar	27846.15	10201.3	17644.85
6	Chandigarh	5729	5729	0
7	Chhattisgarh	7234.31	7234.31	0
8	Daman &Diu and Dadra & Nagar Haveli	450	450	0
9	Delhi	23200.09	23200.09	0
10	Goa	1272.68	1272.68	0
11	Gujarat	49492	49492	0
12	Haryana	19217	19217	0
13	Himachal Pradesh	3545.78	3545.78	0
14	Jharkhand	8406.7317	8406.7317	0
15	J & K	5941.81	5941.81	0
16	Karnataka	82604	38951	43653
17	Kerala	40408	40207	201
18	Ladakh	43.35	43.35	0
19	Lakshadweep	1137	1137	0
20	Madhya Pradesh	20008.91	19003.55	1005.36
21	Maharashtra	82146.35	82111.82	34.53
22	Manipur	921.9	888.5	33.4
23	Meghalaya	1556.95	1556.95	0
24	Mizoram	863.13	863.13	0
25	Nagaland	891.8	652.5	239.3
26	Odisha	15303.76	15303.76	0
27	Puducherry	4360	4360	0
28	Punjab	16998.16	16998.16	0
29	Rajasthan	18911.56	18911.56	0
30	Sikkim	477.56	477.56	0
31	Tamil Nadu	35269.74	35269.74	0
32	Telengana	23810	23810	0
33	Tripura	3852.58	3852.58	0
34	Uttarakhand	7616.57	7616.57	0
35	Uttar Pradesh	64038	64038	0

S.No.	Name of the State/UT	Total Quantity of BMW generated (kg/day)	Total Quantity of BMW Treated and Disposed (kg/day)	Gap in treatment and disposal of bio-medical waste (kg/day)
36	West Bengal	43513.39	43513.39	0
37	DGAFMs	5450.99	5450.99	0
	Total	656674.5117	590941.327	65733.19

It has been observed from the data submitted by States that Assam, Bihar, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Manipur and Nagaland has gap in generation and treatment of Bio medical waste. These states are required to enhance their facilities for treatment and fill-up the gap.

10. Status of Common Bio-medical Waste Treatment and Disposal Facility (CBWTF) and their coverage

A Common Bio-medical Waste Treatment and Disposal Facility (CBWTF) is set up where biomedical waste generated from its member health care facilities is imparted necessary treatment to reduce adverse effect on human health and environment. The treated recyclable waste may finally be sent for disposal in a secured landfill or for recycling. The Bio-medical Waste Management Rules, 2016 (hereafter referred as BMWM Rules) restricts occupier for establishment of on-site or captive bio-medical waste treatment and disposal facility, if a service of common bio- medical waste treatment and disposal facility is available within a distance of seventy-five kilometre.

As per Annual Report Information submitted by SPCBs/PCCs for the year 2020, currently there are 208 numbers of CBWTFs operated in the Country and 33 CBWTFs are under construction. States namely Andaman & Nicobar, Arunachal Pradesh, Goa, Ladhak, Mizoram, Nagaland, Sikkim, Tripura, do not have CBWTFs for treatment and disposal of biomedical waste. However, CPCB requested said State Boards for submitting the proposal for setting up of CBWTFs for which they may avail financial assistance from Ministry of Environment Forests & Climate Change. State-wise details of CBWTFs is given below in Fig.:

S.No	Name of the State/UT	CBWTF in Operation
1	Andhra Pradesh	12
2	Assam	1
3	Bihar	4
4	Chandigarh	1
5	Chhattisgarh	4
6	Daman &Diu and Dadra & Nagar Haveli	Waste Handover to Gujarat Facility
7	Delhi	2
8	Gujarat	20
9	Haryana	11
10	Himachal Pradesh	3
11	Jharkhand	4
12	J & K	3
13	Karnataka	25
14	Kerala	1
15	Lakshadweep	Waste handover to Image kerala
16	Madhya Pradesh	12
17	Maharashtra	30
18	Manipur	1
19	Meghalaya	1
20	Odisha	6

S.No	Name of the State/UT	CBWTF in Operation
21	Puducherry	1
22	Punjab	5
23	Rajasthan	11
24	Tamil Nadu	10
25	Telengana	11
26	Uttarakhand	2
27	Uttar Pradesh	21
28	West Bengal	6
	Total	208

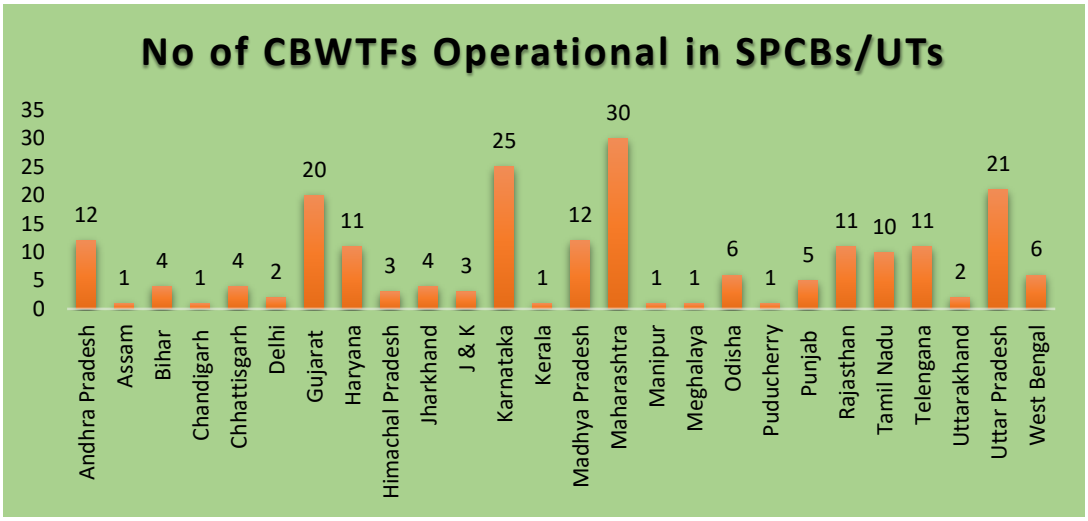


Fig.5: No. of Operational CBWTFs in States and Union Territories

Daman & Diu and Darara & Nagar Haveli biomedical Waste handover to Gujarat facility (M/s En-Cler Biomedical Waste Pvt. Ltd. and Lakshadweep biomedical Waste Handover to CBWTF in Kerala (M/s IMAGE CBWTF in Kerala) for treatment.

11. Captive Treatment Facilities

Biomedical Waste Management Rules, 2016 stipulates that in case there is CBWTF available in any area, then the Healthcare Facilities are not allowed to have their own captive treatment Facilities. However, in case the CBWTF is not available, then the Healthcare Facilities may install their own treatment facility for the treatment and disposal of biomedical waste in compliance to the standards prescribed under said Rules.

There are 17,206 Numbers of captive facilities installed by the Healthcare Facilities. State Boards were directed to monitor the compliance to the BMWM Rules, 2016 and in-case of any violation the healthcare facility should be directed to close its captive treatment facility and become member of CBWTF.

These captive treatment facilities also include deep burial facility. State Boards are required to monitor the status of Deep Burial Facility. State namely Andaman Nicobar, Arunachal Pradesh, Himachal Pradesh, Ladakh, Lakshadweep, Meghalaya, Mizoram, Nagaland, Rajasthan, Sikkim and Uttrakhand have submitted the information on deep burial facilities.

State -wise details of number of captive treatment facilities is given below in Figure.:

S.No.	Name of the State/UT and	Total no. of Bedded Health Care Facilities (HCFs)	Total no. of Non-bedded Health Care Facilities (HCFs)	Total no. Health Care Facilities (HCFs)	No. of captive treatment facilities
1	Andaman Nicobar	52	186	238	7
2	Andhra Pradesh	5930	4572	10502	Nil
3	Arunachal Pradesh	136	98	235	308
4	Assam	777	667	1444	422
5	Bihar	4821	20175	24996	3
6	Chandigarh	50	826	876	Nil
7	Chhattisgarh	2529	3235	5764	1483
8	Daman &Diu and Dadra & Nagar Haveli	45	126	171	Nil
9	Delhi	1184	9239	10423	1
10	Goa	148	631	779	165
11	Gujarat	11654	21336	32990	Nil
12	Haryana	3168	3152	6320	Nil
13	Himachal Pradesh	585	8247	8832	5006
14	Jharkhand	1175	815	1990	202
15	J & K	1548	5373	6904	Nil
16	Karnataka	8404	32402	41709	1713
17	Kerala	2027	15095	17122	51
18	Ladakh	333	56	389	2
19	Lakshadweep	10	38	48	Nil
20	Madhya Pradesh	4064	4837	8901	2
21	Maharashtra	19932	44334	64266	240
22	Manipur	96	641	737	545
23	Meghalaya	182	791	973	81
24	Mizoram	64	77	144	144
25	Nagaland	205	521	726	5
26	Odisha	1445	2232	3676	2885
27	Puducherry	96	171	267	1
28	Punjab	4009	8545	12554	Nil
29	Rajasthan	5703	2661	8364	1219
30	Sikkim	34	241	273	185
31	Tamil Nadu	7300	17726	25026	Nil
32	Telengana	3792	3481	7273	Nil
33	Tripura	137	1753	1890	3
34	Uttarakhand	1368	3074	4442	2377
35	Uttar Pradesh	17188	14286	31474	10
36	West Bengal	2769	5756	8525	Nil
37	DGAFMS	226	542	768	146
	Total	113186	237938	352014	17206

12. Online Continuous Emission Monitoring System:

Biomedical Waste Management Rules, 2016 stipulates that every occupier or operator of the common bio-medical waste treatment facility shall install Online Continuous Emission Monitoring System (OCEMS) for the parameters as stipulated by State Pollution Control Board or Pollution Control Committees in authorization and transmit the real time data to the servers at State Pollution Control Board or Pollution Control Committees and Central Pollution Control Board. As per the submitted information, 195 out of 208 nos. of CBWTFs have installed OCEMS with their incinerator stack. However, CPCB is receiving data from only 167 nos. of CBWTFs. State-wise details is given below:

S.No.	Name of the State/UT and	CBWTFs In operation	No. of CBWTFs that have installed OCEMS (As per AR -2020 submitted by SPCB/PCC)	No. of CBWTFs that have installed OCEMS and connected with CPCB Server
1	Andaman Nicobar	Nil	Nil	Nil
2	Andhra Pradesh	12	12	12
3	Arunachal Pradesh	Nil	nil	Nil
4	Assam	1	1	1
5	Bihar	4	4	4
6	Chandigarh	1	1	1
7	Chhattisgarh	4	2	2
8	Daman &Diu and Dadra & Nagar Haveli	Waste Handover to Gujarat Facility	Nil	Nil
9	Delhi	2	2	2
10	Goa	Nil	Nil	Nil
11	Gujarat	20	20	16
12	Haryana	11	11	11
13	Himachal Pradesh	3	2	2
14	Jharkhand	4	2	2
15	J & K	3	3	2
16	Karnataka	25	27	26
17	Kerala	1	1	1
18	Ladakh	Nil	Nil	Nil
19	Lakshadweep	Waste handover to Image kerala	Nil	Nil
20	Madhya Pradesh	12	12	10
21	Maharashtra	30	29	19
22	Manipur	1	Nil	Nil
23	Meghalaya	1	Nil	Nil
24	Mizoram	Nil	Nil	Nil
25	Nagaland	Nil	Nil	Nil
26	Odisha	6	1	1
27	Puducherry	1	1	1
28	Punjab	5	5	5
29	Rajasthan	11	8	6
30	Sikkim	Nil	Nil	Nil
31	Tamil Nadu	10	10	5
32	Telengana	11	11	11
33	Tripura	Nil	Nil	Nil
34	Uttarakhand	2	2	Nil
35	Uttar Pradesh	21	21	20
36	West Bengal	6	6	6
	Total	**208**	**195**	**167**

13. Non-burn Technologies for treatment & disposal of Biomedical Waste:

It has been observed that the non-burn technologies are available for the treatment & disposal of biomedical waste. However, existing Rules restrict the adoption of such technologies for the treatment of biomedical waste especially highly infectious yellow category of biomedical waste. The technologies based on combination of sterilization and shredding proposed by project proponent for the treatment & disposal of all categories of biomedical waste which can be directly adopted by the Healthcare Facilities.

Following provisions of BMWM Rules, 2016 restrict the adoption of such non-burn technologies:

1. Healthcare Facilities are not allowed to install captive treatment facilities in case the service of CBWTF is available within distance of 75 km.

2. Yellow category of biomedical waste is allowed to be treat and dispose off through incineration/plasma pyrolysis/deep burial.
3. Combination of sterilization and shredding is only allowed for the red and white category of biomedical waste.

For adopting above technology Biomedical Waste Management Rules, 2016 may required to be amended by MOEF&CC. However, CPCB is assessing the technology and based on the recommendation of CPCB "Standing Committee on Technology for Waste Management" CPCB has given permission to pilot scale operation of equipment based on combination of sterilization and shredding to check its efficacy.

14. Issues in Implementation of Biomedical Waste Management Rules, 2016:

Following issues have been observed by CPCB related to implementation of BMWM Rules, 2016:

- District Level information of biomedical waste management is not available in every State/UT which is required as per the BMWM Rules, 2016 as well as CPCB guidelines.
- Authorisation by every Healthcare Facility including non-bedded, is not achieved even after six years of notification of BMWM Rules, 2016.
- Segregation is still not followed effectively in healthcare facilities, as observed by CPCB during random inspections. State Boards in coordination with CBWTFs may arrange frequent trainings for the workers/staff of HCFs.
- Barcode system for tracking of biomedical waste is not yet adopted by every healthcare facility as required under BMWM Rules, 2016.
- Domestic biomedical waste is not collected separately from the households by the Urban Local Bodies as required under BMWM Rules, 2016.
- The deep burial pits being used by healthcare facilities are not approved by the State Pollution Control Boards.
- Gap analysis to assess the requirement of additional treatment facility to treat and dispose off the biomedical waste, is not conducted as required under CPCB guidelines.
- Online Continuous Emission Monitoring System is not effectively implemented by every CBWTF and captive incinerators.

15. Way forward:

i. SPCBs/PCCs shall ensure timely submission of annual reports by all occupiers and CBWTF operators as per the deadline given under BMWM Rules, 2016.
ii. SPCBs/PCCs shall ensure timely submission of annual report pertaining to their respective State or Union Territory within stipulated time period that is on or before 31st July.
iii. SPCBs/PCCs ensure to compile the information at District level as required under prescribed format.
iv. SPCBs/PCCs shall coordinate with Urban Local Bodies and Municipalities for management of domestic biomedical waste as per Solid Waste Management Rules, 2016 for further channelization of domestic biomedical waste to Common Biomedical Waste Treatment Facilities.
v. SPCBs/PCCs should assess the adequacy of the deep burial pits used by the healthcare facilities and ensure their restrictions up-to rural or remote areas and their compliance to deep burial standards as prescribed under BMWM Rules, 2016.

vi. SPCBs/PCCs should compile the treatment capacity of CBWTFs as well as for captive treatment facilities so that actual capacity available for the Country for treatment of biomedical waste could be assessed. Adequate facility be developed in the states which have gaps in generation of waste and its treatment capacities.

vii. SPCBs shall ensure that Recyclable waste collected by CBMWTFs should be treated properly and provided to registered recyclers only in order to conserve the resources

viii. Adequacy of treatment capacity of existing CBWTFs and their compliance status be regularly assessed by the SPCBs/PCCs to review the requirement of additional treatment facility for the State / Union Territory.

ix. OCEMS installed in CBMWTFs be operated and maintained properly with regular calibration and quality check. Data be used for self-regulatory purpose and policy framing for future.

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Annexure I

Annual Report Information on Bio-medical Waste Management Scenario in the Country for the Year 2020 (As submitted by SPCBs/PCCs and DGAFMS) As on 12-11-2021

S.No.	Name of the State/UT and	Total no. of Bedded Health Care Facilities (HCFs)	Total no. of Non-bedded Health Care Facilities (HCFs)	Total no. Health Care Facilities (HCFs)	Total no. of Beds	Authorization Status			No. of HCFs utilization CBWTFs	Total Quantity of BMW generated (kg/day)	Total Quantity of BMW Treated and Disposed (kg/day)	Captive BMW Treatment Facilities Operated by the (HCFs		Common Bio-medical Waste Treatment Facilities (CBWTFs)		Deep burial installed by HCF & CBWTFs		Total BMW treated by captive treatment facilities by HCF in Kg/day	Total BMW treated by CBWTFs kg/day)	Total no. of violation by HCFs & CBWTFs	Total No. of show cause notices/Directions issued to defaulter HCFs/CBWTFs	No. of CBWTFs that have installed COEMS
						Total no. of HCFs applied for authorization	Total no. of HCFs granted authorization	Total no. of HCFs in operation without Authorization				No. of HCFs having Captive Treatment Facilities	No of Captive Incinerators Operated by HCFs	CBWTFs Operational	CBWTFs under Construction	HCF	CBWTFs					
I.	II.	III.	IV.	V.	VI.	VII.	VIII.	IX.	X.	XI.	XIII.	XVI.	XV.	XVI.	XVII.	XVIII.	XIX.	XX.	XXI.	XXII.	XXIII.	XXIV.
1	Andaman Nicobar	52	186	238	1466	238	106	Nil	Nil	536.36	536.36	7	7	Nil	Nil	68	nil	536.36	Nil	5	5	Nil
2	Andhra Pradesh	5930	4572	10502	144689	4613	4600	428	10523	25029.3	25029.3	Nil	Nil	12	2	Nil	nil	Nil	25029.3	572	572	12
3	Arunachal Pradesh	136	98	238	1825	15	308	Nil	Nil	353.63	353.63	308	Nil	Nil	Nil	138	nil	353.63	Nil	46	7	nil
4	Assam	777	667	1444	26194	440	271	946	192	8235.97	5314.22	422	30	1	Nil	INP	nil	3459.25	1854.97	377	180	1
5	Bihar	4821	20175	24996	70563	3001	9969	15027	6032	27846.15	10201.3	3	2	4	Nil	Nil	Nil	231.84	9969.46	766	767	4
6	Chandigarh	50	826	876	4761	65	65	Nil	876	5729	5729	Nil	Nil	1	Nil	Nil	Nil	1295	4434	Nil	Nil	1
7	Chhattisgarh	2529	3235	5764	40327	3331	3075	Nil	2546	7234.31	7234.31	1483	4	4	4	INP	6	1014.04	6220.28	39	39	2
8	Daman &Diu and Dadra & Nagar Haveli	45	126	171	910	171	171	Nil	240	450	450	Nil	Nil	Waste Handover to Gujarat Facility	Nil	Nil	Nil	Nil	450	INP	92	INP
9	Delhi	1184	9239	10423	57832	1247	1179	Nil	10423	23200.09	23200.09	1	0	2	0	0	0	272.09	22928	161	161	2
10	Goa	148	631	779	5051	401	139	419	Nil	1272.68	1272.68	165	1	Nil	Nil	INP	0	1272.68	0	419	419	0
11	Gujarat	11654	21336	32990	210777	3167	3139	3552	32990	49492	49492	Nil	Nil	20	2	Nil	Nil	Nil	49492	2544	2544	20
12	Haryana	3168	3152	6320	59005	6320	5703	157	6320	19217	19217	Nil	2	11	Nil	Nil	Nil	Nil	19217	53	4	11
13	Himachal Pradesh	585	8247	8832	16082	7689	6805	1143	3639	3545.78	3545.78	5006	1	3	1	5005	Nil	177.92	3367.86	672	672	2
14	Jharkhand	1175	815	1990	32170	757	235	39	998	8406.7317	8406.7317	202	6	4	1	INP	0	2408.711	6472.19	376	346	2
15	J & K	1548	5373	6904	17200	1091	916	5813	1434	5941.81	5941.81	Nil	Nil	3	Nil	INP	Nil	Nil	5941.84	5816	205	3
16	Karnataka	8404	32402	41709	220996	18956	18312	6021	25104	82604	38951	1713	8	25	2	INP	Nil	1146	37805	3938	1599	27
17	Kerala	2027	15095	17122	119762	13736	13348	2471	16602	40408	40207	51	19	1	1	INP	Nil	3390	36817	1337	1179	1
18	Ladakh	333	56		1122	2	Nil	333	Nil	43.35	43.35	2	2	Nil	Nil	17	Nil	43.35	Nil	333	INP	Nil
19	Lakshadweep	10	38	48	140	48	47	Nil	0	1137	1137	Nil	Nil	Waste handover to Image kerala	Nil	3	0	712	425	nil	nil	nil
20	Madhya Pradesh	4064	4837	8901	115505	7233	7037	1668	6977	20008.91	19003.55	2	2	12	2	INP	Nil	242.1	18761.45	775	775	13
21	Maharashtra	19932	44334	64266	297565	8184	8143	75	62367	82146.35	82111.82	240	2	30	1	INP	1	494	81617.82	300	254	29
22	Manipur	96	641	737	4854	737	737	Nil	192	921.9	888.5	545	INP	1	1	INP	Nil	325.86	562.19	1	Nil	Nil
23	Meghalaya	182	791	973	7210	831	831	142	48	1556.95	1556.95	81	Nil	1	Nil	140	Nil	367.8	1189.15	Nil	Nil	0
24	Mizoram	64	77	144	2593	59	41	18	Nil	863.13	863.13	144	5	Nil	Nil	101	Nil	863.13	Nil	Nil	Nil	Nil
25	Nagaland	205	521	726	3486	480	480	Nil	Nil	891.8	652.5	5	5	Nil	0	245	0	652.5	Nil	246	246	0
26	Odisha	1445	2232	3676	47748	493	512	56	792	15303.76	15303.76	2885	Nil	6	Nil	Nil	17	10391.54	4912.21	135	135	1
27	Puducherry	96	171	267	11300	267	247	Nil	267	4360	4360	1	1	1	Nil	Nil	Nil	19	4341	23	23	1
28	Punjab	4009	8545	12554	74220	5632	4763	2314	11144	16998.16	16998.16	Nil	Nil	5	1	Nil	Nil	Nil	16998.16	2005	2005	5

S.No.	Name of the State/UT and	Total no. of Bedded Health Care Facilities (HCFs)	Total no. of Non-bedded Health Care Facilities (HCFs)	Total no. Health Care Facilities (HCFs)	Total no. of Beds	Authorization Status			No. of HCFs utilization CBWTFs	Total Quantity of BMW generated (kg/day)	Total Quantity of BMW Treated and Disposed (kg/day)	Captive BMW Treatment Facilities Operated by the (HCFs		Common Bio-medical Waste Treatment Facilities (CBWTFs)		Deep burial installed by HCF & CBWTFs		Total BMW treated by captive treatment facilities by HCF in Kg/day	Total BMW treated by CBWTFs kg/day)	Total no. of violation by HCFs & CBWTFs	Total No. of show cause notices/Directions issued to defaulter HCFs/CBWTFs	No. of CBWTFs that have installed COEMS
						Total no. of HCFs applied for authorization	Total no. of HCFs granted authorization	Total no. of HCFs in operation without Authorization				No. of HCFs having Captive Treatment Facilities	No of Captive Incinerators Operated by HCFs	CBWTFs Operational	CBWTFs under Construction	HCF	CBWTFs					
I.	II.	III.	IV.	V.	VI.	VII.	VIII.	IX.	X.	XI.	XIII.	XVI.	XV.	XVI.	XVII.	XVIII.	XIX.	XX.	XXI.	XXII.	XXIII.	XXIV.
29	Rajasthan	5703	2661	8364	137842	2166	1980	811	6903	18911.56	18911.56	1219	Nil	11	4	1219	Nil	3429.68	15481.88	623	623	8
30	Sikkim	34	241	273	2425	273	273	Nil	Nil	477.56	477.56	185	8	Nil	Nil	118	Nil	477.56	Nil	Nil	Nil	Nil
31	Tamil Nadu	7300	17726	25026	184598	24508	24364	518	19225	35269.74	35269.74	Nil	Nil	10	3	Nil	572	Nil	35269.74	33	33	10
32	Telengana	3792	3481	7273	119135	4717	4594	238	7273	23810	23810	Nil	Nil	11	0	Nil	Nil	Nil	23810	240	240	11
33	Tripura	137	1753	1890	4694	345	345	Nil	Nil	3852.58	3852.58	3	3	Nil	1		Nil	3852.58	Nil	Nil	Nil	Nil
34	Uttarakhand	1368	3074	4442	24908	3921	3438	521	2650	7616.57	7616.57	2377	2	2	Nil	1792		1036.62	6579.95	99	6	2
35	Uttar Pradesh	17188	14286	31474	307877	INP	26030	5444	INP	64038	64038	10	10	21	0	Nil	Nil	6105	57933	150	81	21
36	West Bengal	2769	5756	8525	128825	8525	8525	Nil	8525	43513.39	43513.39	Nil	Nil	6	7	Nil	Nil	Nil	43513.39	177	177	6
37	DGAFMS	226	542	768	38459	11	8	Nil	Nil	5450.99	5450.99	146	5	Nil	Nil	INP		2332.66	3118.33	Nil	Nil	Nil
38	COVID-19 Biomedical Waste									118	118											
	total	113186	237938	352014	2544116	133670	160736	48154	244282	774	708	17206	125	208	33	8846	596	46902.901	544512.17	22261	13389	195

INP : Information not provided

** Till date, Nagaland SPCB has not submitted AR-2020, so previous year data has incorporated

Annual Report
on
Biomedical Waste Management
as per
Biomedical Waste Management Rules, 2016
For the year 2021

Central Pollution Control Board
(Ministry of Environment Forest & Climate Change)
Parivesh Bhawan, East Arjun Nagar
Delhi – 110032

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1 Introduction

The Biomedical Waste has been regulated under Biomedical Waste Management Rules, 2016 (BMWM Rules, 2016) as notified under Environment (Protection) Act, 1986 by the Ministry of Environment Forest & Climate Change. These Rules were first notified in the year 1998 and then revamped in the year 2016 to implement these rules more effectively and to improve the collection, segregation, processing, treatment and disposal of bio-medical wastes in an environmentally sound management thereby, reducing the bio- medical waste generation and its impact on the environment.

BMWM Rules, 2016 prescribed specific duties for Occupier (such as hospitals, nursing homes, clinics, dispensaries, veterinary institutions, animal houses, pathological laboratories, blood banks, AYUSH hospitals, clinical establishments, research or educational institutions, health camps, medical or surgical camps, vaccination camps, blood donation camps, first aid rooms of schools, forensic laboratories and research labs), duties of the operator of Common Biomedical Waste Treatment Facilities (CBWTFs) and also duties for authorities like Ministry of Environment Forest & Climate Change (MoEF & CC), Ministry of Health & Family Welfare (MoH & FW), Ministry of Defence (MoD), Central Pollution Control Board (CPCB), State Government of Health (GoH), State Pollution Control Boards (SPCBs) /Pollution Control Committees (PCCs) and Municipalities or Urban Local Bodies (ULBs). The BMWM Rules, 2016 stipulates about provisions for segregation of biomedical waste as per the colour coded system (Yellow, Red, Blue and White) prescribed under said Rules. These Rules are applicable to all persons who generate, collect, receive, store, transport, treat, dispose, or handle bio medical waste in any form.

These Rules has mandate of preparation of Annual Inventory of biomedical waste generation, its collection, treatment and disposal under Rule 13. Every Occupier and Common Biomedical Waste Treatment Facility Operator is required to prepare annual inventory for biomedical waste management. Further, SPCBs/PCCs shall compile and submit the Annual Report to Central Pollution Control Board for the preceding year before 31st July of every year. Central Pollution Control Board shall compile, review and analyse the annual data submitted by SPCBs / PCCs and submit the same to MoEF &CC.

The inventory with respect to generation, treatment and disposal of biomedical waste is required for effective management of biomedical waste and implementation of BMWM Rules, 2016.

2 Status of Annual Report and Gaps identified

BMWM Rules, 2016 stipulate format for preparation of Annual Report by the Occupier and Operator of CBWTF in Form IV and format for preparation of Annual Report by State Pollution

Control Boards in Form IV(a). All States, Union Territories and Director General of Armed Forces Medical Services (DGAFMS) have submitted the annual reports on biomedical waste management for the year 2021.

States namely Andhra Pradesh, Bihar, Goa, Haryana, Himachal Pradesh, Lakshadweep, Madhya Pradesh, Maharashtra, Meghalaya, Mizoram, Nagaland, Odisha, Puducherry, Punjab, Rajasthan, Sikkim, Tamil Nadu, Telangana, Uttarakhand and West Bengal submitted the annual report information before July, 2022. However, SPCBs namely Andaman Nicobar, Arunachal Pradesh, Assam, Chandigarh, Chhattisgarh, Daman & Diu, Delhi, Gujarat, Jharkhand, J&K, Karnataka, Kerala, Manipur, Tripura, Uttar Pradesh & DGAFMS submitted the annual report information after July, 2022. Annual Report was submitted consistently delayed in the year 2020 and 2021 by SPCBs namely Assam, Chhattisgarh, Jharkhand, J & K, Karnataka, Tripura and U.P.

In the annual report information received from SPCBs/PCCs, following common gaps/ discrepancies have been observed and communicated to respective SPCB/PCC for clarification and rectification:

1. Health Care Facilities (HCFs) are operational without authorization.
2. Many bedded HCFs not installed liquid waste treatment facilities.
3. Information w.r.to deep burial installed by HCFs/CBWTFs is not provided
4. HCFs having captive treatment facility instead of using CBWTF
5. Many HCFs are not utilizing CBWTFs.

SPCBs namely Assam, Bihar, Chandigarh, Daman & Diu, Delhi, DGAFMS, Goa, Haryana, Himachal Pradesh, Kerala, Madhya Pradesh, Maharashtra, Mizoram, Nagaland, Odisha, Puducherry, Punjab, Sikkim, Tamil Nadu and West Bengal have submitted the clarification on above observations of CPCB and the same has been incorporated in this report. However, other SPCBs are not yet responded.

3 Bio-medical Waste management scenario

The total quantum of Biomedical Waste (BMW) generation was reported as 764 tonnes/day of BMW, out of which 721 tonnes/day BMW was treated and disposed off in the country. There are 3,75,256 no. of HCFs, out of which 1,21,396 no. of HCFs are bedded and 2,53,860 no. of HCFs are non-bedded. 2,62,786 no. of HCFs utilise the facilities of CBWTFs for the collection, treatment, & disposal of biomedical waste, while 13,605 HCFs have captive treatment facilities for the treatment and disposal of biomedical waste. There are 215 no. of CBWTFs in operation and 35 no. of CBWTFs are under construction. State-wise details of annual data on BMWM is given at Annexure I. The brief BMW scenario of the Country is given below:

- No. of HCFs : 3,75,256
- No. of bedded HCFs : 1,21,396
- No. of non-bedded HCFs : 2,53,860
- No. of beds : 25,61,295
- No. of CBWTFs : 215* + 35**
- No. of HCFs granted authorization : 3,20,751
- No of HCFs utilizing CBWTFs : 2,62,786
- No. of HCFs having Captive Treatment Facilities : 13,605
- No. of Captive Incinerators Operated by HCFs : 102
- Quantity of BMW generated in Tonnes/day : 764
- Quantity of BMW treated in Tonnes/day : 721
- No. of HCFs/CBWTFs violated BMW Rules : 23,199
- No. of Show-Cause notices/Directions issued to defaulter HCFs/CBWTFs : 15,355

Note: (i) * - CBWTFs in operation (ii) ** - CBWTFs under construction

4 Analysis of BMWM Scenario (in the Year 2020 and 2021)

As the data indicates the number of HCFs has been increased over the period, during the year 2020, total number of HCFs were reported as 3,52,014, however the same has increased to 3,75,256 in 2021. Also, total number of authorized healthcare facilities have been increased and there are 3,20,751 no. of HCFs are authorised out of 3,75,256 no. of HCFs. The increase in number of authorization reflects that the HCFs has been identified and authorized by respective SPCBs/PCCs under BMWM Rules, 2016.

The total generation of Biomedical Waste was about 774 tonnes per day in the year 2020. However, the amount of Biomedical Waste generated is estimated to be 764 tonnes per day in 2021. The decrease in amount of Biomedical Waste generation from year 2020 to 2021 in spite of increase in HCFs is may be due to decreased cases of COVID19 affected patients in year 2021.

Annual report information also shows that there is increase in number of CBWTFs from 208 to 215 in the year 2020 and 2021, respectively, for the treatment & disposal of generated biomedical waste. The same is also reflected as there is increase in number of HCFs utilising CBWTFs from 2,44,282 to 2,62,786 during the year 2020 and 2021, respectively. In addition to this, as there is increase in number of CBWTFs for treatment of biomedical waste, there is decrease in number of captive treatment facility from 17,206 to 13,605 and decrease in no. of captive incinerators from 125 to 102. The captive treatment facilities are majorly in operation in hilly areas and remote areas due to inaccessibility of CBWTFs. Detailed comparison on BMWM scenario during 2020 and 2021 is mentioned in Table 1 below:

Table 1: Comparative BMWM scenario in 2020 and 2021

Particulars	Year 2020	Year 2021
No. of HCFs	3,52,014	3,75,256
No. of bedded HCFs	1,13,186	1,21,396
No. of non-bedded HCFs	2,37,938	2,53,860
No. of beds	25,44,116	25,61,295
No. of CBWTFs	208	215* + 35**
No. of HCFs utilizing CBWTF	2,44,282	2,62,786
No. of HCFs granted authorization	1,60,736	3,20,751
No. of HCFs having Captive Treatment Facilities	17,206	13,605
No. of Captive Incinerators Operated by HCFs	125	102
Quantity of BMW generated (Tonnes/day)	774 (656 Non COVID + 118 COVID BMW)	764 (684 Non COVID BMW+80 COVID BMW)
Quantity of BMW treated in Tonnes/day	708	721
No. of HCFs violated BMW Rules	22,261	23,199
No. of Show-cause notices/Directions issued to defaulter HCFs	13,389	15,355

5 COVID waste management during 2020 to 2021

Biomedical waste generation has been increase due to COVID19 pandemic. For safe collection, transport, treatment and disposal of COVID19 biomedical waste, CPCB has prepared "guidelines for Handling, treatment and disposal of waste generated during treatment, diagnosis and quarantine of COVID-19 Patient" in year 2020.

5.1 Revision of CPCB Guidelines in year 2021:

CPCB guidelines for Handling, treatment and disposal of waste generated during treatment, diagnosis and quarantine of COVID-19 Patient has been revised during the year 2020 and 2021 as per requirement. In the year 2021, Rev.-5 of the guideline has been prepared wherein following changes have been incorporated:

i. Used test kits may be collected separately as domestic hazardous waste characterized under Solid Waste Management Rules, 2016 by local bodies. For this purpose, local bodies may establish common waste deposition centres as per said Rules.
ii. Users may deposit in nearby PHCs, CHCs, GMCs, hospitals and 24 hours' pharmacies for subsequent disposal through CBWTFs or manufacturers attached with them.
iii. Disposal as per Manufacturer's instructions – these instructions may include (i) keep the used test kits separately for minimum 72 hours prior to disposal as dry solid waste, or (ii) use the disinfectant given along with kit by manufacturer or (iii) user may use any other disinfectant to disinfect the used kit prior to disposal with general solid waste as dry waste to ensure 10 log 4 reduction as specified under BMWM Rules, 2016.
iv. Above disposal options are same for the COVID-19 antigen home self-test kits showing both positive or negative test.

5.2 COVID19BWM tracking Application for COVID-19 biomedical waste

In May, 2020, CPCB developed a tracking application namely 'COVID19BWM', which is available on mobile as well as on web version. This application was developed for tracking of COVID-19 biomedical waste. CPCB guideline mandates use of COVID19BWM App by every COVID-19 biomedical waste generator like HCFs having COVID ICUs, quarantine centres/camps, home isolation/home care etc., captive treatment facilities and CBWTFs. The App has also been used during year 2021, around 10813 no. of waste generators was registered in the tracking app and reported in the App. Also, almost all CBWTFs were engaged in treatment & disposal of COVID-19 biomedical waste.

5.3 COVID -19 Biomedical Waste Management during 2021

CPCB reviewed status of COVID waste management in States/UTs during year 2021. As per the available information, an average of around 80 tonnes/day COVID-19 biomedical waste was generated, collected, treated and disposed of during year 2021. Month wise average COVID-19 biomedical waste generation in the Country during the period from January 2021 to December, 2021 is given in Table 2:

Further, during the year 2021, the highest generation of COVID-19 biomedical waste was reported during May 2021 which was about 7,067 Tonnes and the minimum generation of COVID-19 biomedical waste was reported during December 2021 which was about 713 Tonnes.

Table 2 - COVID -19 Biomedical Waste Management during 2021

S. No.	Months	COVID 19 BMW (Tonnes)
1.	January, 2021	1647
2.	February, 2021	1477
3.	March, 2021	2945
4.	April, 2021	3240
5.	May, 2021	7067
6.	June, 2021	4922
7.	July, 2021	2255
8.	August, 2021	1721
9.	September, 2021	1472
10.	October, 2021	1001
11.	November, 2021	738
12.	December, 2021	713
	Total	**29,198 tonnes ~ 80 tonnes/day**

6 Availability of Healthcare Facilities and their Authorization:

As per the annual report data provided by SPCBs and PCCs for the year 2021, there are 3,75,256 no. of HCFs, out of which 1,21,396 no. of HCFs are bedded and 2,53,860 no. of HCFs are non-bedded. Details of the number of HCFs in states/UTs and DGAFMS are given in fig. 1 and 2;

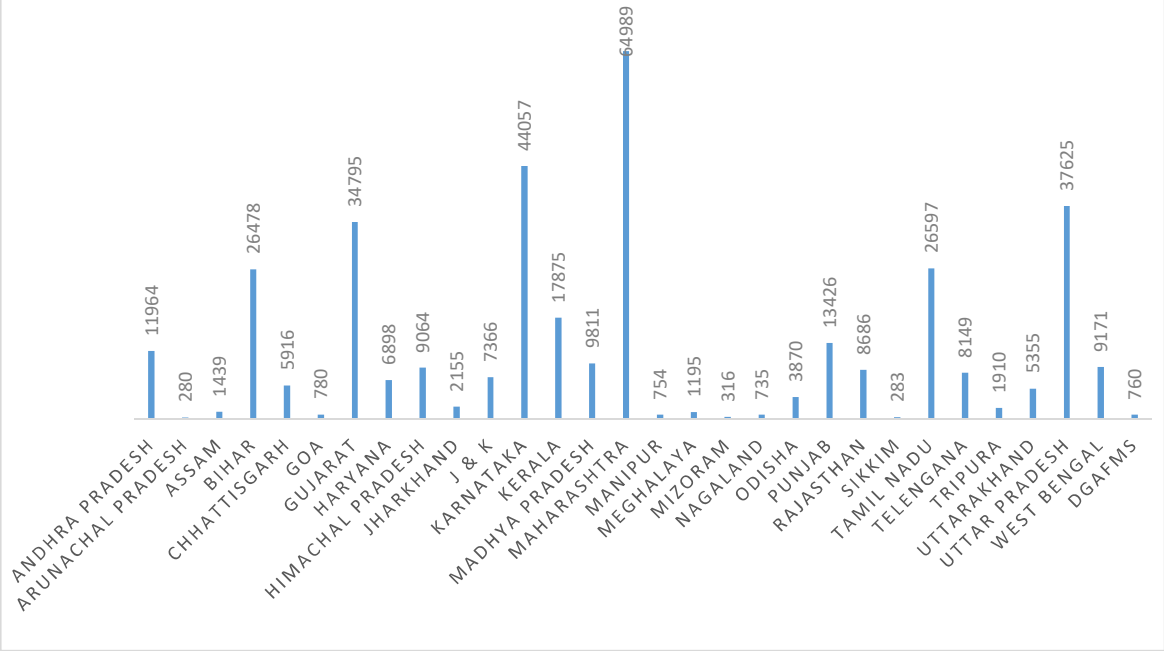


Fig : -1; No. of HCFs in States & DGAFMS

Fig. 1 shows that Maharashtra has the highest number of HCFs and also has highest number of identified and authorized HCFs. Whereas, Arunachal Pradesh has the lowest number of HCFs and less number of HCFs has been authorized. The requirement of HCFs may depend on many factors such as area of State/UT, population density etc.

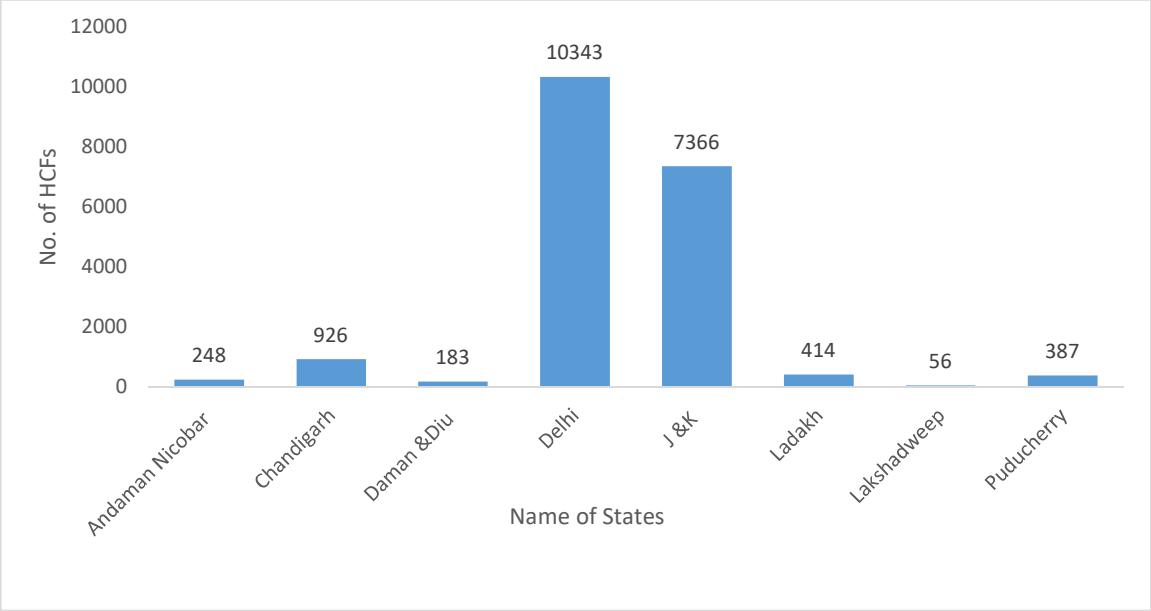


Fig: -2; No. of HCFs in 8 UTs

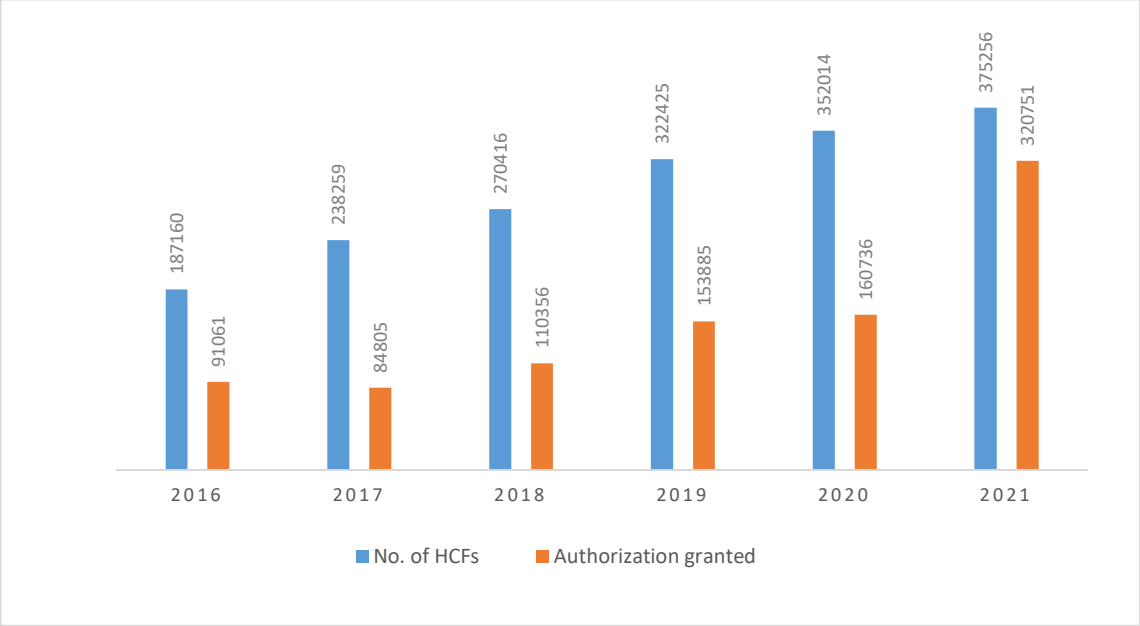


Fig: -3; No. of HCFs and their authorization reported by States/UTs since last five years

Authorization is a tool to capture the information regarding BMWM by the HCFs as well as by CBWTF operators. BMWM Rules, 2016 stipulate that every healthcare facility (bedded & non-bedded) require to obtain authorization from concerned SPCB/PCC. It has been observed that there are HCFs not yet authorized under BMWM Rules, 2016 which is a violation of BMWM Rules, 2016. SPCB/PCC should ensure authorization of every HCFs under BMWM Rules, 2016. Since 2018, the number of authorizations has increased with the increased number of HCFs. Details of the number of HCFs and their authorization reported by States/UTs since last five years are given in fig. 3.

Authorization to all HCFs has been issued by the SPCBs/PCCs namely Andaman & Nicobar, Chandigarh, Delhi, Ladakh, Lakshadweep, Manipur, Mizoram, Sikkim, Tripura, Tamilnadu and West Bengal. As per Annual report information of BMWM for the year 2021, HCFs are in operation without authorization in the States/UTs namely Jammu & Kashmir (81 %), Arunachal Pradesh (74%), Bihar (64%), Goa (46%), Daman & Diu (36%) and Nagaland (28%). The same can be seen in fig. 4 i.e. for percentage of HCFs out of total number of HCFs in operation without applying authorization in States/UTs.

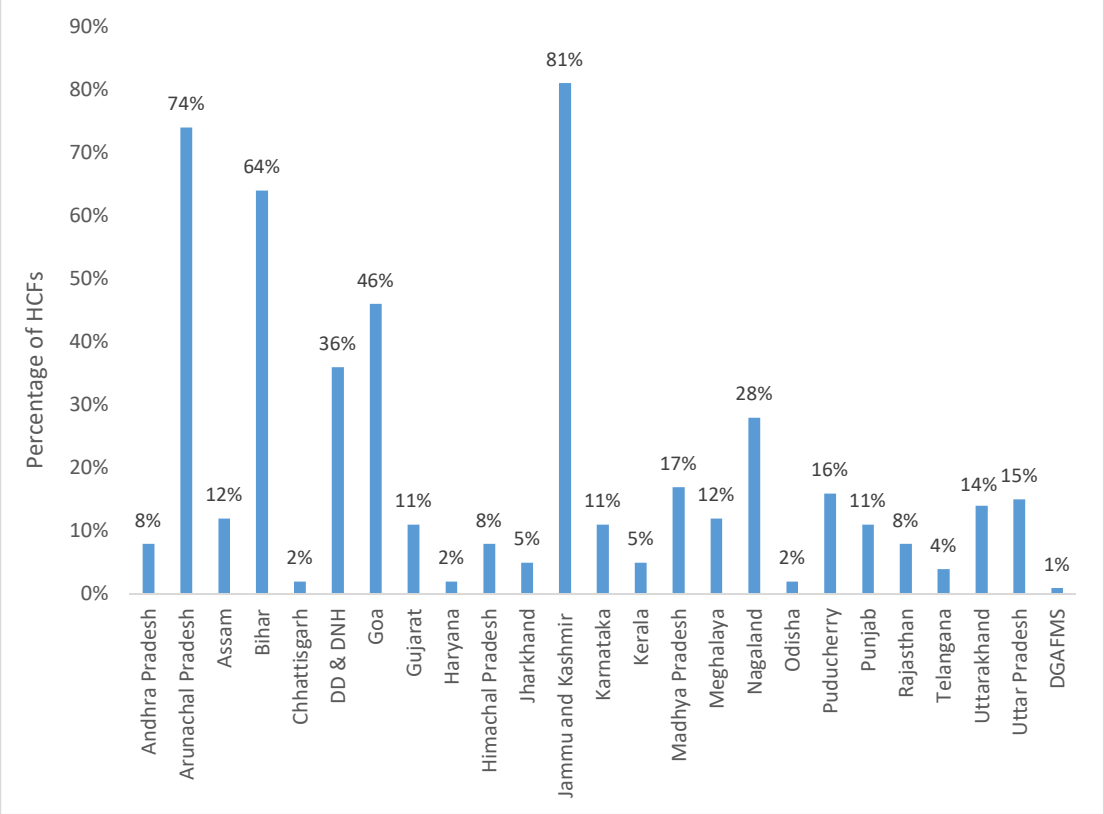


Fig: -4; Percentage of HCFs (Out of total number of HCFs) without applying authorization in States/UTs

7 Biomedical Waste Generation and Treatment

As reported by SPCBs/PCCs, about 764 tonnes/day of BMW were generated during the year 2021 by 3,75,256 numbers of HCFs. Out of 764 tonnes/day of BMW, 721 tonnes/day of BMW is treated and disposed of by CBWTFs and captive treatment facilities (CTFs) installed by Healthcare Facilities.

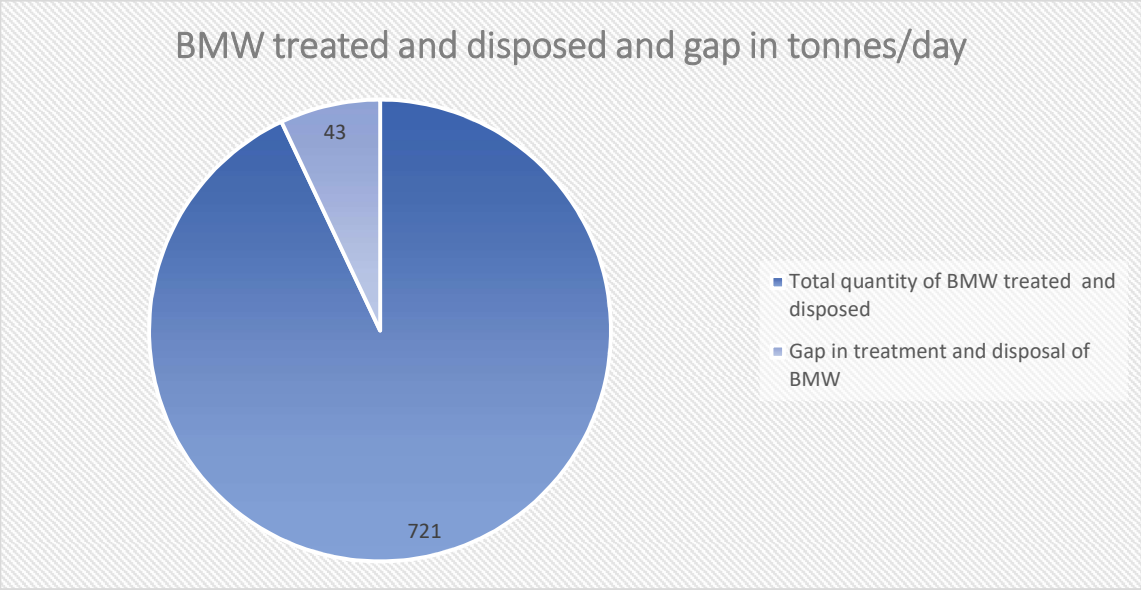


Fig: -5: Quantity of BMW treated & disposed and gap in tonnes/day

As per Annual report information for year 2021, there is a gap between BMW generation and its treatment & disposal. Figure 5 depicts the amount of BMW treated and disposed of, as well as the gap between treatment and disposal. CPCB has communicated the gaps observed to the respective SPCB/PCC to rectify the issue and ensure the disposal of all BMW generated in accordance with the BMWM Rules, 2016.

For environment friendly disposal of BMW there should be no gap between generation and treatment & disposal of biomedical waste. However, the gap in generation, treatment & disposal has been observed in States namely Assam, Bihar, Himachal Pradesh, Jharkhand, Karnataka, Madhya Pradesh, Nagaland, Tripura (fig. 6). Among the above States, the gap in generation, treatment, and disposal has also been observed in 2020 for Bihar, Karnataka, Madhya Pradesh and Nagaland, while the states of Kerala and Maharashtra filled the gap in 2021 for the generation and treatment of BMW.

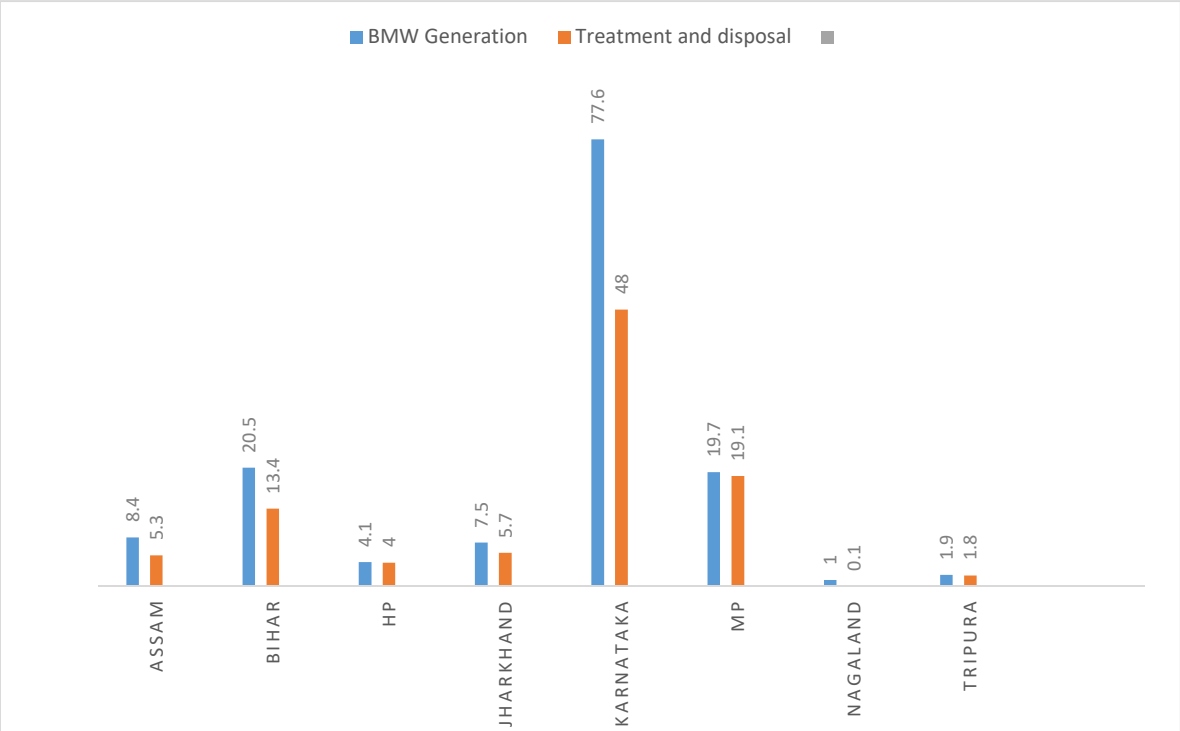


Fig: -6; Status of generation, treatment & disposal of BMW (tonnes/day)

7.1 Availability and adequacy of CBWTFs

As per BMWM Rules, 2016, it is the duty of CBWTF operator to take all necessary steps to ensure that the BMW collected from the occupier is transported, handled, stored, treated and disposed of, without any adverse effect to the human health and the environment, in accordance with BMWM Rules and guidelines issued by the CPCB.

As per the Annual Report Information submitted by SPCBs/PCCs for the year 2021, currently there are 215 numbers of CBWTFs operated in the Country and 35 CBWTFs are under construction. In 2021, there is increase in number of CBWTFs in Gujarat, Karnataka, Kerala, Madhya Pradesh, and Uttar Pradesh as compared to year 2020. States/UTs namely Andaman & Nicobar, Arunachal Pradesh, Ladakh, Lakashdweep, Mizoram, Nagaland, Sikkim, Tripura do not have CBWTFs for treatment and disposal of biomedical waste. In these States/UTs, Biomedical Waste is disposed of through captive treatment facility or deep burial. In this regard, CPCB requested such SPCBs/PCCs for submitting the proposal for setting up of CBWTFs for which they may avail financial assistance from Ministry of Environment Forests & Climate Change. State-wise details of CBWTFs is given below in fig. 7

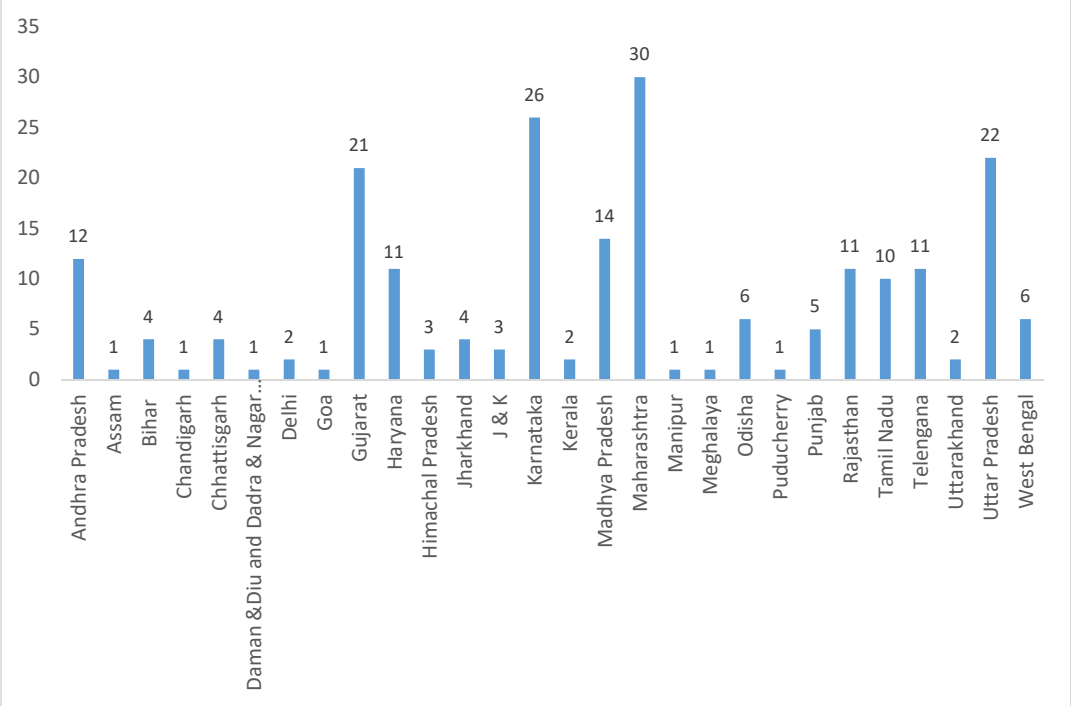


Fig 7:-No. of CBWTFs operational in the States/UTs

As shown in fig. 7, number of CBWTF varies in various States/UTs. The number of CBWTFs may depends on many factors such as number of HCFs, availability of capacity of CBWTFs, accessibility of CBWTFs, population density etc.

In States, Rajasthan and West Bengal, 7 new CBWTFs are proposed to cover all HCFs of State. Daman & Diu and Dadar Nagar Haveli has no CBWTF and handing over BMW to CBWTF situated at Gujarat (M/s En-Cler Biomedical Waste Pvt. Ltd.) for treatment and disposal of biomedical waste and Lakshadweep is handing over biomedical watse to CBWTF situated in Kerala (M/s IMAGE CBWTF in Kerala) for treatment and disposal of biomedical waste.

As per Annual Report information for year 2021, all HCFs operational in States/UTs namely Chandigarh, Delhi, Tamil Nadu, and West Bengal are using CBWTF for treatment and disposal of biomedical waste. In other States namely Bihar, Goa, Himachal Pradesh, Manipur, Odisha, and Uttarakhand, many of HCFs are still not using CBWTFs for treatment and disposal of biomedical waste. The reason of not using CBWTF is may be non-accessibility of CBWTF. States/UTs may look into the accessibility and come up with new CBWTFs to cover all HCFs in the State/UT. Utilization of CBWTFs by HCFs (in percentage) is given in fig. 8.

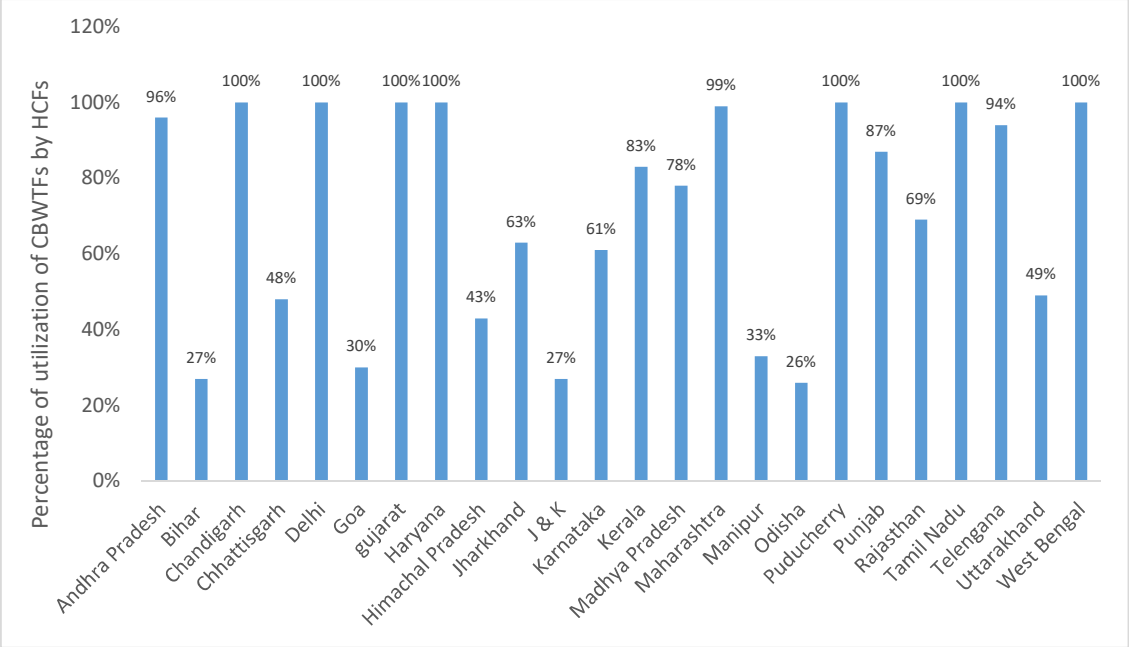


Fig:- 8; Utilization of CBWTFs by HCFs (in percentage) in State/UT.

The CBWTFs in the country are operating at cumulative treatment and disposal capacity of 1619 MT/day, of which incineration capacity is 890 MT/day and autoclave capacity is 729 MT/day. The present generation of 764 MT/day may look adequate for treatment and disposal of BMW. However, availability of CBWTFs may vary at State Level. Available treatment capacity of CBWTFs and utilisation of capacity in the country is shown in fig. 9.

SPCBs/PCCs have submitted compliance reports to the CPCB with respect to performance verification of CBWTFs as per the order passed by Hon'ble National Green Tribunal in the matter of O.A. No. 110 of 2020 regarding News item published on 01.07.2020 in "The Hindu" titled "Ramky Group accused of dumping biomedical waste in the open in Hosur". As per the report received from State Boards, 128 CBWTFs were monitored by the State Boards and 53 out of 128 CBWTFs monitored were reported as complying with the emission and effluent standards, having adequate infrastructure and reporting data as required under BMWM Rules, 2016. Further, common short-comings are given below: -

i. Separate spaces for receiving untreated colour coded biomedical waste is not provided.
ii. Details pertaining to Annual Report, treatment and authorization not shared on website.
iii. Partial implementation of Bar-code tracking system.
iv. Vehicles are not provided with GPS system.

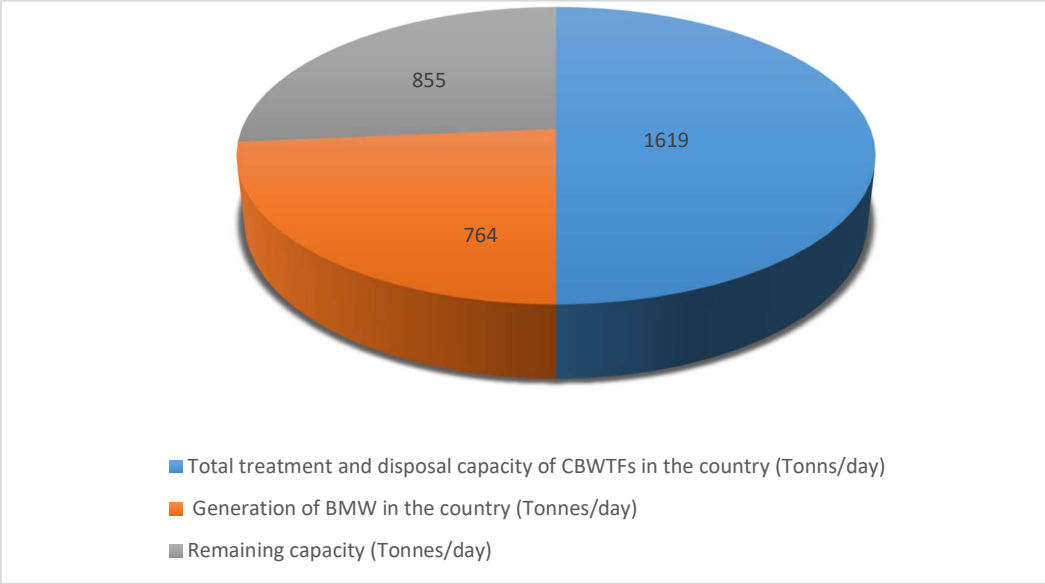


Fig :- 9; Treatment capacity available and utilization of capacity of CBWTFs in the country

7.2 Status of Captive Treatment Facilities

BMWM Rules, 2016 restricts on-site treatment and disposal facility, if a service of CBWTF is available at a distance of 75 Km. However, in case the CBWTF is not available, HCFs may install their own treatment facility for the treatment and disposal of BMW in compliance to the standards prescribed under said Rules. There are 13,605 numbers of captive treatment facilities installed by the Healthcare Facilities.

State namely Himachal Pradesh, Jharkhand, Kerala and Rajasthan have submitted the information on deep burial facilities. As per Annual Report information submitted by SPCBs/PCCs captive treatment facilities decrease in the country after 2019 (fig. 10). Further, CPCB has also issued directions to all SPCBs/PCCs regarding to ensure compliance to the standards prescribed under BMWM Rules, 2016 by captive treatment facilities operated by HCFs. In 2020, HCFs in the states of Haryana, Ladakh, Goa, Mizoram, and Nagaland operated captive incinerators, while in 2021, HCFs in the above states used CBWTF instead of captive incinerators. In addition, one CBWTF has been started in Goa State for the treatment and disposal of BMW.

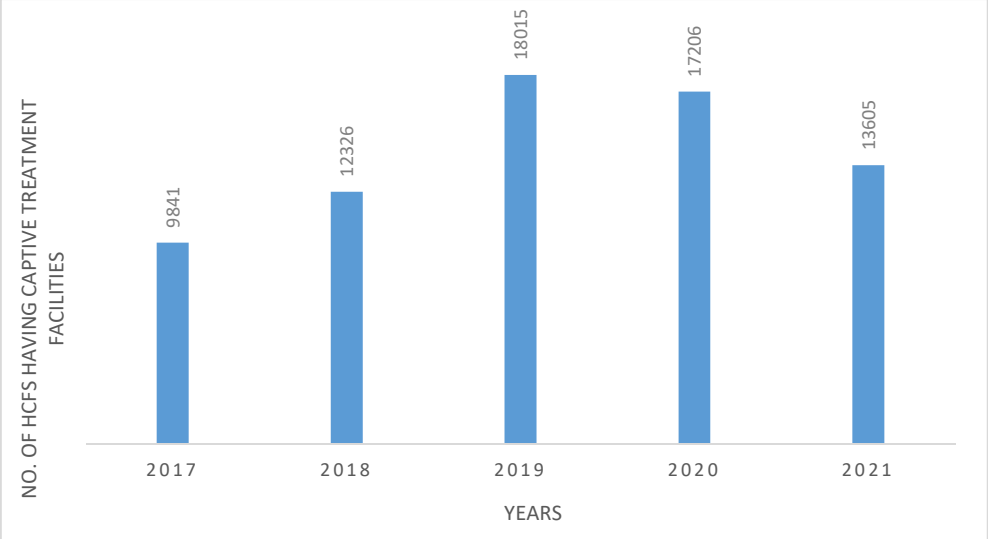


Fig: 10; Number of HCFs having captive treatment facilities

7.3 Status of deep burial

As per the revised guidelines for CBWTFs, SPCB/PCC should not allowed deep burial of BMW as a part of CBWTF. Any existing CBWTF having disposal of BMW by deep burial should have the requisite treatment equipment as stipulated under the BMWM Rules. As per the information submitted by the SPCB/PCCs, deep burial pits installed by the HCFs of Andaman & Nicobar, Arunachal Pradesh, Himachal Pradesh, Jharkhand, Kerala, Madhya Pradesh, Meghalaya, Nagaland, Rajasthan and Sikkim States. The status of deep burial pits installed by HCFs is given in fig. 11. CPCB issued directions to all SPCBs/PCCs regarding verification of deep burial pits that they are authorized and designed in line with standards given under BMWM Rules, 2016. Respective State Boards should initiate steps to set up CBWTF so as to avoid usage of deep burial pits.

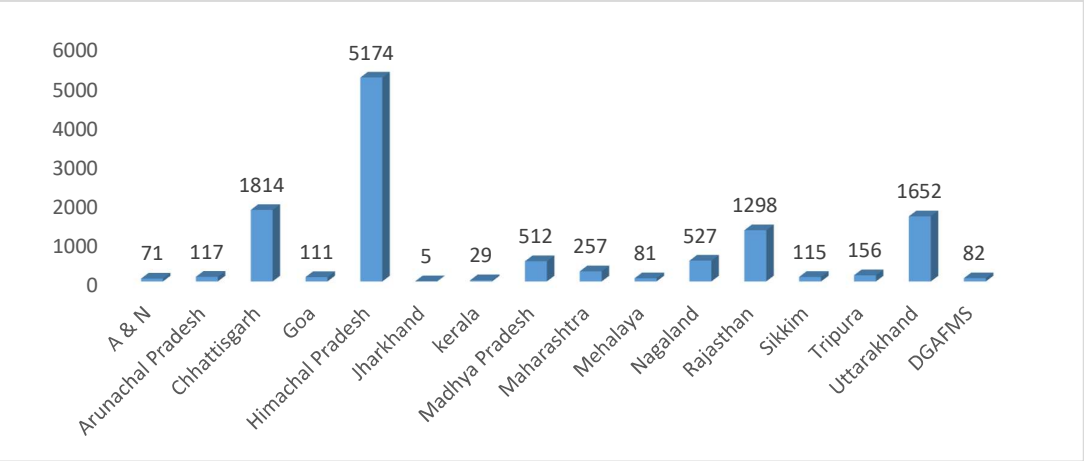
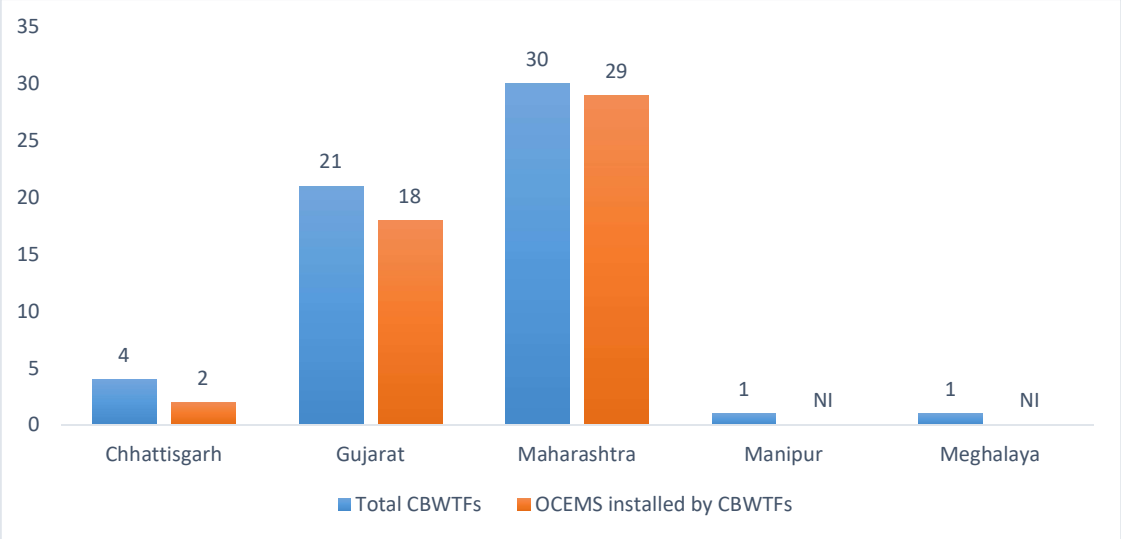


Fig:-11; Deep burial installed by HCFs in States/UTs

8 Online Continuous Emission Monitoring System:

BMWM Rules, 2016 stipulates that every occupier or operator of the common bio-medical waste treatment facility shall install Online Continuous Emission Monitoring System (OCEMS) for the parameters as stipulated by SPCBs/PCCs in authorization and transmit the real time data to the servers at SPCB/PCC and CPCB. As per the submitted information, 207 out of 215 nos. of CBWTFs have installed OCEMS with their incinerators. Further, it has been observed by CPCB that some of the CBWTFs connected to OCEMS portal are not transmitting data regularly to CPCB server. CPCB has conducted meetings with CBWTF operators related to connectivity and calibration of OCEMS and also issued directions to all SPCBs/PCCs regarding to ensure OCEMS data transmission to CPCB server. Details of CBWTFs installed OCEMS is given in fig. 12:



* NI – OCEMS not installed in CBWTF

Fig:- 12; Number of CBWTFs installed OCEMS

All operational CBWTFs of States namely Andhra Pradesh, Assam, Bihar, Chandigarh, Delhi, Goa, Haryana, Himachal Pradesh, J & K, Karnataka, Kerala, Madhya Pradesh, Odisha, Puducherry, Punjab, Rajasthan, Telangana, Tamil Nadu, Uttarakhand, Uttar Pradesh and West Bengal have installed OCEMS, however operational CBWTFs of states namely Manipur and Meghalaya have not installed OCEMS. Further, 2 CBWTFs are using deep burial in Chhattisgarh, 3 CBWTFs in Gujarat, and 1 CBWTF in Maharashtra have not installed OCEMS.

9 Status of Installation of Waste Water Treatment Facility

As per Schedule I of BMWM Rules, 2016, the chemical liquid waste shall be pre-treated before mixing with other wastewater. The combined discharge shall conform to the discharge norms given in Schedule III. Further, bedded HCFs are required to comply with the standard prescribed for liquid waste under Schedule II of BMWM Rules, 2016. However, HCFs may not

necessarily need to install Effluent Treatment Plant (ETP) in case waste water is discharged into a public sewer connected to a terminal sewage treatment plant (STP). Further, water disposed through public sewer are required to meet general standards as notified under the Environment (Protection) Act, 1986. However, all HCFs of Chandigarh State are in the process of installing ETP plant. In terms of installing of Waste Water Treatment Facility, several States are not up to par.

10 DGAFMS scenario

In case of HCFs for armed forces prescribed authority is DGAFMS. As reported, 760 HCFs are established under DGAFMS that generates about 5.8 tonnes/day bio-medical waste, which is entirely treated and disposed off by CBWTFs and Captive Treatment Facility. Out of 760 no. of HCFs, bedded HCFs and Nursing homes are 227, Clinics, Dispensaries are 527, Pathological laboratories are 2, Blood banks are 2 and Research Institutions are 2. Out of 760 no. of HCFs, 678 no. of HCFs are using CBWTFs and 82 no. of HCFs are using Captive Treatment Facility. Further, 1.4 tonnes/day of BMW is being treated by captive treatment facilities of HCFs, which is not recommended under BMWM Rules, 2016 and 4.4 tonnes/day BMW is being treated and disposed off by CBWTF. The status shows that the BMW disposal infrastructure in Armed Forces Medical Establishments does not meet the requirement of Rule. Steps may be taken to upgrade the facilities to ensure compliance of Rule.

11 Technologies for Treatment and Disposal of BMW

It has been observed that the non-burn technologies are available for the treatment & disposal of BMW. However, following provisions of BMWM Rules, 2016 restrict the adoption of non-burn technologies:

i. Yellow category of BMW is allowed to be treat and dispose of through incineration/plasma pyrolysis/deep burial.
ii. HCFs are not allowed to install captive treatment facilities in case the service of CBWTF is available within distance of 75 km. However, in case the CBWTF is not available, HCFs may install their own treatment facility for the treatment and disposal of BMW in compliance to the standards prescribed under BMWM Rules, 2016.
iii. Combination of sterilization and shredding is only allowed for the red and white category of BMW.

Further, as per BMWM Rules, 2016, CPCB may lay down standards for new technologies for treatment and disposal of bio-medical waste and prescribe specifications for treatment and disposal of bio-medical wastes. The proposal for adopting new technology under BMWM Rules, 2016 may be submitted to MoEF &CC and CPCB for assessment of the same.

12 Adoption of Bar-code system

Rule 4 (i) of BMWM Rules, 2016, stipulate that it is the duty of every Health Care Facility (HCF) to establish a bar code system for bags or containers containing BMW to be sent out of the premises or place for any purpose, by 27.03.2019. Also, Rule 5 (c) of the BMWM Rules, 2016 stipulates that it is the duty of every Operator of CBWTF to establish bar code system for handling of BMW. To facilitate implementation of barcode system by Operators of CBWTFs and Hospitals at State levels, CPCB has prepared guidelines for "Barcode System for Effective Management of BMW". According to the status of bar-code implementation received from SPCBs and PCCs, a total of 17,666 HCFs and 42 CBWTFs in 15 States/UTs have adopted the bar-code system.

Further, Hon'ble Supreme Court of India in the matter of IA No. 181745 of 2019 and I.A. No. 46339 of 2020, in W.P.C. 13029 of 1985 also passed orders directed MoEF & CC / CPCB to work out a national bar-coding system/portal for tracking of biomedical waste. In this matter, CPCB is in process of Implementation of Centralised Barcode System for tracking of biomedical waste.

13 Other issues of concern w.r.to bio-medical waste management

- District Level information of BMWM is not available in every State/UT which is required as per the BMWM Rules, 2016 as well as CPCB guidelines.
- Authorisation by every HCF including non-bedded is not achieved even after six years of notification of BMWM Rules, 2016.
- Domestic BMW is not collected separately from the households by the Urban Local Bodies as required under BMWM Rules, 2016.
- HCFs are using captive treatment facilities in some States instead of using CBWTFs. Further, timely monitoring of captive treatment facilities is required by States/UTs.
- Some CBWTFs and HCFs in the States/UTs have installed deep burial and many of the States/UTs has not provided information w.r.to deep burial pits installed by HCFs. Status of compliance by deep burial may be checked SPCBs/PCCs.
- Liquid waste treatment facility i.e ETP/STP is not installed by all bedded HCFs in the States.
- Gap analysis to assess the requirement of additional treatment facility to treat and dispose of the biomedical waste is not conducted as per CPCB guidelines.
- OCEMS is not effectively implemented by every CBWTF and captive treatment facility.

14 Actions may require/ Way forward

- SPCBs/PCCs shall ensure timely submission of annual report pertaining to their respective State or Union Territory within stipulated time period that is on or before 31st July.

- SPCBs/PCCs ensure to compile the information at District level as required under prescribed format. iv. SPCBs/PCCs shall coordinate with Urban Local Bodies and Municipalities for management of domestic biomedical waste as per Solid Waste Management Rules, 2016 for further channelization of domestic BMW to CBWTFs.

- SPCBs/PCCs should assess the adequacy of the deep burial pits used by the HCFs and ensure their restrictions up-to rural or remote areas and their compliance to deep burial standards as prescribed under BMWM Rules, 2016.

- Gap analysis should be conducted by all SPCBs/PCCs with respect to generation of BMW and available treatment capacity to check adequacy of available treatment capacity of CBWTF.

- SPCBs shall ensure that recyclable waste collected by CBMWTFs should be treated properly and provided to registered recyclers only.

- Adequacy of treatment capacity of existing CBWTFs and their compliance status be regularly assessed by the SPCBs/PCCs to review the requirement of additional treatment facility for the State / Union Territory.

- State Boards should closely monitor or track the movement of BMW generated by HCFs and treated and disposed through CBWTF.

- Any incidents or reports of illegal dumping or open burning of waste and non-complying facilities should be acted upon quickly and appropriate action may be initiated including imposition of Environmental Compensation Charges.

- SPCBs/PCCs may ensure that coverage of CBWTFs is available to every HCF to extent possible to ensure effective treatment and disposal of BMW.

- OCEMS installed in CBMWTFs be operated and maintained properly with regular calibration and quality check. Data be used for self-regulatory purpose.

*****

Annexure -I

Annual Report information on BMWM Scenario in the Country for the Year 2021 (As submitted by SPCBs/PCCs and DGAFMS) as on March, 2023

S.No.	Name of the State/UT	Total no. of Bedded Health Care Facilities (HCFs)	Total no. of Non-bedded Health Care Facilities (HCFs)	Total no. Health Care Facilities (HCFs)	Total no. of Beds	Authorization Status			No. of HCFs utilization CBWTFs	Total Quantity of BMW generated (kg/day)	Total Quantity of BMW Treated and Disposed (kg/day)	Captive BMW Treatment Facilities Operated by the (HCFs)		Common Bio-medical Waste Treatment Facilities (CBWTFs)		Deep burial installed by HCF & CBWTFs		Total BMW treated by captive treatment facilities by HCF in Kg/day	Total BMW treated by CBWTFs kg/day)	Total no. of violation by HCFs/CBWTFs	Total No. of show cause notices/Directions issued to defaulter HCFs/CBWTFs	No. of CBWTFs that have installed OCEMS
						Total no. of HCFs applied for authorization	Total no. of HCFs granted authorization	Total no. of HCFs in operation without Authorization				No. of HCFs having Captive Treatment Facilities	No of Captive Incinerators Operated by HCFs	CBWTFs Operatio-nal	CBWTFs under Constructi-on	HCF	CBWTFs					
I.	II.	III.	IV.	V.	VI.	VII.	VIII.	IX.	X.	XI.	XIII.	XVI.	XV.	XVI.	XVII.	XVII I.	XIX.	XX.	XXI.	XXII.	XXIII.	XXIV.
1	Andaman Nicobar	53	195	248	1598	248	117	Nil	Nil	542.94	542.94	7	5	Nil	Nil	71	Nil	542.94	Nil	Nil	131	Nil
2	Andhra Pradesh	6511	5453	11964	156949	2860	2859	926	11431	19719.87	19719.87	Nil	0	12	1	Nil	Nil	Nil	19719.87	927	931	12
3	Arunachal Pradesh	140	140	280	1861	312	308	172	Nil	347.53	347.53	308	10	Nil	Nil	117	Nil	347.53	nil	172	172	Nil
4	Assam	732	707	1439	23860	896	391	173	339	8421.201	5359.31	457	26	1	Nil	INP	Nil	3478.81	1880.5	469	84	1
5	Bihar	6023	20455	26478	104391	2647	2188	16929	7049	20548.81	13421.55	3	2	4	Nil	Nil	Nil	344.69	13076.86	625	626	4
6	Chandigarh	44	882	926	4817	31	31	Nil	926	5374	5374	Nil	Nil	1	Nil	Nil	Nil	Nil	5374	Nil	Nil	1
7	Chhattisgarh	1924	3992	5916	44223	1300	1075	116	2857	7906.73	7906.73	1816	3	4	2	1814	2	1717.45	6189.28	154	0	2
8	Daman &Diu and Dadra & Nagar Haveli	73	110	183	1521	103	73	66	183	553.85	553.85	NIL	NIL	Waste Handover to Gujarat Facility	NIL	Nil	Nil	NIL	553.85	NIL	Nil	Nil
9	Delhi	1094	9249	10343	58120	1015	719	0	10343	25828.35	25828.35	1	Nil	2	Nil	Nil	Nil	148.35	25680	99	99	2
10	Goa	149	631	780	5051	159	90	363	236	1129	1129	329	Nil	1	Nil	111	Nil	Nil	1129	348	348	1
11	Gujarat	12221	22574	34795	187760	4479	3966	3714	34795	52800	52800	Nil	nil	21	1	Nil	Nil	Nil	52800	6181	6181	18
12	Haryana	3428	3470	6898	63509	5709	5588	179	6898	21436	21436	Nil	Nil	11	Nil	Nil	Nil	Nil	21436	179	179	11
13	Himachal Pradesh	607	8457	9064	16685	8341	7844	723	3886	4130.3	4067.04	2	2	3	1	5174	Nil	109.44	3957.6	26	26	3
14	Jharkhand	1200	955	2155	34873	737	250	104	1359	7523.86	5756.34	5	5	4	1	5	Nil	892.38	4863.96	119	30	4
15	J & K	1589	5777	7366	18102	1415	598	5951	2010	7663.5	7663.5	Nil	Nil	3	Nil	Nil	Nil	Nil	7663.5	5953	409	3
16	Karnataka	8944	35113	44057	229222	33430	177158	5148	27135	77639	48096.28	1904	2	26	2	Nil	Nil	2297	45799.28	2118	831	26

17	Kerala	2095	15780	17875	124804	17106	16792	970	14936	61136	61136	44	15	2	Nil	29	Nil	2438	58698	1436	1497	2
18	Ladakh	334	80	414	1078	Nil	Nil	Nil	Nil	34.742	34.742	414	Nil	Nil	0	0	0	34.742	Nil	414	414	0
19	Lakshadweep	9	47	56	240	48	47	Nil	Nil	86.76	86.76	10	Nil	Nil	Nil	INP	Nil	Nil	86.76	Nil	Nil	Nil
20	Madhya Pradesh	4005	5806	9811	130000	8167	7897	1644	7656	19754.33	19124.73	2	2	14	5	512	2	202.82	18921.91	733	431	14
21	Maharashtra	20696	44293	64989	322873	7482	6445	160	64525	80314	80314	259	2	30	3	257	1	213	80101	336	302	29
22	Manipur	96	658	754	4854	754	754	Nil	248	1166.13	1266.22	506	2	1	Nil	INP	Nil	847.82	418.4	1	Nil	Nil
23	Meghalaya	183	1012	1195	7145	1046	1036	149	36	1287	1287	229	Nil	1	Nil	81	Nil	761	526	Nil	Nil	Nil
24	Mizoram	99	217	316	3546	25	25	Nil	Nil	803.57	803.57	99	Nil	Nil	Nil	INP	Nil	803.57	Nil	Nil	Nil	Nil
25	Nagaland	222	513	735	3660	529	529	206	Nil	1006.55	188.42	5	Nil	Nil	Nil	527	Nil	188.42	Nil	Nil	Nil	Nil
26	Odisha	1563	2307	3870	50609	718	682	69	987	16167.947	16167.947	2883	Nil	6	Nil	Nil	Nil	11563.579	4604.368	44	44	6
27	Puducherry	96	291	387	12112	324	304	63	387	4638.5	4638.5	1	1	1	Nil	Nil	Nil	19	4618.5	14	1	1
28	Punjab	4057	9369	13426	76945	4752	3881	1519	11756	18490.13	18490.13	Nil	Nil	5	Nil	Nil	Nil	Nil	18490.13	1293	1293	5
29	Rajasthan	5970	2716	8686	142473	1778	1662	708	6016	19170.28	19170.28	1298	Nil	11	7	1298	1	1821.97	17348.31	598	764	11
30	Sikkim	33	250	283	2299	283	283	Nil	Nil	545.34	545.34	192	7	Nil	nil	115	Nil	545.34	Nil	Nil	Nil	Nil
31	Tamil Nadu	7601	18996	26597	145848	26480	26393	Nil	26597	45215.93	45215.93	0	0	10	3	Nil	Nil	0	45215.93	21	21	10
32	Telengana	4221	3928	8149	122321	5979	5955	316	7696	24235	24235	Nil	Nil	11	Nil	Nil	Nil	Nil	24235	317	317	11
33	Tripura	141	1769	1910	4711	142	142	Nil	Nil	1940.264	1822.125	158	3	Nil	1	156	Nil	1822.125	Nil	Nil	Nil	Nil
34	Uttarakhand	1727	3628	5355	29231	4253	3935	749	2650	6891.37	6891.37	2582	2	2	1	1652	NIL	1206.72	5684.65	324	58	2
35	Uttar Pradesh	20397	17228	37625	356321	INP	31555	5550	INP	71264.2	71264.2	9	10	22	0	Nil	Nil	496.4	70767.8	150	20	22
36	West Bengal	2892	6279	9171	133415	9171	9171	Nil	9171	42286.861	42286.861	Nil	Nil	6	7	Nil	Nil	Nil	42286.861	148	146	6
37	DGAFMS	227	533	760	38659	8	8	1	678	5895.82	5895.82	82	3	Nil	Nil	82	Nil	1430.93	4464.89	Nil	Nil	Nil
	COVID-19 BMW									80*	80*											
	Total	**121396**	**253860**	**375256**	**2561295**	**152727**	**320751**	**46668**	**262786**	**764***	**721***	**13605**	**102**	**215**	**35**	**12001**	**6**	**34274.0**	**606592.2**	**23199**	**15355**	**207**

* Data provided in tonnes/day

Annual Report

on

Biomedical Waste Management

for the year 2022

as per

Biomedical Waste Management Rules, 2016

Central Pollution Control Board

(Ministry of Environment Forest & Climate Change)
Parivesh Bhawan, East Arjun Nagar Delhi – 110032

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1. Introduction

1.1. Biomedical Waste Management Rules, 2016

Govt. of India has notified Biomedical Waste Management Rules, 2016 (BMWM Rules, 2016) under the Environment (Protection) Act, 1986 in the year 2016. These Rules stipulate various provision for collection, segregation, processing, treatment and disposal of bio-medical wastes in an environmentally sound manner.

As per the BMWM Rules, 2016 the biomedical waste generated in Healthcare Facilities should be collected, transported, treated and disposed-off through Common Biomedical Waste Treatment Facilities (CBWTFs). The Rules defines duties for Occupier which include hospitals, nursing homes, clinics, dispensaries, veterinary institutions, animal houses, pathological laboratories, etc.), duties of the operator of CBWTFs and duties for authorities like Ministry of Environment Forest & Climate Change (MoEF & CC), Ministry of Health & Family Welfare (MoH & FW), Ministry of Defence (MoD), Central Pollution Control Board (CPCB), State Government of Health (GoH), State Pollution Control Boards (SPCBs)/Pollution Control Committees (PCCs) and Municipalities or Urban Local Bodies (ULBs).

1.2. Annual Report on Biomedical Waste Management

As per BMWM Rules, 2016 every occupier or operator of common bio-medical waste treatment facility (CBWTF) shall submit an annual report to the prescribed authority i.e. SPCBs/PCCs on or before the 30th June of every year. Thereafter, the prescribed authority shall compile, review and analyse the information received and send to Central Pollution Control Board on or before the 31st July of every year. The BMWM Rules, 2016 Annual Reports shall also be available online on the websites of Occupiers, SPCB/PCC and CPCB. The occupier or operator of CBWTF through this report provide the information regarding the waste generated, collected in the facility, amount of biomedical waste treated, disposal facilities utilised, amount of treated biomedical waste sent to recyclers, number of vehicles used in collection of biomedical waste, trainings, accidents, violations of BMWM Rules, 2016, etc. These details help in analysing status of the biomedical waste across the country, identifying the gaps in the biomedical waste management and addressing the shortcoming in the upcoming year for effective management of biomedical waste and implementation of BMWM Rules, 2016.

1.3. Status of Annual Report 2022 and Gaps identified

All States, Union Territories and Director General of Armed Forces Medical Services (DGAFMS) have submitted the annual reports on biomedical waste management for the year 2022.

States and UTs namely Andaman & Nicobar, Arunachal Pradesh, Bihar, Chhattisgarh, Chandigarh, Delhi, DD & DNH, Goa, Gujarat, Himachal Pradesh, J&K, Karnataka, Kerala, Ladakh, Lakshadweep, Madhya Pradesh, Mizoram, Meghalaya, Nagaland, Odisha, Puducherry, Punjab, Sikkim, Telangana, Tamil Nadu, Rajasthan, Tripura, Uttarakhand and West Bengal & DGAFMS submitted the annual report information before July, 2023. However, SPCBs namely Andhra Pradesh, Assam, Jharkhand, Manipur, Maharashtra, Haryana, Uttar Pradesh submitted the annual report information after July, 2023.

The following common gaps/discrepancies were observed in the annual report information received from SPCBs/PCCs and communicated to respective States/UTs for clarification and rectification.

i) 11,093 HCFs are using the deep burial for disposal of biomedical waste.
ii) 24,705 HCFs are operational without authorisation.
iii) 17,490 HCFs are still using captive treatment facility.
iv) Cent percent installation of ETP by bedded HCFs is not achieved.
The response received from SPCBs/PCCs are incorporated in Annual Report.

1.4. Brief Summary of Bio-medical Waste Management in India

In year 2022, about 705 tonnes/day of biomedical waste was generated in the country, out of which 645 tonnes/day BMW was treated and disposed-off through CBWTFs and Captive treatment facilities. There are 3,93,939 no. of HCFs in the country, out of which 1,25,259 no. of HCFs are bedded with a total of 24,65,063 number of beds and 2,67,155 no. of HCFs are non-bedded. 3,10,809 no. of HCFs that is around 79% of HCFs utilise the facilities of CBWTFs for the collection, treatment, & disposal of biomedical waste, while 17,490 no. that is around 4.4 % of HCFs have captive treatment facilities for the treatment and disposal of biomedical waste. A gap of 16% of HCF is reported that are neither using CBWTF nor CTF. A gap of around 8.5% is reported between the generation and disposal of the BMW in the country, as per response received from SPCBs/PCCs the gap is due for information not received from CBWTFs or deep burials. There are 218 no. of CBWTFs in operation and 34 no. of CBWTFs

are under construction. Annexure I provide details of biomedical waste management in State/UTs Brief of biomedical waste scenario of the Country is given below:

No. of HCFs	**3,93,939**
No. of bedded HCFs	1,25,259
No. of non-bedded HCFs	2,67,155
No. of beds	24,65,063
No. of CBWTFs	218* + 34**
No. of HCFs granted authorization	1,56,637
No. of HCFs utilizing CBWTFs	3,10,809
No. of HCFs having Captive Treatment Facilities	17,490
No. of Captive Incinerators Operated by HCFs	153
Quantity of BMW generated in tons/day	705
Quantity of BMW treated in tons/day	645
No. of HCFs/CBWTFs violated BMW Rules	22,306
No. of Show-Cause notices/Directions issued to defaulter HCFs/CBWTFs	8291

Note: (i) * - CBWTFs in operation (ii) ** - CBWTFs under construction

1.5. Comparison of BMWM in 2021 and 2022

As per the annual report information for year 2022, 705 tons of BMW waste was generated in the country per day which is less than the generation of biomedical waste (764 tons per day) in year 2021. 59 tons (about 8%) of biomedical waste was generated less per day in 2022 in comparison to 2021 which may be due to increased quantity of biomedical waste during COVID-19 pandemic. Around 5% of increase in the total number of healthcare facilities have been reported in year 2022 as compared to 2021.

Annual report information shows that 3 new CBWTF were added in 2022 for the treatment & disposal of generated biomedical waste. Also, increase in number of HCFs utilising CBWTFs was observed to be increased from 2,62,786 to 3,10,809 from year 2021 and 2022, respectively. The captive treatment facilities are majorly operational in regions where CBWTFs is not accessible. Detailed comparison of biomedical waste management BMWM scenario during 2021 and 2022 is mentioned in Table 1 below:

Table 1: Comparative BMWM scenario in 2021 and 2022

Particulars	Year 2021	Year 2022
No. of HCFs	3,75,256	3,93,939
No. of bedded HCFs	1,21,396	1,25,259
No. of non-bedded HCFs	2,53,860	2,67,155
No. of beds	25,61,295	24,65,063
No. of CBWTFs	215* + 35**	218* + 34**
No. of HCFs utilizing CBWTF	2,62,786	3,10,809
No. of HCFs granted Authorization	3,20,751	1,56,637
No. of HCFs having Captive Treatment Facilities	13,605	17,490
No. of Captive Incinerators Operated by HCFs	102	153
Quantity of BMW generated (Tonnes/day)	764 (684 Non COVID BMW+80 COVID BMW)	705
Quantity of BMW treated (Tonnes/day)	721	645
No. of HCFs violated BMW Rules	23,199	22,306
No. of Show-cause notices/Directions issued todefaulter HCFs	15,355	8291

2. Status of Healthcare Facility

2.1. Availability of Healthcare Facilities

As per BMWM Rules, 2016, health care facility means a place where diagnosis, treatment or immunisation of human beings or animals is provided irrespective of type and size of health treatment system, and research activity pertaining thereto. It includes bedded and non-bedded HCFs.

As per the annual report information received from SPCBs and PCCs for the year 2022, there are 3,93,939 no. of HCFs, out of which 1,25,259 no. of HCFs are bedded and 2,67,155 no. of HCFs are non-bedded. Detail of number of HCFs in states/UTs and DGAFMS are given in fig. 1 and 2. In case of states, Maharashtra has the highest number of health care facilities followed by Karnataka and Uttar Pradesh. Sikkim has the lowest number of health care facilities followed by Arunachal Pradesh and Mizoram. In case of Union territories, Delhi has the highest number of health care facilities and the lowest healthcare facilities are present in Lakshadweep. Number of healthcare facilities generally depends on the geographical area of the state/UT, population density, availability of the health workers, financial restrains of state, workload of healthcare facility, etc. The figures also depict the same.

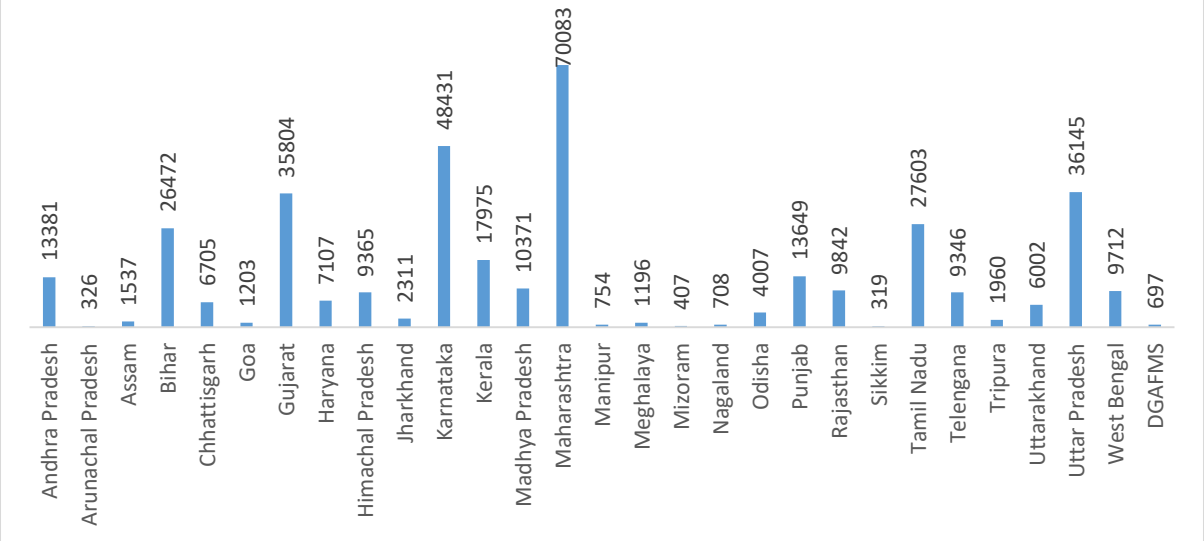


Figure 1: No. of HCFs in States & DGAFMS

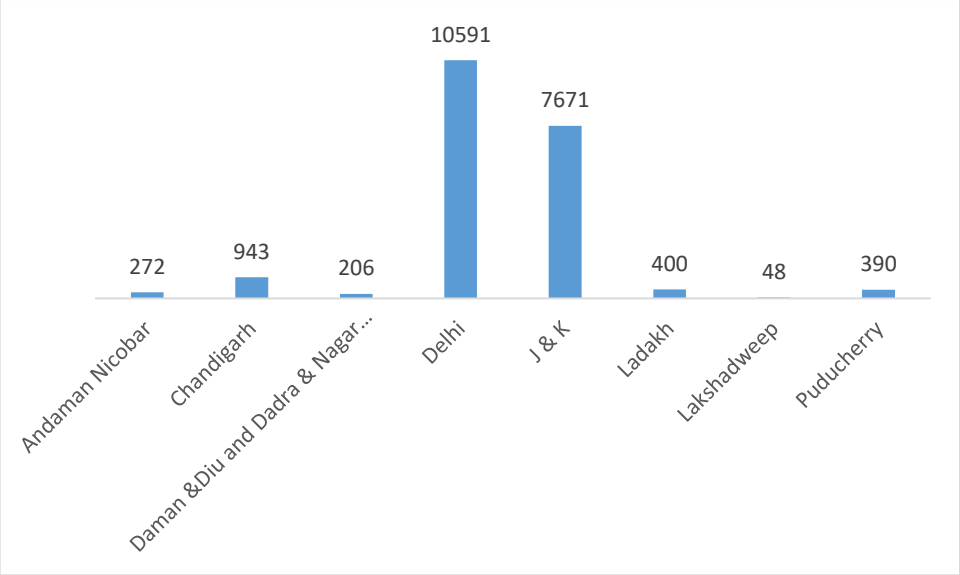


Figure 2: No. of HCFs in UT

2.2. Authorisation of Healthcare Facilities

Authorization is a process which brings HCFs and CBWTFs under the purview of BMWM Rules, 2016. BMWM Rules, 2016 stipulate that every healthcare facility (bedded & non bedded) require to obtain authorization from concerned SPCB/PCC. It has been observed that there are HCFs not yet authorized which is a violation of BMWM Rules, 2016. SPCB/PCC should ensure authorization of every HCFs under BMWM Rules, 2016.

HCFs of States/UTs namely Andhra Pradesh, Gujarat, Kerala, Lakshadweep, Manipur, Meghalaya, Mizoram, Nagaland, Rajasthan, Sikkim, Tripura and West Bengal have reported no HCF operating without authorisation. The States/UTs which has no HCF operating without authorisation are Delhi, Lakshadweep, Manipur, Mizoram, Nagaland and Puducherry, Tripura and West Bengal. As per information received from SPCBs/PCCs i) HCFs not applied for renewal of authorization after expiry of earlier authorization, ii) not applied for authorization after refusal of earlier authorization applications and iii) never applied for authorization.

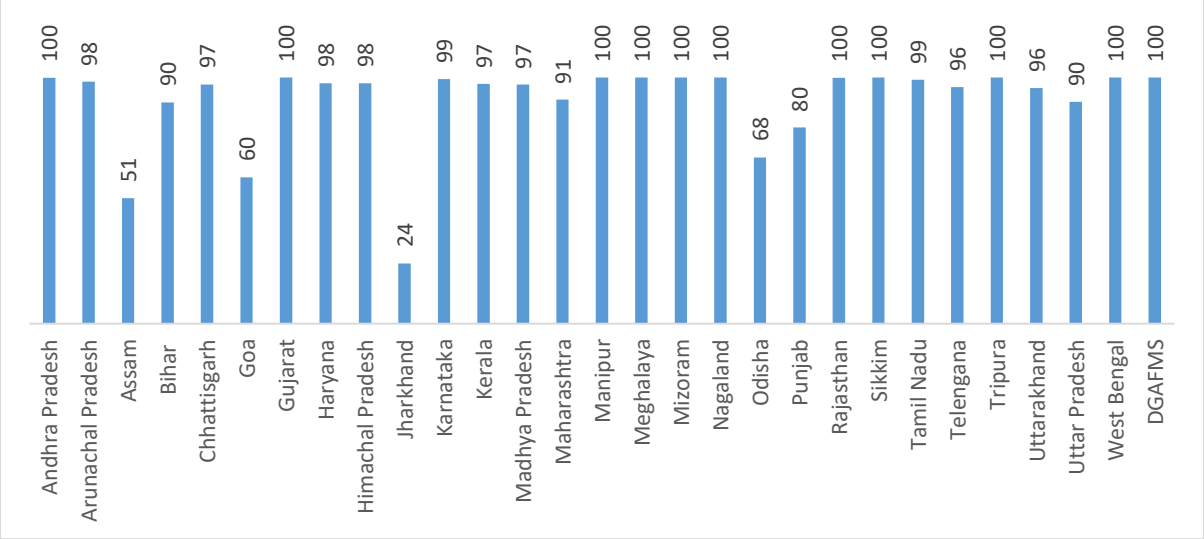


Figure 3: Percentage of applying HCF granted authorisation in the state and DGFAMS

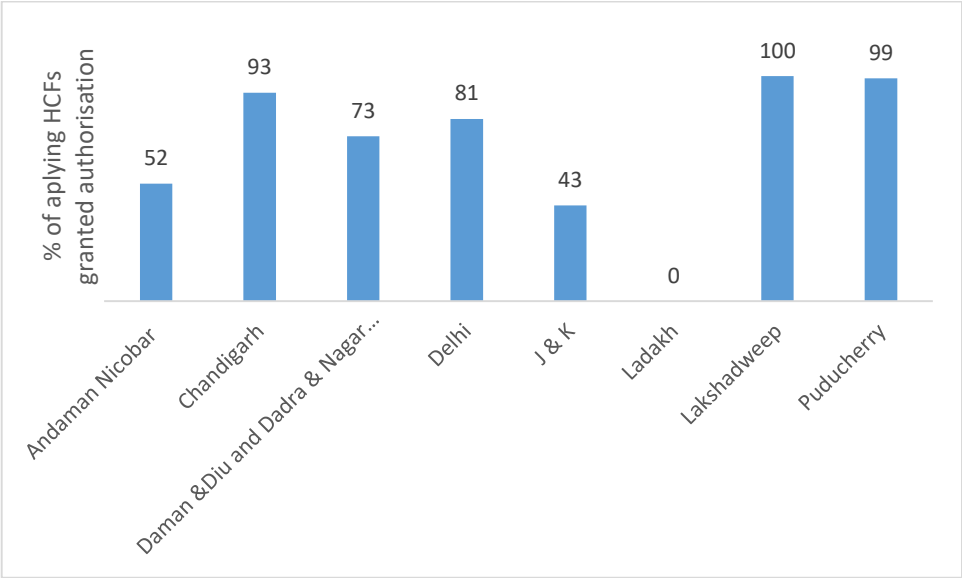


Figure 4: Percentage of applying HCFs granted authorisation in UTs

3. Status of Biomedical Waste Generation

3.1. Biomedical Waste Generation

Bio-medical waste means any waste, which is generated during the diagnosis, treatment or immunisation of human beings or animals or research activities pertaining thereto or in the production or testing of biological or in health camps, including the categories mentioned in Schedule I appended to BMWM Rules, 2016. As reported by SPCBs/PCCs, about 705 tonnes/day of BMW were generated during the year 2022 by 3,93,939 numbers of HCFs. The biomedical waste production generally depends on the number of healthcare facilities present in the state, population density, type of healthcare facility, etc. the quantity of biomedical waste produced in the states and UT in 2022 given in figure 5 and 6.

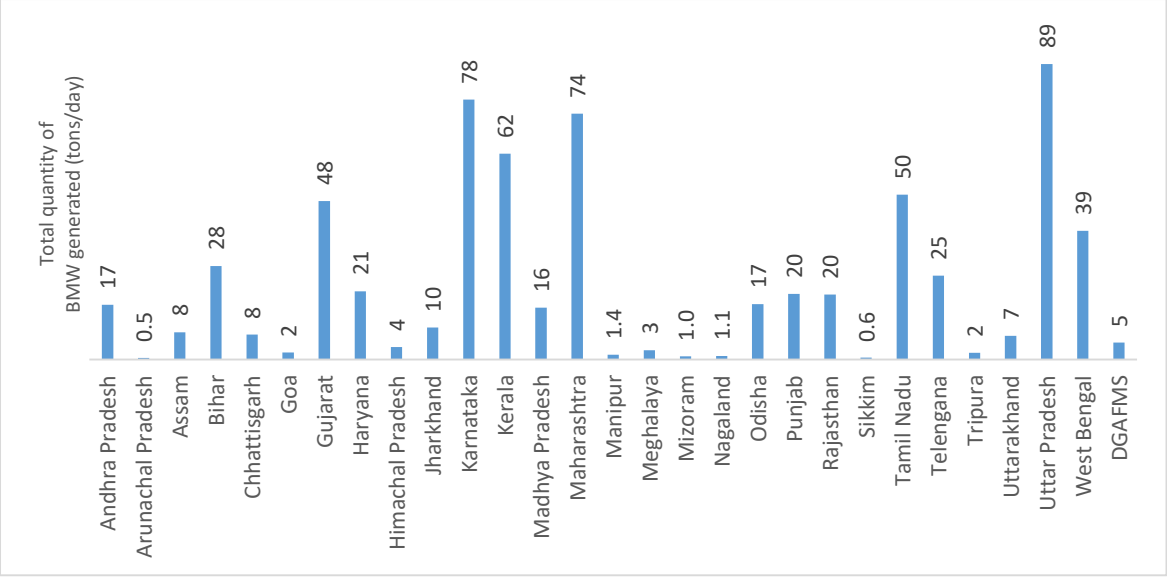


Figure 5: Total Quantity of BMW generated (tons/day) in different states and DGFAMS

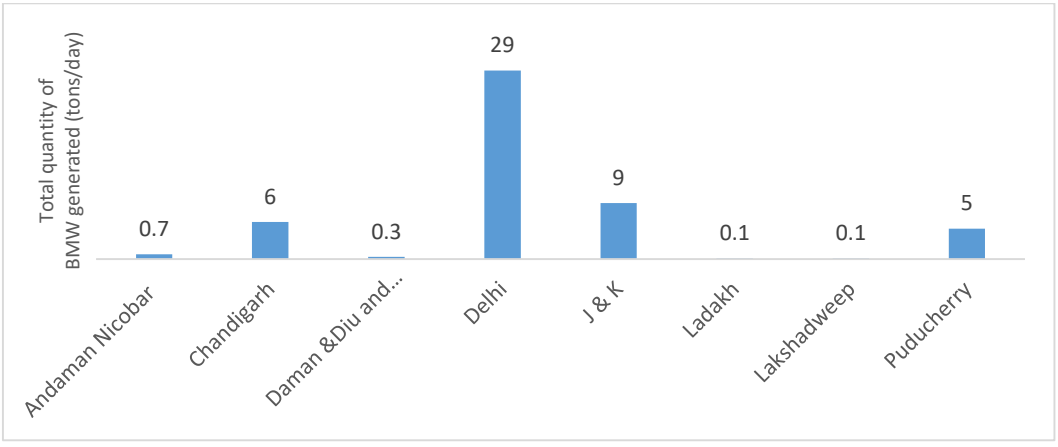


Figure 6: Total quantity of BMW generated (kg/day) in different UT

3.2. Treatment of Biomedical waste

As per Rule 7 (1), Bio-medical waste shall be treated and disposed of in accordance with Schedule I, and in compliance with the standards provided in Schedule-II by the health care facilities and CBWTFs. Out of 705 tonnes/day of BMW generated in the country in 2022, 645 tonnes/day of BMW is treated and disposed of by CBWTFs and captive treatment facilities (CTFs) installed by Healthcare Facilities.

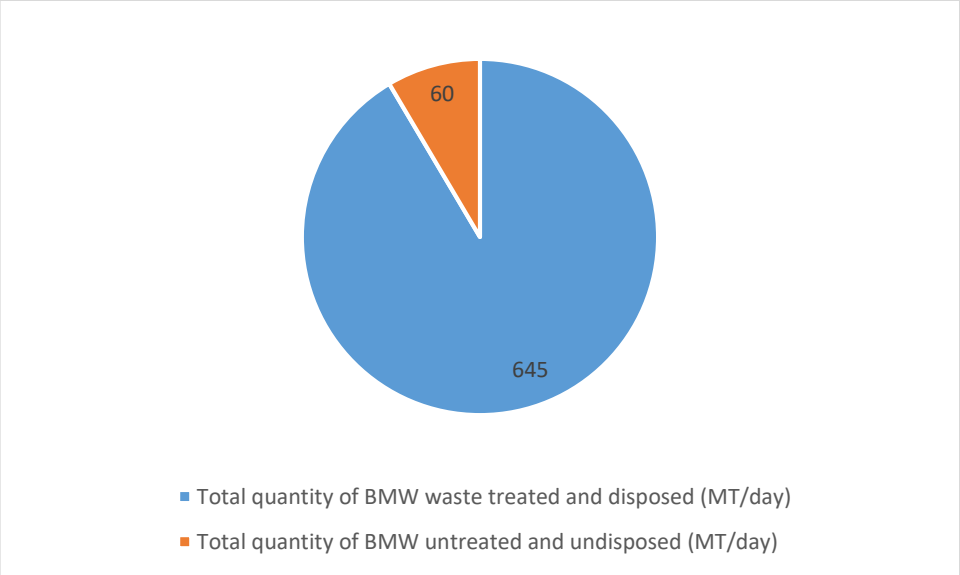


Figure 7: Quantity of BMW treated & disposed and gap in tonnes/day

As per Annual report information for year 2022, there is a gap between biomedical waste generation and its treatment & disposal. Figure 7 depicts the amount of BMW treated and disposed of, as well as the gap between treatment and disposal. For environment friendly disposal of BMW there should be no gap between generation and treatment & disposal of biomedical waste. However, the gap in generation, treatment & disposal has been observed in States namely Assam, Bihar, Jharkhand, Karnataka, Kerala, Madhya Pradesh, Meghalaya and Uttarakhand (fig. 8). Among the above States, the gap in generation, treatment, and disposal has also been observed in 2021 for Assam, Bihar, Karnataka, Jharkhand, Karnataka, Madhya Pradesh while the states of Himachal Pradesh, Nagaland and Tripura has overcome the gap in 2022 for the generation and treatment of BMW. CPCB has communicated the gaps observed to the respective SPCB/PCC to rectify the issue and ensure the disposal of all BMW generated in accordance with the BMWM Rules, 2016.

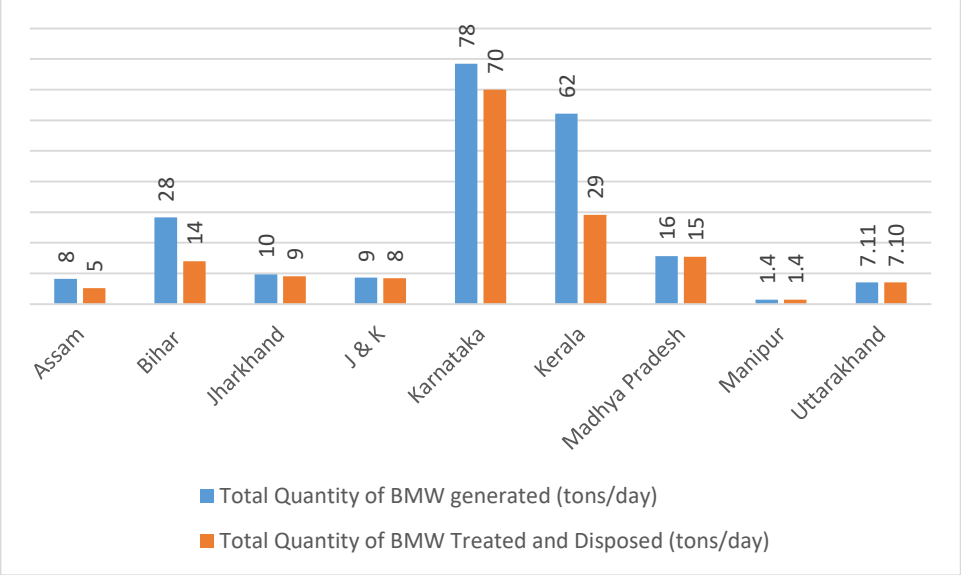


Figure 8: Status of generation, treatment & disposal of BMW (tons/day)

Some SPCBs/PCCs submitted that the gap is due to incomplete information received from HCFs and CBWTFs or deep burials used for biomedical waste.

4. Status of Common Biomedical Waste Treatment Facilities (CBWTF)

4.1. Availability of CBWTF

CBWTF means any facility which is involved in collection, treatment and disposal of bio-medical waste. As per BMWM Rules, 2016, it is the duty of CBWTF operator to take all necessary steps to ensure that the BMW collected from the occupier is transported, handled, stored, treated and disposed of, without any adverse effect to the human health and the environment, in accordance with BMWM Rules, 2016 and guidelines issued by the CPCB.

As per the Annual Report Information submitted by SPCBs/PCCs for the year 2022, currently there are 218 numbers of CBWTFs operated in the Country and 34 CBWTFs are under construction. In year 2022, there is increase in number of CBWTFs in Assam, Chhattisgarh, Punjab, Tripura and West Bengal as compared to year 2021. Andaman and Nicobar, Arunachal Pradesh, Laddakh, Lakshadweep, Mizoram, Nagaland and Sikkim have reported that no CBWTF is present in the State/UTs. Daman & Diu and Dadra & Nagar Haveli utilises the CBWTF of Gujarat state for treatment of biomedical waste. Similarly, Lakshadweep is utilising the facility of CBWTF situated in Kerala. In rest reported states the disposal of Biomedical waste is undertaken using the Captive treatment facility or deep burials. In this regard, CPCB requested such SPCBs/PCCs for submitting the proposal for setting up of CBWTFs for which they may avail financial assistance from Ministry of Environment Forests & Climate Change. No. of CBWTF present in state and UTs is represented in fig. 9 and fig. 10.

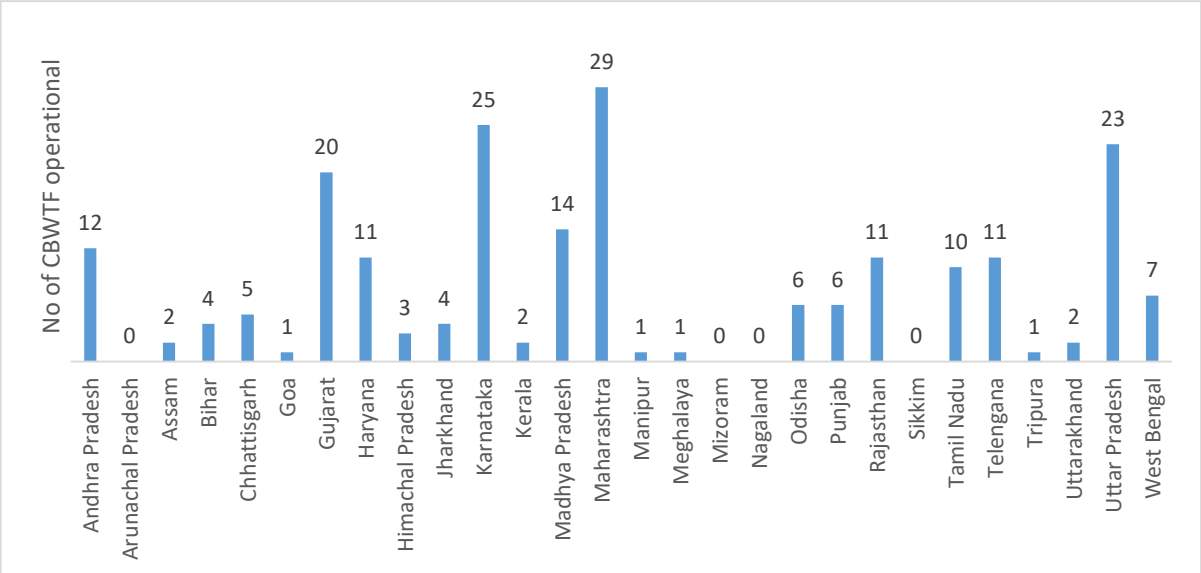


Figure 9: No. of CBWTFs operational in the States

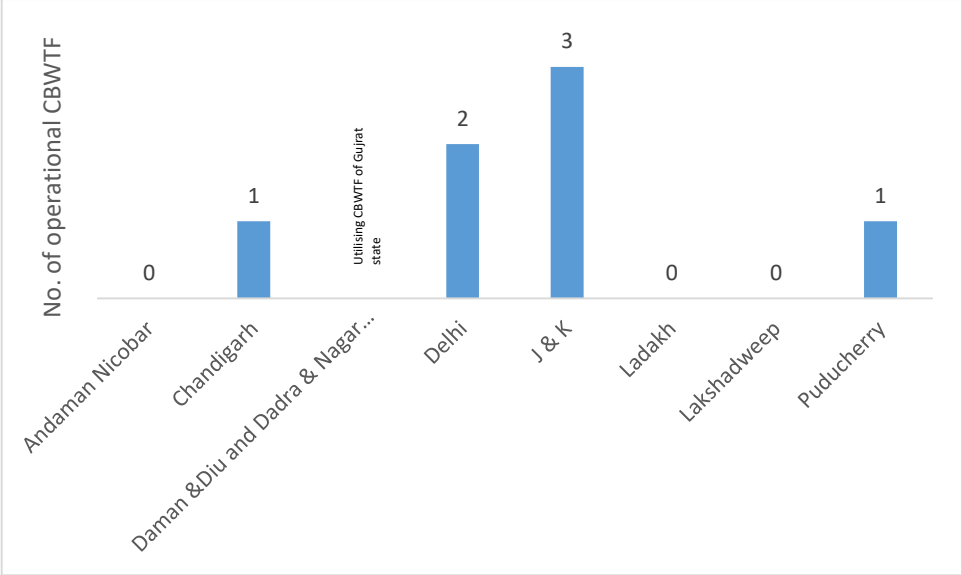


Figure 10: Number of CBWTF operational in UTs

As shown in figure 7 and 8, the availability of CBWTFs operated in States varies based on the area of the State, population density, number of HCFs in the states/UT, capacity of the CBWTF, accessibility of CBWTF, etc.

New CBWTF are under currently reported to be under construction in the states of Andhra Pradesh, Chhattisgarh, Gujarat, Himachal Pradesh, Jharkhand, Karnataka, Madhya Pradesh, Maharashtra, Rajasthan, Tamil Nadu, Uttar Pradesh, Uttarakhand and West Bengal.

4.2. Utilisation of CBWTF

As per Rule 7 (3) of the BMWN rules, 2016, "no occupier shall establish on-site treatment and disposal facility, if a service of common biomedical waste treatment facility is available at a distance of seventy-five kilometre". As per Annual Report information for year 2022, all HCFs operational in States/UTs namely Chandigarh, Delhi, Gujrat, Haryana, Puducherry, Tamil Nadu, Telangana and West Bengal are using CBWTF for treatment and disposal of biomedical waste. Less than 30 percent of HCFs are utilising CBWTF in the States/UT namely Meghalaya, Tripura, Assam and Bihar and is depended largely on the captive treatment and deep burials for treatment and disposal of biomedical waste. The reason of not using CBWTF is may be non-accessibility of CBWTF due to hilly terrain and presence of the HCF in the remote locations. States/UTs may look into the accessibility and come up with new CBWTFs to cover all HCFs in the State/UT. Utilization of CBWTFs by HCFs (in percentage) is given in fig. 11.

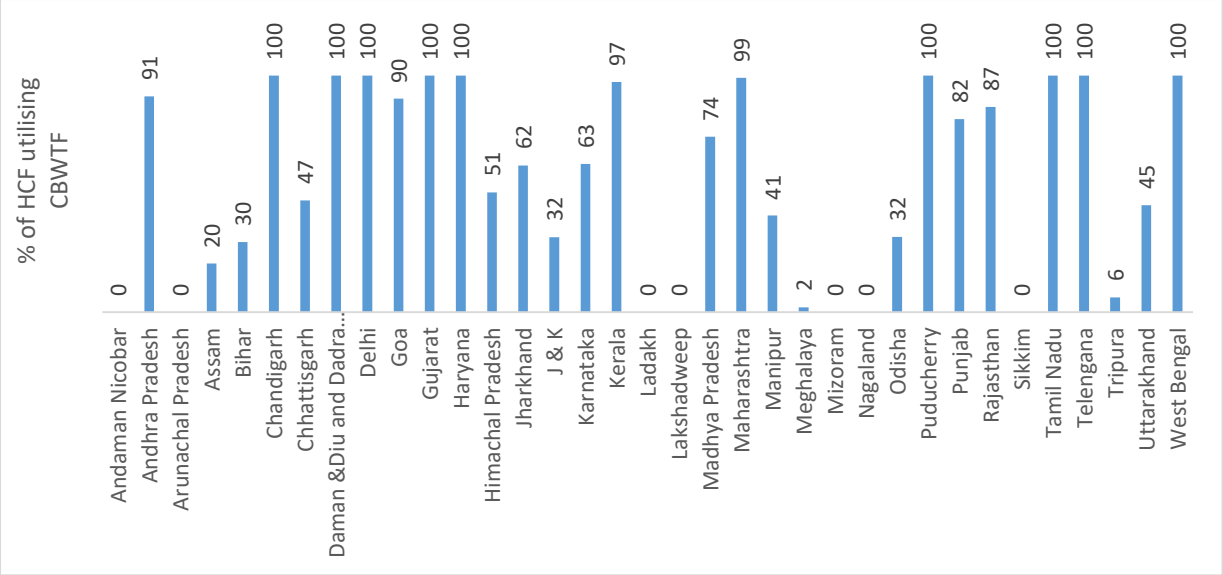


Figure 11: Percentage of HCF utilising the CBWTF in various states/UT

4.3. Capacity of CBWTF

The CBWTFs in the country are operating at cumulative treatment and disposal capacity of 1590 MT/day, of which incineration capacity is 858 MT/day and autoclave capacity is 732 MT/day. The present generation of 705 MT/day may look adequate for treatment and disposal of BMW. However, availability of CBWTFs may vary at State Level. Available treatment capacity of CBWTFs and utilisation of capacity in the country is shown in fig. 12.

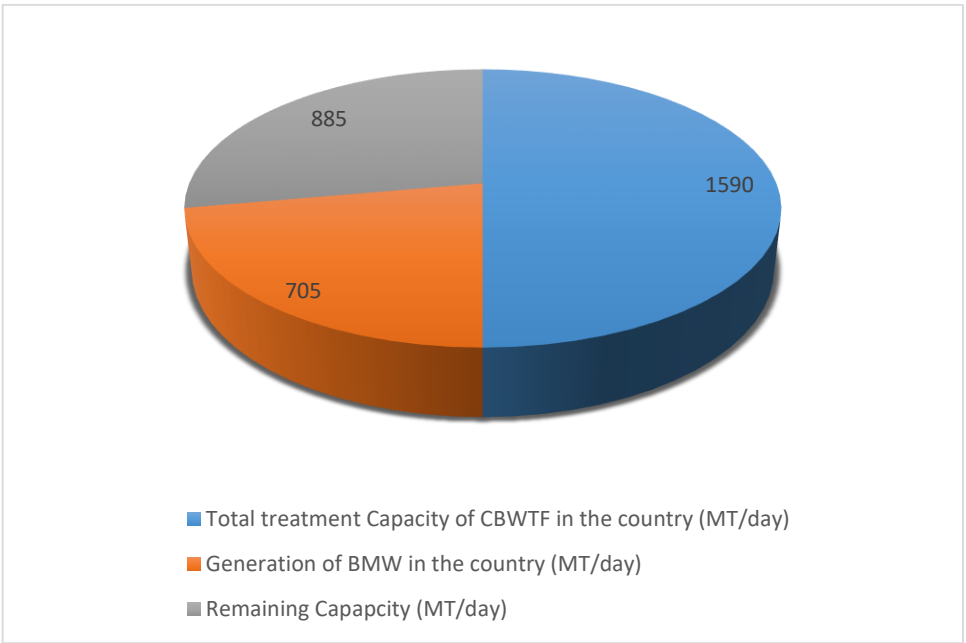


Figure 12: Treatment capacity available and utilization of capacity of CBWTFs in the country

5. Status of Captive Treatment Facilities

BMWM Rules, 2016 restricts on-site treatment and disposal facility, if a service of CBWTF is available at a distance of 75 Km. In cases where service of the common bio-medical waste treatment facility is not available, the Occupiers shall set up requisite biomedical waste treatment equipment like incinerator, autoclave or microwave, shredder prior to commencement of its operation, as per the authorisation given by the prescribed authority.

As per the annual report information submitted by SPCBs/PCCs, in 2022, 17,490 number of Healthcare Facilities in the country are utilising the captive treatment facility. Comparing to 2021, an increase in the number of captive treatment facilities operated by HCFs is reported in 2022 (fig. 13). Further, CPCB has also issued directions to all SPCBs/PCCs regarding to ensure compliance to the standards prescribed under BMWM Rules, 2016 by captive treatment facilities operated by HCFs.

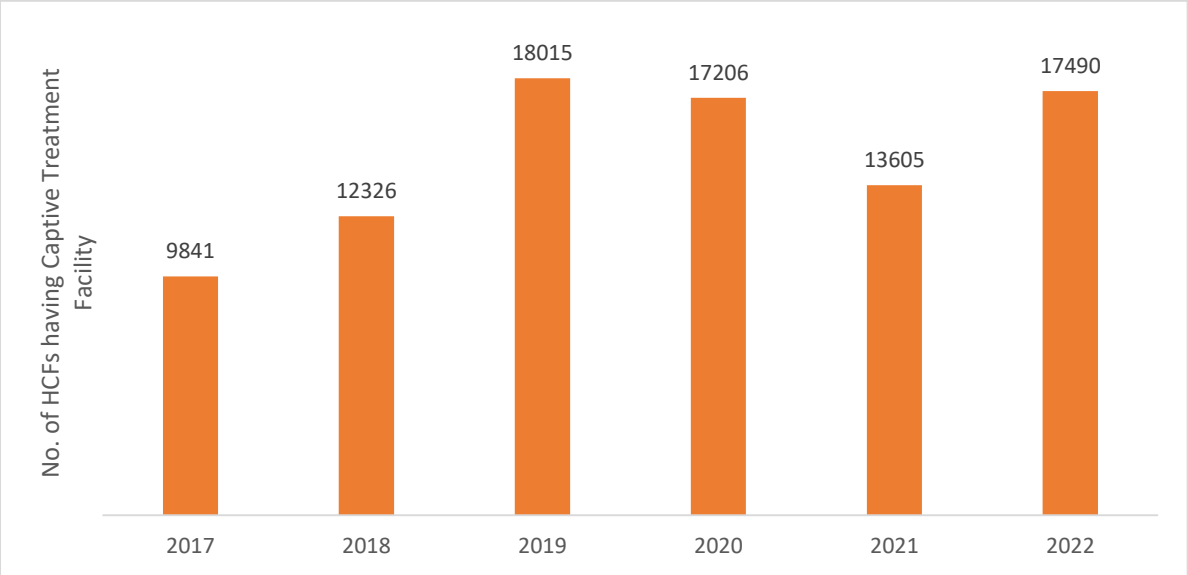


Figure 13: Number of HCFs having captive treatment facilities

HCFs of the States/UT namely Andaman and Nicobar, Arunachal Pradesh, Assam, Bihar, Chhattisgarh, Himachal Pradesh, Jharkhand, Karnataka, Kerala, Ladakh, Lakshadweep, Madhya Pradesh, Manipur, Meghalaya, Mizoram, Nagaland, Puducherry, Sikkim, Tripura, Uttarakhand and Uttar Pradesh are operating captive treatment facility (Fig. 14 & Fig. 15). Himachal Pradesh has reported to be using highest number of captive treatment facilities that is around 50% of the HCFs present in the states are using the CTF. In year 2022, no CTF are being utilised in the state of Andhra Pradesh, Goa, Gujrat Haryana, Punjab, Tamil Nadu, Telangana and West Bengal. In UTs, Ladakh has the highest number of HCF utilising the CTF.

The UT of Chandigarh, Daman and Diu and Dadar and Nagar Haveli and Jammu & Kashmir is having no CTF utilised by the HCF. The percentage of HCF out of total HCFs present in the states/UTs utilising the CTF are given in figure 16. 100% of the waste in Arunachal Pradesh, Mizoram and Lakshadweep is being disposed-off the CTF. These States/UT Should explore the possibility of setting up of CBWTF.

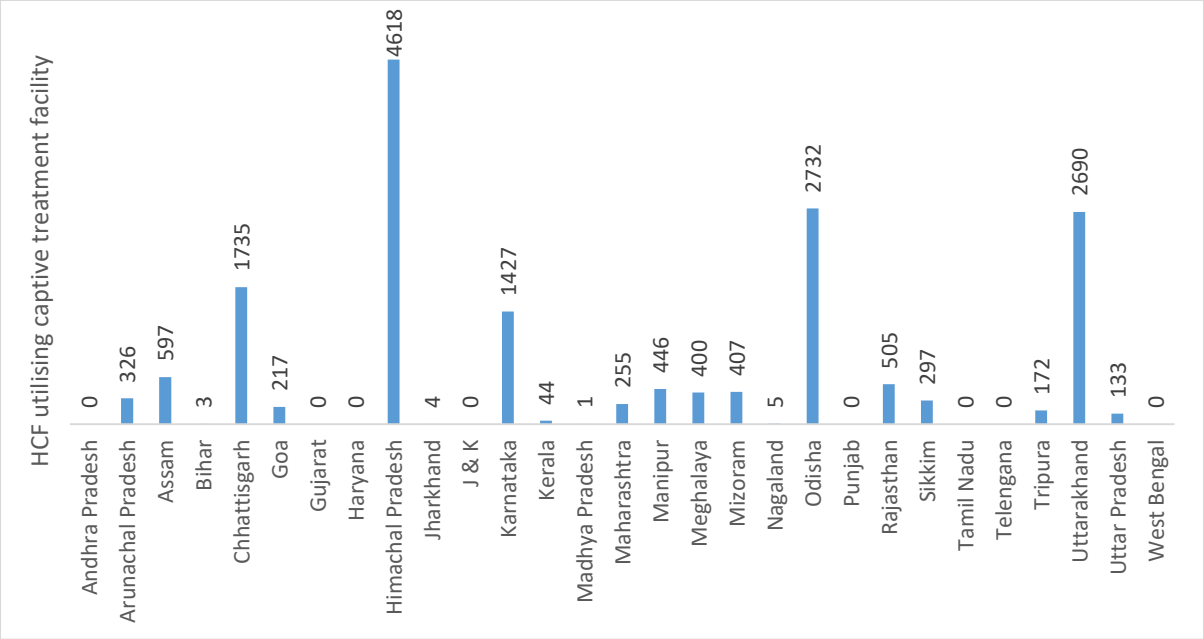


Figure 14: Number of HCF having captive treatment in different states

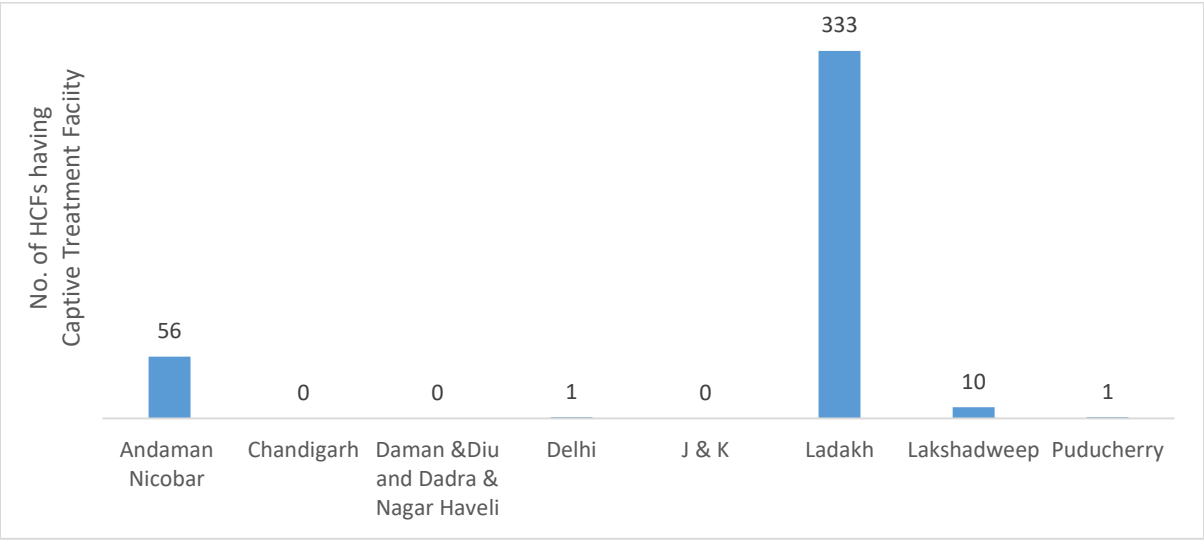


Figure 15: Number of HCF having captive treatment facility in different UTs

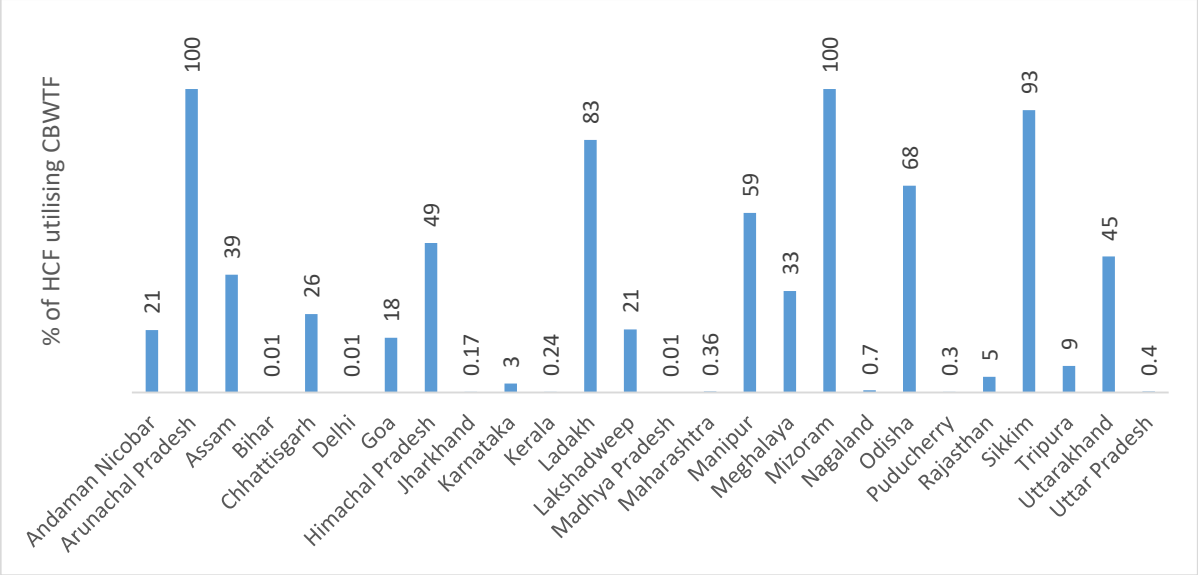


Figure 16: % of HCF utilising the CTF in various states and UT

6. Status of deep burial

6.1. Deep burial pits utilised by HCF

As per BMWM rules, 2016 disposal by deep burial is permitted only in rural or remote areas where there is no access to common bio-medical waste treatment facility. This will be carried out with prior approval from the prescribed authority and as per the Standards specified in Schedule-III. The deep burial facility shall be located as per the provisions and guidelines issued by Central Pollution Control Board from time to time. As per the information submitted by the SPCB/PCCs, deep burial pits installed by the HCFs of Andaman & Nicobar, Arunachal Pradesh, Himachal Pradesh, Jharkhand, Kerala, Ladakh, Lakshadweep, Maharashtra, Meghalaya, Mizoram, Nagaland, Odisha, Puducherry, Rajasthan, Sikkim and Tripura. The status of deep burial pits installed by HCFs is given in fig. 17. Highest number of HCFs in Himachal Pradesh are using deep burial pits for disposal of BMW. But the numbers have decreased to 4618 in 2022 from 5174 in 2021. UT of Puducherry has lowest that is only one HCF using the deep burial for disposal of BMW.

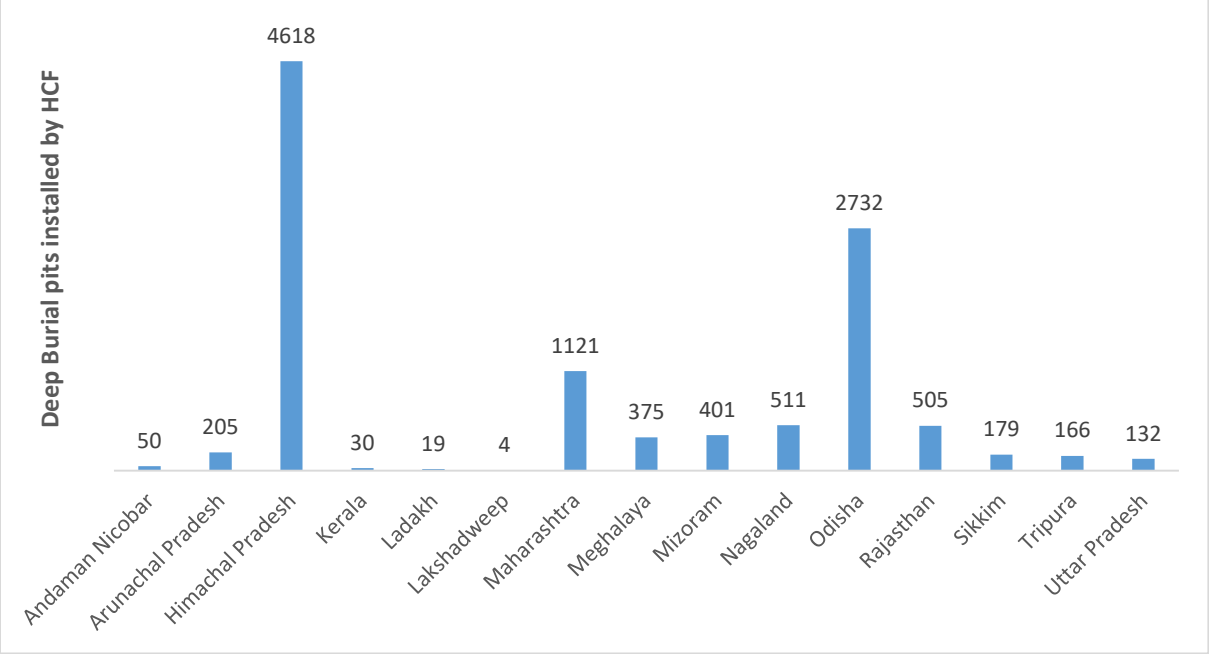


Figure 17: Deep burial installed by HCFs in States/UTs

6.2. Deep burial pits utilised by CBWTF

As per the revised guidelines for CBWTFs, SPCB/PCC should not allowed deep burial of BMW as a part of CBWTF. Any existing CBWTF having disposal of BMW by deep burial should have the requisite treatment equipment as stipulated under the BMWM Rules. CPCB issued directions to all SPCBs/PCCs regarding verification of deep burial pits that they are

authorized and designed in line with standards given under BMWM Rules, 2016. As per the response received by the Odisha PCB, the 2 deep burial pits though existing, are currently not in use. Response from other state boards are still awaited. Respective State Boards should initiate steps to set up CBWTF so as to avoid usage of deep burial pits.

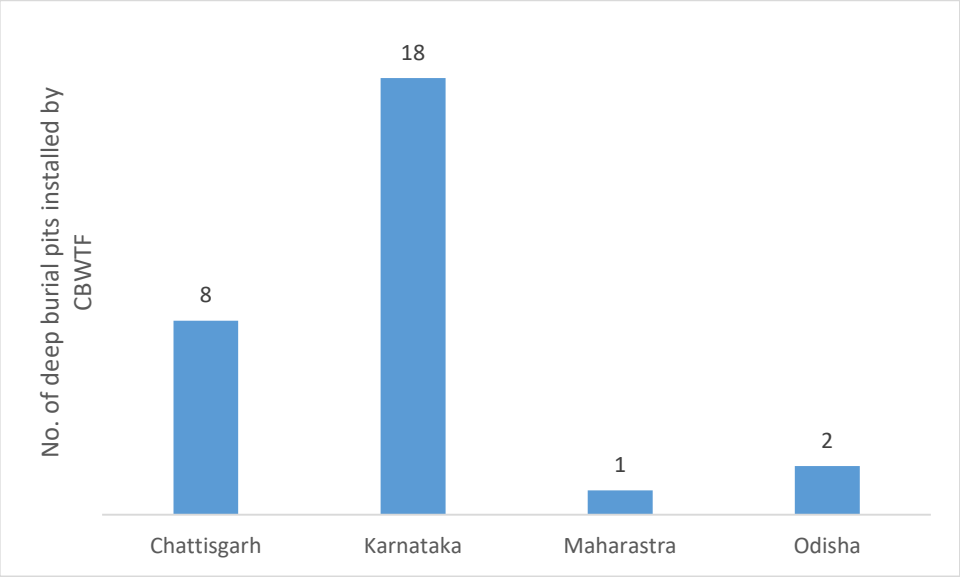


Figure 18: No. of deep burial pits installed by CBWTF

7. Status of other essential compliances

7.1. Online Continuous Emission Monitoring System

BMWM Rules, 2016 stipulates that every occupier or operator of the common bio-medical waste treatment facility shall install Online Continuous Emission Monitoring System (OCEMS) for the parameters as stipulated by SPCBs/PCCs in authorization and transmit the real time data to the servers at SPCB/PCC and CPCB. As per the submitted information, 208 out of 218 nos. that is about 95% of present CBWTFs have installed OCEMS with their incinerators. Further, it has been observed by CPCB that some of the CBWTFs connected to OCEMS portal are not transmitting data regularly to CPCB server. CPCB has conducted meetings with CBWTF operators related to connectivity and calibration of OCEMS and also issued directions to all SPCBs/PCCs regarding to ensure OCEMS data transmission to CPCB server. Details of CBWTFs installed OCEMS is given in fig. 19.

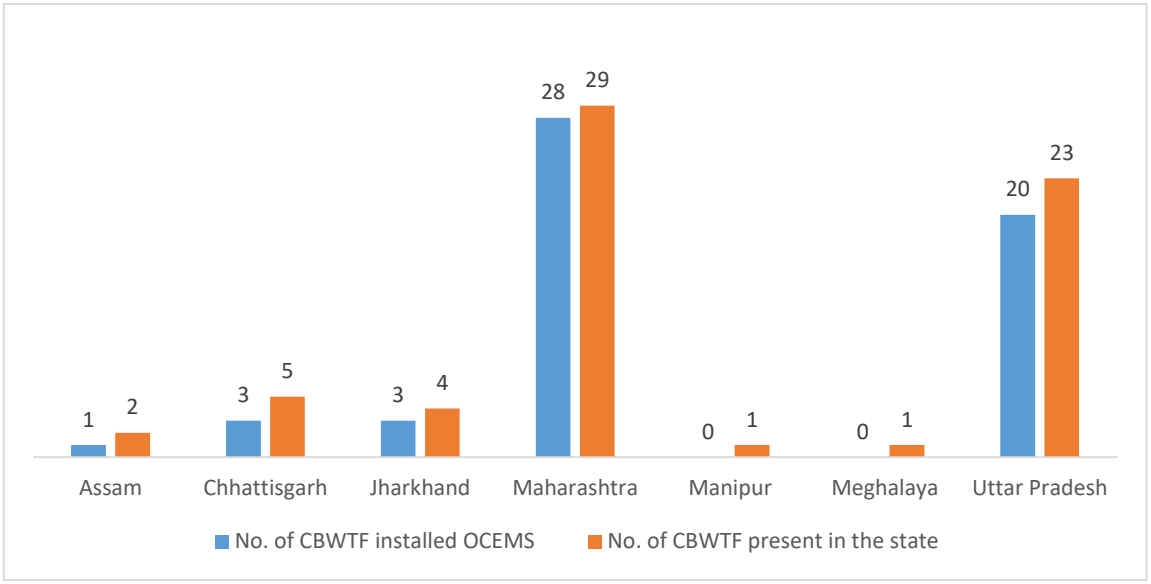


Figure 19: Number of CBWTF installed OCEMS out of total CBWTF present in the State/UT

All operational CBWTFs of States namely Andhra Pradesh, Bihar, Chandigarh, Delhi, Goa, Haryana, Himachal Pradesh, J & K, Karnataka, Kerala, Madhya Pradesh, Odisha, Puducherry, Punjab, Rajasthan, Telangana, Tamil Nadu, Uttarakhand and West Bengal have installed OCEMS, however few operational CBWTFs of states namely Assam, Chhattisgarh, Jharkhand, Maharashtra, Manipur and Meghalaya have not installed OCEMS.

7.2. Installation of Waste Water Treatment Facility

As per Schedule I of BMWM Rules, 2016, the chemical liquid waste shall be pre-treated before mixing with other wastewater. The combined discharge shall confirm to the discharge norms given in Schedule III. Further, bedded HCFs are required to comply with the standard prescribed for liquid waste under Schedule II of BMWM Rules, 2016. However, HCFs may not necessarily need to install Effluent Treatment Plant (ETP) in case waste water is discharged into a public sewer connected to a terminal sewage treatment plant (STP). However, it should meet the desired general standards as notified under the Environment (Protection) Act, 1986. In terms of installing of Waste Water Treatment Facility, several States are not up to par.

7.3. Implementation of Bar code and Unique Identification Number for HCF

As per BMWM Rules, 2016, it is the duty of every occupier and operator of CBWTF to adopt bar code system for tracking of bio-medical waste. Also, as per order of Hon'ble Supreme Court of India in the matter of IA No. 181745 of 2019 and I.A. No. 46339 of 2020, in W.P.C. 13029 of 1985 directed MoEF&CC / CPCB to work out a national bar-coding system/portal for tracking of biomedical waste. In this regard, CPCB has initiated the project namely "Implementation of Centralised Bar Code System for Tracking Biomedical Waste (CBST-BMW)" and finalised the vendor M/s Atishay Limited, Bhopal for the same. This project will help in tracking of the BMW from source of generation to the final disposal. CPCB has also directed the SPCBs/PCCs to develop a system to allot unique identity number to all the HCFs present in the states/UTs. CPCB has directed all SPCBs to timely finish the implementation of the Bar code and Unique Identification Number for HCF.

8. Biomedical Waste Management in Healthcare Establishments of Armed Force Medical Services (AFMS)

The prescribed authority for Armed Force Medical Services is DGAFMS. As reported, 697 HCFs are established under DGAFMS that generates about 5.1 tonnes/day bio-medical waste, which is entirely treated and disposed-off by CBWTFs and Captive Treatment Facility. Out of 697 no. of HCFs, there are 226 bedded HCFs and Nursing homes, 465 Clinics, Dispensaries, 2 Pathological laboratories, 2 Blood banks and 2 Research Institutions. Out of 697 no. of HCFs, 622 no. of HCFs are using CBWTFs and 75 no. of HCFs are using Captive Treatment Facility. Further, 0.9 tonnes/day of BMW is being treated by captive treatment facilities of HCFs, which is not recommended under BMWM Rules, 2016 and 4.2 tonnes/day BMW is being treated and disposed-off by CBWTF. As per the clarification received 75 HCF are located in remote location/isolated far flung areas where CBWTF is not available within the range of 75 km. However, AFHCEs is making a continuous effort to reduce the number of HCFs disposing through captive treatment facility. The number of HCFs disposing through captive treatment facility have been reduced to 75 in 2022 as compared to 82 in 2021. 23 AFHCEs located in Assam, Bihar, Goa, Odisha, Kerala, Kolkata, Karnataka, Maharashtra, Madhya Pradesh, Rajasthan and Uttar Pradesh were inspected by the CPCB and the non-compliance were observed in 10 AFHCEs which were communicated to the concerned authority along with recommendations. CPCB also conducted a meeting on 04.07.2023 with officials of DGAFMS to discuss the implementation of biomedical waste management Rules, 2016 by AFHCFs. The shortcomings observed during inspection were discussed with the officials of DGAFMS and following decisions were taken:

- Time bound Action plan may be submitted to correct shortcomings observed during inspection.
- Regular meetings of Advisory Committee (Defence) may be conducted to resolve the issues and gaps in implementation of BMWM Rules, 2016.
- The matter of installation of ETP may be discussed with Advisory Committee (Defence).
- DGAFMS may organize a workshop for awareness on Biomedical Waste Management in line with the BMWM Rules, 2016.
- Separate modules may be developed in the project “Implementation of Centralised Barcode System for Tracking of Biomedical Waste” for AFHCEs.

9. Other issues of concern w.r.to bio-medical waste management

- 100% HCFs are still not authorisation even after 7 years of the notification of the BMWM, 2016.
- HCFs are using captive waste treatment facilities in some states instead of CBWTF, SPCB are directed to undertake continuous monitoring of such facilities.
- There are less number of CBWTF present in some states in comparison to the population density and number of HCF present. States are required to increase the numbers of CBWTF present so more HCF can utilise CBWTF in place of captive treatment facility.
- District Level information of BMWM is not available in every State/UT which is required as per the BMWM Rules, 2016 as well as CPCB guidelines.
- Domestic biomedical waste is not collected separately from the households by the Urban Local Bodies as required under BMWM Rules, 2016.
- Some CBWTFs and HCFs in the States/UTs have installed deep burial and many of the States/UTs has not provided information w.r.to deep burial pits installed by HCFs. Status of compliance by deep burial should be verified by SPCBs/PCCs.
- Liquid waste treatment facility i.e ETP/STP is not installed by all bedded HCFs in the States.
- Gap analysis to assess the requirement of additional treatment facility to treat and dispose of the biomedical waste is not conducted as per CPCB guidelines.
- Every CBWTFs and captive treatment facility should install OCEMS and ensure its connectivity to SPCB/PCC and CPCB server.

10. BMWM status in States and Union Territory

10.1. Andaman and Nicobar Islands

No. of HCFs	272
No. of bedded HCFs	53
No. of non-bedded HCFs	219
No. of beds	1610
No. of CBWTFs	NIL
No. of HCFs granted authorization	128
No. of HCFs utilizing CBWTFs	NIL
No. of HCFs having Captive Treatment Facilities	6
No. of Captive Incinerators Operated by HCFs	6
Quantity of BMW generated in kg/day	734.79
Quantity of BMW treated in kg/day	734.79
No. of HCFs/CBWTFs violated BMW Rules	NIL
No. of Show-Cause notices/Directions issued to defaulter HCFs/CBWTFs	130

Andaman and Nicobar Islands are geographically isolated and most HCFs are located in the remote locations, therefore deep burial pits are being used by the HCF for disposal of biomedical waste. Currently there is no operational CBWTF in the UT, although Directorate of Health Service (DHS) has been identifying land for installation of CBWTF. All generated BMW that is 734.79 kg is being treated and disposed through captive incinerators and deep burial pits. CPCB strongly recommend commissioning of CBWTF in the UT so that dependency of HCF on captive treatment and deep burial can be reduced.

10.2. Andhra Pradesh

No. of HCFs	13,381
No. of bedded HCFs	6,779
No. of non-bedded HCFs	6,602
No. of beds	1,62,751
No. of CBWTFs	12
No. of HCFs granted authorization	3074
No. of HCFs utilizing CBWTFs	13381
No. of HCFs having Captive Treatment Facilities	NIL
No. of Captive Incinerators Operated by HCFs	NIL
Quantity of BMW generated in kg/day	16,512.02
Quantity of BMW treated in kg/day	16,512.02
No. of HCFs/CBWTFs violated BMW Rules	907
No. of Show-Cause notices/Directions issued to defaulter HCFs/CBWTFs	907

Currently all the BMW generated in the state is treated through CBWTF and no captive treatment facility is operational in the state. There are 781 occupiers that are currently operational without authorisation in the state. Only 615 occupier installed liquid waste treatment facility. SPCB should authorise the remaining occupiers and improve the compliance regarding liquid waste treatment.

10.3. Arunachal Pradesh

No. of HCFs	326
No. of bedded HCFs	189
No. of non-bedded HCFs	137
No. of beds	2759
No. of CBWTFs	NIL
No. of HCFs granted authorization	403
No. of HCFs utilizing CBWTFs	NIL
No. of HCFs having Captive Treatment Facilities	326
No. of Captive Incinerators Operated by HCFs	16
Quantity of BMW generated in kg/day	464.6
Quantity of BMW treated in kg/day	464.6
No. of HCFs/CBWTFs violated BMW Rules	56
No. of Show-Cause notices/Directions issued to defaulter HCFs/CBWTFs	56

Currently there is no CBWTF operational in the state and the generated biomedical that is 464.6 kg/day is treated and disposed through captive treatment facility. Though the HCFs are located in remote areas, development of CBWTF should be explored by SPCB to avoid use of captive treatment facility and deep burial.

10.4. Assam

No. of HCFs	1537
No. of bedded HCFs	767
No. of non-bedded HCFs	770
No. of beds	30,432
No. of CBWTFs	02
No. of HCFs granted authorization	516
No. of HCFs utilizing CBWTFs	315
No. of HCFs having Captive Treatment Facilities	597
No. of Captive Incinerators Operated by HCFs	28
Quantity of BMW generated in kg/day	8229.3
Quantity of BMW treated in kg/day	5208.9
No. of HCFs/CBWTFs violated BMW Rules	482

No. of Show-Cause notices/Directions issued to defaulter HCFs/CBWTFs	81

Currently there are 02 CBWTF is present in the state and 2,140.5 kg/day of BMW is treated and disposed through CBWTF. 597 of HCF in the state have captive treatment facility and 3,068.5 kg/day of BMW is treated and disposed through CTF. A gap of around 37% is observed between the generation and disposal of the BMW in the state. 526 occupiers are currently in operation without applying for authorisation. 778 nos. of occupier have installed the liquid waste treatment facility. SPCB should ensure implementation of BMWM Rules, 2016 and bridge the gaps identified in Annual Report

10.5. Bihar

No. of HCFs	26,472
No. of bedded HCFs	6,061
No. of non-bedded HCFs	20,411
No. of beds	1,04,943
No. of CBWTFs	04
No. of HCFs granted authorization	2311
No. of HCFs utilizing CBWTFs	7836
No. of HCFs having Captive Treatment Facilities	03
No. of Captive Incinerators Operated by HCFs	03
Quantity of BMW generated in kg/day	28246.3
Quantity of BMW treated in kg/day	13949.3
No. of HCFs/CBWTFs violated BMW Rules	2542
No. of Show-Cause notices/Directions issued to defaulter HCFs/CBWTFs	29

Currently there are only 3 CBWTF are operational in the state which seems less to cater the need of the state. There is a gap of around 50% between the generated and treated BMW in the state. 18633 HCF facilities are neither having the captive treatment nor utilising the CBWTF. 2811 HCF are operational in the state without authorisation. 778 nos. of occupier have installed the liquid waste treatment facility. SPCB should rectify the gaps identified in Annual Report.

10.6. Chandigarh

No. of HCFs	943
No. of bedded HCFs	44
No. of non-bedded HCFs	899
No. of beds	4825
No. of CBWTFs	01
No. of HCFs granted authorization	50

No. of HCFs utilizing CBWTFs	943
No. of HCFs having Captive Treatment Facilities	0
No. of Captive Incinerators Operated by HCFs	0
Quantity of BMW generated in kg/day	5710
Quantity of BMW treated in kg/day	5710
No. of HCFs/CBWTFs violated BMW Rules	0
No. of Show-Cause notices/Directions issued to defaulter HCFs/CBWTFs	0

Currently there is 01 CBWTF is present in the UT and total generated BMW that is 5710 kg/day is treated and disposed through CBWTF. There is no captive treatment facility in the UT and all occupiers are currently authorised by PCC. 899 non bedded facilities pre-treat their liquid waste, neutralize it and then dispose it off in the drains whereas 15 nos. out 44 nos. of bedded HCF have the ETP and rest are in the installation phase. ETP should be established by remaining HCF for proper disposal of liquid waste.

10.7. Chhattisgarh

No. of HCFs	6,705
No. of bedded HCFs	2,292
No. of non-bedded HCFs	4,280
No. of beds	50,829
No. of CBWTFs	5
No. of HCFs granted authorization	4,513
No. of HCFs utilizing CBWTFs	3168
No. of HCFs having Captive Treatment Facilities	1735
No. of Captive Incinerators Operated by HCFs	2
Quantity of BMW generated in kg/day	7504.9
Quantity of BMW treated in kg/day	8210.8*
No. of HCFs/CBWTFs violated BMW Rules	196
No. of Show-Cause notices/Directions issued to defaulter HCFs/CBWTFs	134

*As the no. of HCFs which have submitted the annual report is much less than the no. of HCFs which have been given authorization, the quantity of Bio Medical Waste treated is more than the quantity generated.

Currently there are 5 CBWTF operational in the state of which 3 are incinerator based and 2 are deep burial pits based. 3 CBWTF are currently under construction in the state. The deep burial pits based CBWTF are allowed until the new incinerator based CBWTFs are established, after which their operation will be terminated. 1225.78 kg/day of BMW is treated and disposed through captive treatment facility. 1287 occupier have installed liquid waste treatment facility. SPCB should rectify the gaps identified in Annual Report.

10.8. Daman &Diu and Dadra & Nagar Haveli

No. of HCFs	206
No. of bedded HCFs	74
No. of non-bedded HCFs	132
No. of beds	1,449
No. of CBWTFs	Utilising CBWTF of Gujarat
No. of HCFs granted authorization	79
No. of HCFs utilizing CBWTFs	206
No. of HCFs having Captive Treatment Facilities	0
No. of Captive Incinerators Operated by HCFs	0
Quantity of BMW generated in kg/day	324
Quantity of BMW treated in kg/day	324
No. of HCFs/CBWTFs violated BMW Rules	2
No. of Show-Cause notices/Directions issued to defaulter HCFs/CBWTFs	2

Currently only 1 CBWTF which is situated in the Gujarat state is utilised by the HCF of the UT for disposal of the BMW. No captive treatment facility is operational in the UT. No occupier in the UT has installed liquid waste treatment facility. SPCB should rectify the gaps identified in Annual Report.

10.9. Delhi

No. of HCFs	10,591
No. of bedded HCFs	1,141
No. of non-bedded HCFs	9,450
No. of beds	60,344
No. of CBWTFs	2
No. of HCFs granted authorization	1,253
No. of HCFs utilizing CBWTFs	10,591
No. of HCFs having Captive Treatment Facilities	1
No. of Captive Incinerators Operated by HCFs	0
Quantity of BMW generated in kg/day	29,155
Quantity of BMW treated in kg/day	29,155
No. of HCFs/CBWTFs violated BMW Rules	25
No. of Show-Cause notices/Directions issued to defaulter HCFs/CBWTFs	25

Currently there are 02 CBWTF is present in the UT and 29,155 kg/day of BMW is treated and disposed through CBWTF. 01 HCF in the UT have captive treatment facility and 402.2 kg/day of BMW is treated and disposed through CTF. No occupier is currently in operation without

applying for authorisation. 157 nos. of occupier have installed the liquid waste treatment facility. SPCB should rectify the gaps identified in Annual Report.

10.10. Goa

No. of HCFs	1,203
No. of bedded HCFs	168
No. of non-bedded HCFs	1,035
No. of beds	6,573
No. of CBWTFs	1
No. of HCFs granted authorization	241
No. of HCFs utilizing CBWTFs	1,086
No. of HCFs having Captive Treatment Facilities	0
No. of Captive Incinerators Operated by HCFs	0
Quantity of BMW generated in kg/day	2,128.4
Quantity of BMW treated in kg/day	2,128.4
No. of HCFs/CBWTFs violated BMW Rules	336
No. of Show-Cause notices/Directions issued to defaulter HCFs/CBWTFs	0

Currently there is 01 CBWTF is present in the state and total generated waste that is 2128.4 kg/day is treated and disposed through CBWTF. There is no captive treatment facility in the state. For the year 2022, the GSPCB is in process of identifying additional HCFs operating without authorisation under the BMW Rules in consultation with CBWTF. 17 occupiers have installed liquid waste treatment facility. ETP should be established in the remaining HCF for proper disposal of liquid waste.

10.11. Gujrat

No. of HCFs	35,804
No. of bedded HCFs	12,422
No. of non-bedded HCFs	23,572
No. of beds	2,23,997
No. of CBWTFs	20
No. of HCFs granted authorization	4,944
No. of HCFs utilizing CBWTFs	35,804
No. of HCFs having Captive Treatment Facilities	0
No. of Captive Incinerators Operated by HCFs	0
Quantity of BMW generated in kg/day	47,843
Quantity of BMW treated in kg/day	47,843
No. of HCFs/CBWTFs violated BMW Rules	1,024
No. of Show-Cause notices/Directions issued to defaulter HCFs/CBWTFs	1,024

Currently there is 20 CBWTF is present in the state and total generated BMW that is 47,843 kg/day is treated and disposed through CBWTF and no captive treatment facility present in the state. 2617 nos. occupiers are currently in operation without applying for the authorisation. 495 occupiers have installed liquid waste treatment facility. SPCB should rectify the gaps identified in Annual Report.

10.12. Haryana

No. of HCFs	7,107
No. of bedded HCFs	3,527
No. of non-bedded HCFs	3,580
No. of beds	67,332
No. of CBWTFs	11
No. of HCFs granted authorization	6,780
No. of HCFs utilizing CBWTFs	7,107
No. of HCFs having Captive Treatment Facilities	0
No. of Captive Incinerators Operated by HCFs	0
Quantity of BMW generated in kg/day	20,590
Quantity of BMW treated in kg/day	20,590
No. of HCFs/CBWTFs violated BMW Rules	169
No. of Show-Cause notices/Directions issued to defaulter HCFs/CBWTFs	169

Currently there is 11 CBWTF is present in the state and total generated BMW that is 20,590 kg/day is treated and disposed through CBWTF and no captive treatment facility present in the state. 169 nos. of occupiers are currently in operation without applying for the authorisation. 290 occupiers have installed liquid waste treatment facility and remaining 3237 HCFs are connected with terminal treatment facility and discharging into public sewer. SPCB should rectify the gaps identified in Annual Report.

10.13. Himachal Pradesh

No. of HCFs	9,365
No. of bedded HCFs	627
No. of non-bedded HCFs	8,738
No. of beds	18,824
No. of CBWTFs	3
No. of HCFs granted authorization	8,848
No. of HCFs utilizing CBWTFs	4,747
No. of HCFs having Captive Treatment Facilities	4,618
No. of Captive Incinerators Operated by HCFs	1
Quantity of BMW generated in kg/day	3769.5

Quantity of BMW treated in kg/day	3769.5
No. of HCFs/CBWTFs violated BMW Rules	44
No. of Show-Cause notices/Directions issued to defaulter HCFs/CBWTFs	44

Currently there are 03 CBWTF is present in the state and 3,612.5 kg/day of BMW is treated and disposed through CBWTF. 4618 of HCF in the state have captive treatment facility and 157.04 kg/day of BMW is treated and disposed through CTF. 315 occupiers are currently in operation without applying for authorisation. 8848 nos. of occupier have installed the liquid waste treatment facility. CPCB strongly recommend to address the identified gaps and non-compliances for proper BMWM.

10.14. Jharkhand

No. of HCFs	2,311
No. of bedded HCFs	1,368
No. of non-bedded HCFs	1,399
No. of beds	13,968
No. of CBWTFs	9
No. of HCFs granted authorization	160
No. of HCFs utilizing CBWTFs	1,434
No. of HCFs having Captive Treatment Facilities	4
No. of Captive Incinerators Operated by HCFs	4
Quantity of BMW generated in kg/day	9694.5
Quantity of BMW treated in kg/day	9011.2
No. of HCFs/CBWTFs violated BMW Rules	110
No. of Show-Cause notices/Directions issued to defaulter HCFs/CBWTFs	26

Currently there are 09 CBWTF is present in the state and 8843.8 kg/day of BMW is treated and disposed through CBWTF. 4 HCF in the state have captive treatment facility and 167.5 kg/day of BMW is treated and disposed through CTF. A gap of around 7% is observed between the generation and disposal of the BMW in the state. 140 occupiers are currently in operation without applying for authorisation. 177 nos. of occupier have installed the liquid waste treatment facility. SPCB should rectify the gaps identified in Annual Report.

10.15. Jammu and Kashmir

No. of HCFs	7,671
No. of bedded HCFs	2,924
No. of non-bedded HCFs	4,747
No. of beds	18,571

No. of CBWTFs	03
No. of HCFs granted authorization	556
No. of HCFs utilizing CBWTFs	2,430
No. of HCFs having Captive Treatment Facilities	0
No. of Captive Incinerators Operated by HCFs	0
Quantity of BMW generated in kg/day	8,651.42
Quantity of BMW treated in kg/day	8,418.53
No. of HCFs/CBWTFs violated BMW Rules	5,953
No. of Show-Cause notices/Directions issued to defaulter HCFs/CBWTFs	409

Currently there are only 3 CBWTF are operational in the state which seems less to cater the need of the state. A gap of around 2.7% between the generated and treated BMW is reported in the state. No captive treatment facility has been reported in the state. 6364 nos. of occupiers are currently in operation without applying for the authorisation. 104 occupiers have installed liquid waste treatment facility. SPCB should rectify the gaps identified in Annual Report.

10.16. Karnataka

No. of HCFs	48,431
No. of bedded HCFs	8,628
No. of non-bedded HCFs	37,765
No. of beds	2,31,007
No. of CBWTFs	25
No. of HCFs granted authorization	19,159
No. of HCFs utilizing CBWTFs	30,387
No. of HCFs having Captive Treatment Facilities	1,427
No. of Captive Incinerators Operated by HCFs	2
Quantity of BMW generated in kg/day	78,441
Quantity of BMW treated in kg/day	70,018
No. of HCFs/CBWTFs violated BMW Rules	2,075
No. of Show-Cause notices/Directions issued to defaulter HCFs/CBWTFs	667

Currently there are 25 CBWTF is present in the state and 6,66,934 kg/day of BMW is treated and disposed through CBWTF. 1,427 of HCF in the state have captive treatment facility and 3084 kg/day of BMW is treated and disposed through CTF. 3,733 occupiers are currently in operation without applying for authorisation. 10,808 nos. of occupier have installed the liquid waste treatment facility. SPCB should rectify the gaps identified in Annual Report.

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10.17. Kerala

No. of HCFs	17,975
No. of bedded HCFs	1,694
No. of non-bedded HCFs	16,281
No. of beds	1,21,349
No. of CBWTFs	2
No. of HCFs granted authorization	16,550
No. of HCFs utilizing CBWTFs	17,489
No. of HCFs having Captive Treatment Facilities	44
No. of Captive Incinerators Operated by HCFs	14
Quantity of BMW generated in kg/day	62,122.78
Quantity of BMW treated in kg/day	62,122.78
No. of HCFs/CBWTFs violated BMW Rules	25
No. of Show-Cause notices/Directions issued to defaulter HCFs/CBWTFs	486

Currently there are 2 CBWTF is present in the state and 26,803 kg/day of BMW is treated and disposed through CBWTF. 44 of HCF in the state have captive treatment facility and 2,372 kg/day of BMW is treated and disposed through CTF. A gap of around 53% has been observed between the generated and treated BMW. 2148 occupiers are currently in operation without applying for authorisation. 10,811 nos. of occupier have installed the liquid waste treatment facility. SPCB should rectify the gaps identified in Annual Report.

10.18. Ladakh

No. of HCFs	400
No. of bedded HCFs	333
No. of non-bedded HCFs	67
No. of beds	1,042
No. of CBWTFs	0
No. of HCFs granted authorization	0
No. of HCFs utilizing CBWTFs	0
No. of HCFs having Captive Treatment Facilities	333
No. of Captive Incinerators Operated by HCFs	4
Quantity of BMW generated in kg/day	86.335
Quantity of BMW treated in kg/day	86.335
No. of HCFs/CBWTFs violated BMW Rules	0
No. of Show-Cause notices/Directions issued to defaulter HCFs/CBWTFs	0

Currently there is no CBWTF is operational in the UT. The generated BMW that is 86.3 kg/day is treated and disposed through captive treatment facility present with 333 HCF. There are 399

occupiers operating without applying for the authorisation. Only 1 occupier has installed liquid waste treatment facility. SPCB should rectify the gaps identified in Annual Report and expedite the process of establishment of CBWTF.

10.19. Lakshadweep

No. of HCFs	48
No. of bedded HCFs	09
No. of non-bedded HCFs	39
No. of beds	247
No. of CBWTFs	Nil
No. of HCFs granted authorization	48
No. of HCFs utilizing CBWTFs	0
No. of HCFs having Captive Treatment Facilities	10
No. of Captive Incinerators Operated by HCFs	0
Quantity of BMW generated in kg/day	86
Quantity of BMW treated in kg/day	86
No. of HCFs/CBWTFs violated BMW Rules	0
No. of Show-Cause notices/Directions issued to defaulter HCFs/CBWTFs	0

Currently there are no CBWTF present in the UT. The generated waste that is 86 kg/day is treated using captive treatment facility and deep burial pits by the HCF. No occupier is operating without applying for authorization. No occupier has installed the liquid waste treatment facility. SPCB should rectify the gaps identified in Annual Report and expedite the process of establishment of CBWTF.

10.20. Madhya Pradesh

No. of HCFs	10,371
No. of bedded HCFs	3,877
No. of non-bedded HCFs	6,494
No. of beds	1,35,695
No. of CBWTFs	14
No. of HCFs granted authorization	8493
No. of HCFs utilizing CBWTFs	7694
No. of HCFs having Captive Treatment Facilities	1
No. of Captive Incinerators Operated by HCFs	1
Quantity of BMW generated in kg/day	15631.8
Quantity of BMW treated in kg/day	15450.7
No. of HCFs/CBWTFs violated BMW Rules	872
No. of Show-Cause notices/Directions issued to defaulter HCFs/CBWTFs	782

Currently there are 14 CBWTF is present in the state and 15,387.7 kg/day of BMW is treated and disposed through CBWTF. Only 1 HCF in the state have captive treatment facility and 63.1 kg/day of BMW is treated and disposed through CTF. A gap of around 1.2% has been observed between the generated and treated BMW. 1630 occupiers are currently in operation without applying for authorisation. 3277 nos. of occupier have installed the liquid waste treatment facility. SPCB should rectify the gaps identified in Annual Report.

10.21. Maharashtra

No. of HCFs	70,083
No. of bedded HCFs	21,685
No. of non-bedded HCFs	48,398
No. of beds	3,39,351
No. of CBWTFs	29
No. of HCFs granted authorization	6,542
No. of HCFs utilizing CBWTFs	69,416
No. of HCFs having Captive Treatment Facilities	255
No. of Captive Incinerators Operated by HCFs	0
Quantity of BMW generated in kg/day	74,248
Quantity of BMW treated in kg/day	74,248
No. of HCFs/CBWTFs violated BMW Rules	643
No. of Show-Cause notices/Directions issued to defaulter HCFs/CBWTFs	607

Currently there are 29 CBWTF is present in the state and 74,084 kg/day of BMW is treated and disposed through CBWTF. 03 CBWTF are currently under construction in the state. 255 of HCF in the state have captive treatment facility and 164 kg/day of BMW is treated and disposed through CTF. 679 occupiers are currently in operation without applying for authorisation. 633 nos. of occupier have installed the liquid waste treatment facility. SPCB should rectify the gaps identified in Annual Report.

10.22. Manipur

No. of HCFs	754
No. of bedded HCFs	96
No. of non-bedded HCFs	658
No. of beds	4,854
No. of CBWTFs	1
No. of HCFs granted authorization	754
No. of HCFs utilizing CBWTFs	308
No. of HCFs having Captive Treatment Facilities	446
No. of Captive Incinerators Operated by HCFs	2
Quantity of BMW generated in kg/day	1442.9
Quantity of BMW treated in kg/day	1442.4
No. of HCFs/CBWTFs violated BMW Rules	1

No. of Show-Cause notices/Directions issued to defaulter HCFs/CBWTFs	0

Currently there are 01 CBWTF is present in the state and 676 kg/day of BMW is treated and disposed through CBWTF. 446 of HCF in the state have captive treatment facility and 766.4 kg/day of BMW is treated and disposed through CTF. No occupier is reported to be currently in operation without applying for authorisation. 10 nos. of occupier have installed the liquid waste treatment facility. SPCB should rectify the gaps identified in Annual Report.

10.23. Meghalaya

No. of HCFs	1196
No. of bedded HCFs	183
No. of non-bedded HCFs	1,013
No. of beds	7,145
No. of CBWTFs	1
No. of HCFs granted authorization	1,056
No. of HCFs utilizing CBWTFs	24
No. of HCFs having Captive Treatment Facilities	283
No. of Captive Incinerators Operated by HCFs	1
Quantity of BMW generated in kg/day	2727.7
Quantity of BMW treated in kg/day	2427.7
No. of HCFs/CBWTFs violated BMW Rules	0
No. of Show-Cause notices/Directions issued to defaulter HCFs/CBWTFs	0

Currently there is 1 CBWTF is present in the state and 1902.31 kg/day of BMW is treated and disposed through CBWTF. 283 HCF in the state have captive treatment facility and 825.47 kg/day of BMW is treated and disposed through CTF. 140 occupiers are currently in operation without applying for authorisation. 38 nos. of occupier have installed the liquid waste treatment facility. SPCB should rectify the gaps identified in Annual Report.

10.24. Mizoram

No. of HCFs	407
No. of bedded HCFs	87
No. of non-bedded HCFs	320
No. of beds	3,280
No. of CBWTFs	0
No. of HCFs granted authorization	153
No. of HCFs utilizing CBWTFs	0
No. of HCFs having Captive Treatment Facilities	407
No. of Captive Incinerators Operated by HCFs	7

Quantity of BMW generated in kg/day	958
Quantity of BMW treated in kg/day	958
No. of HCFs/CBWTFs violated BMW Rules	0
No. of Show-Cause notices/Directions issued to defaulter HCFs/CBWTFs	0

Currently there are no CBWTF present in the state. 1 CBWTF is currently in the construction stage. The generated waste that is 958.06 kg/day is treated using captive treatment facility and deep burial pits by the HCF. No occupier is operating without applying for authorization. 88 occupiers have installed the liquid waste treatment facility. SPCB should rectify the gaps identified in Annual Report and expedite the process of establishment of CBWTF.

10.25. Nagaland

No. of HCFs	708
No. of bedded HCFs	251
No. of non-bedded HCFs	457
No. of beds	3,700
No. of CBWTFs	0
No. of HCFs granted authorization	636
No. of HCFs utilizing CBWTFs	0
No. of HCFs having Captive Treatment Facilities	5
No. of Captive Incinerators Operated by HCFs	5
Quantity of BMW generated in kg/day	1076.4
Quantity of BMW treated in kg/day	1076.4
No. of HCFs/CBWTFs violated BMW Rules	0
No. of Show-Cause notices/Directions issued to defaulter HCFs/CBWTFs	0

Currently there are no CBWTF present in the state. The generated waste that is 1076.4 kg/day is treated using captive treatment facility and deep burial pits by the HCF. No occupier is operating without applying for authorization. 12 occupiers have installed the liquid waste treatment facility. SPCB should rectify the gaps identified in Annual Report and expedite the process of establishment of CBWTF.

10.26. Odisha

No. of HCFs	4,007
No. of bedded HCFs	1,638
No. of non-bedded HCFs	2,369
No. of beds	4,854
No. of CBWTFs	6
No. of HCFs granted authorization	735
No. of HCFs utilizing CBWTFs	1275
No. of HCFs having Captive Treatment Facilities	2732

No. of Captive Incinerators Operated by HCFs	0
Quantity of BMW generated in kg/day	16677.6
Quantity of BMW treated in kg/day	16677.6
No. of HCFs/CBWTFs violated BMW Rules	0
No. of Show-Cause notices/Directions issued to defaulter HCFs/CBWTFs	0

Currently there is 06 CBWTF is present in the state and 5,945.1 kg/day of BMW is treated and disposed through CBWTF. 2732 HCF in the state have captive treatment facility and 10735.6 kg/day of BMW is treated and disposed through CTF. 34 occupiers are currently in operation without applying for authorisation. 88 nos. of occupier have installed the liquid waste treatment facility. SPCB should rectify the gaps identified in Annual Report.

10.27. Puducherry

No. of HCFs	390
No. of bedded HCFs	96
No. of non-bedded HCFs	294
No. of beds	52,140
No. of CBWTFs	1
No. of HCFs granted authorization	386
No. of HCFs utilizing CBWTFs	390
No. of HCFs having Captive Treatment Facilities	1
No. of Captive Incinerators Operated by HCFs	1
Quantity of BMW generated in kg/day	4706.4
Quantity of BMW treated in kg/day	4706.4
No. of HCFs/CBWTFs violated BMW Rules	8
No. of Show-Cause notices/Directions issued to defaulter HCFs/CBWTFs	3

Currently there is 01 CBWTF is present in the state and 4927 kg/day of BMW is treated and disposed through CBWTF. 01 HCF in the state have captive treatment facility and 15.4 kg/day of BMW is treated and disposed through CTF. No occupier is currently in operation without applying for authorisation. 31 nos. of occupier have installed the liquid waste treatment facility. SPCB should rectify the gaps identified in Annual Report.

10.28. Punjab

No. of HCFs	13,649
No. of bedded HCFs	3,998
No. of non-bedded HCFs	9,651
No. of beds	12,112
No. of CBWTFs	6

No. of HCFs granted authorization	2,464
No. of HCFs utilizing CBWTFs	11,139
No. of HCFs having Captive Treatment Facilities	0
No. of Captive Incinerators Operated by HCFs	0
Quantity of BMW generated in kg/day	19,841
Quantity of BMW treated in kg/day	19,841
No. of HCFs/CBWTFs violated BMW Rules	921
No. of Show-Cause notices/Directions issued to defaulter HCFs/CBWTFs	922

Currently there is 06 CBWTF is present in the state and total generated BMW that is 19,841 kg/day is treated and disposed through CBWTF and no captive treatment facility present in the state. 1003 nos. occupiers are currently in operation without applying for the authorisation. 10,841 HCFs have installed system for pre-treatment of liquid waste with 1-2% of sodium hypochlorite. However, 387 HCFs have provided ETP for the final treatment of liquid waste. SPCB should rectify the gaps identified in Annual Report.

10.29. Rajasthan

No. of HCFs	9,842
No. of bedded HCFs	6,744
No. of non-bedded HCFs	3,098
No. of beds	1,80,085
No. of CBWTFs	11
No. of HCFs granted authorization	2799
No. of HCFs utilizing CBWTFs	8546
No. of HCFs having Captive Treatment Facilities	505
No. of Captive Incinerators Operated by HCFs	0
Quantity of BMW generated in kg/day	19564.9
Quantity of BMW treated in kg/day	19564.9
No. of HCFs/CBWTFs violated BMW Rules	869
No. of Show-Cause notices/Directions issued to defaulter HCFs/CBWTFs	951

Currently there is 11 CBWTF is present in the state and 17986.975 kg/day of BMW is treated and disposed through CBWTF. 505 HCF in the state have captive treatment facility and 1577.93 kg/day of BMW is treated and disposed through deep burial pits. 677 occupiers are currently in operation without applying for authorisation. 315 nos. of occupier have installed the liquid waste treatment facility. SPCB should rectify the gaps identified in Annual Report.

10.30. Sikkim

No. of HCFs	319
No. of bedded HCFs	33
No. of non-bedded HCFs	286
No. of beds	2,329
No. of CBWTFs	0
No. of HCFs granted authorization	317
No. of HCFs utilizing CBWTFs	0
No. of HCFs having Captive Treatment Facilities	297
No. of Captive Incinerators Operated by HCFs	7
Quantity of BMW generated in kg/day	562
Quantity of BMW treated in kg/day	562
No. of HCFs/CBWTFs violated BMW Rules	0
No. of Show-Cause notices/Directions issued to defaulter HCFs/CBWTFs	0

Currently there are no CBWTF present in the state. The generated waste that is 562 kg/day is treated using captive treatment facility and deep burial pits by the HCF. 02 occupiers are operating without applying for authorization. 45 occupiers have installed the liquid waste treatment facility. SPCB should rectify the gaps identified in Annual Report and expedite the process of establishment of CBWTF.

10.31. Tamil Nadu

No. of HCFs	27,603
No. of bedded HCFs	7,922
No. of non-bedded HCFs	19,681
No. of beds	19,114
No. of CBWTFs	10
No. of HCFs granted authorization	27,353
No. of HCFs utilizing CBWTFs	27,603
No. of HCFs having Captive Treatment Facilities	0
No. of Captive Incinerators Operated by HCFs	0
Quantity of BMW generated in kg/day	49721.4
Quantity of BMW treated in kg/day	49721.4
No. of HCFs/CBWTFs violated BMW Rules	3
No. of Show-Cause notices/Directions issued to defaulter HCFs/CBWTFs	3

Currently there is 10 CBWTF is present in the state and total generated BMW that is 49,721 kg/day is treated and disposed through CBWTF and no captive treatment facility present in the state. 05 nos. occupiers are currently in operation without applying for the authorisation. 5904

occupiers have installed liquid waste treatment facility. SPCB should rectify the gaps identified in Annual Report.

10.32. Telangana

No. of HCFs	9,346
No. of bedded HCFs	4,830
No. of non-bedded HCFs	4,516
No. of beds	1,32,332
No. of CBWTFs	11
No. of HCFs granted authorization	5,036
No. of HCFs utilizing CBWTFs	9,346
No. of HCFs having Captive Treatment Facilities	0
No. of Captive Incinerators Operated by HCFs	0
Quantity of BMW generated in kg/day	25,306
Quantity of BMW treated in kg/day	25,306
No. of HCFs/CBWTFs violated BMW Rules	188
No. of Show-Cause notices/Directions issued to defaulter HCFs/CBWTFs	188

Currently there is 11 CBWTF is present in the state and total generated BMW that is 25,306 kg/day is treated and disposed through CBWTF and no captive treatment facility present in the state. 187 nos. occupiers are currently in operation without applying for the authorisation. 2093 occupiers have installed liquid waste treatment facility. SPCB should rectify the gaps identified in Annual Report

10.33. Tripura

No. of HCFs	1,960
No. of bedded HCFs	153
No. of non-bedded HCFs	1807
No. of beds	4768
No. of CBWTFs	01
No. of HCFs granted authorization	122
No. of HCFs utilizing CBWTFs	123
No. of HCFs having Captive Treatment Facilities	172
No. of Captive Incinerators Operated by HCFs	6
Quantity of BMW generated in kg/day	1975.87
Quantity of BMW treated in kg/day	1975.87
No. of HCFs/CBWTFs violated BMW Rules	0
No. of Show-Cause notices/Directions issued to defaulter HCFs/CBWTFs	0

Currently there is 01 CBWTF is present in the state and 182.8 kg/day of BMW is treated and disposed through CBWTF. 172 HCF in the state have captive treatment facility and 1793.1 kg/day of BMW is treated and disposed through captive treatment facility. No occupiers are currently in operation without applying for authorisation. 17 nos. of occupier have installed the liquid waste treatment facility. SPCB should rectify the gaps identified in Annual Report.

10.34. Uttarakhand

No. of HCFs	6,002
No. of bedded HCFs	1,705
No. of non-bedded HCFs	4,297
No. of beds	30,706
No. of CBWTFs	2
No. of HCFs granted authorization	4,707
No. of HCFs utilizing CBWTFs	2,711
No. of HCFs having Captive Treatment Facilities	2,690
No. of Captive Incinerators Operated by HCFs	2
Quantity of BMW generated in kg/day	7,113.3
Quantity of BMW treated in kg/day	7,101.6
No. of HCFs/CBWTFs violated BMW Rules	907
No. of Show-Cause notices/Directions issued to defaulter HCFs/CBWTFs	47

Currently there is 02 CBWTF is present in the state and 5814.9 kg/day of BMW is treated and disposed through CBWTF. 2690 HCF in the state have captive treatment facility and 1286.8 kg/day of BMW is treated and disposed through captive treatment facility. 1058 occupiers are currently in operation without applying for authorisation. 174 nos. of occupier have installed the liquid waste treatment facility. SPCB should rectify the gaps identified in Annual Report..

10.35. Uttar Pradesh

No. of HCFs	36145
No. of bedded HCFs	19301
No. of non-bedded HCFs	16844
No. of beds	3,56,321
No. of CBWTFs	23
No. of HCFs granted authorization	15,638
No. of HCFs utilizing CBWTFs	26,753
No. of HCFs having Captive Treatment Facilities	133
No. of Captive Incinerators Operated by HCFs	06
Quantity of BMW generated in kg/day	89210.65
Quantity of BMW treated in kg/day	89210.65

No. of HCFs/CBWTFs violated BMW Rules	149
No. of Show-Cause notices/Directions issued to defaulter HCFs/CBWTFs	149

Currently there are 23 CBWTF is present in the state and 89210.65 kg/day of BMW is treated and disposed through CBWTF. There are 03 CBWTF currently under construction. 133 HCF in the state have captive treatment facility and 358.25 kg/day of BMW is treated and disposed through captive treatment facility. 4729 occupiers are currently in operation without applying for authorisation. 202 nos. of occupier have installed the liquid waste treatment facility. SPCB should rectify the gaps identified in Annual Report.

10.36. West Bengal

No. of HCFs	9,712
No. of bedded HCFs	3,334
No. of non-bedded HCFs	6,378
No. of beds	1,45,750
No. of CBWTFs	7
No. of HCFs granted authorization	9,712
No. of HCFs utilizing CBWTFs	9,712
No. of HCFs having Captive Treatment Facilities	0
No. of Captive Incinerators Operated by HCFs	0
Quantity of BMW generated in kg/day	38,886.1
Quantity of BMW treated in kg/day	38,886.1
No. of HCFs/CBWTFs violated BMW Rules	149
No. of Show-Cause notices/Directions issued to defaulter HCFs/CBWTFs	149

Currently there are 07 CBWTF is present in the state and 38886.14 kg/day of BMW is treated and disposed through CBWTF. There are 8 CBWTF currently under construction. No HCF in the state have captive treatment facility. No occupiers are currently in operation without applying for authorisation. 963 nos. of occupier have installed the liquid waste treatment facility. SPCB should rectify the gaps identified in Annual Report.

S.No	Name of the State/UT	Total no. of Bedded Health Care Facilities (HCFs)	Total no. of Non-bedded Health Care Facilities (HCFs)	Total no. Health Care Facilities (HCFs)	Total no. of Beds	Authorization Status			No. of HCFs utilization CBWTFs	Total Quantity of BMW generated (kg/day)	Total Quantity of BMW Treated and Disposed (kg/day)	Captive BMW Treatment Facilities Operated by the (HCFs		Common Bio-medical Waste Treatment Facilities (CBWTFs)		Deep burial installed by HCF & CBWTFs		Total BMW treated by captive treatment facilities by HCF in Kg/day	Total BMW treated by CBWTFs (kg/day)	Total no. of violation by HCFs & CBWTFs	Total No. of show cause notices/Directions issued to defaulter HCFs/CBWTFs	No. of CBWTFs that have installed COEMS
						Total no. of HCFs applied for authorization	Total no. of HCFs granted authorization	Total no. of HCFs in operation without Authorization				No. of HCFs having Captive Treatment Facilities	No of Captive Incinerators Operated by HCFs	CBWTFs Operational	CBWTFs under Construction	HCF	CBWTFs					
I.	II.	III.	IV.	V.	VI.	VII.	VIII.	IX.	X.	XI.	XII.	XIII.	XIV	XV.	XVI.	XVII.	XVIII.	XIX.	XX	XXI	XXII.	XXIII.
1	Andaman Nicobar	53	219	272	1610	272	142	INP	0	734.79	734.79	56	6	0	0	50	0	734.79	0	130	130	nil
2	Andhra Pradesh	6779	6602	13381	162751	3077	3074	781	12208	16512.02	16512.02	0	nil	12	1	nil	nil	nil	16512.02	907	907	12
3	Arunachal Pradesh	189	137	326	2759	410	403	56	0	464.6	464.6	326	16	Nil	nil	205	Nil	464.6	Nil	56	56	nil
4	Assam	767	770	1537	30432	1011	516	526	315	8229.32	5208.93	597	28	2	nil	INP	Nil	3068.45	2140.48	482	81	1
5	Bihar	6061	20411	26472	104943	2571	2311	2811	7836	28246.3	13949.3	3	3	4	0	0	0	302.79	13646.51	2542	29	4
6	Chandigarh	44	899	943	4825	54	50	4	943	5710	5710	0	Nil	1	0	Nil	Nil	0	5710	0	0	1
7	Chhattisgarh	2292	4280	6705	50829	4642	4513	inp	3168	7504.9	7504.9	1735	2	5	3	ask	2	1225.78	6985.11	196	134	3
8	Daman &Diu and Dadra & Nagar Haveli	74	132	206	1449	108	79	23	206	324	324	0	0	Utilising CBWTF of Gujarat	0	0	0	0	324	2	2	Utilising Gujarat facility-OCEMS installed
9	Delhi	1141	9450	10591	60344	1548	1253	Nil	10591	29155	29155	1	nil	2	nil	nil	nil	402.21	29155	25	25	2
10	Goa	168	1035	1203	6573	405	241	109	1086	2128.4	2128.44	217	0	1	0	0	0	0	2128.46	336	0	1
11	Gujarat	12422	23572	35804	2,23,997	4883	4944	2617	35804	47843	47843	0	Nil	20	1	nil	nil	nil	47843	1024	1024	20
12	Haryana	3527	3580	7107	67332	6938	6780	169	7107	20590	20590	0	nil	11	nil	nil	nil	nil	20590	169	169	11
13	Himachal Pradesh	627	8738	9365	18824	9050	8848	315	4747	3769.51	3769.51	4618	1	3	1	4618	nil	157.04	3612.47	44	44	3
14	Jharkhand	1368	1399	2311	31968	654	160	140	1434	9694.5	9011.22	4	4	4	1			167.47	8843.76	110	26	3

S.No	Name of the State/UT	Total no. of Bedded Health Care Facilities (HCFs)	Total no. of Non-bedded Health Care Facilities (HCFs)	Total no. Health Care Facilities (HCFs)	Total no. of Beds	Authorization Status			No. of HCFs utilization CBWTFs	Total Quantity of BMW generated (kg/day)	Total Quantity of BMW Treated and Disposed (kg/day)	Captive BMW Treatment Facilities Operated by the (HCFs		Common Bio-medical Waste Treatment Facilities (CBWTFs)		Deep burial installed by HCF & CBWTFs		Total BMW treated by captive treatment facilities by HCF in Kg/day	Total BMW treated by CBWTFs (kg/day)	Total no. of violation by HCFs & CBWTFs	Total No. of show cause notices/Directions issued to defaulter HCFs/CBWTFs	No. of CBWTFs that have installed COEMS
						Total no. of HCFs applied for authorization	Total no. of HCFs granted authorization	Total no. of HCFs in operation without Authorization				No. of HCFs having Captive Treatment Facilities	No of Captive Incinerators Operated by HCFs	CBWTFs Operational	CBWTFs under Construction	HCF	CBWTFs					
I.	II.	III.	IV.	V.	VI.	VII.	VIII.	IX.	X.	XI.	XII.	XIII.	XIV	XV.	XVI.	XVII.	XVIII.	XIX.	XX	XXI	XXII.	XXIII.
15	J & K	2924	4747	7671	18571	1307	556	740	2430	8651.42	8418.53	0	Nil	3	1	INP	Nil	Nil	8418.53	6364	3	3
16	Karnataka	8628	37765	48431	231007	19265	19159	3733	30387	78441	70018	1427	2	25	2	Nil	18	3084	66934	2075	667	25
17	Kerala	1694	16281	17975	121349	16989	16550	2148	17489	62122.78	29175	44	14	2	nil	30	nil	2372.15	59750	25	486	2
18	Ladakh	333	67	400	1042	1	0	399	0	86.335	86.34	333	4	0	0	19	0	86.335	0	399	145	0
19	Lakshadweep	9	39	48	247	48	48	0	0	86	86	10	1	0	0	4	0	86	0	0	0	0
20	Madhya Pradesh	3877	6494	10371	135695	8741	8493	1630	7694	15631.86	15450.77	1	1	14	6	Nil	Nil	63.11	15387.66	872	782	14
21	Maharashtra	21685	48398	70083	339351	7181	6542	679	69416	74248	74248	255	0	29	3	1121	1	164	74084	M	607	28
22	Manipur	96	658	754	4854	754	754	nil	308	1442.92	1442.42	446	2	1	nil	INP	nil	766.42	676	1	nil	nil
23	Meghalaya	183	1013	1196	7077	1066	1066	130	42	2840.66	2840.66	400	1	1	0	375	0	926.59	1914.06	0	0	0
24	Mizoram	87	320	407	3280	153	153	0	0	958.06	958.06	407	7	0	0	401	0	958.06	0	0	0	0
25	Nagaland	251	457	708	3700	636	636	0	0	1076.43	1076.43	5	5	0	0	511	0	1076.43	0	0	0	0
26	Odisha	1638	2369	4007	52140	1088	735	34	1275	16677.6	16677.64	2732	0	6	0	2732	2	10732.56	5945.08	100	100	6
27	Puducherry	96	294	390	12112	390	386	0	390	4706.4	4706.4	1	1	1	0	0	0	15.4	4927	8	3	1
28	Punjab	3998	9651	13649	79954	3092	2464	1003	11139	19841	19841	0	nil	6	nil	nil	nil	nil	19841	921	922	6
29	Rajasthan	6744	3098	9842	180085	2801	2799	677	8546	19564.9	19564.91	505	0	11	1	505	0	1577.93	17986.975	869	951	11
30	Sikkim	33	286	319	2329	317	317	2	0	562	562	297	7	0	0	179	0	562	0	0	0	NA
31	Tamil Nadu	7922	19681	27603	19114	27598	27353	5	27603	49721.43	49721.43	0	Nil	10	1	Nil	Nil	0	49721.43	3	3	10
32	Telengana	4830	4516	9346	132332	5238	5036	187	9346	25306	25306	0	NIL	11	0	NIL	Nil	NIL	25306	188	188	11

S.No	Name of the State/UT	Total no. of Bedded Health Care Facilities (HCFs)	Total no. of Non-bedded Health Care Facilities (HCFs)	Total no. Health Care Facilities (HCFs)	Total no. of Beds	Authorization Status			No. of HCFs utilization CBWTFs	Total Quantity of BMW generated (kg/day)	Total Quantity of BMW Treated and Disposed (kg/day)	Captive BMW Treatment Facilities Operated by the (HCFs		Common Bio-medical Waste Treatment Facilities (CBWTFs)		Deep burial installed by HCF & CBWTFs		Total BMW treated by captive treatment facilities by HCF in Kg/day	Total BMW treated by CBWTFs (kg/day)	Total no. of violation by HCFs & CBWTFs	Total No. of show cause notices/Directions issued to defaulter HCFs/CBWTFs	No. of CBWTFs that have installed COEMS
						Total no. of HCFs applied for authorization	Total no. of HCFs granted authorization	Total no. of HCFs in operation without Authorization				No. of HCFs having Captive Treatment Facilities	No of Captive Incinerators Operated by HCFs	CBWTFs Operational	CBWTFs under Construction	HCF	CBWTFs					
I.	II.	III.	IV.	V.	VI.	VII.	VIII.	IX.	X.	XI.	XII.	XIII.	XIV	XV.	XVI.	XVII.	XVIII.	XIX.	XX	XXI	XXII.	XXIII.
33	Tripura	153	1807	1960	4768	122	122	0	123	1975.87	1975.87	172	6	1	0	166	0	1793.1	182.77	0	0	1
34	Uttarakhand	1705	4297	6002	30706	4914	4707	1058	2711	7113.37	7101.60	2690	2	2	2	ask	0	1286.8	5814.8	907	47	2
35	Uttar Pradesh	19301	16844	36145	356321	17340	15638	4729	26753	89210.65	89210.65	133	10	23	3	132	0	358.25	88851.75	3402	611	20
36	West Bengal	3334	6378	9712	145750	9712	9712	0	9712	38886.14	38886.14	0	0	7	8	0	0	0	38886.14	149	149	7
37	DGAFMS	226	471	697	38640	97	97	0	0	5152.3	5152.3	75	30	0	0	45	0	926.586	4225.72	0	0	0
	total	**125259**	**267155**	**393939**	**2465063**	**164473**	**156637**	**24705**	**310809**	**705209.569**	**645411.851**	**17490**	**153**	**218**	**34**	**11093**	**23**	**33358.829**	**646343.75**	**22306**	**8291**	**208**

Annual Report
on
Biomedical Waste Management for the year 2023

Central Pollution Control Board

(Ministry of Environment, Forest & Climate Change)
Parivesh Bhawan, East Arjun Nagar, Delhi – 110032

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1 Introduction

1.1 Biomedical Waste Management Rules, 2016

Government of India has notified Biomedical Waste Management Rules, 2016 (BMWM Rules, 2016) under the Environment (Protection) Act, 1986 which stipulates provision for treatment and disposal of biomedical waste in an environmentally sound manner and accordingly, biomedical waste is managed in line with the said Rules in the Country. The Rules are applicable to all persons who generate, collect, receive, store, transport, treat, dispose, or handle biomedical waste in any form.

As per the said Rules, the Health Care Facilities (HCFs) are required to handover the segregated biomedical waste to Common Biomedical Waste Treatment Facilities (CBWTFs) for further treatment and disposal.

The Rules stipulates that HCFs shall hand over segregated biomedical waste as per colour coded system prescribed under Schedule -I of BMWM Rules, 2016 in four categories i.e. Yellow category, red category, blue category and white category to CBWTF for treatment and final disposal in accordance with Schedule I and in compliance with the standards prescribed under Schedule-II of BMWM Rules, 2016.

BMWM Rules, 2016 have been amended on 16.03.2018, 19.02.2019 and 10.05.2019 to strengthen the framework for biomedical waste segregation, treatment, and disposal. The key changes in the amendments are in respect of efficient segregation, treatment & disposal methods for biomedical waste, reporting of annual report information through Form IV A and regulations to ensure proper management of liquid waste by small healthcare units (less than ten beds).

The BMWM Rules, 2016 stipulates duties of Occupiers, Operator of CBWTFs as well as duties for authorities' vis-a-vis Ministry of Environment Forest & Climate Change (MoEF & CC), Ministry of Health & Family Welfare (MoHFW), Ministry of Defense (MoD), Central Pollution Control Board (CPCB), State Government of Health (GoH), State Pollution Control Boards (SPCBs)/Pollution Control Committees (PCCs) and Municipalities or Urban Local Bodies (ULBs). As per the Rules, SPCB/PCC is the prescribed authority for implementation of BMWM Rules, 2016, in respective State/UT.

1.2 Annual Report on Biomedical Waste Management

As per BMWM Rules, 2016 every occupier and operator of CBWTF shall submit the annual report to the prescribed authority i.e. SPCBs/PCCs on or before the 30th June of every year for the period of January to December of the preceding calendar year. Thereafter, the prescribed authority shall compile, review and analyze the information received and send to Central Pollution Control Board (CPCB) on or before the 31st July of every year. The Annual Reports shall also be available online on the websites of Occupiers, SPCB/PCC and CPCB. The Annual Report provides the information regarding the biomedical waste generation, collection, treatment, biomedical waste sent to recyclers after treatment, trainings conducted on biomedical waste management, no. of violators & action taken against violators of BMWM Rules, 2016, etc. These details provided through the Annual Report help in analyzing status of the biomedical waste management across the country,

identifying the gaps in the biomedical waste management and addressing the shortcoming in the upcoming year for effective management of biomedical waste and implementation of BMWM Rules, 2016.

1.3 Status of Annual Report 2023 and Gaps identified

All States/UTs and Director General of Armed Force Research (DGAFMS) have submitted the annual reports information on biomedical waste management for the year 2023.

States/UTs namely Andaman Nicobar, Arunachal Pradesh, Andhra Pradesh, Chhattisgarh, Jharkhand, Jammu & Kashmir (J & K), Kerala, Ladakh, Manipur, Maharashtra, Karnataka, Tripura, Uttarakhand and Uttar Pradesh submitted the annual report information after July, 2024. However, other States submitted Annual Report before 31st July 2024.

The following common gaps/discrepancies were observed in the annual report information received from SPCBs/PCCs which were communicated to respective States/UTs for clarification and rectification.

i) HCFs are operational without authorization.

ii) HCFs are still using captive treatment facilities including deep burial for disposal of biomedical waste.

iii) Gap in generation and treatment of bio-medical waste.

iv) Effluent Treatment Plant is not installed by all bedded HCFs.

The response received from SPCBs/PCCs have been incorporated in Annual Report.

1.4 Brief Summary of Bio-medical Waste Management in India

There are 4,35,257 no. of HCFs in the country, out of which 1,37,132 no. of HCFs are bedded (total beds : 30,91,847) and 2,98,125 no. of HCFs are non-bedded. About 743 tons/day of biomedical waste was generated in the country, out of which 694 tons/day was treated and disposed-off through CBWTFs and Captive Treatment Facilities (CTFs). 3,14,586 no. of HCFs i.e. around 72 % of total HCFs utilize CBWTFs for the collection, treatment, & disposal of biomedical waste, while 15,870 no. i.e. around 3.6 % of HCFs have captive treatment facilities for the treatment and disposal of biomedical waste. 27.89% of HCF reported neither using CBWTF nor CTF. Some of the States/UTs submitted that the gap between generation & treatment and the HCFs which are neither using CBWTF nor using CTF, is due to non-submission of information regarding deep burials being used by HCFs. There are 234 no. of CBWTFs in operation and 30 no. of CBWTFs are under construction. **Annexure-I** provide details of biomedical waste management in State/UTs. Brief of biomedical waste scenario of the Country is given below:

No. of HCFs	4,35,257
No. of bedded HCFs	1,37,132
No. of non-bedded HCFs	2,98,125
No. of beds	30,91,847

No. of CBWTFs	234* + 30**
No. of HCFs obtained authorization	1,44,905
No. of HCFs utilizing CBWTFs	3,14,586
No. of HCFs having Captive Treatment Facilities	15,870
No. of Captive Incinerators Operated by HCFs	69
Quantity of BMW generated in tons/day	743
Quantity of BMW treated in tons/day	694
No. of HCFs/CBWTFs violated BMW Rules	20,081
No. of Show-Cause notices/Directions issued to defaulter HCFs/CBWTFs	8082

Note: (i) * - CBWTFs in operation (ii) ** - CBWTFs under construction

1.5 Comparison of Biomedical Waste Management between year 2022 and 2023

According to the annual report for 2023, around 743 tons/day of biomedical waste is generated, surpassing the 705 tons/day of biomedical waste generated in year 2022. This marks a significant increase in waste generation. This represents a significant rise in waste generation, which can be attributed to the 9.4% increase in the number of healthcare facilities in 2023 compared to the previous year.

The report also highlights a rise in the number of CBWTFs, increasing from 218 in 2022 to 234 in 2023, facilitating the treatment and disposal of biomedical waste. Alongside this growth, there was a decline in the number of captive treatment facilities, which decreased from 17,490 to 15,870, and a reduction in the number of captive incinerators, which is decreased from 153 to 69. Captive treatment facilities are mainly found in remote and hilly areas, where access to CBWTFs is limited.

Detailed comparison on biomedical waste management scenario during 2022 and 2023 is mentioned in Table 1 below:

Table 1: Comparative BMWM scenario in 2022 and 2023

Particulars	Year 2022	Year 2023
No. of HCFs	3,93,939	4,35,257
No. of bedded HCFs	1,25,259	1,37,132
No. of non-bedded HCFs	2,67,155	2,98,125
No. of beds	24,65,063	30,91,847
No. of CBWTFs	218* + 34**	234* + 30**
No. of HCFs utilizing CBWTF	3,10,809	3,14,586
No. of HCFs obtained Authorization	1,56,637	1,44,905
No. of HCFs having Captive Treatment Facilities	17,490	15,870

No. of Captive Incinerators Operated by HCFs	153	69
Quantity of BMW generated (Tons/day)	705	743
Quantity of BMW treated (Tons/day)	645	694
No. of HCFs/CBWTFs violated BMWM Rules, 2016	22,306	20,081
No. of Show-cause notices/Directions issued to defaulter HCFs	8291	8,082

Note: (i) * - CBWTFs in operation (ii) ** - CBWTFs under construction

2 Status of Healthcare Facility

2.1 Availability of Healthcare Facilities

As per BMWM Rules, 2016, Health Care Facility means a place where diagnosis, treatment or immunization of human beings or animals is provided irrespective of type, size of health treatment system, and research activity pertaining thereto. It includes bedded and non-bedded HCFs.

As per the annual report information received from SPCBs and PCCs for the year 2023, there are 4,35,257 no. of HCFs, out of which 1,37,132 no. of HCFs are bedded and 2,98,125 no. of HCFs are non-bedded. Detail of number of HCFs in States/UTs and DGAFMS are given in fig. 1 and 2. In case of States, Maharashtra has the highest number of HCFs followed by Karnataka and Uttar Pradesh. Arunachal Pradesh has the lowest number of HCFs followed by Sikkim and Mizoram. In case of Union territories, Delhi has the highest number of HCFs and the lowest number of HCFs are present in Lakshadweep. Number of HCFs generally depends on the geographical area of the State/UT, population density, availability of the health workers, financial restrains of State, workload of healthcare facility, etc. The figure no. 1 & 2 also depict the same.

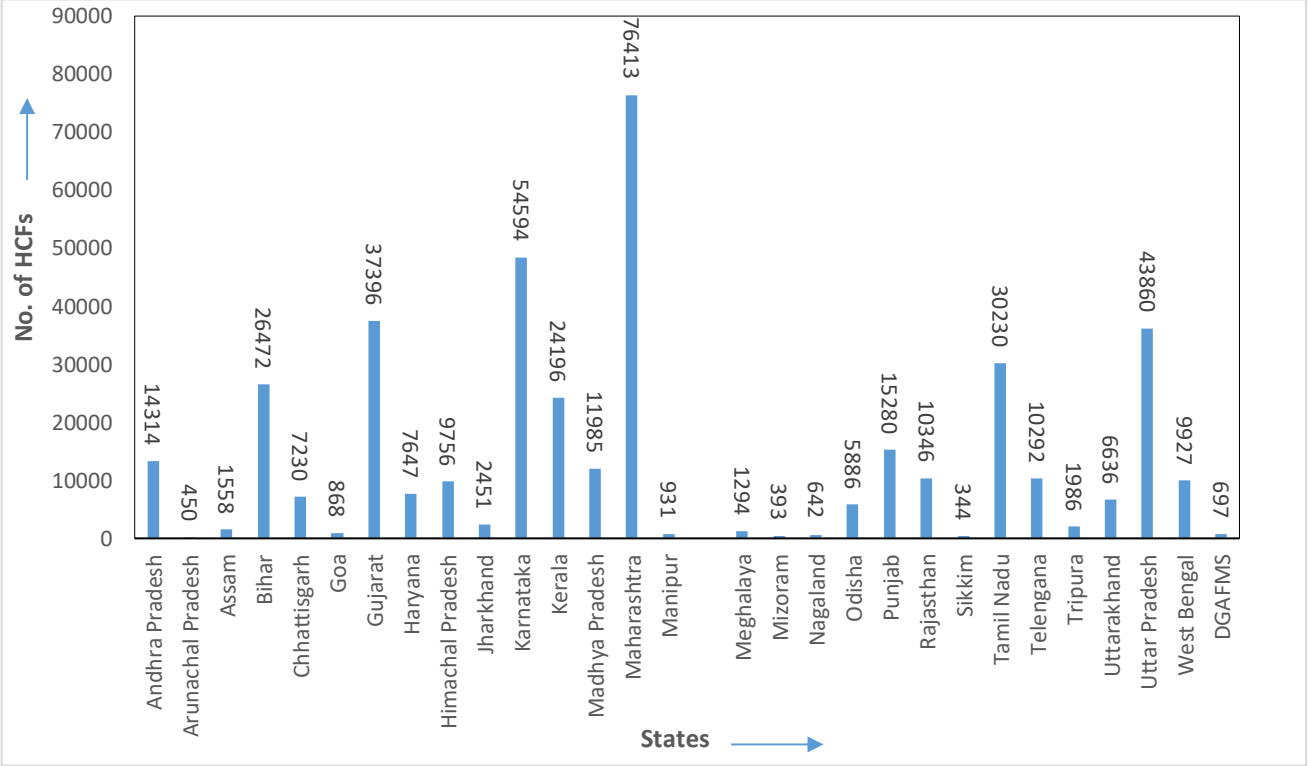


Figure 1: No. of HCFs in States & DGAFMS

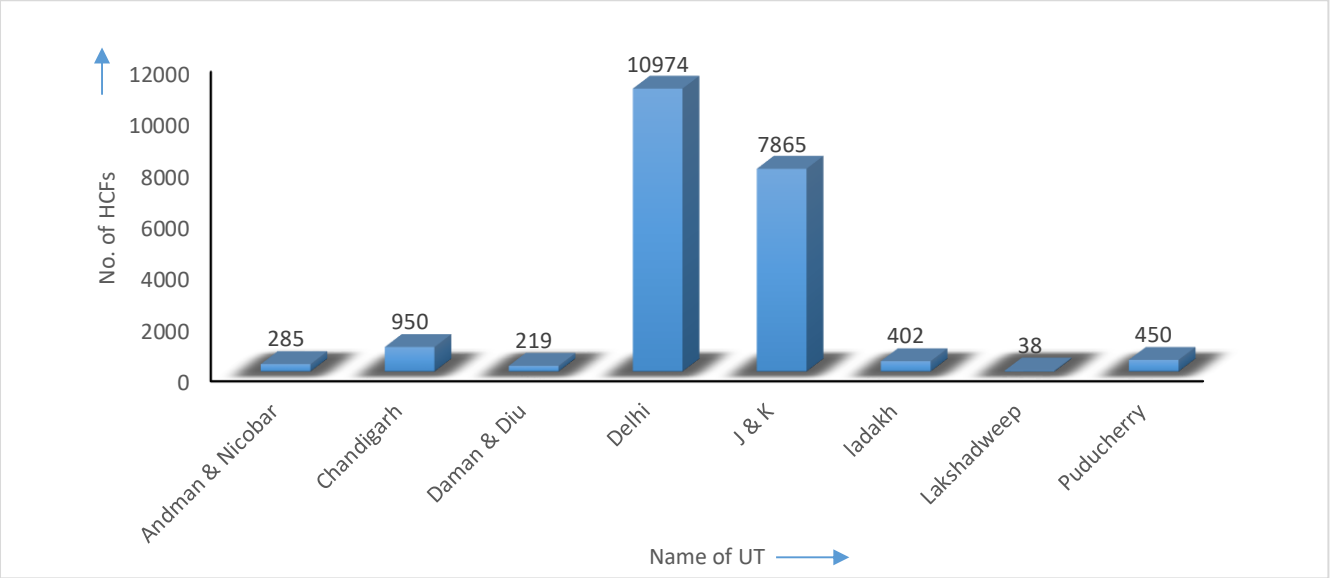


Figure 2: No. of HCFs in UTs

2.2 Authorization of Healthcare Facilities

Authorization is a process to bring HCFs and CBWTFs under the purview of BMWM Rules, 2016. BMWM Rules, 2016 stipulate that every healthcare facility (bedded & non bedded) is required to obtain authorization from concerned SPCB/PCC. It has been observed that some of the HCFs are not yet authorized which is a violation of BMWM Rules, 2016. SPCB/PCC should ensure

authorization of every HCFs under BMWM Rules, 2016 and take action against HCFs which are operational without having authorization.

As per the Annual Report information, in States/UTs namely Chandigarh, DD & DNH, Goa, Lakshadweep, Manipur, Mizoram, Nagaland, Puducherry, Sikkim, Tamil Nadu, Tripura, West Bengal and DGAFMS., 100 % HCFs are authorized.

HCFs are in operation without authorization in the States/UTs namely Andhra Pradesh, Arunachal Pradesh, Assam, Bihar, Chandigarh, Gujarat, Haryana, Himachal Pradesh, Jharkhand, J & K, Karnataka, Kerala, Ladakh, Madhya Pradesh, Maharashtra, Meghalaya, Odisha, Punjab, Rajasthan, Telangana, Uttarakhand and Uttar Pradesh. Some SPCBs/PCCs submitted that non-bedded HCFs like small clinics, dispensaries etc. never applied for authorization and list of such HCFs are forwarded to State Health Departments to direct these HCFs to obtain authorization.

As informed by SPCBs/PCCs, efforts are being made to bring remaining HCFs under the ambit of authorization as inventorization and authorization is a continuous process. Status of authorization of HCFs in States/UTs are given in fig. 3 & 4.

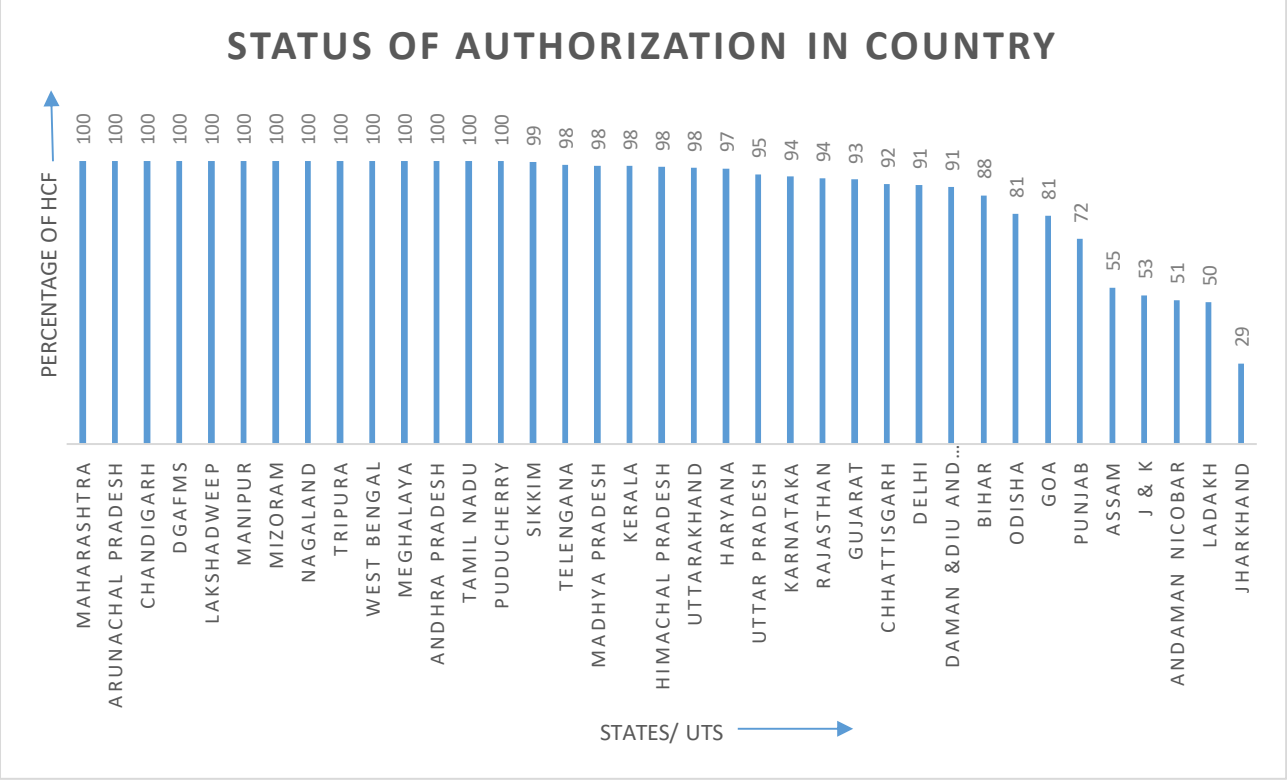


Figure 3: Percentage of HCFs authorized during year 2023 in States/UTs

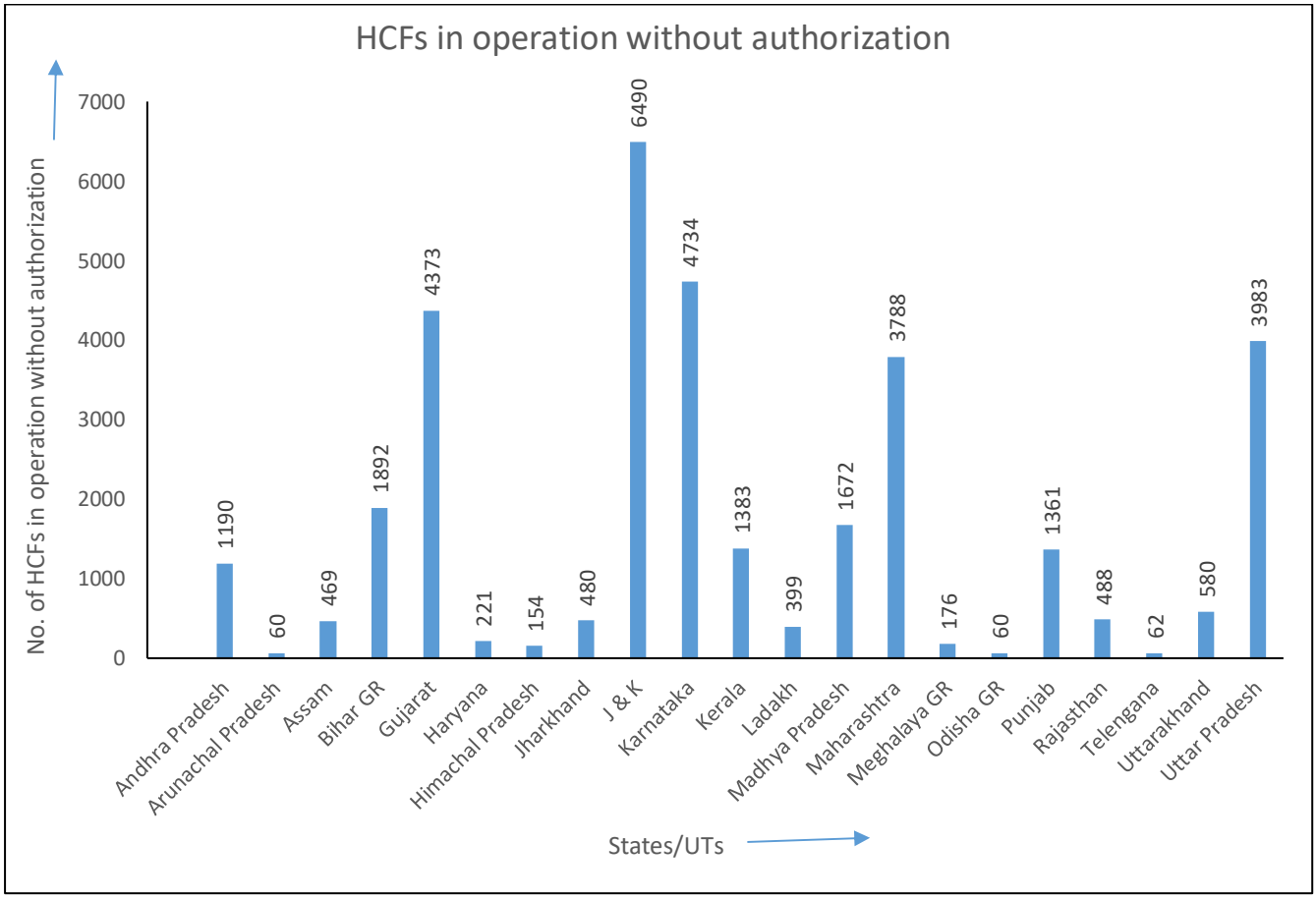


Figure 4: Unauthorized HCFs in operation in States/UTs

3 Status of Biomedical Waste Generation & Treatment

3.1 Biomedical Waste Generation

Bio-medical waste means any waste which is generated during the diagnosis, treatment or immunization of human beings or animals or research activities pertaining thereto or in the production or testing of biological or in health camps, including the categories mentioned in Schedule I of BMWM Rules, 2016. As reported by SPCBs/PCCs, about 743 tons/day of biomedical waste was generated during the year 2023 by 4,35,257 numbers of HCFs. The biomedical waste generation generally depends on the number of healthcare facilities present in the State, population density, type of healthcare facility, etc. the quantity of biomedical waste generated in the States and UT in year 2023 is given in fig 5 and 6.

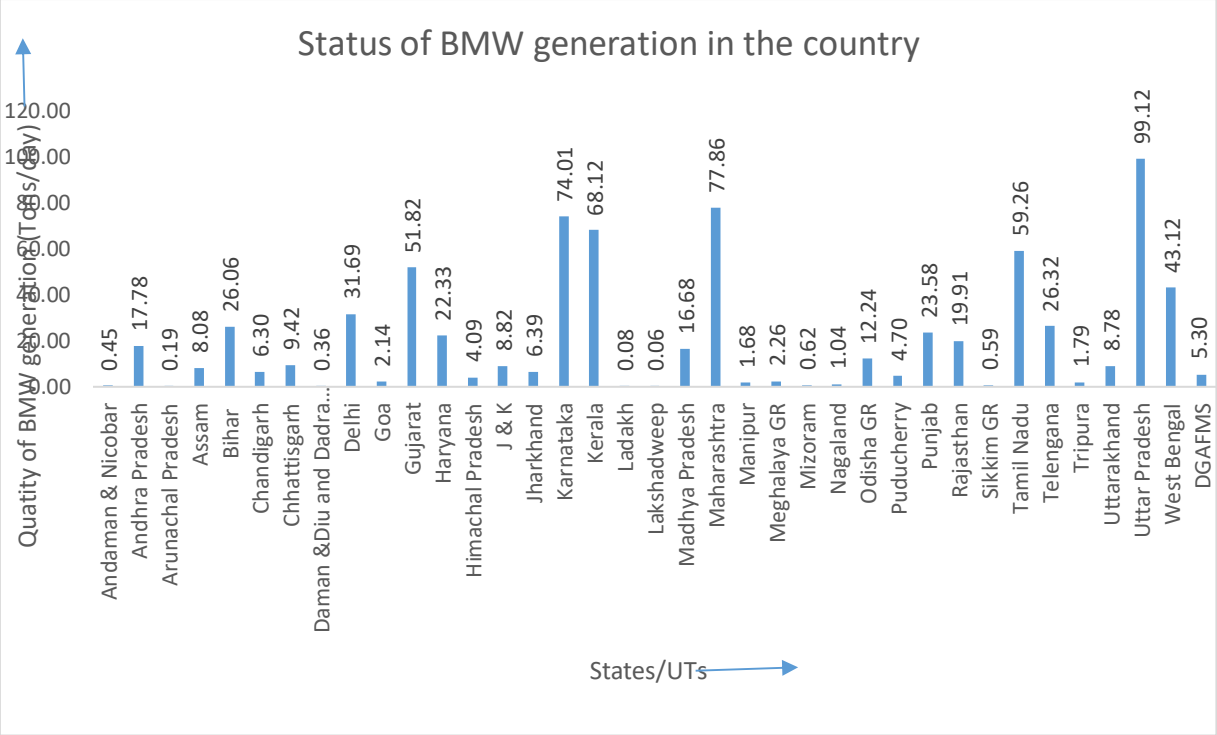


Figure 5: Total Quantity of BMW generated (tons/day) in the States/UTs and DGFAMS

3.2 Treatment of Biomedical Waste

As per Rule 7 (1), biomedical waste is required to be treated and disposed of in accordance with Schedule I, and in compliance with the standards provided in Schedule-II of BMWM Rules, 2016. Out of 859 tons/day of biomedical waste generated in the country, 694 tons/day of BMW is treated and disposed of by CBWTFs and CTFs installed by HCFs.

For environment friendly disposal of biomedical waste, there should be no gap between generation and treatment & disposal of biomedical waste. However, the gap in generation, treatment & disposal has been observed in States/UTs namely Assam, Bihar, Jharkhand,

Karnataka, Kerala, Madhya Pradesh, Manipur, Mizoram, Nagaland and Puducherry (figure 6). The gap in generation, treatment and disposal was also observed in year 2022 in States namely Assam, Bihar, Karnataka, Jharkhand, Madhya Pradesh, Kerala, Meghalaya & Uttarakhand. CPCB has communicated the gaps observed to the respective SPCB/PCC to ensure rectify the issue and ensure the disposal of all biomedical waste generated in State/UT accordance with the BMWM Rules, 2016.

Some SPCBs/PCCs submitted that the gap between treatment and disposal is due to incomplete information submitted by HCFs and CBWTFs in annual report with respect to generation, treatment and disposal of biomedical waste. Further, continuous efforts are being made by SPCBs/PCCs to ensure that there is no gap between generation and treatment of biomedical waste.

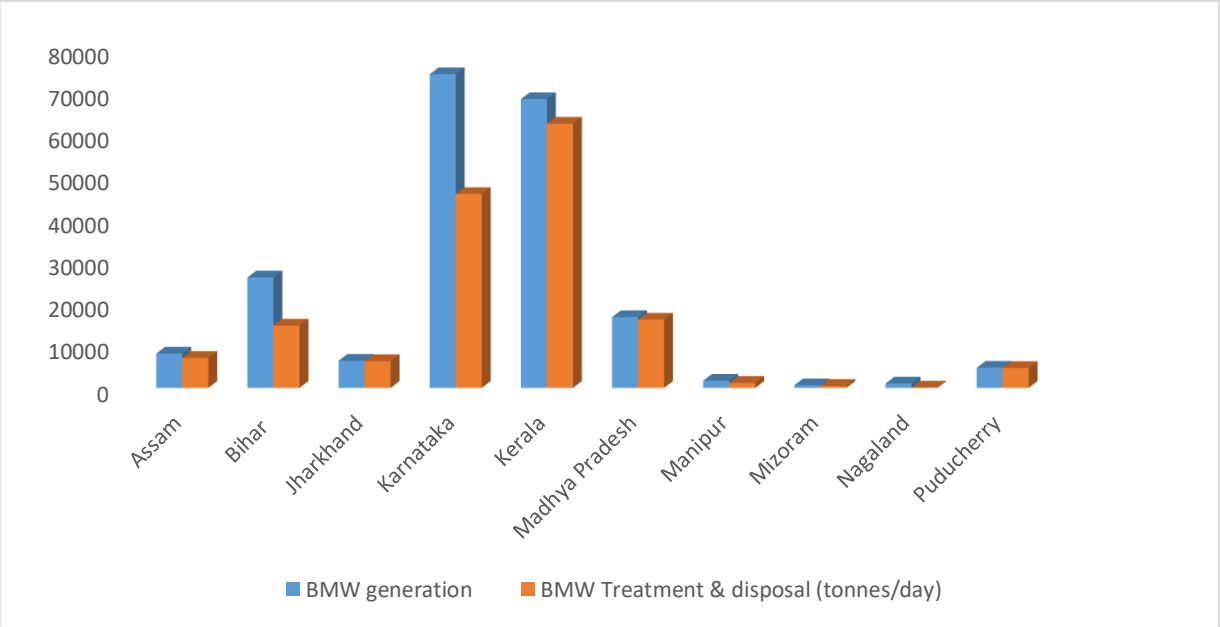


Figure 6: Status of generation, treatment & disposal of biomedical waste

4 Status of Common Biomedical Waste Treatment Facilities (CBWTF)

4.1 Availability of CBWTF

CBWTF means the facility which is involved in collection, treatment and disposal of bio- medical waste. As per BMWM Rules, 2016, it is the duty of CBWTF operator to take all necessary steps to ensure that the biomedical waste collected from the occupier is transported, handled, stored, treated and disposed of, without any adverse effect to the human health and the environment, in accordance with BMWM Rules, 2016 and guidelines issued by the CPCB.

As per the Annual Report Information submitted by SPCBs/PCCs for the year 2023, currently there are 234 number of CBWTFs operated in the Country and 30 CBWTFs are under construction. In the year 2023, there are an increase in number of CBWTFs in Gujarat, Jharkhand, Karnataka, Madhya Pradesh, Maharashtra, Odisha, Rajasthan, Uttar Pradesh and West Bengal as compared to year 2022. Daman & Diu and Dadra & Nagar Haveli utilizes the CBWTF of Gujarat

State for treatment and disposal of biomedical waste. Similarly, Lakshadweep is utilizing the CBWTF situated in Kerala for treatment and disposal of Red and Blue category biomedical wastes. In remaining States/UTs, disposal of biomedical waste is being done through captive treatment facilities including deep burials. In this regard, CPCB requested such SPCBs/PCCs for submitting the proposal for setting up of CBWTFs to cover entire districts of State/UT for which they may avail financial assistance from Ministry of Environment Forests & Climate Change. No. of CBWTF present and under construction in State and UTs is represented in fig. 7.

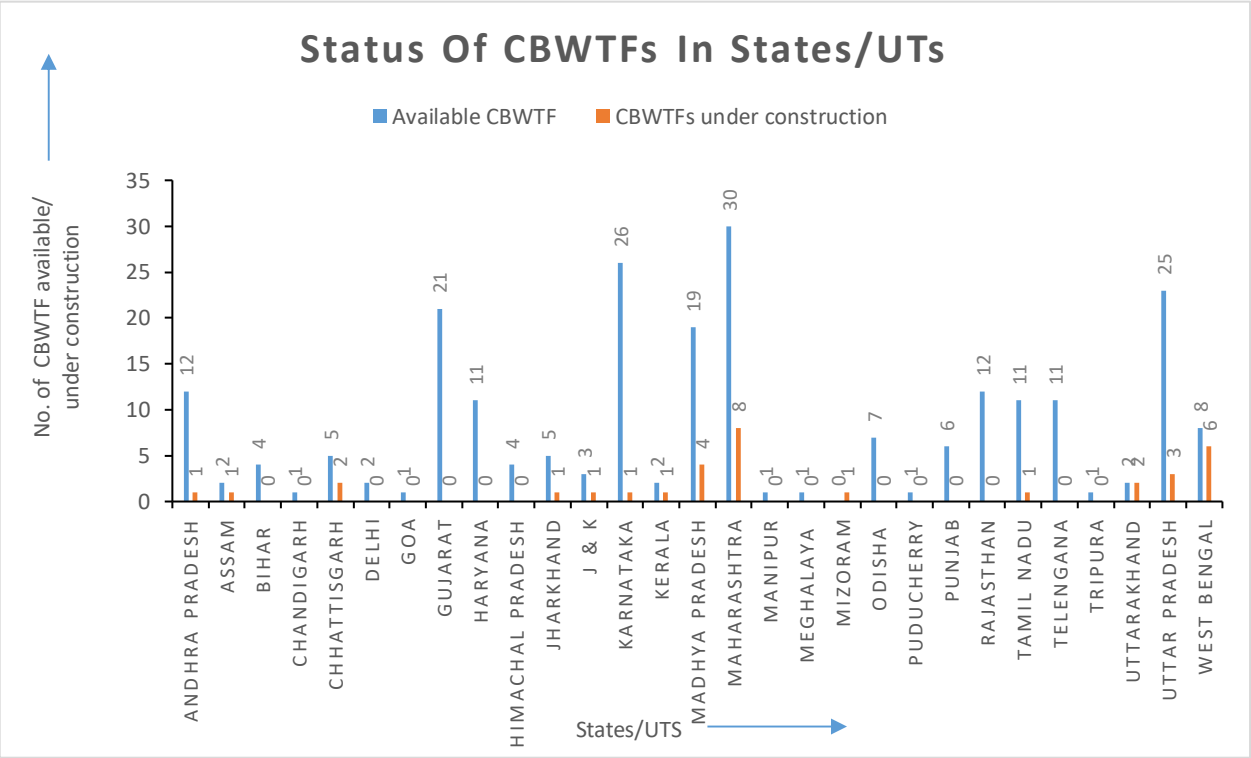


Figure 7: No. of CBWTFs operational and under construction in the States/UTs

CBWTFs are under construction in States like Andhra Pradesh, Assam, Chhattisgarh, Jharkhand, J & K, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Mizoram, Tamil Nadu, Uttarakhand and West Bengal. The availability of CBWTFs operated in States varies based on the area of the State, population density, number of HCFs in the States/UT, capacity of the CBWTF, accessibility of CBWTF etc.

Andaman and Nicobar, Arunachal Pradesh, Ladakh, Lakshadweep, Mizoram, Nagaland and Sikkim have reported that no CBWTF is present in the State/UTs. In this regard, CPCB requested such SPCBs/PCCs to initiate action for establishment of CBWTF and submit action taken to CPCB.

4.2 Utilization of CBWTF

As per Rule 7 (3) of the BMWN rules, 2016, "no occupier shall establish on-site treatment and disposal facility, if a service of common biomedical waste treatment facility is available at a distance of seventy-five kilometers". As per Annual Report information for year 2023, all HCFs operating in States/UTs namely Andhra Pradesh, Chandigarh, Goa, Gujarat, Haryana, Punjab, Tamil Nadu, Telangana and West Bengal are using CBWTF for treatment and disposal of biomedical waste. In

other States/UTs namely Assam, Bihar, Chhattisgarh, Delhi, Himachal Pradesh, Jharkhand, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Manipur, Meghalaya, Mizoram, Odisha, Rajasthan, Sikkim, Tripura, Uttarakhand, Uttar Pradesh and DGAFMS are using captive treatment facilities along with CBWTF.

Some of the HCFs of these States are having captive treatment facility (captive incinerator) for treatment and disposal of bio-medical waste. States/UTs may look into the accessibility of CBWTFs and come up with new CBWTFs to cover all HCFs in the State/UT. Utilization of CBWTFs by HCFs (in percentage) is given in fig. 8

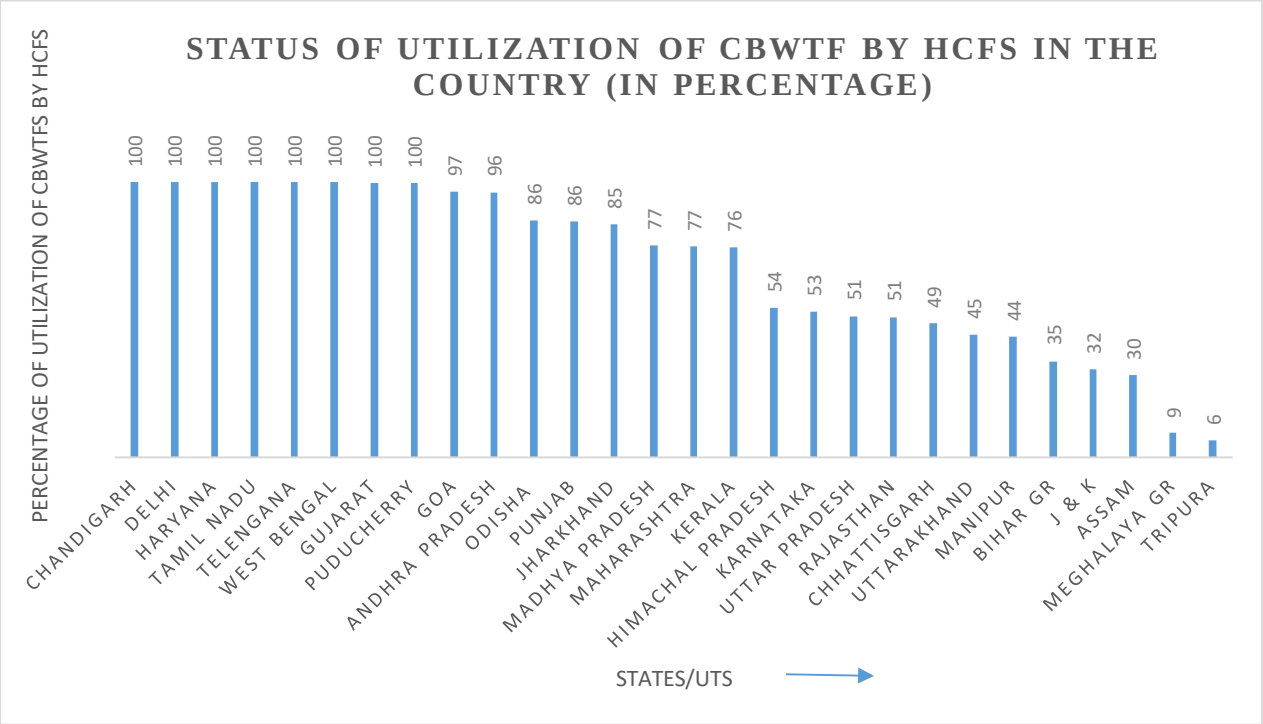


Figure 8: Percentage of HCF utilizing the CBWTF in various States/UT

The CBWTFs in the country are operating at cumulative treatment and disposal capacity of 1717 MT/day, of which incineration capacity is 990 MT/day and autoclave capacity is 727 MT/day. The present generation of 743 MT/day may look adequate for treatment and disposal of BMW. However, availability of CBWTFs may vary at State Level. Biomedical waste generated and remaining treatment capacity of CBWTFs after treatment of generated biomedical waste is given in figure 9.

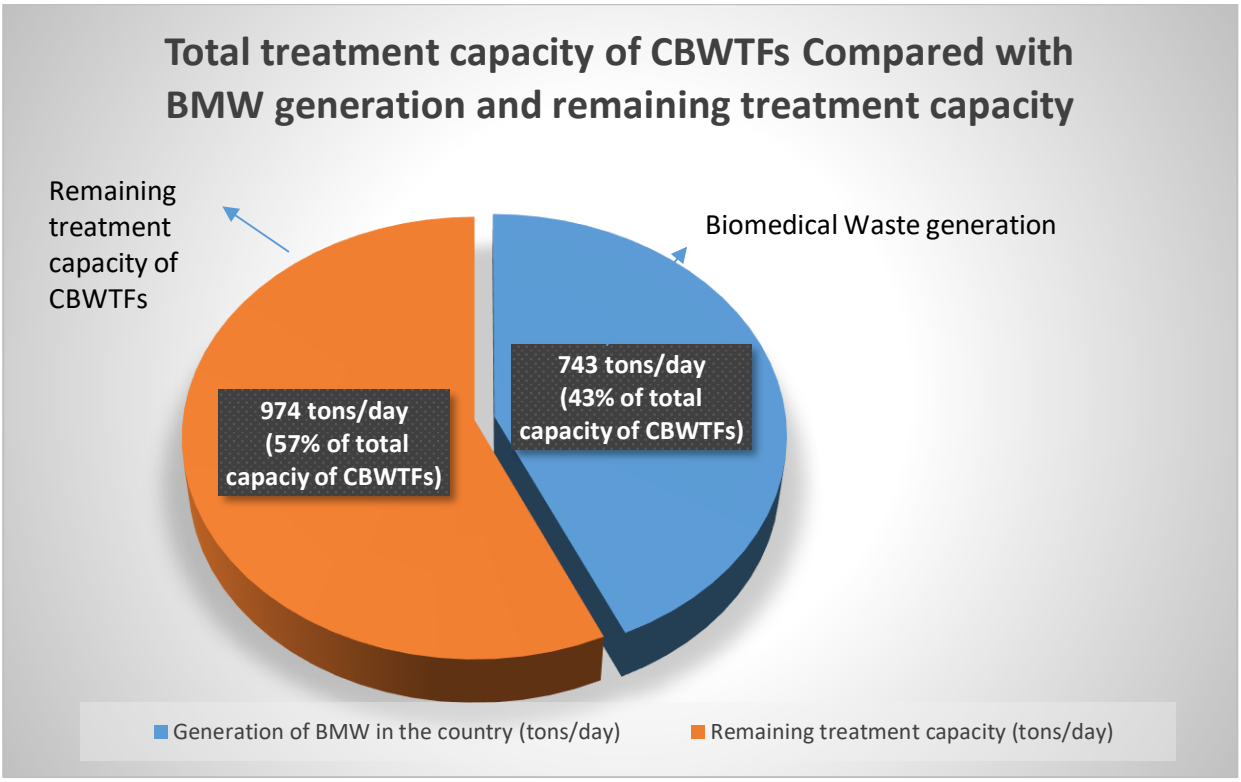


Figure 9 : Total treatment capacity of CBWTFs compared with biomedical waste generation and remaining treatment capacity

As per Annual report information for year 2023, there is a gap between biomedical waste generation and its treatment & disposal. However, Figure 9 depicts that only 43% of the treatment capacity of CBWTFs is being used for processing the generated biomedical waste, leaving 57% of the capacity still available for biomedical waste treatment and disposal.

5 Status of Captive Treatment Facility (CTF) including deep burial

BMWM Rules, 2016 restricts on-site treatment and disposal facility, if a service of CBWTF is available at a distance of 75 Km. However, 15,870 numbers of HCFs are having captive treatment facility. States/UTs namely Chandigarh, Daman, Diu and Dadar and Nagar Haveli, Andhra Pradesh, Goa, Gujarat, Haryana, Punjab, Tamil Nadu, Telangana and West Bengal are not utilized captive treatment facility. Number of HCFs having captive treatment facility in various States/UTs are showing in figure 10. These States/UT should explore the possibility of treating and disposing biomedical waste through CBWTF.

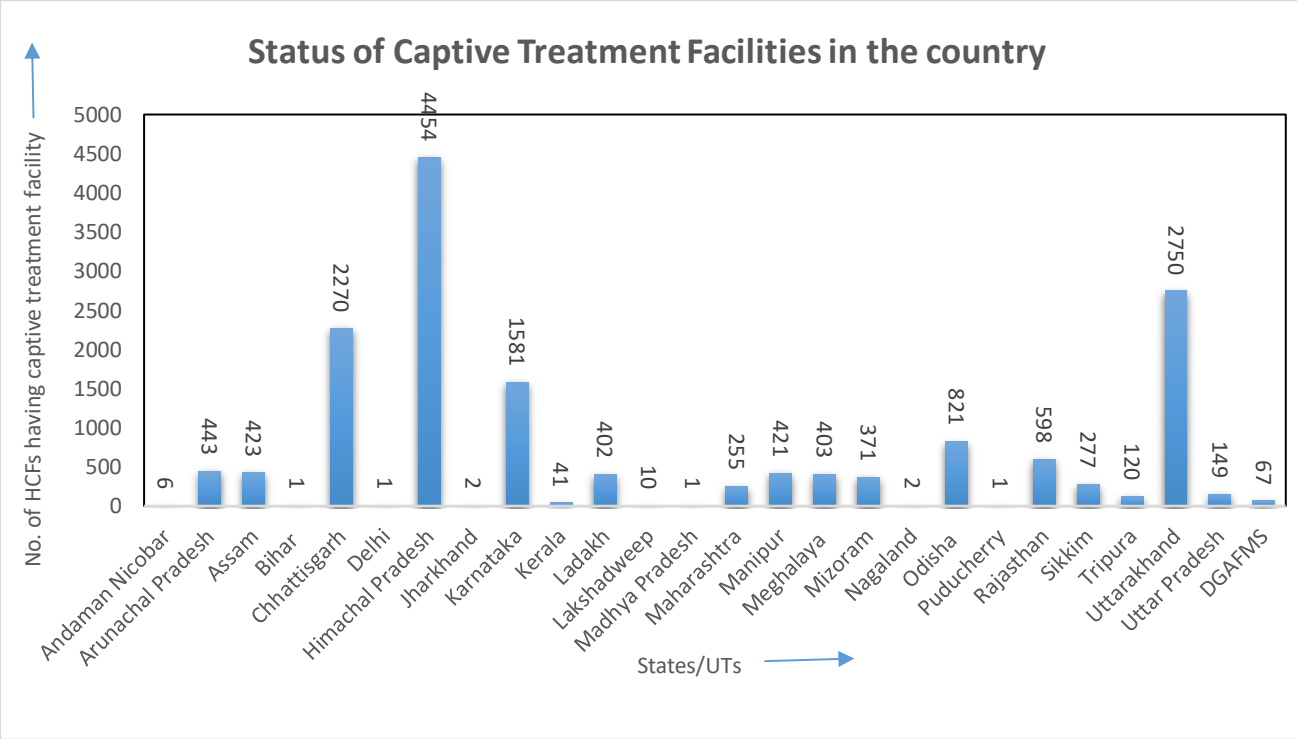


Figure 10 : Number of HCFs having captive treatment in States/UTs

As per the clarification received from the State namely Meghalaya and Madhya Pradesh, there are CTF operating by the HCFs due to operation of HCFs in rural areas, where there was no CBWTF or before the issuance of guidelines of CBWTF. CPCB requested SPCBs/PCCs to restrict use of captive treatment facilities in case CBWTF is available within 75 km. SPCBs/PCCs should also ensure that if CBWTFs are not available with in radius of 75 Km, captive treatment facility operated by HCFs should with prior approval from the prescribed authority and as per the Standards specified in Schedule-III of BMWM Rules, 2016. The deep burial facility shall be located as per the provisions and guidelines issued by Central Pollution Control Board from time to time. As per the information submitted by the SPCB/PCCs, deep burial pits are installed by the HCFs of Andaman & Nicobar, Arunachal Pradesh, Assam, Chhattisgarh, Himachal Pradesh, Jharkhand, J & K, Karnataka, Kerala, Ladakh, Lakshadweep, Maharashtra, Meghalaya, Mizoram, Nagaland, Odisha, Rajasthan, Sikkim, Tripura, Uttarakhand and Uttar Pradesh. The status of deep burial pits installed by HCFs is given in figure 11. CPCB directed all SPCBs/PCCs regarding verification of captive treatment facilities including deep burials installed by HCFs and ensure that these are in line with the standards given under BMWM Rules, 2016 and CPCB guidelines. SPCBs/PCCs should initiate steps to cover entire State/UT by CBWTF so as to minimize usage of captive treatment facility including deep burial pits by HCFs.

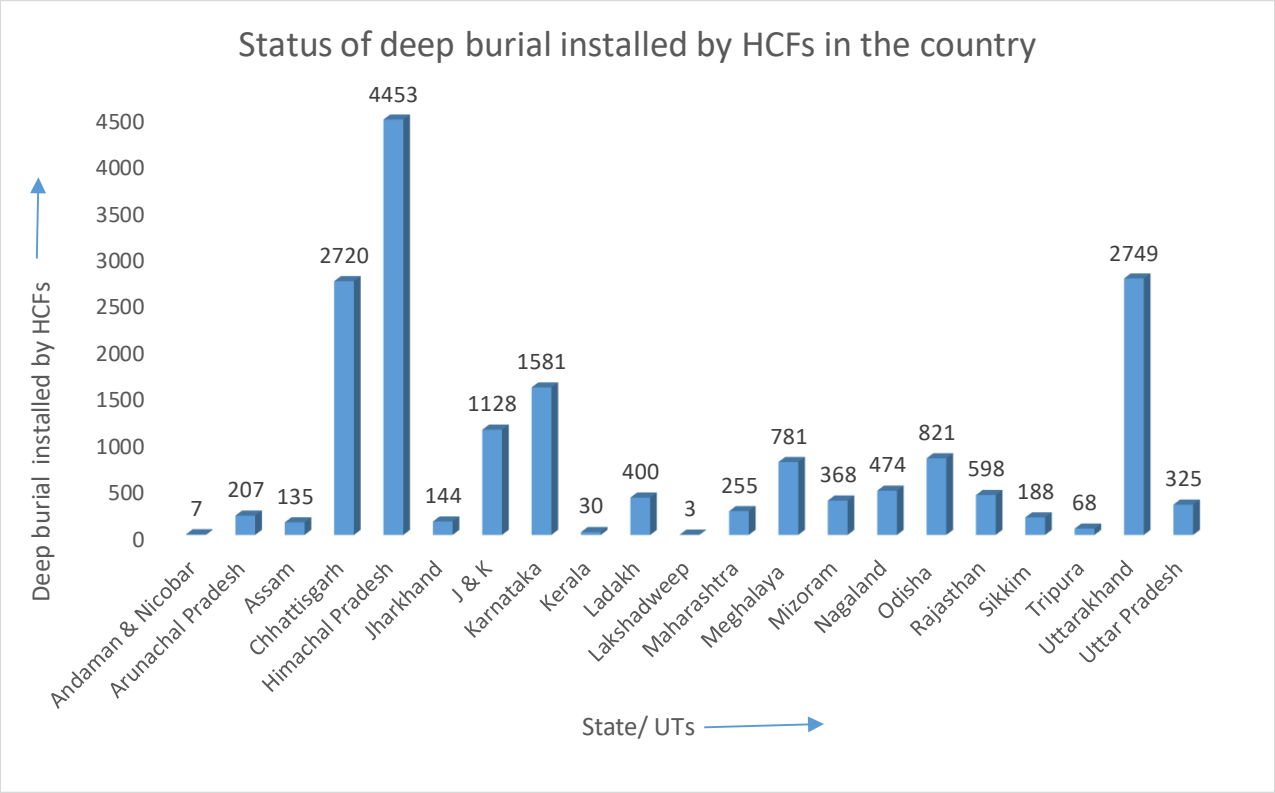


Figure 11: Deep burial installed by HCFs in States/UTs

6 Online Continuous Emission Monitoring System (OCEMS)

BMWM Rules, 2016 stipulates that every occupier or operator of the common bio-medical waste treatment facility shall install Online Continuous Emission Monitoring System (OCEMS) for the parameters as stipulated by SPCBs/PCCs in authorization and transmit the real time data to the servers at SPCB/PCC and CPCB. As per the submitted information, 229 out of 234 nos. i.e. about 98 % of present CBWTFs have installed OCEMS for continuous emission monitoring. Further, it has been observed by CPCB that some of the CBWTFs connected to OCEMS portal are not transmitting data regularly to CPCB server. States namely Assam, Chhattisgarh, Jharkhand and Kerala should ensure the installation of OCEMS by all existing CBWTFs and transmission of the real time data to the SPCB and CPCB server. CBWTFs where OCEMS is not installed is shown in figure 12.

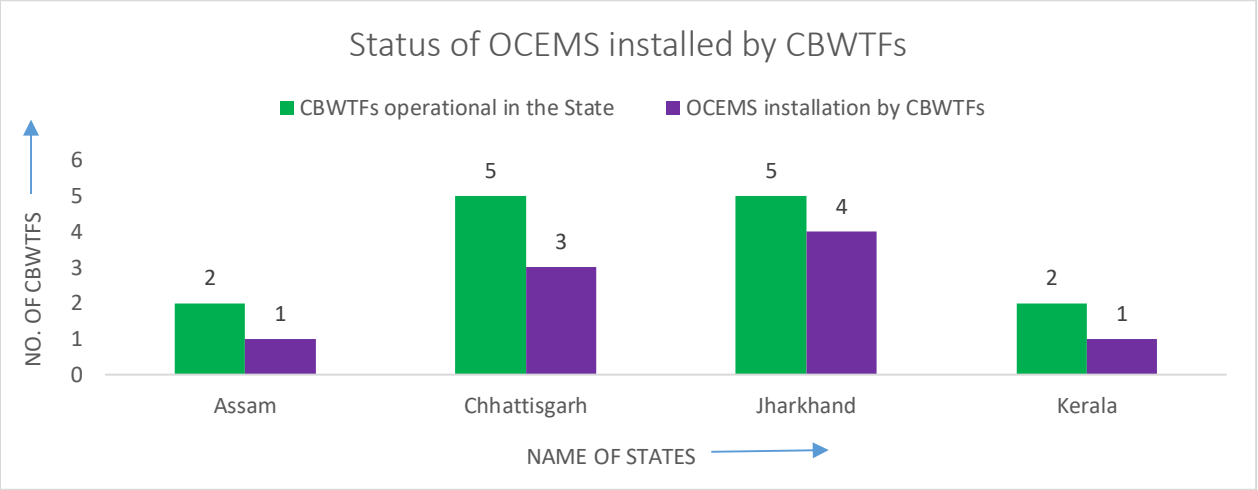


Fig 12; Status of no. of CBWTFs not installed OCEMS in States

7 Biomedical Waste Management in Healthcare Establishments of Armed Force Medical Services (AFMS)

The prescribed authority for Armed Force Medical Services is DGAFMS. As reported, 697 HCFs are established under DGAFMS that generates about 5.3 tons/day bio-medical waste, which is entirely treated and disposed-off through CBWTFs and Captive Treatment Facilities. Out of 697 no. of HCFs, there are 226 bedded HCFs and 471 are non –bedded. Out of 697 no. of HCFs, 630 no. of HCFs are using CBWTFs and 67 no. of HCFs are using Captive Treatment Facility. Further, 0.53 tons/day of biomedical waste is being treated by captive treatment facilities of HCFs, which is not recommended under BMWM Rules, 2016 if CBWTF is available within radius of 75 Km and 4.7 tons/day of biomedical waste is being treated and disposed-off through CBWTF. As per the clarification received 67 HCF are located in remote location/isolated far flung areas where CBWTF is not available within the range of 75 km. However, Armed Forces Health Care Establishments (AFHCEs) is making a continuous effort to reduce the number of HCFs disposing through captive treatment facility. The number of HCFs disposing through captive treatment facility have been reduced to 67 in 2023 as compared to 75 in 2022.

Central Pollution Control Board (CPCB) has conducted the inspection of 20 AFHCEs in year 2023 located in Assam, Bihar, Goa, Odisha, Kerala, Kolkata, Karnataka, Maharashtra, Madhya Pradesh and Uttar Pradesh to verify the compliance status of BMWM Rules, 2016. Based on observations of CPCB, recommendations were forwarded to DGAFMS and requested to take necessary action against the defaulting AFHCFs and to ensure corrective measures in respect of violation observed by CPCB.

A meeting was also conducted by CPCB to discuss the implementation of BMWM Rules, 2016 in AFHCEs wherein various issues regarding installation of ETP/STP plant, disposal of liquid bio-medical waste, implementation of bar code system and other issues were discussed.

8 Issues and way forward

- Some of the HCFs are still not authorized even after 8 years of the notification of the BMWM, 2016. SPCB/PCCs shall ensure authorization of every HCF and take action against HCFs

operational without authorization.

- Some of the States/UTs namely Assam, Jharkhand, Karnataka, Kerala, Karnataka, Maharashtra, Manipur, Mizoram, Nagaland and Puducherry submitted that there is gap between generation and treatment of biomedical waste. SPCBs/PCCs should ensure that all biomedical waste generated from HCFs should be treated and disposed of in line with BMWM Rules, 2016.
- SPCBs shall ensure that recyclable waste collected by CBMWTFs should be treated properly and sent to registered recyclers only.
- SPCBs/PCCs shall ensure timely submission of annual report pertaining to their respective State or Union Territory within stipulated time period i.e. on or before 31st July.
- Despite of availability of service of CBWTF, Captive Treatment Facilities including deep burials are still being used in 18 States/UTs. Therefore, SPCBs/PCCs should restrict usage of captive treatment facilities including deep burial pits where CBWTF is accessible and ensure that it is in line with the standards as prescribed under BMWM Rules, 2016.
- Adequacy of treatment capacity of existing CBWTFs and their compliance status be regularly monitored by the SPCBs/PCCs to assess the requirement of additional treatment facility for the State / Union Territory.
- All SPCBs/PCCs should also conduct gap analysis with respect to generation of biomedical waste and available treatment capacity to check adequacy of available treatment capacity of CBWTF.
- For continuous monitoring of emission from incinerators, SPCBs/PCCs shall ensure that OCEMS is installed in every CBWTFs and connected to CPCB/SPCB server.

9 State/UT wise status of Biomedical Waste Management

9.1 Andaman and Nicobar Islands

No. of HCFs	285
No. of bedded HCFs	87
No. of non-bedded HCFs	198
No. of beds	1328
No. of CBWTFs	NIL
No. of HCFs granted authorization	145
No. of HCFs utilizing CBWTFs	NIL
No. of HCFs having Captive Treatment Facilities	6
No. of Captive Incinerators Operated by HCFs	6
Quantity of BMW generated in kg/day	452.79
Quantity of BMW treated in kg/day	452.79
No. of HCFs/CBWTFs violated BMW Rules	5
No. of Show-Cause notices/Directions issued to defaulter HCFs/CBWTFs	5

Andaman and Nicobar Islands are geographically isolated and most HCFs are located in the remote locations, therefore deep burial pits are being used by the HCF for disposal of biomedical waste. Currently there is no operational CBWTF in the UT, although Directorate of Health Service (DHS) has initiated for identification of land for establishment of CBWTF. All biomedical waste

generated in UT is being treated and disposed through captive incinerators including deep burial pits.

9.2 Andhra Pradesh

No. of HCFs	14,314
No. of bedded HCFs	7,687
No. of non-bedded HCFs	6,627
No. of beds	1,68,043
No. of CBWTFs	12
No. of HCFs granted authorization	3218
No. of HCFs utilizing CBWTFs	13,804
No. of HCFs having Captive Treatment Facilities	NIL
No. of Captive Incinerators Operated by HCFs	NIL
Quantity of BMW generated in kg/day	17,784.118
Quantity of BMW treated in kg/day	17,784.118
No. of HCFs/CBWTFs violated BMW Rules	1194
No. of Show-Cause notices/Directions issued to defaulter HCFs/CBWTFs	1194

Currently all the BMW generated in the State is treated through CBWTF and no captive treatment facility is operational in the State. There are 1,190 occupiers that are currently operational without authorization in the State. Only 822 occupier installed liquid waste treatment facility. SPCB should authorize the remaining occupiers and improve the compliance regarding liquid waste treatment by HCFs.

9.3 Arunachal Pradesh

No. of HCFs	159
No. of bedded HCFs	126
No. of non-bedded HCFs	33
No. of beds	1,839
No. of CBWTFs	NIL
No. of HCFs granted authorization	443
No. of HCFs utilizing CBWTFs	NIL
No. of HCFs having Captive Treatment Facilities	443
No. of Captive Incinerators Operated by HCFs	7
Quantity of BMW generated in kg/day	185.85

Quantity of BMW treated in kg/day	185.85
No. of HCFs/CBWTFs violated BMW Rules	60
No. of Show-Cause notices/Directions issued to defaulter HCFs/CBWTFs	60

Currently there is no CBWTF operational in the State and the generated biomedical i.e. 185.85 kg/day is treated and disposed through captive treatment facility. Though the HCFs are located in remote areas, development of CBWTF should be explored by SPCB to restrict use of captive treatment facility including deep burial.

9.4 Assam

No. of HCFs	1,558
No. of bedded HCFs	675
No. of non-bedded HCFs	883
No. of beds	29,265
No. of CBWTFs	02
No. of HCFs granted authorization	602
No. of HCFs utilizing CBWTFs	464
No. of HCFs having Captive Treatment Facilities	423
No. of Captive Incinerators Operated by HCFs	INP
Quantity of BMW generated in kg/day	8,084
Quantity of BMW treated in kg/day	7,068
No. of HCFs/CBWTFs violated BMW Rules	NIL
No. of Show-Cause notices/Directions issued to defaulter HCFs/CBWTFs	NIL

Currently there are 02 no. of CBWTFs is present in the State and 4,044 kg/day of BMW is treated and disposed through CBWTF. 423 no. of HCFs in the State have captive treatment facility and 3,024 kg/day of BMW is treated and disposed through captive treatment facilities. A gap of around 12.56 % is observed between the generation and disposal of the biomedical waste in the State. 469 no. of occupiers are currently in operation without applying for authorization. 786 no. of occupiers have installed the liquid waste treatment facility. SPCB should ensure implementation of BMWM Rules, 2016 and minimize the gaps identified in Annual Report.

9.5 Bihar

No. of HCFs	26,472
No. of bedded HCFs	6,781
No. of non-bedded HCFs	19,691
No. of beds	1,04,943
No. of CBWTFs	04

No. of HCFs granted authorization	2427
No. of HCFs utilizing CBWTFs	9262
No. of HCFs having Captive Treatment Facilities	01
No. of Captive Incinerators Operated by HCFs	01
Quantity of BMW generated in kg/day	26,061.35
Quantity of BMW treated in kg/day	14,701.9
No. of HCFs/CBWTFs violated BMW Rules	316
No. of Show-Cause notices/Directions issued to defaulter HCFs/CBWTFs	316

There is a gap of around 44% between the generated and treated biomedical waste in the State. 17, 209 no. of HCFs are neither having the captive treatment facility nor utilizing the CBWTF. 1, 892 no. of HCFs are operational in the State without authorisation. 708 nos. of occupier have installed the liquid waste treatment facility. SPCB should rectify the gaps identified in Annual Report.

9.6 Chandigarh

No. of HCFs	950
No. of bedded HCFs	50
No. of non-bedded HCFs	900
No. of beds	4,952
No. of CBWTFs	01
No. of HCFs granted authorization	46
No. of HCFs utilizing CBWTFs	950
No. of HCFs having Captive Treatment Facilities	0
No. of Captive Incinerators Operated by HCFs	0
Quantity of BMW generated in kg/day	6,347
Quantity of BMW treated in kg/day	6,347
No. of HCFs/CBWTFs violated BMW Rules	0
No. of Show-Cause notices/Directions issued to defaulter HCFs/CBWTFs	0

Currently there is 01 CBWTF is present in the UT and total generated biomedical waste ie. 6347 kg/day is treated and disposed through CBWTF. There is no captive treatment facility in the UT and all occupiers are currently authorised by PCC.

9.7 Chhattisgarh

No. of HCFs	7,230

No. of bedded HCFs	2,498
No. of non-bedded HCFs	4,732
No. of beds	54,987
No. of CBWTFs	5
No. of HCFs granted authorization	2,462
No. of HCFs utilizing CBWTFs	3,528
No. of HCFs having Captive Treatment Facilities	2270
No. of Captive Incinerators Operated by HCFs	INP
Quantity of BMW generated in kg/day	9418.28
Quantity of BMW treated in kg/day	9418.28
No. of HCFs/CBWTFs violated BMW Rules	12
No. of Show-Cause notices/Directions issued to defaulter HCFs/CBWTFs	9

State has not submitted information regarding captive treatment facilities being used by HCFs. States shall submit the complete information in the Annual Report information and minimise the gaps observed in the Annual reports communicate by CPCB.

9.8 Daman &Diu and Dadra & Nagar Haveli

No. of HCFs	219
No. of bedded HCFs	83
No. of non-bedded HCFs	136
No. of beds	1,476
No. of CBWTFs	Utilising CBWTF of Gujarat
No. of HCFs granted authorization	118
No. of HCFs utilizing CBWTFs	222
No. of HCFs having Captive Treatment Facilities	0
No. of Captive Incinerators Operated by HCFs	0
Quantity of BMW generated in kg/day	358.03
Quantity of BMW treated in kg/day	358.03
No. of HCFs/CBWTFs violated BMW Rules	0
No. of Show-Cause notices/Directions issued to defaulter HCFs/CBWTFs	16

Currently only 1 CBWTF which is situated in the Gujarat State is being utilised by the HCF of the UT for disposal of the biomedical waste. No captive treatment facility is operational in the UT. No occupier in the UT has installed liquid waste treatment facility. SPCB should rectify the gaps identified in Annual Report.

9.9 Delhi

No. of HCFs	10,974
No. of bedded HCFs	1,209
No. of non-bedded HCFs	9,765
No. of beds	61,581
No. of CBWTFs	2
No. of HCFs granted authorization	1,166
No. of HCFs utilizing CBWTFs	10,974
No. of HCFs having Captive Treatment Facilities	1
No. of Captive Incinerators Operated by HCFs	0
Quantity of BMW generated in kg/day	31,692
Quantity of BMW treated in kg/day	31,692
No. of HCFs/CBWTFs violated BMW Rules	0
No. of Show-Cause notices/Directions issued to defaulter HCFs/CBWTFs	0

Currently there are 02 no. of CBWTF is present in the UT and 31,692 kg/day of biomedical waste is treated and disposed through CBWTF. 01 no. of HCF in the UT have captive treatment facility and 491.8 kg/day of biomedical waste is treated and disposed through captive treatment facility. 166 nos. of occupier have installed the liquid waste treatment facility. SPCB should rectify the gaps identified in Annual Report.

9.10 Goa

No. of HCFs	868
No. of bedded HCFs	107
No. of non-bedded HCFs	761
No. of beds	5,121
No. of CBWTF	1
No. of HCFs granted authorization	341
No. of HCFs utilizing CBWTFs	838
No. of HCFs having Captive Treatment Facilities	0
No. of Captive Incinerators Operated by HCFs	0
Quantity of BMW generated in kg/day	2,136.09
Quantity of BMW treated in kg/day	2,136.09
No. of HCFs/CBWTFs violated BMW Rules	51
No. of Show-Cause notices/Directions issued to defaulter HCFs/CBWTFs	51

Currently there is 01 no. of CBWTF is present in the State and total generated waste i.e. 2136.09 kg/day is treated and disposed through CBWTF. There is no captive treatment facility in the State. 22 no. of occupiers have installed liquid waste treatment facility.

9.11 Gujarat

No. of HCFs	37,396
No. of bedded HCFs	13,124
No. of non-bedded HCFs	24,272
No. of beds	2,42,421
No. of CBWTFs	21
No. of HCFs granted authorization	4,877
No. of HCFs utilizing CBWTFs	37,322
No. of HCFs having Captive Treatment Facilities	0
No. of Captive Incinerators Operated by HCFs	0
Quantity of BMW generated in kg/day	51,823
Quantity of BMW treated in kg/day	51,823
No. of HCFs/CBWTFs violated BMW Rules	661
No. of Show-Cause notices/Directions issued to defaulter HCFs/CBWTFs	661

Currently there is 21 CBWTF is present in the State and total generated BMW i.e. 51,823 kg/day is treated and disposed through CBWTF and no captive treatment facility present in the State. 4,373 nos. occupiers are currently in operation without applying for the authorisation. 3,998 occupiers have installed liquid waste treatment facility. SPCB should rectify the gaps identified in Annual Report.

9.12 Haryana

No. of HCFs	7,647
No. of bedded HCFs	3,708
No. of non-bedded HCFs	3,939
No. of beds	71,598
No. of CBWTFs	11
No. of HCFs granted authorization	7,229
No. of HCFs utilizing CBWTFs	7,647
No. of HCFs having Captive Treatment Facilities	0
No. of Captive Incinerators Operated by HCFs	0
Quantity of BMW generated in kg/day	22,333
Quantity of BMW treated in kg/day	22,333
No. of HCFs/CBWTFs violated BMW Rules	221
No. of Show-Cause notices/Directions issued to defaulter HCFs/CBWTFs	231

Currently there is 11 no. of CBWTF is present in the State and total generated BMW i.e. 22,333 kg/day is treated and disposed through CBWTF and no captive treatment facility present in the State. 221 no. of occupiers are currently in operation without applying for the authorization.

456 occupiers have installed liquid waste treatment facility.

9.13 Himachal Pradesh

No. of HCFs	9,756
No. of bedded HCFs	652
No. of non-bedded HCFs	9,104
No. of beds	19,615
No. of CBWTFs	4
No. of HCFs granted authorization	9,383
No. of HCFs utilizing CBWTFs	5,303
No. of HCFs having Captive Treatment Facilities	4,454
No. of Captive Incinerators Operated by HCFs	1
Quantity of BMW generated in kg/day	4,093
Quantity of BMW treated in kg/day	4,093
No. of HCFs/CBWTFs violated BMW Rules	16
No. of Show-Cause notices/Directions issued to defaulter HCFs/CBWTFs	16

Currently there are 04 no. of CBWTF is present in the State and 3968.96 kg/day of BMW is treated and disposed through CBWTF. 4,454 no. of HCF in the State have captive treatment facility and 123.47 kg/day of BMW is treated and disposed through CTF. 154 occupiers are currently in operation without applying for authorisation. 9,383 no. of occupiers have installed the liquid waste treatment facility.

9.14 Jharkhand

No. of HCFs	2,451
No. of bedded HCFs	1,355
No. of non-bedded HCFs	1,096
No. of beds	36,268
No. of CBWTFs	5
No. of HCFs granted authorization	222
No. of HCFs utilizing CBWTFs	2,076
No. of HCFs having Captive Treatment Facilities	2
No. of Captive Incinerators Operated by HCFs	2
Quantity of BMW generated in kg/day	6394.3154
Quantity of BMW treated in kg/day	6294.187
No. of HCFs/CBWTFs violated BMW Rules	361
No. of Show-Cause notices/Directions issued to defaulter HCFs/CBWTFs	361

Currently there are 05 no. of CBWTF is present in the State and 6294.187 kg/day of biomedical

waste is treated and disposed through CBWTF. 480 no. of occupiers are currently in operation without applying for authorization. 195 no. of occupiers have installed the liquid waste treatment facility. SPCB should rectify the gaps identified in Annual Report.

9.15 Jammu and Kashmir

No. of HCFs	7,865
No. of bedded HCFs	1,829
No. of non-bedded HCFs	6,036
No. of beds	18,550
No. of CBWTFs	03
No. of HCFs granted authorization	722
No. of HCFs utilizing CBWTFs	2,513
No. of HCFs having Captive Treatment Facilities	0
No. of Captive Incinerators Operated by HCFs	0
Quantity of BMW generated in kg/day	8,819.27
Quantity of BMW treated in kg/day	8,819.27
No. of HCFs/CBWTFs violated BMW Rules	6,491
No. of Show-Cause notices/Directions issued to defaulter HCFs/CBWTFs	129

Information regarding captive treatment facility is not submitted by State. 6, 490 no. of occupiers are currently in operation without applying for the authorization. 113 no. of occupiers have installed liquid waste treatment facility. SPCB should rectify the gaps identified in Annual Report.

9.16 Karnataka

No. of HCFs	54,594
No. of bedded HCFs	10,183
No. of non-bedded HCFs	44,411
No. of beds	2,43,071
No. of CBWTFs	26
No. of HCFs granted authorization	5,313
No. of HCFs utilizing CBWTFs	29,013
No. of HCFs having Captive Treatment Facilities	1,581
No. of Captive Incinerators Operated by HCFs	1
Quantity of BMW generated in kg/day	74,013.82
Quantity of BMW treated in kg/day	45,738
No. of HCFs/CBWTFs violated BMW Rules	1,808

No. of Show-Cause notices/Directions issued to defaulter HCFs/CBWTFs	415

Currently there are 26 CBWTF is present in the State and 44,756 kg/day of biomedical waste is treated and disposed through CBWTF. 1,581 no. of HCF in the State have captive treatment facility and 982 kg/day of BMW is treated and disposed through CTF. 4,734 no. of occupiers are currently in operation without applying for authorization. 17,364 nos. of occupier have installed the liquid waste treatment facility. SPCB should rectify the gaps identified in Annual Report.

9.17 Kerala

No. of HCFs	24,196
No. of bedded HCFs	2,182
No. of non-bedded HCFs	22,014
No. of beds	1,28,955
No. of CBWTFs	2
No. of HCFs granted authorization	21,823
No. of HCFs utilizing CBWTFs	18,463
No. of HCFs having Captive Treatment Facilities	41
No. of Captive Incinerators Operated by HCFs	13
Quantity of BMW generated in kg/day	68,122.53
Quantity of BMW treated in kg/day	62,329.89
No. of HCFs/CBWTFs violated BMW Rules	165
No. of Show-Cause notices/Directions issued to defaulter HCFs/CBWTFs	165

Currently there are 2 no. of CBWTF is present in the State and 60,969.57 kg/day of biomedical waste is treated and disposed through CBWTF. 41 no. of HCFs in the State have captive treatment facility and 1,360.327 kg/day of biomedical waste is treated and disposed through CTF. A gap of around 8.5% has been observed between the generated and treated BMW. 1,383 no. of occupiers are currently in operation without applying for authorization. 13,274 nos. of occupier have installed the liquid waste treatment facility. SPCB should rectify the gaps identified in Annual Report.

9.18 Ladakh

No. of HCFs	402
No. of bedded HCFs	334
No. of non-bedded HCFs	68
No. of beds	1,046
No. of CBWTFs	0
No. of HCFs granted authorization	2
No. of HCFs utilizing CBWTFs	0

No. of HCFs having Captive Treatment Facilities	402
No. of Captive Incinerators Operated by HCFs	2
Quantity of BMW generated in kg/day	81.37
Quantity of BMW treated in kg/day	81.37
No. of HCFs/CBWTFs violated BMW Rules	399
No. of Show-Cause notices/Directions issued to defaulter HCFs/CBWTFs	399

Currently there are 4 no. of CBWTFs are operational in the UT. The generated BMW i.e. 81.37 kg/day is treated and disposed through captive treatment facility present with 402 no. of HCFs. There are 399 no. of occupiers operating without applying for the authorization. Installation of liquid waste treatment facility is under process in all HCFs. SPCB should rectify the gaps identified in Annual Report and expedite the process of establishment of CBWTF.

9.19 Lakshadweep

No. of HCFs	38
No. of bedded HCFs	10
No. of non-bedded HCFs	28
No. of beds	270
No. of CBWTFs	NIL
No. of HCFs granted authorization	48
No. of HCFs utilizing CBWTFs	0
No. of HCFs having Captive Treatment Facilities	10
No. of Captive Incinerators Operated by HCFs	1
Quantity of BMW generated in kg/day	59.65
Quantity of BMW treated in kg/day	59.65
No. of HCFs/CBWTFs violated BMW Rules	0
No. of Show-Cause notices/Directions issued to defaulter HCFs/CBWTFs	0

Currently there are no CBWTF present in the UT. The generated waste i.e. 59.65 kg/day is treated using captive treatment facility including deep burial pits by the HCFs. No occupier is operating without applying for authorization. No occupier has installed the liquid waste treatment facility. SPCB should rectify the gaps identified in Annual Report and expedite the process of establishment of CBWTF.

9.20 Madhya Pradesh

No. of HCFs	11,985
No. of bedded HCFs	4,424
No. of non-bedded HCFs	7,561
No. of beds	1,47,165

No. of CBWTFs	20
No. of HCFs granted authorization	5,724
No. of HCFs utilizing CBWTFs	9,234
No. of HCFs having Captive Treatment Facilities	1
No. of Captive Incinerators Operated by HCFs	1
Quantity of BMW generated in kg/day	16681.7
Quantity of BMW treated in kg/day	16092.61
No. of HCFs/CBWTFs violated BMW Rules	1641
No. of Show-Cause notices/Directions issued to defaulter HCFs/CBWTFs	803

Currently there are 20 no. of CBWTFs is present in the State and 16000.5 kg/day of biomedical waste is treated and disposed through CBWTF. Only 1 HCF in the State have captive treatment facility and 92.11 kg/day of biomedical waste is treated and disposed through CTF. A gap of around 3.53% has been observed between the generated and treated BMW. 1,672 no. of occupiers are currently in operation without applying for authorisation. 3,934 nos. of occupier have installed the liquid waste treatment facility. SPCB should rectify the gaps identified in Annual Report.

9.21 Maharashtra

No. of HCFs	76,413
No. of bedded HCFs	22,783
No. of non-bedded HCFs	53,630
No. of beds	3,58,789
No. of CBWTFs	30
No. of HCFs granted authorization	2,186
No. of HCFs utilizing CBWTFs	58,515
No. of HCFs having Captive Treatment Facilities	255
No. of Captive Incinerators Operated by HCFs	0
Quantity of BMW generated in kg/day	77,862
Quantity of BMW treated in kg/day	77,861
No. of HCFs/CBWTFs violated BMW Rules	483
No. of Show-Cause notices/Directions issued to defaulter HCFs/CBWTFs	199

Currently there are 30 no. of CBWTFs is present in the State and 77,861 kg/day of BMW is treated and disposed through CBWTF. 08 no. of CBWTFs are currently under construction in the State. 255 no. of HCFs in the State have captive treatment facility and 528 kg/day of BMW is treated and disposed through CTF. 3,788 no. of occupiers are currently in operation without applying for authorization. 846 nos. of occupier have installed the liquid waste treatment facility. SPCB should rectify the gaps identified in Annual Report.

9.22 Manipur

No. of HCFs	931
No. of bedded HCFs	206
No. of non-bedded HCFs	725
No. of beds	5,393
No. of CBWTFs	1
No. of HCFs granted authorization	931
No. of HCFs utilizing CBWTFs	408
No. of HCFs having Captive Treatment Facilities	421
No. of Captive Incinerators Operated by HCFs	2
Quantity of BMW generated in kg/day	1680.7
Quantity of BMW treated in kg/day	1166.14
No. of HCFs/CBWTFs violated BMW Rules	1
No. of Show-Cause notices/Directions issued to defaulter HCFs/CBWTFs	0

Currently there are 01 CBWTF is present in the State and 566.2 kg/day of biomedical waste is treated and disposed through CBWTF. 421 no. of HCFs in the State have captive treatment facility and 599.94 kg/day of biomedical waste is treated and disposed through captive treatment facility. No occupier is reported to be currently in operation without applying for authorization. 81 no. of occupiers have installed the liquid waste treatment facility. SPCB should rectify the gaps identified in Annual Report.

9.23 Meghalaya

No. of HCFs	1,294
No. of bedded HCFs	193
No. of non-bedded HCFs	1,101
No. of beds	8,186
No. of CBWTFs	1
No. of HCFs granted authorization	1,117
No. of HCFs utilizing CBWTFs	115
No. of HCFs having Captive Treatment Facilities	403
No. of Captive Incinerators Operated by HCFs	0
Quantity of BMW generated in kg/day	2,257.03
Quantity of BMW treated in kg/day	2,257.03
No. of HCFs/CBWTFs violated BMW Rules	0
No. of Show-Cause notices/Directions issued to defaulter HCFs/CBWTFs	0

Currently there is 1 CBWTF is present in the State and 908.823 kg/day of BMW is treated and disposed through CBWTF. 403 no. of HCFs in the State have captive treatment facility and 1348.21 kg/day of BMW is treated and disposed through captive treatment facilities. 176

occupiers are currently in operation without applying for authorisation. 42 no. of occupiers have installed the liquid waste treatment facility. SPCB should rectify the gaps identified in Annual Report.

9.24 Mizoram

No. of HCFs	393
No. of bedded HCFs	82
No. of non-bedded HCFs	311
No. of beds	3,610
No. of CBWTFs	0
No. of HCFs granted authorization	90
No. of HCFs utilizing CBWTFs	0
No. of HCFs having Captive Treatment Facilities	371
No. of Captive Incinerators Operated by HCFs	8
Quantity of BMW generated in kg/day	620.42
Quantity of BMW treated in kg/day	468.42
No. of HCFs/CBWTFs violated BMW Rules	0
No. of Show-Cause notices/Directions issued to defaulter HCFs/CBWTFs	0

Currently there are no CBWTF present in the State. 1 no. of CBWTF is currently in the construction stage. Out of total generated waste i.e. 468.42 kg/day is treated using captive treatment facility including deep burial pits by the HCF. No occupier is operating without applying for authorization. 82 no. of occupiers have installed the liquid waste treatment facility. SPCB should rectify the gaps identified in Annual Report and expedite the process of establishment of CBWTF.

9.25 Nagaland

No. of HCFs	642
No. of bedded HCFs	245
No. of non-bedded HCFs	397
No. of beds	3,681
No. of CBWTFs	0
No. of HCFs granted authorization	642
No. of HCFs utilizing CBWTFs	0
No. of HCFs having Captive Treatment Facilities	2
No. of Captive Incinerators Operated by HCFs	2
Quantity of BMW generated in kg/day	1035.88
Quantity of BMW treated in kg/day	64.3
No. of HCFs/CBWTFs violated BMW Rules	0
No. of Show-Cause notices/Directions issued to defaulter HCFs/CBWTFs	0

Currently there are no CBWTF present in the State. Out of total generated biomedical waste i.e. 64.3 kg/day is treated using captive treatment facility including deep burial pits by the HCF. No occupier is operating without applying for authorization. 13 no. of occupiers have installed the liquid waste treatment facility. SPCB should rectify the gaps identified in Annual Report and expedite the process of establishment of CBWTF.

9.26 Odisha

No. of HCFs	5,886
No. of bedded HCFs	1,722
No. of non-bedded HCFs	4,164
No. of beds	5,547
No. of CBWTFs	7
No. of HCFs granted authorization	1,644
No. of HCFs utilizing CBWTFs	5,065
No. of HCFs having Captive Treatment Facilities	821
No. of Captive Incinerators Operated by HCFs	0
Quantity of BMW generated in kg/day	12,239
Quantity of BMW treated in kg/day	12,239
No. of HCFs/CBWTFs violated BMW Rules	54
No. of Show-Cause notices/Directions issued to defaulter HCFs/CBWTFs	54

Currently there is 07 no. of CBWTFs is present in the State and 9301.63 kg/day of BMW is treated and disposed through CBWTF. 821 no. of HCFs in the State have captive treatment facility and 2937.635 kg/day of BMW is treated and disposed through captive treatment facilities. 60 no. of occupiers are currently in operation without applying for authorization. 101 no. of occupiers have installed the liquid waste treatment facility. SPCB should rectify the gaps identified in Annual Report.

9.27 Puducherry

No. of HCFs	450
No. of bedded HCFs	126
No. of non-bedded HCFs	324
No. of beds	12,142
No. of CBWTFs	1
No. of HCFs granted authorization	449
No. of HCFs utilizing CBWTFs	449
No. of HCFs having Captive Treatment Facilities	1
No. of Captive Incinerators Operated by HCFs	1
Quantity of BMW generated in kg/day	4,753.8
Quantity of BMW treated in kg/day	4,686.4

No. of HCFs/CBWTFs violated BMW Rules	8
No. of Show-Cause notices/Directions issued to defaulter HCFs/CBWTFs	5

Currently there is 01 CBWTF is present in the State and 4,671 kg/day of biomedical waste is treated and disposed through CBWTF. 01 HCF in the State have captive treatment facility and 15.4 kg/day of biomedical waste is treated and disposed through captive treatment facility. No occupier is currently in operation without applying for authorisation. 35 no. of occupiers have installed the liquid waste treatment facility. SPCB should rectify the gaps identified in Annual Report.

9.28 Punjab

No. of HCFs	15,280
No. of bedded HCFs	4, 601
No. of non-bedded HCFs	10,679
No. of beds	90,569
No. of CBWTFs	6
No. of HCFs granted authorization	2,767
No. of HCFs utilizing CBWTFs	13095
No. of HCFs having Captive Treatment Facilities	0
No. of Captive Incinerators Operated by HCFs	0
Quantity of BMW generated in kg/day	23,582.83
Quantity of BMW treated in kg/day	23,582.83
No. of HCFs/CBWTFs violated BMW Rules	903
No. of Show-Cause notices/Directions issued to defaulter HCFs/CBWTFs	903

Currently there is 06 no. of CBWTFs is present in the State and total generated BMW i.e. 23,583.83 kg/day is treated and disposed through CBWTF and no captive treatment facility present in the State. 1,361 no. of occupiers are currently in operation without applying for the authorization. SPCB should rectify the gaps identified in Annual Report. 11,847 no. of occupiers have installed the liquid waste treatment facility.

9.29 Rajasthan

No. of HCFs	10,346
No. of bedded HCFs	7,128
No. of non-bedded HCFs	3,218
No. of beds	1,89,012
No. of CBWTFs	12
No. of HCFs granted authorization	1,501
No. of HCFs utilizing CBWTFs	9,258

No. of HCFs having Captive Treatment Facilities	598
No. of Captive Incinerators Operated by HCFs	0
Quantity of BMW generated in kg/day	19,907.64
Quantity of BMW treated in kg/day	19,907.64
No. of HCFs/CBWTFs violated BMW Rules	651
No. of Show-Cause notices/Directions issued to defaulter HCFs/CBWTFs	651

Currently there is 12 no. of CBWTFs are present in the State and 19907.64 kg/day of BMW is treated and disposed through CBWTF. 488 occupiers are currently in operation without applying for authorisation. 366 no. of occupiers have installed the liquid waste treatment facility. SPCB should rectify the gaps identified in Annual Report.

9.30 Sikkim

No. of HCFs	344
No. of bedded HCFs	33
No. of non-bedded HCFs	311
No. of beds	2,366
No. of CBWTFs	0
No. of HCFs granted authorization	342
No. of HCFs utilizing CBWTFs	0
No. of HCFs having Captive Treatment Facilities	277
No. of Captive Incinerators Operated by HCFs	7
Quantity of BMW generated in kg/day	586
Quantity of BMW treated in kg/day	586
No. of HCFs/CBWTFs violated BMW Rules	4
No. of Show-Cause notices/Directions issued to defaulter HCFs/CBWTFs	4

Currently there are no CBWTF present in the State. The generated waste i.e. 586 kg/day is treated using captive treatment facility including deep burial pits by the HCF. 02 no. of occupiers are operating without applying for authorization. 46 occupiers have installed the liquid waste treatment facility. SPCB should rectify the gaps identified in Annual Report and expedite the process of establishment of CBWTF.

9.31 Tamil Nadu

No. of HCFs	30,230
No. of bedded HCFs	8,127
No. of non-bedded HCFs	22,103
No. of beds	2,04,717
No. of CBWTFs	11

No. of HCFs granted authorization	30,163
No. of HCFs utilizing CBWTFs	29,871
No. of HCFs having Captive Treatment Facilities	0
No. of Captive Incinerators Operated by HCFs	0
Quantity of BMW generated in kg/day	59,261.04
Quantity of BMW treated in kg/day	59,261.04
No. of HCFs/CBWTFs violated BMW Rules	0
No. of Show-Cause notices/Directions issued to defaulter HCFs/CBWTFs	0

Currently there is 11 no. of CBWTFs are present in the State and total generated biomedical waste i.e. 59261.04 kg/day is treated and disposed through CBWTF and no captive treatment facility present in the State. 6248 no. of occupiers have installed liquid waste treatment facility. SPCB should rectify the gaps identified in Annual Report.

9.32 Telangana

No. of HCFs	10,292
No. of bedded HCFs	5,386
No. of non-bedded HCFs	4,906
No. of beds	1,43,313
No. of CBWTFs	11
No. of HCFs granted authorization	5,553
No. of HCFs utilizing CBWTFs	10,292
No. of HCFs having Captive Treatment Facilities	0
No. of Captive Incinerators Operated by HCFs	0
Quantity of BMW generated in kg/day	26,316
Quantity of BMW treated in kg/day	26,316
No. of HCFs/CBWTFs violated BMW Rules	232
No. of Show-Cause notices/Directions issued to defaulter HCFs/CBWTFs	232

Currently there is 11 no. of CBWTFs are present in the State and total generated BMW i.e. 26,316 kg/day is treated and disposed through CBWTF and no captive treatment facility present in the State. 62 no. occupiers are currently in operation without applying for the authorisation. 1,908 occupiers have installed liquid waste treatment facility. SPCB should rectify the gaps identified in Annual Report

9.33 Tripura

No. of HCFs	1,986
No. of bedded HCFs	156
No. of non-bedded HCFs	1,830

No. of beds	4,798
No. of CBWTFs	01
No. of HCFs granted authorization	127
No. of HCFs utilizing CBWTFs	123
No. of HCFs having Captive Treatment Facilities	120
No. of Captive Incinerators Operated by HCFs	4
Quantity of BMW generated in kg/day	1789.97
Quantity of BMW treated in kg/day	1789.97
No. of HCFs/CBWTFs violated BMW Rules	0
No. of Show-Cause notices/Directions issued to defaulter HCFs/CBWTFs	0

Currently there is 01 no. of CBWTF is present in the State and 286.57 kg/day of BMW is treated and disposed through CBWTF. 120 no. of HCFs in the State have captive treatment facility and 1503.4 kg/day of BMW is treated and disposed through captive treatment facility. No occupiers are currently in operation without applying for authorisation. 36 no. of occupiers have installed the liquid waste treatment facility. SPCB should rectify the gaps identified in Annual Report.

9.34 Uttarakhand

No. of HCFs	6,636
No. of bedded HCFs	1,949
No. of non-bedded HCFs	4,687
No. of beds	32,985
No. of CBWTFs	2
No. of HCFs granted authorization	5,899
No. of HCFs utilizing CBWTFs	2,955
No. of HCFs having Captive Treatment Facilities	2750
No. of Captive Incinerators Operated by HCFs	2
Quantity of BMW generated in kg/day	8776.51
Quantity of BMW treated in kg/day	8776.51
No. of HCFs/CBWTFs violated BMW Rules	584
No. of Show-Cause notices/Directions issued to defaulter HCFs/CBWTFs	107

Currently there is 02 no. of CBWTFs are present in the State and 6804.7 kg/day of BMW is treated and disposed through CBWTF. 2750 no. of HCFs in the State have captive treatment facility and 1972 kg/day of BMW is treated and disposed through captive treatment facility. 580 no. of occupiers are currently in operation without applying for authorization. 263 no. of occupiers have installed the liquid waste treatment facility. SPCB should rectify the gaps identified in Annual Report.

9.35 Uttar Pradesh

No. of HCFs	43,860
No. of bedded HCFs	23,856
No. of non-bedded HCFs	20,004
No. of beds	4,27,372
No. of CBWTFs	25
No. of HCFs granted authorization	15,168
No. of HCFs utilizing CBWTFs	22,541
No. of HCFs having Captive Treatment Facilities	149
No. of Captive Incinerators Operated by HCFs	8
Quantity of BMW generated in kg/day	99115.08
Quantity of BMW treated in kg/day	99115.08
No. of HCFs/CBWTFs violated BMW Rules	3503
No. of Show-Cause notices/Directions issued to defaulter HCFs/CBWTFs	839

Currently there are 25 no. of CBWTFs are present in the State and 99115.08 kg/day of biomedical waste is treated and disposed through CBWTF. There are 01 CBWTF currently under construction. 149 no. of HCFs in the State have captive treatment facility and 99115.08 kg/day of biomedical waste is treated and disposed through captive treatment facility. 355 no. of occupiers have installed the liquid waste treatment facility. SPCB should rectify the gaps identified in Annual Report.

9.36 West Bengal

No. of HCFs	9,927
No. of bedded HCFs	3,209
No. of non-bedded HCFs	6,718
No. of beds	1,68,323
No. of CBWTFs	8
No. of HCFs granted authorization	9,927
No. of HCFs utilizing CBWTFs	9,927
No. of HCFs having Captive Treatment Facilities	0
No. of Captive Incinerators Operated by HCFs	0
Quantity of BMW generated in kg/day	43120.87
Quantity of BMW treated in kg/day	43120.87
No. of HCFs/CBWTFs violated BMW Rules	257
No. of Show-Cause notices/Directions issued to defaulter HCFs/CBWTFs	257

Currently 08 no. of CBWTFs are present in the State and 43120.87 kg/day of biomedical waste is treated and disposed through CBWTF. There are 06 no. of CBWTFs currently under construction. No HCF in the State have captive treatment facility. No occupiers are currently in operation without applying for authorisation. 1,206 no. of occupiers have installed the liquid waste treatment facility. SPCB should rectify the gaps identified in Annual Report.

s.no.	Name of the State/UT	Total no. of Bedded Health Care Facilities (HCFs)	Total no. of Non-bedded Health Care Facilities (HCFs)	Total no. Health Care Facilities (HCFs)	Total no. of Beds	Authorization Status			No. of HCFs utilization CBWTFs	Total Quantity of BMW generated (kg/day)	Total Quantity of BMW Treated and Disposed (kg/day)	Captive BMW Treatment Facilities Operated by the (HCFs		Common Bio-medical Waste Treatment Facilities (CBWTFs)		Deep burial installed by HCF & CBWTFs		Total BMW treated by captive treatment facilities by HCF in Kg/day	Total BMW treated by CBWTFs kg/day)	Total no. of violation by HCFs & CBWTFs	Total No. of Show Cause notice issued to HCFs/CBWTFs	No. of CBWTFs that have installed COEMS
						Total no. of HCFs applied for authorization	Total no. of HCFs granted authorization	Total no. of HCFs in operation without Authorization				No. of HCFs having Captive Treatment Facilities	No of Captive Incinerators Operated by HCFs	CBWTFs Operational	CBWTFs under Construction	HCF	CBWTFs					
I.	II.	III.	IV.	V.	VI.	VII.	VIII.	IX.	X.	XII.	XIII.	XVI.	XV.	XVI.	XVII.	XVIII.	XIX.	XX.	XXI.	XXII.	XXIII.	XXIV.
1	Andaman Nicobar	87	198	285	1328	285	145	INP	0	452.79	452.79	6	6	0	0	7	0	452.79	0	5	5	0
2	Andhra Pradesh	7687	6627	14314	168043	3220	3218	1190	13804	17784.12	17784.12	0	0	12	0	0	0	0	17784.118	1194	1194	12
3	Arunachal Pradesh	126	324	450	1839	450	443	60	0	185.85	185.85	443	7	0	0	207	0	185.85	0	60	60	0
4	Assam	675	883	1558	29265	1089	602	469	464	8084	7068	423	INP	2	1	135	0	3024	4044	0	0	1
5	Bihar	6781	19691	26472	104943	2763	2427	1892	9262	26061.35	14701.9	1	1	4	0	NIL	NIL	143.52	14558.38	316	316	4
6	Chandigarh	50	900	950	4952	46	46	0	950	6347	6347	0	0	1	0	0	0	0	6347	0		1
7	Chhattisgarh	2498	4732	7230	54987	2687	2462	INP	3528	9418.28	9418.28	2270	INP	5	2	2720	7	1414.31	8003.97	12	9	3
8	Daman &Diu and Dadra & Nagar Haveli	83	136	219	1476	130	118	NIL	222	358.03	358.03	NIL	0	Utilizing CBWTF of Gujarat	NIL	0	0	NIL	358.03	NIL	16	Utilising gujarat facility
9	Delhi	1209	9765	10974	61581	1277	1166	INP	10974	31692	31692	1	0	2	0	0	0	491.8	31201	0	0	2
10	Goa	107	761	868	5121	423	341	NIL	838	2136.09	2136.09	0	0	1	0	0	0	0	2136.09	51	51	1
11	Gujarat	13124	24272	37396	242421	5227	4877	4373	37322	51823	51823	0	0	21	0	0	0	0	51823	661	661	21
12	Haryana	3708	3939	7647	71598	7426	7229	221	7647	22332.96	22332.96	0	0	11	0	0	0	0	22332.96	221	231	11
13	Himachal Pradesh	652	9104	9756	19615	9602	9383	154	5303	4092.44	4092.44	4454	1	4	0	4453	0	123.47	3968.96	16	16	4
14	Jharkhand	1355	1096	2451	36268	778	222	480	2076	6394.32	6338.65	2	2	5	1	144	0	341.46	5997.18	361	361	4
15	J & K	1829	6036	7865	18550	1375	722	6490	2513	8819.27	8819.27	0	0	3	1	1128	0	0	8819.27	6491	129	3
16	Karnataka	10183	44411	54594	243071	5628	5313	4734	29013	74013.82	45738	1581	1	26	1	1581	NIL	982	44756	1808	415	26
17	Kerala	2182	22014	24196	128955	22241	21823	1383	18463	68122.53	62329.89	41	13	2	1	30	0	1360.327	60969.57	165	165	1
18	Ladakh	334	68	402	1046	3	2	399	NIL	81.37	81.37	402	2	NIL	NIL	400	0	81.37	0	399	399	0

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I.	II.	III.	IV.	V.	VI.	VII.	VIII.	IX.	X.	XII.	XIII.	XVI.	XV.	XVI.	XVII.	XVIII.	XIX.	XX.	XXI.	XXII.	XXIII.	XXIV.
19	Lakshadweep	10	28	38	270	48	48	NIL	NIL	59.65	59.65	10	1	0	0	3	0	59.65	0	NIL	NIL	NIL
20	Madhya Pradesh	4424	7561	11985	147165	5822	5724	1672	9234	16681.7	16092.61	1	1	19	4	0	3	92.11	16000.5	1641	803	19
21	Maharashtra	22783	53630	76413	358789	2173	2173	3788	58515	77862	77862	255	0	30	8	255	0	528	77333	483	199	30
22	Manipur	206	725	931	5393	931	931	NIL	408	1680.7	1166.14	421	2	1	NIL	INP	NIL	599.94	566.2	1	NIL	1
23	Meghalaya	193	1101	1294	8186	1118	1117	176	115	2257.039	2257.04	403	0	1	0	781	0	1348.216	908.82	0	0	1
24	Mizoram	82	311	393	3610	90	90	0	0	620.42	468.42	371	3	0	1	368	0	468.42	0	0	0	0
25	Nagaland	245	397	642	3681	642	642	NIL	NIL	1035.88	64.3	2	2	NIL	NIL	474	NIL	64.3	NIL	NIL	NIL	NIL
26	Odisha	1722	4164	5886	55457	2025	1644	60	5065	12239	12239	821	0	7	NIL	821	7	2937.365	9301.635	54	54	7
27	Puducherry	126	324	450	12142	450	449	0	449	4753.8	4686.4	1	1	1	0	0	0	15.4	4671	8	5	1
28	Punjab	4601	10679	15280	90569	3826	2767	1361	13095	23582.83	23582.83	0	0	6	0	0	0	0	23582.83	903	903	6
29	Rajasthan	7128	3218	10346	189012	1600	1501	488	9258	19907.64	19907.64	598	0	12	0	598	0	1834.33	18073.31	651	651	12
30	Sikkim	33	311	344	2366	344	342	NIL	0	586	586	277	7	0	0	188	0	586	0	4	4	0
31	Tamil Nadu	8127	22103	30230	204717	30230	30163	0	30230	59261.04	59261.04	0	0	11	1	0	0	0	59261.04	NIL	NIL	11
32	Telengana	5386	4906	10292	143313	5638	5553	62	10292	26316	26316	0	0	11	0	0	0	0	26316	232	232	11
33	Tripura	156	1830	1986	4798	127	127	0	123	1789.97	1789.97	120	4	1	0	68	0	1503.4	286.57	0	NA	1
34	Uttarakhand	1949	4687	6636	32985	6048	5899	580	2955	8776.51	8776.51	2750	2	2	2	2749	0	1972	6804.7	584	107	2

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I.	II.	III.	IV.	V.	VI.	VII.	VIII.	IX.	X.	XII.	XIII.	XVI.	XV.	XVI.	XVII.	XVIII.	XIX.	XX.	XXI.	XXII.	XXIII.	XXIV.
35	Uttar Pradesh	23856	20004	43860	427372	15942	15168	3983	22541	99115.08	99115.08	149	8	25	1	325	0	1515.3	97599.7	3503	839	25
36	West Bengal	3209	6718	9927	168323	9927	9927	0	9927	43120.87	43120.87	0	0	8	6	0	0	0	43120.87	257	257	8
37	DGAFMS	226	471	697	38640	101	101	0	0	5302.182	5302.182	67	0	0	0		0	531.303	4770.879	0	0	0
	total	137132	298125	435257	3091847	151732	144905	34015	314586	743147.52	694353.33	15870	64	234	30	17435	17	22656.63	671696.59	20081	8082	229

सत्यमेव जयते

Government of India
Ministry of Environment, Forest and Climate Change
(Issued by the State Environment Impact Assessment Authority (SEIAA), ASSAM)
***

Minutes of 45th SEIAA Meeting (INFRA) State Environment Impact Assessment A uthority meeting held from 02/08/2025 to 02/08/2025

Date: 06/08/2025

MoM ID: EC/MOM/SEIAA/600945/8/2025

Agenda ID: EC/AGENDA/SEIAA/600945/8/2025

Meeting Venue: Conference Hall of 3rd floor, Pollution Control Board, Assam

Meeting Mode: Physical

Date & Time:

02/08/2025	10:30 AM	01:00 PM

1. Opening remarks

The Member Secretary, SEIAA welcomed the Chairman, SEIAA and the Member of the regulatory body. He briefed the house about the agenda for the meeting for deliberation and to expedite disposal of the recommended proposals by SEAC, Assam.

2. Confirmation of the minutes of previous meeting

As per the agenda, the regulatory body duly reviewed the Minutes of the 44th SEIAA Meetings held on 28/07/2025.

3. Details of proposals considered by the committee

Day 1 -02/08/2025

3.1. Agenda Item No 1:

3.1.1. Details of the proposal

M/s. Kaziranga Biotech Private Limited by **KAZIRANGA BIOTECH PRIVATE LIMITED** located at **JORHAT, ASSAM**			
Proposal For		Fresh ToR	
Proposal No	**File No**	**Submission D ate**	**Activity (Schedule Item)**
SIA/AS/INFRA2/540631/2025	SEAC/SEIAA. 4198/2025	21/06/2025	Bio-Medical Waste Treatment Facilities (7(da))

3.1.2. Deliberations by the committee in previous meetings

Date of SEAC 1 :21/07/2025

Deliberations of SEAC 1 :

Requisite documents requiring clearances from the statutory bodies are uploaded including the Form 1, Pre-feasibility Report, proposed ToR etc. The documents as submitted and uploaded by the project Proponent in support of the proposal are scrutinized and placed before the Committee.

The project proponent assisted by other authorized stakeholders and the NABET Accredited Consultant for **Enpro Enviro Tech and Engineer Pvt. Ltd.** has made detailed presentation before the Committee.

It is submitted that since the location of the proposed Project is at **Titabor Industrial Estate, Public Hearing (PH) is exempted as per the EIA Notification, 2006.**

Upon hearing the party and due deliberation the Committee deemed it appropriate to invoke certain conditions in the Standard Terms of Reference (ToR) as under :

Recommendation:

The Committee is of the considered opinion to recommend issue of the ToR by the SEIAA to the project Proponent with the above special conditions in the standard ToR.

3.1.3. Deliberations by the SEIAA in current meetings

TOR is approved for M/s. Kaziranga Biotech Pvt. Ltd. proposes to establish a new Common Bio-Medical Waste Treatment Facility (CBMWTF) at Plot - 1B, Titabor Industrial Estate, Mouza - Thengal, Village - Kundorgaon, District - Jorhat, Assam.

The total area provided/allotted for the facility is 4,050 Sq m out of which an area of about 1608.9 Sq m (39.7 % of the total plot area) will be allocated for Green Belt development with plantation of indigenous species.

As per submitted land record, total project area is 0.405 Ha. Location of the project is within Titabor Industrial Estate. Land has been allotted by the Assam Industrial Development Corporation Ltd. (AIDC Ltd.) for the establishment of CBWTF. Total cost of the project is estimated at Rs 1,000 Lakh.

All other terms & conditions mentioned by SEAC, Assam remain unchanged.

3.1.4. Recommendation of SEIAA

Approved

3.1.5. Details of Terms of Reference

3.1.5.1. Specific

SPECIFIC CONDITIONS BY SEAC

1.	1) For development of Green Belt, the plant species to be planted being tolerant to the air pollution in the area which should invariably be given priority. Preferred plant species, so suitable for the area shall be Safed Siris (*Albizzia procera*), Kadam (*Neolamarckia cadamba*), Ow tenga *(Dillenia indica*), Thekera (*Garcinia morella*), Tepor tenga (*Garcinia xanthochymus*), Bor Thekera (*Garcinia pedunculata*), Cham (*Artocarpus chaplasha*), Bot gos (*Ficus benjamina*), Uriam (*Bischofia javanica*), Ajhar (*Lagerstroemia speciosa*), Chatiana (*Alstonia scholaris*), Hollock (*Termianlia myriocarpa*), Hilikha (*Terminalia chebula*), Leteku (*Baccaurea rammiflora*) etc etc. This shall also be in addition to the local and endemic species of broad leaved evergreen plants of Upper Assam which need to be considered for the purposes. 2) Use of Green Energy around the Project area needs to be proposed. 3) The Company shall tie up with the AEGCL for the CNG under guidance and advice of the PCB to discard use of Fuel wood, Coal etc . 4) Environment Management Plan is required to ensure support by way of livelihood generation to nearby community residing in villages, skill development programme etc. 5) CER activities as committed in the meeting while deliberation for installation/purchase of a special machinery namely MPAES (50% of the total cost not exceeding an amount of **Rs 12.50 Lakh**) required for the purposes of environmental monitoring and management, Hazardous Waste and Solid Waste management monitoring, food and beverage quality monitoring, heavy metal content in tree leaf, tree bark, air particulate, water and soil quality monitoring which shall boost the laboratory activity in the Department of Chemistry and the students shall immensely be benefited in their endeavour and pursuit for environmental studies etc in B Borooah College(Autonomous), Guwahati where in the two Bharat Ratna Awardee of entire Northeast, Sri Gopinath Bordoloi was the founder Principal of the College while Dr Bhupen Hazarika, the legendary personality of Assam was also a former faculty of the College. For the purpose of execution of the CER activity the PP shall contact the Principal, B Borooah College, Guwahati. 6) For the purpose of the EMP budget indicating the activities under the CSR , CER, etc, all the details with the proposed targets in physical terms showing financial expenditures are to be accordingly reflected for each year keeping in view the public demand / requirement for due consideration, deliberation and reasonable pragmatic decisions by the SEAC in due course.

3.1.5.2. Standard

7(da)	**Bio-Medical Waste Treatment Facilities**
Project Details	
1.	Importance and benefits of the project.
1.	Reasons for selecting the site with details of alternate sites examined/rejected/selected on merit with comparative statement and reason/basis for selection. The examination should justify site suitability in terms of environmental damages, resources sustainability associated with selected site as compared to rejected sites. The analysis should include parameters considered along with weightage criteria for short-listing selected site.
1.	The cost of the Project (capital cost and recurring cost) as well as the cost towards implementation of EMP should be clearly spelt out.
1.	Details of various waste management units with capacities for the proposed project. Details of utilities indicating size and capacity to be provided.
1.	List of waste to be handled and their characteristics. Details of temporary storage facility for storage of Bio-medical waste at project site.

1.	Other chemicals and materials required with quantities and storage capacities.
1.	Detailed design of pre-treatment and waste stabilization facility of Biomedical waste.
1.	Project proponents would also submit a write up on how their project proposal conform to the stipulations made in the Bio-Medical Waste Management Rules, 2016 , notified by the MoEF&CC on 28th March, 2016.
1.	Process description along with major equipment and machineries, process flow sheet (quantitative) from Bio-Medical waste material to disposal to be provided.
1.	Details of man-power requirement (regular and contract).
1.	A detailed layout of the project site indicating all the project components.
Road and Traffic	
1.	Submit the details of the road/rail connectivity along with the likely impacts and mitigative measures
1.	Examine the details of transportation of Bio-Medical wastes, and its safety in handling.
Land Environment	
1.	Detailed soil analysis of the site including its permeability, water holding capacity be included.
1.	Submit the present land use and permission required for any conversion such as forest, agriculture etc
1.	Specify the land area and space allotted for each activity proposed within the facility. The area requirements for each activity shall be calculated as per the CPCB guidelines for the specified activity.
1.	Status of the land purchases in terms of land acquisition Act. If acquisition is not complete, stage of the acquisition process and expected time of complete possession of the land.
1.	The EIA would address to the conformity of site to the stipulations as made in the Bio-Medical Waste Management Rules, 2016 and Hazardous and Other Wastes (Management and Trans-boundary Movement) Rules, 2016 and will have a complete chapter indicating conformity to the said rules. NOC shall be obtained from State Pollution Control Board/Committee (SPCB/SPCC) regarding site suitability for establishment of Bio-Medical Waste Treatment Facilities.
1.	Post project reclamation management program with financial allocation.
Environmental Monitoring and Management	
1.	Examine and submit the details of on line pollutant monitoring.
1.	Project proponent must ensure Good Combustion Practice (GCP) to reduce the possibilities of formation of ‘Total dioxins and furans’. In addition, GCP must be coupled with appropriate End-of-the-pipe treatment at low temperature to reduce the emission of ‘Total dioxins and furans’ below the standards. Further, the project proponent must provide detailed Standard operating procedure (SOPs) for sampling and monitoring of ‘Total dioxins and furans’.
1.	Environmental Management Plan should be accompanied with Environmental Monitoring Plan and environmental cost and benefit assessment. Regular monitoring shall be carried out for odour control
1.	Water quality around the landfill site shall be monitored regularly to examine the impact on the ground water.
1.	A detailed draft EIA/EMP report should be prepared in accordance with the above additional TOR and should be

	submitted to the Ministry in accordance with the Notification.
1.	Air Quality Index shall be calculated for base level air quality.
1.	Baseline data on Ground water quality is required.
1.	Possible carbon footprint contribution from each activities and mitigation measures proposed shall be included as part of Environment Management Plan.
Waste Management	
1.	Examine and submit details of the proposed odour control measures.
1.	The storage and handling of Bio-Medical wastes shall be as per the Bio-Medical Waste Management Rules, 2016.
1.	Details of storage and disposal of pre-processing and post-processing rejects/inerts and products. List of proposed end receivers for the rejects/inerts/products should be provided. MoUs to be submitted in this regard.
1.	Details of hazardous/solid waste generation and their management.
Water Environment	
1.	Detailed hydro-geological studies and possible impact if any accidental contamination occurs shall be included.
1.	Examine and submit details of monitoring of water quality around the landfill site.
1.	Examine and submit details of impact on water body and mitigative measures during rainy season.
1.	Details of Drainage of the project up to 5 km radius of study area. If the site is within 1 km radius of any major river, peak and lean season river discharge as well as flood occurrence frequency based on peak rainfall data of the past 30 years. Details of Flood Level of the project site and maximum Flood Level of the river shall also be provided.
Water Management	
1.	Details of effluent treatment and recycling process.
1.	A certificate from the local body supplying water, specifying the total annual water availability with the local authority, the quantity of water already committed, the quantity of water allotted to the project under consideration and the balance water available. This should be specified separately for ground water and surface water sources, ensuring that there is no impact on other users.
Energy Management	
1.	A certificate of adequacy of available power from the agency supplying power to the project along with the load allowed for the project.
Disaster Management Plan	
1.	Submit details of a comprehensive Disaster Management Plan including emergency evacuation during natural and man-made disaster.
1.	Hazard identification and proposed mitigation measures.
Green Belt	

1.	A detailed Plan for green belt development.
Socioeconomic Environment	
1.	Public hearing to be conducted for the project in accordance with provisions of Environmental Impact Assessment Notification, 2006 and the issues raised by the public should be addressed in the Environmental Management Plan. The Public Hearing should be conducted based on the ToR letter issued by the Ministry and not on the basis of Minutes of the Meeting available on the web-site.
1.	The project proponents shall satisfactorily address all the complaints/suggestions that have been received against the project till the date of submission of proposals for Appraisal.
Court Cases	
1.	Details of litigation pending against the project, if any, with direction /order passed by any Court of Law against the Project should be given.
Miscellaneous	
1.	Any further clarification on carrying out the above studies including anticipated impacts due to the project and mitigative measure, project proponent can refer to the model ToR available on Ministry website http://moef.nic.in/Manual/Incinerator

3.2. Agenda Item No 2:

3.2.1. Details of the proposal

Residential Project "Shristi Ananta" by **shristi developers** located at **KAMRUP METRO,ASSAM**			
Proposal For		Fresh EC	
Proposal No	**File No**	**Submission Date**	**Activity (Schedule Item)**
SIA/AS/INFRA2/541942/2025	SEAC/SEIAA.4194/2025	23/06/2025	Building / Construction (8(a))

3.2.2. Deliberations by the committee in previous meetings

Date of SEAC 1 :21/07/2025

Deliberations of SEAC 1 :

Requisite documents requiring clearances from the statutory bodies are uploaded including the EMP, Waste Water Management details, Solid Waste Management Plan, E-waste generation details, Rain Water Harvesting (RWH) system, Drainage Plan, Parking Plan, Disaster Management Plan etc. The NABET accredited consultant for "*Oceao Enviro Management Solutions* (India) Pvt. Ltd" Sri Krishna Panda in presence of the project Proponent has made detailed presentation before the Committee.

Environmental Management Plan with Capital Cost of **Rs 139.50 Lakh** and recurring cost of **Rs 31.00 Lakh** have been proposed involving dust mitigation measures, environmental monitoring, occupational health and safety, greenbelt development, rain water harvesting and awareness programme for environment conservation.

The Committee deliberated upon the matter and also discussed on each of the relevant issues after presentation and under consideration. The Committee after having point-wise clarifications on all the issues relating to environment management and mitigation measures was convinced that on the site inspection for appraisal is not necessary at this stage which could however be taken up by the competent authority in due course of time while issue of CTE/CTO by the PCBA. Considering the above facts and Office Memorandum issued by the Ministry of Environment, Forest and Climate Changes, New Delhi, Govt. of India vide N**o. 21-270/2008-IA.III** dated **19.06.2013** which *inter alia* states that SEIAA/SEAC need not to focus on the other issues which are normally looked after by the concerned local bodies / State Government Departments / SPCBs and, therefore, the SEAC is convinced to recommend for grant of the EC by the SEIAA for the project under the special Specific Conditions stipulated here under.

Recommendation: Recommended for grant of EC.

3.2.3. Deliberations by the SEIAA in current meetings

EC is approved for Commercial and Residential Building Apartment "Shristi Ananta" located at Jyotikuchi, Guwahati Assam is proposed by Amit Kumar Jain (Partner), Shristi Developers.

The plot area of the proposed project is 1.34 Ha. The Built-up Area is 42,829.38 Sq m. As the Plot area is 1.34 ha and the Built up Area of the project is 42,829.38 Sq m apparently above 20,000 Sq m but below 1,50,000 Sq m and therefore the project is considered under Schedule 8(a) of Category-B of the EIA Notification, 2006 as amended.

Distance from the boundary of Deepor Beel Wildlife Sanctuary is 6 KM and the project is apparently free from Wildlife angle as falling under the Regulated activity.

The total estimated cost of the project is Rs 8,500 Lakh.

The proposed Green Belt to be established is earmarked with an area of 0.2685 Ha (20.03% of plot area), which will include Green belt, Avenue plantation and lawn to enhance the aesthetic beauty of site and help combat air and noise pollution.

Numbers of trees proposed to be planted in the green belt development is 168 trees where in an amount of Rs 10.00 Lakh is proposed.

All other terms & conditions mentioned by SEAC, Assam remain unchanged.

3.2.4. Recommendation of SEIAA

Approved

3.2.5. Details of Environment Conditions

3.2.5.1. Specific

SPECIFIC CONDITIONS BY SEAC	
1.	I) For raising of Green Belt around the plot area the PP shall consider and take in to account the species of plants being endemic with evergreen in nature, being of aesthetic value, medicinal value comprising of trees, shrubs, liana with proper labelling for appreciation of the importance of these plants by inmates, occupants, visitors etc. II) The plant species as may be preferred are Cheni chompa (***Artabotrys hexapetalus***), Shatamool (***Asparagus racemosus***), Jasmine (***Cestrum nocturnum***), Kamini Kusum (***Murraya paniculata***), Ashok (***Saraca asoca***), Bakul (***Mimosups elengi***), Nahor (***Mesua ferrea***), Sewali (***Nyctanthes arbor tris tis***), Bael (***Aegle marmelos***), Thuja (***Thuja compacta***), Putranjiba (***Putranjiva roxburghii***), Debadaru (***Polyalthia pendula***), Cycas (***Cycas pectinata***), Haguni lota (***Tinospora cordifolia***) etc etc. III) CER activities as committed in the meeting while deliberation for installation/purchase of a special machinery namely MPAES (50% of the total cost not exceeding an amount of **Rs. 12.50 Lakh**) required for the purposes of environmental monitoring and management, Hazardous Waste and Solid Waste management monitoring, food and beverage quality monitoring, heavy metal content in tree leaf, tree bark, air particulate, water and soil quality monitoring which shall boost the laboratory activity in the Department of Chemistry and the students shall immensely be benefited in their endeavour and pursuit for environmental studies etc in B Borooah College(Autonomous), Guwahati where in the two Bharat Ratna Awardee of entire Northeast, Sri Gopinath Bordoloi was the founder Principal of the College while Dr Bhupen Hazarika, the legendary personality of Assam was also a former faculty of the College. For the purpose of execution of the CER activity the PP shall contact the Principal, B Borooah College, Guwahati. IV) All the above conditions shall form part of the CER activities and shall be complied with in a time bound manner and Half Yearly Compliance Reports (HCR) are mandatory on the part of project Proponent which need to be uploaded on or before 1st June and 1st December of the calendar year in **PARIVESH 2.0 portal**. V) The Proponent shall comply with the conditions of Indian Green Building Council (IGBC) or *GRIHA* (Green Rating for Integrated Habitat Assessment) / LEEDS (Leadership in Energy and Environmental Development Systems). VI) Further, the STP is to be managed by the project Proponent for the period even after handing over the projects to the stakeholders. The PP shall have the necessary AMC with the STP provider for operation and maintenance for a period of at least 10 years at the initial / 1st instance and their maintenance shall be ensured by the PCB, Assam. VII) The Committee felt it expedient that the proponent shall make provision for a ***YOGA Hall*** (Yoga Centre for the inmates specially for the Children, the Women and as well for the ***elderly*** inmates). VIII) Certificate from the Central Ground Water Authority for use of water in the Operational phase needs to be obtained by the Proponent. IX) The cost earmarked for the environmental safeguards contained in the Environment Management Plan (EMP), as approved against the Environment Management Plan, amounting to **Rs 139.50** Lakh as Capital Cost and **Rs 31.00** Lakh as recurring cost per year against each of the components and the Fund for Social aspects under the EMP amounting to **Rs 170.50 Lakh** shall have to be utilized and shall not be diverted for any other purposes and year wise expenditures both in constructional and

	operational phases shall be reported to the PCB, Assam, the SEIAA and the Regional Office, MoEF & CC, GoI, Guwahati along with the break up of expenditures for record and monitoring. X) The PP shall obtain Consent to establish (CTE) and Consent to Operate (CTO) from Pollution Control Board, Assam under the provisions of the Water (Prevention and Control of Pollution) Act, 1974 and Air (Prevention and Control of Pollution) Act, 1981, as applicable before starting of the construction activities and during the construction activities respectively. XI) It shall be bounden on the project Proponent to upload the Half Yearly Compliance Report (HCR) in terms of the guidelines circulated under OM No. IA3-22/1/2022-IA.III Dated 14.06.2024 by the Ministry in the MoEF & CC, GoI.

3.2.5.2. Standard

8(a)	**Building / Construction**
Statutory compliance	
1.	The project proponent shall obtain all necessary clearance/ permission from all relevant agencies including town planning authority before commencement of work. All the construction shall be done in accordance with the local building byelaws.
1.	The approval of the Competent Authority shall be obtained for structural safety of buildings due to earthquakes, adequacy of firefighting equipment etc. as per National Building Code including protection measures from lightening etc.
1.	The project proponent shall obtain forest clearance under the provisions of Forest (Conservation) Act, 1980, in case of the diversion of forest land for non-forest purpose involved in the project.
1.	The project proponent shall obtain clearance from the National Board for Wildlife, if applicable.
1.	The project proponent shall obtain Consent to Establish / Operate under the provisions of Air (Prevention & Control of Pollution) Act, 1981 and the Water (Prevention & Control of Pollution) Act, 1974 from the concerned State Pollution Control Board/ Committee.
1.	The project proponent shall obtain the necessary permission for drawl of ground water / surface water required for the project from the competent authority.
1.	A certificate of adequacy of available power from the agency supplying power to the project along with the load allowed for the project should be obtained.
1.	All other statutory clearances such as the approvals for storage of diesel from Chief Controller of Explosives, Fire Department, Civil Aviation Department shall be obtained, as applicable, by project proponents from the respective competent authorities.
1.	The provisions of the Solid Waste Management Rules, 2016, e-Waste (Management) Rules, 2016, and the Plastics Waste Management Rules, 2016, shall be followed.
1.	The project proponent shall follow the ECBC/ECBC-R prescribed by Bureau of Energy Efficiency, Ministry of Power strictly.
Air quality monitoring and preservation	
1.	Notification GSR 94(E) dated 25.01.2018 of MoEF&CC regarding Mandatory Implementation of Dust Mitigation Measures for Construction and Demolition Activities for projects requiring Environmental Clearance shall be

	complied with.
1.	A management plan shall be drawn up and implemented to contain the current exceedance in ambient air quality at the site.
1.	The project proponent shall install system to carryout Ambient Air Quality monitoring for common/criterion parameters relevant to the main pollutants released (e.g. PM10 and PM2.5) covering upwind and downwind directions during the construction period.
1.	Diesel power generating sets proposed as source of backup power should be of enclosed type and conform to rules made under the Environment (Protection) Act, 1986. The height of stack of DG sets should be equal to the height needed for the combined capacity of all proposed DG sets. Use of low sulphur diesel. The location of the DG sets may be decided with in consultation with State Pollution Control Board.
1.	Construction site shall be adequately barricaded before the construction begins. Dust, smoke & other air pollution prevention measures shall be provided for the building as well as the site. These measures shall include screens for the building under construction, continuous dust/ wind breaking walls all around the site (at least 3-meter height). Plastic/tarpaulin sheet covers shall be provided for vehicles bringing in sand, cement, murram and other construction materials prone to causing dust pollution at the site as well as taking out debris from the site.
1.	Sand, murram, loose soil, cement, stored on site shall be covered adequately so as to prevent dust pollution.
1.	Wet jet shall be provided for grinding and stone cutting.
1.	Unpaved surfaces and loose soil shall be adequately sprinkled with water to suppress dust.
1.	All construction and demolition debris shall be stored at the site (and not dumped on the roads or open spaces outside) before they are properly disposed. All demolition and construction waste shall be managed as per the provisions of the Construction and Demolition Waste Management Rules 2016.
1.	The diesel generator sets to be used during construction phase shall be low sulphur diesel type and shall conform to Environmental (Protection) prescribed for air and noise emission standards.
1.	The gaseous emissions from DG set shall be dispersed through adequate stack height as per CPCB standards. Acoustic enclosure shall be provided to the DG sets to mitigate the noise pollution. Low sulphur diesel shall be used. The location of the DG set and exhaust pipe height shall be as per the provisions of the Central Pollution Control Board (CPCB) norms.
1.	For indoor air quality the ventilation provisions as per National Building Code of India.
Water quality monitoring and preservation	
1.	The natural drain system should be maintained for ensuring unrestricted flow of water. No construction shall be allowed to obstruct the natural drainage through the site, on wetland and water bodies. Check dams, bio-swales, landscape, and other sustainable urban drainage systems (SUDS) are allowed for maintaining the drainage pattern and to harvest rain water.
1.	Buildings shall be designed to follow the natural topography as much as possible. Minimum cutting and filling should be done.
1.	Total fresh water use shall not exceed the proposed requirement as provided in the project details.
1.	The quantity of fresh water usage, water recycling and rainwater harvesting shall be measured and recorded to monitor the water balance as projected by the project proponent. The record shall be submitted to the Regional Office, MoEF&CC along with six monthly Monitoring reports.
1.	A certificate shall be obtained from the local body supplying water, specifying the total annual water availability

	with the local authority, the quantity of water already committed, the quantity of water allotted to the project under consideration and the balance water available. This should be specified separately for ground water and surface water sources, ensuring that there is no impact on other users.
1.	At least 20% of the open spaces as required by the local building bye-laws shall be pervious. Use of Grass pavers, paver blocks with at least 50% opening, landscape etc. would be considered as pervious surface.
1.	Installation of dual pipe plumbing for supplying fresh water for drinking, cooking and bathing etc and other for supply of recycled water for flushing, landscape irrigation, car washing, thermal cooling, conditioning etc. shall be done.
1.	Use of water saving devices/fixtures (viz. low flow flushing systems; use of low flow faucets tap aerators etc) for water conservation shall be incorporated in the building plan.
1.	Separation of grey and black water should be done by the use of dual plumbing system. In case of single stack system separate recirculation lines for flushing by giving dual plumbing system be done.
1.	Water demand during construction should be reduced by use of pre-mixed concrete, curing agents and other best practices referred.
1.	The local bye-law provisions on rain water harvesting should be followed. If local bye-law provision is not available, adequate provision for storage and recharge should be followed as per the Ministry of Urban Development Model Building Byelaws, 2016. Rain water harvesting recharge pits/storage tanks shall be provided for ground water recharging as per the CGWB norms.
1.	A rain water harvesting plan needs to be designed where the recharge bores of minimum one recharge bore per 5,000 square meters of built up area and storage capacity of minimum one day of total fresh water requirement shall be provided. In areas where ground water recharge is not feasible, the rain water should be harvested and stored for reuse. The ground water shall not be withdrawn without approval from the Competent Authority.
1.	All recharge should be limited to shallow aquifer.
1.	No ground water shall be used during construction phase of the project.
1.	Any ground water dewatering should be properly managed and shall conform to the approvals and the guidelines of the CGWA in the matter. Formal approval shall be taken from the CGWA for any ground water abstraction or dewatering.
1.	The quantity of fresh water usage, water recycling and rainwater harvesting shall be measured and recorded to monitor the water balance as projected by the project proponent. The record shall be submitted to the Regional Office, MoEF&CC along with six monthly Monitoring reports.
1.	Sewage shall be treated in the STP with tertiary treatment. The treated effluent from STP shall be recycled/re-used for flushing, AC make up water and gardening. As proposed, no treated water shall be disposed in to municipal drain.
1.	No sewage or untreated effluent water would be discharged through storm water drains.
1.	Onsite sewage treatment of capacity of treating 100% waste water to be installed. The installation of the Sewage Treatment Plant (STP) shall be certified by an independent expert and a report in this regard shall be submitted to the Ministry before the project is commissioned for operation. Treated waste water shall be reused on site for landscape, flushing, cooling tower, and other end-uses. Excess treated water shall be discharged as per statutory norms notified by Ministry of Environment, Forest and Climate Change. Natural treatment systems shall be promoted.
1.	Periodical monitoring of water quality of treated sewage shall be conducted. Necessary measures should be made to mitigate the odour problem from STP.

1.	Sludge from the onsite sewage treatment, including septic tanks, shall be collected, conveyed and disposed as per the Ministry of Urban Development, Central Public Health and Environmental Engineering Organization (CPHEEO) Manual on Sewerage and Sewage Treatment Systems, 2013.
Noise monitoring and prevention	
1.	Ambient noise levels shall conform to residential area/commercial area/industrial area/silence zone both during day and night as per Noise Pollution (Control and Regulation) Rules, 2000. Incremental pollution loads on the ambient air and noise quality shall be closely monitored during construction phase. Adequate measures shall be made to reduce ambient air and noise level during construction phase, so as to conform to the stipulated standards by CPCB / SPCB.
1.	Noise level survey shall be carried as per the prescribed guidelines and report in this regard shall be submitted to Regional Officer of the Ministry as a part of six-monthly compliance report.
1.	Acoustic enclosures for DG sets, noise barriers for ground-run bays, ear plugs for operating personnel shall be implemented as mitigation measures for noise impact due to ground sources.
Energy Conservation measures	
1.	Compliance with the Energy Conservation Building Code (ECBC) of Bureau of Energy Efficiency shall be ensured. Buildings in the States which have notified their own ECBC, shall comply with the State ECBC.
1.	Outdoor and common area lighting shall be LED.
1.	Concept of passive solar design that minimize energy consumption in buildings by using design elements, such as building orientation, landscaping, efficient building envelope, appropriate fenestration, increased day lighting design and thermal mass etc. shall be incorporated in the building design. Wall, window, and roof u-values shall be as per ECBC specifications.
1.	Energy conservation measures like installation of CFLs/ LED for the lighting the area outside the building should be integral part of the project design and should be in place before project commissioning.
1.	Solar, wind or other Renewable Energy shall be installed to meet electricity generation equivalent to 1% of the demand load or as per the state level/ local building bye-laws requirement, whichever is higher.
1.	Solar power shall be used for lighting in the apartment to reduce the power load on grid. Separate electric meter shall be installed for solar power. Solar water heating shall be provided to meet 20% of the hot water demand of the commercial and institutional building or as per the requirement of the local building bye-laws, whichever is higher. Residential buildings are also recommended to meet its hot water demand from solar water heaters, as far as possible.
Waste Management	
1.	A certificate from the competent authority handling municipal solid wastes, indicating the existing civic capacities of handling and their adequacy to cater to the M.S.W. generated from project shall be obtained.
1.	Disposal of muck during construction phase shall not create any adverse effect on the neighbouring communities and be disposed taking the necessary precautions for general safety and health aspects of people, only in approved sites with the approval of competent authority.
1.	Separate wet and dry bins must be provided in each unit and at the ground level for facilitating segregation of waste. Solid waste shall be segregated into wet garbage and inert materials.
1.	Organic waste compost/Vermiculture pit/Organic Waste Converter within the premises with a minimum capacity of 0.3 kg /person/day must be installed.

1.	All non-biodegradable waste shall be handed over to authorized recyclers for which a written tie up must be done with the authorized recyclers.
1.	Any hazardous waste generated during construction phase, shall be disposed off as per applicable rules and norms with necessary approvals of the State Pollution Control Board.
1.	Use of environment friendly materials in bricks, blocks and other construction materials, shall be required for at least 20% of the construction material quantity. These include Fly Ash bricks, hollow bricks, AACs, Fly Ash Lime Gypsum blocks, Compressed earth blocks, and other environment friendly materials.
1.	Fly ash should be used as building material in the construction as per the provision of Fly Ash Notification of September, 1999 and amended as on 27th August, 2003 and 25th January, 2016. Ready mixed concrete must be used in building construction.
1.	Any wastes from construction and demolition activities related thereto shall be managed so as to strictly conform to the Construction and Demolition Waste Management Rules, 2016.
1.	Used CFLs and TFLs should be properly collected and disposed off/sent for recycling as per the prevailing guidelines/ rules of the regulatory authority to avoid mercury contamination.
Green Cover	
1.	No tree can be felled/transplant unless exigencies demand. Where absolutely necessary, tree felling shall be with prior permission from the concerned regulatory authority. Old trees should be retained based on girth and age regulations as may be prescribed by the Forest Department. Plantations to be ensured species (cut) to species (planted).
1.	A minimum of 1 tree for every 80 sqm of land should be planted and maintained. The existing trees will be counted for this purpose. The landscape planning should include plantation of native species. The species with heavy foliage, broad leaves and wide canopy cover are desirable. Water intensive and/or invasive species should not be used for landscaping.
1.	Where the trees need to be cut with prior permission from the concerned local Authority, compensatory plantation in the ratio of 1:10 (i.e. planting of 10 trees for every 1 tree that is cut) shall be done and maintained. Plantations to be ensured species (cut) to species (planted). Area for green belt development shall be provided as per the details provided in the project document.
1.	Topsoil should be stripped to a depth of 20 cm from the areas proposed for buildings, roads, paved areas, and external services. It should be stockpiled appropriately in designated areas and reapplied during plantation of the proposed vegetation on site.
Transport	
1.	A comprehensive mobility plan, as per MoUD best practices guidelines (URDPFI), shall be prepared to include motorized, non-motorized, public, and private networks. Road should be designed with due consideration for environment, and safety of users. The road system can be designed with these basic criteria. a. Hierarchy of roads with proper segregation of vehicular and pedestrian traffic. b. Traffic calming measures. c. Proper design of entry and exit points. d. Parking norms as per local regulation.
1.	Vehicles hired for bringing construction material to the site should be in good condition and should have a pollution check certificate and should conform to applicable air and noise emission standards be operated only during non-peak hours.
null	
1.	A detailed traffic management and traffic decongestion plan shall be drawn up to ensure that the current level of service of the roads within a 05 kms radius of the project is maintained and improved upon after the

	implementation of the project. This plan should be based on cumulative impact of all development and increased habitation being carried out or proposed to be carried out by the project or other agencies in this 05 Kms radius of the site in different scenarios of space and time and the traffic management plan shall be duly validated and certified by the State Urban Development department and the P.W.D./ competent authority for road augmentation and shall also have their consent to the implementation of components of the plan which involve the participation of these departments.
Human health issues	
1.	All workers working at the construction site and involved in loading, unloading, carriage of construction material and construction debris or working in any area with dust pollution shall be provided with dust mask.
1.	For indoor air quality the ventilation provisions as per National Building Code of India.
1.	Emergency preparedness plan based on the Hazard identification and Risk Assessment (HIRA) and Disaster Management Plan shall be implemented.
1.	Provision shall be made for the housing of construction labour within the site with all necessary infrastructure and facilities such as fuel for cooking, mobile toilets, mobile STP, safe drinking water, medical health care, crèche etc. The housing may be in the form of temporary structures to be removed after the completion of the project.
1.	Occupational health surveillance of the workers shall be done on a regular basis.
1.	A First Aid Room shall be provided in the project both during construction and operations of the project.
Miscellaneous	
1.	The project proponent shall prominently advertise it at least in two local newspapers of the District or State, of which one shall be in the vernacular language within seven days indicating that the project has been accorded environment clearance and the details of MoEFCC/SEIAA website where it is displayed.
1.	ii. environmental clearance shall be submitted by the project proponents to the Heads of local bodies, Panchayats and Municipal Bodies in addition to the relevant offices of the Government who in turn has to display the same for 30 days from the date of receipt.
1.	The project proponent shall upload the status of compliance of the stipulated environment clearance conditions, including results of monitored data on their website and update the same on half-yearly basis.
1.	The project proponent shall submit six-monthly reports on the status of the compliance of the stipulated environmental conditions on the website of the ministry of Environment, Forest and Climate Change at environment clearance portal.
1.	The company shall have a well laid down environmental policy duly approved by the Board of Directors. The environmental policy should prescribe for standard operating procedures to have proper checks and balances and to bring into focus any infringements/deviation/violation of the environmental/forest/wildlife norms/conditions. The company shall have defined system of reporting infringements/deviation/violation of the environmental/forest/wildlife norms/conditions and/or shareholders/stake holders. The copy of the board resolution in this regard shall be submitted to the MoEF&CC as a part of six-monthly report.
1.	A separate Environmental Cell both at the project and company head quarter level, with qualified personnel shall be set up under the control of senior Executive, who will directly report to the head of the organization.
1.	Action plan for implementing EMP and environmental conditions along with responsibility matrix of the company shall be prepared and shall be duly approved by competent authority. The year wise funds earmarked for environmental protection measures shall be kept in separate account and not to be diverted for any other purpose. Year wise progress of implementation of action plan shall be reported to the Ministry/Regional Office along with the Six Monthly Compliance Report

1.	The project proponent shall submit the environmental statement for each financial year in Form-V to the concerned State Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently and put on the website of the company.
1.	The project proponent shall inform the Regional Office as well as the Ministry, the date of financial closure and final approval of the project by the concerned authorities, commencing the land development work and start of production operation by the project.
1.	The project authorities must strictly adhere to the stipulations made by the State Pollution Control Board and the State Government.
1.	The project proponent shall abide by all the commitments and recommendations made in the EIA/EMP reportand also that during their presentation to the Expert Appraisal Committee.
1.	No further expansion or modifications in the plant shall be carried out without prior approval of the Ministry of Environment, Forest and Climate Change (MoEF&CC).
1.	Concealing factual data or submission of false/fabricated data may result in revocation of this environmental clearance and attract action under the provisions of Environment (Protection) Act, 1986.
1.	The Ministry may revoke or suspend the clearance, if implementation of any of the above conditions is not satisfactory.
1.	The Ministry reserves the right to stipulate additional conditions if found necessary. The Company in a time bound manner shall implement these conditions.
1.	The Regional Office of this Ministry shall monitor compliance of the stipulated conditions. The project authorities should extend full cooperation to the officer (s) of the Regional Office by furnishing the requisite data / information/monitoring reports.
1.	The above conditions shall be enforced, inter-alia under the provisions of the Water (Prevention & Control of Pollution) Act, 1974, the Air (Prevention & Control of Pollution) Act, 1981, the Environment (Protection) Act, 1986, Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016, and the Public Liability Insurance Act, 1991 along with their amendments and Rules and any other orders passed by the Hon'ble Supreme Court of India / High Courts and any other Court of Law relating to the subject matter.
1.	Any appeal against this EC shall lie with the National Green Tribunal, if preferred, within a period of 30 days as prescribed under Section 16 of the National Green Tribunal Act, 2010.
Specific Conditions	
1.	Recommendations of mitigation measures from possible accident shall be implemented based on Risk Assessment studies conducted for worst case scenarios using latest techniques.

3.3. Agenda Item No 3:

3.3.1. Details of the proposal

Construction of New Assembly Complex and MLA Hostel at Dibrugarh, Assam by **LOKESH MAZUMDAR** loca ted at **DIBRUGARH,ASSAM**			
Proposal For		Fresh EC	
Proposal No	**File No**	**Submission Date**	**Activity (Schedule Item)**

SIA/AS/INFRA2/543842/2025	SEAC/SEIAA.4196/2025	16/07/2025	Building / Construction (8(a))

3.3.2. Deliberations by the committee in previous meetings

Date of SEAC 1 :21/07/2025

Deliberations of SEAC 1 :

Requisite documents requiring clearances from the statutory bodies are uploaded including the EMP, Waste Water Management details, Solid Waste Management Plan, E-waste generation details, Rain Water Harvesting (RWH) system, Drainage Plan, Parking Plan, Disaster Management Plan etc. The NABET accredited consultant for ***In Situ Enviro Care*** Sri Ashish Kumar on behalf of the project Proponent has made detailed presentation before the Committee.

The Committee deliberated upon the matter and also discussed on each of the relevant issues after presentation and under consideration.

Considering the above facts and Office Memorandum issued by the Ministry of Environment, Forest and Climate Changes, New Delhi, Govt. of India vide N**o. 21-270/2008-IA.III** dated **19.06.2013** which *inter alia* states that SEIAA/SEAC need not to focus on the other issues which are normally looked after by the concerned local bodies / State Government Departments / SPCBs and, in view of the above proposition the SEAC is convinced to recommend for grant of the EC by the SEIAA for the project involving public welfare and of paramount importance for the state administrative sector in the remote part of the country under the Specific Conditions stipulated here under.

Recommendation: Recommended for grant of EC.

3.3.3. Deliberations by the SEIAA in current meetings

EC is approved for for “Construction of New Assembly Complex and MLA Hostel at Dibrugarh, Assam” and is proposed by the Public Works Department, Government of Assam.

There are in total 3 towers comprising of Assembly building block with canteen (G+2), MLA Hostel block (G+8) and Auditorium block (G+2) along service block. The entrance gate complex with pass office has been provided along with engineering services like Electric Sub Station, UGT, STP, etc.

The plot area of the proposed project is 91,780 Sq m. The Built-up Area (BUA) is 35,975.13 Sq m.

The total estimated cost of the project is Rs 28,403 Lakh.

The proposed Green Belt to be established is earmarked with an area of 46,686.5 Sq m (50.86% of plot area), which will include Greenbelt, Avenue plantation and lawn to enhance the aesthetic beauty of site and help combat air and noise pollution. Numbers of saplings proposed to be planted in the green belt development is 1,440 where in an amount of Rs 10.00 Lakh is proposed.

The PP has submitted that total water demand will be 186 KLD and proposed STP of 210 KLD.

All other terms & conditions mentioned by SEAC, Assam remain unchanged.

AREA STATEMENT

Descriptio	Assembly	MLA Host	Auditoriu	Barrack B	Service Bl

n	Building & Canteen	el Block (126 Capacity)	m Block	lock (480 Capacity)	ock (Pass office, ESS, Gate & Guard room)
No. of Floors	GF+2	GF+8	GF+2	GF+2	GF
Ground Floor	6417.00	1568.01	3059.44	1450.00	1375.00
First Floor	4356.00	1395.15	867.37	1497.00	-
Second Floor	1771.44	1455.59	904.32	1315.59	-
Third Floor	-	1423.87	-	-	-
Fourth Floor	-	1423.87	-	-	-
Fifth Floor	-	1423.87	-	-	-
Sixth Floor	-	1423.87	-	-	-
Seventh Floor	-	1423.87	-	-	-
Eighth Flo	-	1423.87	-	-	-

or					
TOTAL	12544.44	12961.97	4831.13	4262.59	1375.00
Total Buil t-up Area	35,975.13				

PROJECT SALIENT FEATURES

Sl No	Description	Particulars	Unit
GENERAL			
1	Total Plot area	91,780	Sq.m
2	Proposed Built Up Area	35,975.13	Sq.m
3	Max No of Floors	G+8	--
WATER			
4	Total Water Requirement	186.0	KLD
5	Fresh water requirement	116.0	KLD
6	Waste water Generation	170.0	KLD

7	Proposed STP	210.0	KLD
8	Recycled Water	136.0	KLD
PARKING			
9	Total parking area proposed within the project site is 1419.77 Sq.m. comprising o f 64 parking units.		
GREEN AREA			
10	Proposed Green area	46,686.5	Sq.m
POWER DETAILS			
11	Total power requirement	1378	KW
12	DG Sets backup (3 x 625 KVA + 1 x 125 KVA)	2000	KVA

3.3.4. Recommendation of SEIAA

Approved

3.3.5. Details of Environment Conditions

3.3.5.1. Specific

SPECIFIC CONDITIONS BY SEAC		
1.	I)	For raising of Green Belt around the plot area the PP shall consider and take in to account the

species of plants being endemic with evergreen nature, being of aesthetic value, medicinal value comprising of trees, shrubs, liana with proper labelling for appreciation of the importance of these plants by visitors, officials, dignitaries.

II) The plant species as may be preferred are Cheni chompa (***Artabotrys hexapetalus***), Nahor (***Mesua ferrea***), Jasmine (***Cestrum nocturnum***), Kamini Kusum (***Murraya paniculata***), Ashok (***Saraca asoca***), Bakul (***Mimosups elengi***), Hilikha (**Terminalia chebula**), Sewali (***Nyctanthes arbor tris tis***), Thuja (***Thuja compacta***), Kuji Thekera (**G*arcinia morella***), Kao Thekera (***Garcinia cowa***), Putranjiba (***Putranjiva roxburghii***), Debadaru (***Polyalthia pendula***), Amlokhi (***Phyllanthus acidus***), Cycas (***Cycas pectinata***), Saguni lota/Amar lota (***Tinospora cordifolia***) besides other indigenous species of plants of the locality etc etc.

III) As a part of Climate Change mitigation measure the PP shall undertake CER activity by way of activation of the **Timber Treatment and Seasoning Plant** at Makum, Forest Guards' Training School and for the purpose contribute an amount of **Rs 50 Lakh** in consultation with the DFO, Digboi Division (Nodal Officer for the purpose).

IV) All the above conditions shall form part of the CER activity and shall be complied with in a time bound manner and Half Yearly Compliance Reports (HCR) are mandatory on the part of project Proponent which need to be uploaded on or before 1st June and 1st December of the calendar year in PARIVESH 2.0 portal.

V) The Proponent shall comply with the conditions of Indian Green Building Council (IGBC) or *GRIHA* (Green Rating for Integrated Habitat Assessment) / LEEDS (Leadership in Energy and Environmental Development Systems).

VI) The STP is to be managed by the project Proponent for the period even after handing over the projects to the stakeholders. The PP shall have the necessary AMC with the STP provider for operation and maintenance for a period of at least 10 years at the initial / 1st instance and their maintenance shall be ensured by the PCB, Assam.

VII) The Committee felt it expedient that the proponent shall make provision for a ***YOGA Hall*** (Yoga Centre for use by the visitors, officials, specially the Women folk).

VIII) Certificate from the Central Ground Water Authority for use of water in the Operational phase needs to be obtained by the Proponent.

IX) The cost earmarked for the environmental safeguards contained in the Environment Management Plan (EMP), as approved against the Environment Management Plan, amounting to **Rs 100.0** Lakh as Capital Cost and **Rs 45.0** Lakh as recurring cost per year against each of the components and the Fund for Social aspects under the EMP amounting to **Rs 140.0 Lakh** shall have to be utilized and shall not be diverted for any other purposes and year wise expenditures both in constructional and operational phases shall be reported to the PCB, Assam & SEIAA, the Regional Office, MoEF & CC, GoI, Guwahati along with the break up of expenditures for record and monitoring.

X) The PP shall obtain Consent to establish (CTE) and Consent to Operate (CTO) from Pollution Control Board, Assam under the provisions of the Water (Prevention and Control of Pollution) Act, 1974 and Air (Prevention and Control of Pollution) Act, 1981, as applicable before starting of the construction activities and during the construction activities respectively.

XI) The copy of the EC shall be made available/marked to the DFO, Digboi Division for the purpose of implementation and execution of the CER activity within the 1st 6(six) months.

XII) It shall be bounden on the project Proponent to upload the Half Yearly Compliance Report (HCR) in terms of the guidelines circulated under OM No. IA3-22/1/2022-IA.III Dated 14.06.2024 by the Ministry in the MoEF & CC, GoI.

3.3.5.2. Standard

8(a)	**Building / Construction**
Statutory compliance	
1.	The project proponent shall obtain all necessary clearance/ permission from all relevant agencies including town planning authority before commencement of work. All the construction shall be done in accordance with the local building byelaws.
1.	The approval of the Competent Authority shall be obtained for structural safety of buildings due to earthquakes, adequacy of firefighting equipment etc. as per National Building Code including protection measures from lightening etc.
1.	The project proponent shall obtain forest clearance under the provisions of Forest (Conservation) Act, 1980, in case of the diversion of forest land for non-forest purpose involved in the project.
1.	The project proponent shall obtain clearance from the National Board for Wildlife, if applicable.
1.	The project proponent shall obtain Consent to Establish / Operate under the provisions of Air (Prevention & Control of Pollution) Act, 1981 and the Water (Prevention & Control of Pollution) Act, 1974 from the concerned State Pollution Control Board/ Committee.
1.	The project proponent shall obtain the necessary permission for drawl of ground water / surface water required for the project from the competent authority.
1.	A certificate of adequacy of available power from the agency supplying power to the project along with the load allowed for the project should be obtained.
1.	All other statutory clearances such as the approvals for storage of diesel from Chief Controller of Explosives, Fire Department, Civil Aviation Department shall be obtained, as applicable, by project proponents from the respective competent authorities.
1.	The provisions of the Solid Waste Management Rules, 2016, e-Waste (Management) Rules, 2016, and the Plastics Waste Management Rules, 2016, shall be followed.
1.	The project proponent shall follow the ECBC/ECBC-R prescribed by Bureau of Energy Efficiency, Ministry of Power strictly.
Air quality monitoring and preservation	
1.	Notification GSR 94(E) dated 25.01.2018 of MoEF&CC regarding Mandatory Implementation of Dust Mitigation Measures for Construction and Demolition Activities for projects requiring Environmental Clearance shall be complied with.
1.	A management plan shall be drawn up and implemented to contain the current exceedance in ambient air quality at the site.
1.	The project proponent shall install system to carryout Ambient Air Quality monitoring for common/criterion parameters relevant to the main pollutants released (e.g. PM10 and PM2.5) covering upwind and downwind directions during the construction period.
1.	Diesel power generating sets proposed as source of backup power should be of enclosed type and conform to rules made under the Environment (Protection) Act, 1986. The height of stack of DG sets should be equal to the height needed for the combined capacity of all proposed DG sets. Use of low sulphur diesel. The location of the DG sets may be decided with in consultation with State Pollution Control Board.
1.	Construction site shall be adequately barricaded before the construction begins. Dust, smoke & other air pollution

	prevention measures shall be provided for the building as well as the site. These measures shall include screens for the building under construction, continuous dust/ wind breaking walls all around the site (at least 3-meter height). Plastic/tarpaulin sheet covers shall be provided for vehicles bringing in sand, cement, murram and other construction materials prone to causing dust pollution at the site as well as taking out debris from the site.
1.	Sand, murram, loose soil, cement, stored on site shall be covered adequately so as to prevent dust pollution.
1.	Wet jet shall be provided for grinding and stone cutting.
1.	Unpaved surfaces and loose soil shall be adequately sprinkled with water to suppress dust.
1.	All construction and demolition debris shall be stored at the site (and not dumped on the roads or open spaces outside) before they are properly disposed. All demolition and construction waste shall be managed as per the provisions of the Construction and Demolition Waste Management Rules 2016.
1.	The diesel generator sets to be used during construction phase shall be low sulphur diesel type and shall conform to Environmental (Protection) prescribed for air and noise emission standards.
1.	The gaseous emissions from DG set shall be dispersed through adequate stack height as per CPCB standards. Acoustic enclosure shall be provided to the DG sets to mitigate the noise pollution. Low sulphur diesel shall be used. The location of the DG set and exhaust pipe height shall be as per the provisions of the Central Pollution Control Board (CPCB) norms.
1.	For indoor air quality the ventilation provisions as per National Building Code of India.
Water quality monitoring and preservation	
1.	The natural drain system should be maintained for ensuring unrestricted flow of water. No construction shall be allowed to obstruct the natural drainage through the site, on wetland and water bodies. Check dams, bio-swales, landscape, and other sustainable urban drainage systems (SUDS) are allowed for maintaining the drainage pattern and to harvest rain water.
1.	Buildings shall be designed to follow the natural topography as much as possible. Minimum cutting and filling should be done.
1.	Total fresh water use shall not exceed the proposed requirement as provided in the project details.
1.	The quantity of fresh water usage, water recycling and rainwater harvesting shall be measured and recorded to monitor the water balance as projected by the project proponent. The record shall be submitted to the Regional Office, MoEF&CC along with six monthly Monitoring reports.
1.	A certificate shall be obtained from the local body supplying water, specifying the total annual water availability with the local authority, the quantity of water already committed, the quantity of water allotted to the project under consideration and the balance water available. This should be specified separately for ground water and surface water sources, ensuring that there is no impact on other users.
1.	At least 20% of the open spaces as required by the local building bye-laws shall be pervious. Use of Grass pavers, paver blocks with at least 50% opening, landscape etc. would be considered as pervious surface.
1.	Installation of dual pipe plumbing for supplying fresh water for drinking, cooking and bathing etc and other for supply of recycled water for flushing, landscape irrigation, car washing, thermal cooling, conditioning etc. shall be done.
1.	Use of water saving devices/fixtures (viz. low flow flushing systems; use of low flow faucets tap aerators etc) for water conservation shall be incorporated in the building plan.
1.	Separation of grey and black water should be done by the use of dual plumbing system. In case of single stack

	system separate recirculation lines for flushing by giving dual plumbing system be done.
1.	Water demand during construction should be reduced by use of pre-mixed concrete, curing agents and other best practices referred.
1.	The local bye-law provisions on rain water harvesting should be followed. If local bye-law provision is not available, adequate provision for storage and recharge should be followed as per the Ministry of Urban Development Model Building Byelaws, 2016. Rain water harvesting recharge pits/storage tanks shall be provided for ground water recharging as per the CGWB norms.
1.	A rain water harvesting plan needs to be designed where the recharge bores of minimum one recharge bore per 5,000 square meters of built up area and storage capacity of minimum one day of total fresh water requirement shall be provided. In areas where ground water recharge is not feasible, the rain water should be harvested and stored for reuse. The ground water shall not be withdrawn without approval from the Competent Authority.
1.	All recharge should be limited to shallow aquifer.
1.	No ground water shall be used during construction phase of the project.
1.	Any ground water dewatering should be properly managed and shall conform to the approvals and the guidelines of the CGWA in the matter. Formal approval shall be taken from the CGWA for any ground water abstraction or dewatering.
1.	The quantity of fresh water usage, water recycling and rainwater harvesting shall be measured and recorded to monitor the water balance as projected by the project proponent. The record shall be submitted to the Regional Office, MoEF&CC along with six monthly Monitoring reports.
1.	Sewage shall be treated in the STP with tertiary treatment. The treated effluent from STP shall be recycled/re-used for flushing, AC make up water and gardening. As proposed, no treated water shall be disposed in to municipal drain.
1.	No sewage or untreated effluent water would be discharged through storm water drains.
1.	Onsite sewage treatment of capacity of treating 100% waste water to be installed. The installation of the Sewage Treatment Plant (STP) shall be certified by an independent expert and a report in this regard shall be submitted to the Ministry before the project is commissioned for operation. Treated waste water shall be reused on site for landscape, flushing, cooling tower, and other end-uses. Excess treated water shall be discharged as per statutory norms notified by Ministry of Environment, Forest and Climate Change. Natural treatment systems shall be promoted.
1.	Periodical monitoring of water quality of treated sewage shall be conducted. Necessary measures should be made to mitigate the odour problem from STP.
1.	Sludge from the onsite sewage treatment, including septic tanks, shall be collected, conveyed and disposed as per the Ministry of Urban Development, Central Public Health and Environmental Engineering Organization (CPHEEO) Manual on Sewerage and Sewage Treatment Systems, 2013.
Noise monitoring and prevention	
1.	Ambient noise levels shall conform to residential area/commercial area/industrial area/silence zone both during day and night as per Noise Pollution (Control and Regulation) Rules, 2000. Incremental pollution loads on the ambient air and noise quality shall be closely monitored during construction phase. Adequate measures shall be made to reduce ambient air and noise level during construction phase, so as to conform to the stipulated standards by CPCB / SPCB.
1.	Noise level survey shall be carried as per the prescribed guidelines and report in this regard shall be submitted to Regional Officer of the Ministry as a part of six-monthly compliance report.

1.	Acoustic enclosures for DG sets, noise barriers for ground-run bays, ear plugs for operating personnel shall be implemented as mitigation measures for noise impact due to ground sources.
Energy Conservation measures	
1.	Compliance with the Energy Conservation Building Code (ECBC) of Bureau of Energy Efficiency shall be ensured. Buildings in the States which have notified their own ECBC, shall comply with the State ECBC.
1.	Outdoor and common area lighting shall be LED.
1.	Concept of passive solar design that minimize energy consumption in buildings by using design elements, such as building orientation, landscaping, efficient building envelope, appropriate fenestration, increased day lighting design and thermal mass etc. shall be incorporated in the building design. Wall, window, and roof u-values shall be as per ECBC specifications.
1.	Energy conservation measures like installation of CFLs/ LED for the lighting the area outside the building should be integral part of the project design and should be in place before project commissioning.
1.	Solar, wind or other Renewable Energy shall be installed to meet electricity generation equivalent to 1% of the demand load or as per the state level/ local building bye-laws requirement, whichever is higher.
1.	Solar power shall be used for lighting in the apartment to reduce the power load on grid. Separate electric meter shall be installed for solar power. Solar water heating shall be provided to meet 20% of the hot water demand of the commercial and institutional building or as per the requirement of the local building bye-laws, whichever is higher. Residential buildings are also recommended to meet its hot water demand from solar water heaters, as far as possible.
Waste Management	
1.	A certificate from the competent authority handling municipal solid wastes, indicating the existing civic capacities of handling and their adequacy to cater to the M.S.W. generated from project shall be obtained.
1.	Disposal of muck during construction phase shall not create any adverse effect on the neighbouring communities and be disposed taking the necessary precautions for general safety and health aspects of people, only in approved sites with the approval of competent authority.
1.	Separate wet and dry bins must be provided in each unit and at the ground level for facilitating segregation of waste. Solid waste shall be segregated into wet garbage and inert materials.
1.	Organic waste compost/Vermiculture pit/Organic Waste Converter within the premises with a minimum capacity of 0.3 kg /person/day must be installed.
1.	All non-biodegradable waste shall be handed over to authorized recyclers for which a written tie up must be done with the authorized recyclers.
1.	Any hazardous waste generated during construction phase, shall be disposed off as per applicable rules and norms with necessary approvals of the State Pollution Control Board.
1.	Use of environment friendly materials in bricks, blocks and other construction materials, shall be required for at least 20% of the construction material quantity. These include Fly Ash bricks, hollow bricks, AACs, Fly Ash Lime Gypsum blocks, Compressed earth blocks, and other environment friendly materials.
1.	Fly ash should be used as building material in the construction as per the provision of Fly Ash Notification of September, 1999 and amended as on 27th August, 2003 and 25th January, 2016. Ready mixed concrete must be used in building construction.
1.	Any wastes from construction and demolition activities related thereto shall be managed so as to strictly conform

	to the Construction and Demolition Waste Management Rules, 2016.
1.	Used CFLs and TFLs should be properly collected and disposed off/sent for recycling as per the prevailing guidelines/ rules of the regulatory authority to avoid mercury contamination.
Green Cover	
1.	No tree can be felled/transplant unless exigencies demand. Where absolutely necessary, tree felling shall be with prior permission from the concerned regulatory authority. Old trees should be retained based on girth and age regulations as may be prescribed by the Forest Department. Plantations to be ensured species (cut) to species (planted).
1.	A minimum of 1 tree for every 80 sqm of land should be planted and maintained. The existing trees will be counted for this purpose. The landscape planning should include plantation of native species. The species with heavy foliage, broad leaves and wide canopy cover are desirable. Water intensive and/or invasive species should not be used for landscaping.
1.	Where the trees need to be cut with prior permission from the concerned local Authority, compensatory plantation in the ratio of 1:10 (i.e. planting of 10 trees for every 1 tree that is cut) shall be done and maintained. Plantations to be ensured species (cut) to species (planted). Area for green belt development shall be provided as per the details provided in the project document.
1.	Topsoil should be stripped to a depth of 20 cm from the areas proposed for buildings, roads, paved areas, and external services. It should be stockpiled appropriately in designated areas and reapplied during plantation of the proposed vegetation on site.
Transport	
1.	A comprehensive mobility plan, as per MoUD best practices guidelines (URDPFI), shall be prepared to include motorized, non-motorized, public, and private networks. Road should be designed with due consideration for environment, and safety of users. The road system can be designed with these basic criteria. a. Hierarchy of roads with proper segregation of vehicular and pedestrian traffic. b. Traffic calming measures. c. Proper design of entry and exit points. d. Parking norms as per local regulation.
1.	Vehicles hired for bringing construction material to the site should be in good condition and should have a pollution check certificate and should conform to applicable air and noise emission standards be operated only during non-peak hours.
null	
1.	A detailed traffic management and traffic decongestion plan shall be drawn up to ensure that the current level of service of the roads within a 05 kms radius of the project is maintained and improved upon after the implementation of the project. This plan should be based on cumulative impact of all development and increased habitation being carried out or proposed to be carried out by the project or other agencies in this 05 Kms radius of the site in different scenarios of space and time and the traffic management plan shall be duly validated and certified by the State Urban Development department and the P.W.D./ competent authority for road augmentation and shall also have their consent to the implementation of components of the plan which involve the participation of these departments.
Human health issues	
1.	All workers working at the construction site and involved in loading, unloading, carriage of construction material and construction debris or working in any area with dust pollution shall be provided with dust mask.
1.	For indoor air quality the ventilation provisions as per National Building Code of India.
1.	Emergency preparedness plan based on the Hazard identification and Risk Assessment (HIRA) and Disaster

	Management Plan shall be implemented.
1.	Provision shall be made for the housing of construction labour within the site with all necessary infrastructure and facilities such as fuel for cooking, mobile toilets, mobile STP, safe drinking water, medical health care, crèche etc. The housing may be in the form of temporary structures to be removed after the completion of the project.
1.	Occupational health surveillance of the workers shall be done on a regular basis.
1.	A First Aid Room shall be provided in the project both during construction and operations of the project.
Miscellaneous	
1.	The project proponent shall prominently advertise it at least in two local newspapers of the District or State, of which one shall be in the vernacular language within seven days indicating that the project has been accorded environment clearance and the details of MoEFCC/SEIAA website where it is displayed.
1.	ii. environmental clearance shall be submitted by the project proponents to the Heads of local bodies, Panchayats and Municipal Bodies in addition to the relevant offices of the Government who in turn has to display the same for 30 days from the date of receipt.
1.	The project proponent shall upload the status of compliance of the stipulated environment clearance conditions, including results of monitored data on their website and update the same on half-yearly basis.
1.	The project proponent shall submit six-monthly reports on the status of the compliance of the stipulated environmental conditions on the website of the ministry of Environment, Forest and Climate Change at environment clearance portal.
1.	The company shall have a well laid down environmental policy duly approved by the Board of Directors. The environmental policy should prescribe for standard operating procedures to have proper checks and balances and to bring into focus any infringements/deviation/violation of the environmental/forest/wildlife norms/conditions. The company shall have defined system of reporting infringements/deviation/violation of the environmental/forest/wildlife norms/conditions and/or shareholders/stake holders. The copy of the board resolution in this regard shall be submitted to the MoEF&CC as a part of six-monthly report.
1.	A separate Environmental Cell both at the project and company head quarter level, with qualified personnel shall be set up under the control of senior Executive, who will directly report to the head of the organization.
1.	Action plan for implementing EMP and environmental conditions along with responsibility matrix of the company shall be prepared and shall be duly approved by competent authority. The year wise funds earmarked for environmental protection measures shall be kept in separate account and not to be diverted for any other purpose. Year wise progress of implementation of action plan shall be reported to the Ministry/Regional Office along with the Six Monthly Compliance Report
1.	The project proponent shall submit the environmental statement for each financial year in Form-V to the concerned State Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently and put on the website of the company.
1.	The project proponent shall inform the Regional Office as well as the Ministry, the date of financial closure and final approval of the project by the concerned authorities, commencing the land development work and start of production operation by the project.
1.	The project authorities must strictly adhere to the stipulations made by the State Pollution Control Board and the State Government.
1.	The project proponent shall abide by all the commitments and recommendations made in the EIA/EMP reportand also that during their presentation to the Expert Appraisal Committee.

1.	No further expansion or modifications in the plant shall be carried out without prior approval of the Ministry of Environment, Forest and Climate Change (MoEF&CC).
1.	Concealing factual data or submission of false/fabricated data may result in revocation of this environmental clearance and attract action under the provisions of Environment (Protection) Act, 1986.
1.	The Ministry may revoke or suspend the clearance, if implementation of any of the above conditions is not satisfactory.
1.	The Ministry reserves the right to stipulate additional conditions if found necessary. The Company in a time bound manner shall implement these conditions.
1.	The Regional Office of this Ministry shall monitor compliance of the stipulated conditions. The project authorities should extend full cooperation to the officer (s) of the Regional Office by furnishing the requisite data / information/monitoring reports.
1.	The above conditions shall be enforced, inter-alia under the provisions of the Water (Prevention & Control of Pollution) Act, 1974, the Air (Prevention & Control of Pollution) Act, 1981, the Environment (Protection) Act, 1986, Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016, and the Public Liability Insurance Act, 1991 along with their amendments and Rules and any other orders passed by the Hon'ble Supreme Court of India / High Courts and any other Court of Law relating to the subject matter.
1.	Any appeal against this EC shall lie with the National Green Tribunal, if preferred, within a period of 30 days as prescribed under Section 16 of the National Green Tribunal Act, 2010.
Specific Conditions	
1.	Recommendations of mitigation measures from possible accident shall be implemented based on Risk Assessment studies conducted for worst case scenarios using latest techniques.

3.4. Agenda Item No 4:

3.4.1. Details of the proposal

Proposed Kanaklata Baruah University at Gohpur Bholaguri, Biswanath, Assam by **RATAN CHANDRA MOC HAHARY** located at **Biswanath,ASSAM**			
Proposal For		Fresh EC	
Proposal No	**File No**	**Submission Date**	**Activity (Schedule Item)**
SIA/AS/INFRA2/542719/2025	SEAC/SEIAA. 4199/2025	18/07/2025	Building / Construction (8(a))

3.4.2. Deliberations by the committee in previous meetings

Date of SEAC 1 :21/07/2025

Deliberations of SEAC 1 :

Requisite documents requiring clearances from the statutory bodies are uploaded including the EMP, Waste Water Management details, Solid Waste Management Plan, E-waste generation details, Rain Water Harvesting (RWH) system, Drainage Plan, Parking Plan, Disaster Management Plan etc. The NABET accredited consultant for I***n Situ Enviro Care*** Sri Ashish Kumar on behalf of the project Proponent has made detailed presentation before the Committee.

The Committee deliberated upon the matter and also discussed on each of the relevant issues after presentation and under consideration. Considering the above facts and Office Memorandum issued by the Ministry of Environment, Forest and Climate Changes, New Delhi, Govt. of India vide N**o. 21-270/2008-IA.III** dated **19.06.2013** which *inter alia* states that SEIAA/SEAC need not to focus on the other issues which are normally looked after by the concerned local bodies / State Government Departments / SPCBs and, therefore, the SEAC is of the considered opinion to recommend grant of EC in favour of the Proponent.

In view of the above proposition the SEAC is convinced to recommend for grant of the EC by the SEIAA for the project involving the higher Academic Curriculum for the aspiring student community and of priority for the state education sector in the remote part of the country under the Specific Conditions stipulated here under.

Decision : Recommended for grant of EC.

3.4.3. Deliberations by the SEIAA in current meetings

EC is approved for “Kanaklata Baruah University” at Gohpur (Bholaguri), Biswanath district in Assam is proposed by the Executive Engineer, PWD, Building Division, Biswanath as the implementing agency for the project.

SALIENT FEATURES OF THE PROJECT

S. No.	Description	Particulars	Unit
GENERAL			
1	Total Plot area	1177170.29	Sq.m
2	Proposed Built Up Area	68111.42	Sq.m
3	Max No of Flo ors	G+7	--
WATER			
4	Total Water R	407	KLD

	equirement		
5	Fresh water requirement	248	KLD
6	Waste water Generation	358	KLD
7	Proposed STP	410	KLD
8	Proposed ETP	18	KLD
9	Recycled Water	286	KLD
PARKING			
10	Surface Parking Area is 18,043.92 Sq.m. Proposed parking spaces are: 620 ECS		
GREEN AREA			
11	Proposed Green area	1079561.82	Sq.m
POWER DETAILS			
12	Total power requirement	3182	KW
13	DG Sets backup (2 x 700 KVA & 1 x 380 KVA))	1780	KVA

The entire plot of land on which the project construction is proposed for Kanaklata Baruah University is handed over to the Executive Engineer, PWD, Biswanath by the Revenue Department, Government of Assam. The plot area of the proposed project is 11, 77,170.29 Sq m. The Built-up Area is 68,111.42 Sq m. The total estimated cost of the project is Rs 554 Crore.

AREA STATEMENT

Phase - 1					
S.No.	Description	No of B locks	No of Floor	Area (In Sq.m)	Total Area (In Sq.m)
A	Building Work				
1	Academic Block (600 Student)	3	G+3	5007.88	15,023.64
2	Common Lecture Hall Complex (1100 Students)	1	G+1	3753.45	3753.45
3	Double Seater Hostel Block (540 Bed)	3	G+7	9944.56	29833.68
4	Mega Mess	1	G+1	2702.74	2702.74
5	Student Facility Centre	1	G	1250.00	1250.00
6	Vc Residence	1	G+1	554.00	554.00
7	Registrar Residence	1	G+1	376.00	376.00
8	Guest House (36 Bed)	1	G+1	1677.00	1677.80
9	Type IV Residential Quarters (24)	2	G+5	5265.08	10530.16
10	Type III Residential Quarters (24)	1	G+5	2109.95	2109.95
11	Service Block	1	G. F	300.00	300.00
	Total-A _ (Building Works)			33011.46	68111.42

The PP has submitted the copy of approval of the project including the sanction accorded in the Assam Budget 2024-25, Geo-Technical investigation Report, Architectural Drawings and Land documents.

The proposed Green Belt to be established is earmarked with an area of 107.956 ha (91.7 % of plot area), which will include Green belt, Avenue plantation and lawn to enhance the aesthetic beauty of site and help combat air and noise pollution. Numbers of trees proposed to be planted in the green belt development is 800 trees where in an amount of Rs 6.00 Lakh is proposed.

PP submitted that total water demand will be 407 KLD and proposed STP of 410 KLD & 18 KLD ETP.

All other terms & conditions mentioned by SEAC, Assam remain unchanged.

3.4.4. Recommendation of SEIAA

Approved

3.4.5. Details of Environment Conditions

3.4.5.1. Specific

SPECIFIC CONDITIONS BY SEAC	
1.	I) For raising of Green Belt around the plot area the PP shall consider and take in to account the species of plants being endemic with evergreen nature, being of aesthetic value, medicinal value comprising of trees, shrubs, liana with proper labelling for appreciation of the importance of these plants by visitors. II) The plant species as may be preferred are Cheni chompa (***Artabotrys hexapetalus***), Shatamool (***Asparagus racemosus***), Jasmine (***Cestrum nocturnum***), Kamini Kusum (***Murraya paniculata***), Ashok (***Saraca asoca***), Bakul (***Mimosups elengi***), Nahor (***Mesua ferrea***), Sewali (***Nyctanthes arbor tris tis***), Thuja (***Thuja compacta***), Putranjiba (***Putranjiva roxburghii***), Debadaru (***Polyalthia pendula***), Cycas (***Cycas pectinata***), Haguni lota (***Tinospora cordifolia***) etc etc III) As a part of the CER activity, for the benefit of the student community an Herbal Garden within the premises should be developed with Thematic plantations as huge area is reserved for plantation. An amount of **Rs 30 Lakh @ Rs 10 Lakh per Ha** of area for developing the Garden within an area of **3 Ha** should be earmarked. For this purpose assistance of the local DFO of the District should be sought or any other person who is a domain expert in the field. IV) As a part of Climate Change mitigation measure the PP shall undertake CER activity by way of activation of the **Timber Treatment and Seasoning Plant** at Makum, Forest Guards' Training School and for the purpose contribute an amount of **Rs 50 Lakh** in consultation with the DFO, Digboi Division (Nodal Officer for the purpose). V) All the above conditions shall form part of the CER activities and shall be complied with in a time bound manner and Half Yearly Compliance Reports (HCR) are mandatory on the part of project Proponent which need to be uploaded on or before 1st June and 1st December of the calendar year in PARIVESH 2.0 portal. VI) The Proponent shall comply with the conditions of Indian Green Building Council (IGBC) or *GRIHA* (Green Rating for Integrated Habitat Assessment) / LEEDS (Leadership in Energy and Environmental Development Systems). VII) Further, the STP is to be managed by the project Proponent for the period even after handing over the projects to the stakeholders. The PP shall have the necessary AMC with the STP provider for operation and maintenance for a period of at least 10 years at the initial / 1st instance and their

	maintenance shall be ensured by the PCB, Assam. VIII) The Committee felt it expedient that the proponent shall make provision for a ***YOGA Hall*** (Yoga Centre for the students, the inmates and other personnel, Teachers and as well for the elderly inmates). IX) Certificate from the Central Ground Water Authority for use of water in the Operational phase needs to be obtained by the Proponent. X) The cost earmarked for the environmental safeguards contained in the Environment Management Plan (EMP), as approved against the Environment Management Plan, amounting to **Rs 80.0** Lakh as Capital Cost and **Rs 40.0** Lakh as recurring cost per year against each of the components and the Fund for Social aspects under the EMP amounting to **Rs 435.0 Lakh** shall have to be utilized and shall not be diverted for any other purposes and year wise expenditures both in constructional and operational phases shall be reported to the PCB, Assam & SEIAA, the Regional Office, MoEF & CC, GoI, Guwahati along with the break up of expenditures for record and monitoring. XI) The PP shall obtain Consent to establish (CTE) and Consent to Operate (CTO) from Pollution Control Board, Assam under the provisions of the Water (Prevention and Control of Pollution) Act, 1974 and Air (Prevention and Control of Pollution) Act, 1981, as applicable before starting of the construction activities and during the construction activities respectively. XII) The copy of the EC shall be made available/marked to the DFO, Digboi Division for the purpose of implementation and execution of the CER activity within the 1st 6(six) months. XIII) It shall be bounden on the project Proponent to upload the Half Yearly Compliance Report (HCR) in terms of the guidelines circulated under OM No. IA3-22/1/2022-IA.III Dated 14.06.2024 by the Ministry in the MoEF & CC, GoI.

3.4.5.2. Standard

8(a)	**Building / Construction**
Statutory compliance	
1.	The project proponent shall obtain all necessary clearance/ permission from all relevant agencies including town planning authority before commencement of work. All the construction shall be done in accordance with the local building byelaws.
1.	The approval of the Competent Authority shall be obtained for structural safety of buildings due to earthquakes, adequacy of firefighting equipment etc. as per National Building Code including protection measures from lightening etc.
1.	The project proponent shall obtain forest clearance under the provisions of Forest (Conservation) Act, 1980, in case of the diversion of forest land for non-forest purpose involved in the project.
1.	The project proponent shall obtain clearance from the National Board for Wildlife, if applicable.
1.	The project proponent shall obtain Consent to Establish / Operate under the provisions of Air (Prevention & Control of Pollution) Act, 1981 and the Water (Prevention & Control of Pollution) Act, 1974 from the concerned State Pollution Control Board/ Committee.
1.	The project proponent shall obtain the necessary permission for drawl of ground water / surface water required for the project from the competent authority.
1.	A certificate of adequacy of available power from the agency supplying power to the project along with the load allowed for the project should be obtained.

1.	All other statutory clearances such as the approvals for storage of diesel from Chief Controller of Explosives, Fire Department, Civil Aviation Department shall be obtained, as applicable, by project proponents from the respective competent authorities.
1.	The provisions of the Solid Waste Management Rules, 2016, e-Waste (Management) Rules, 2016, and the Plastics Waste Management Rules, 2016, shall be followed.
1.	The project proponent shall follow the ECBC/ECBC-R prescribed by Bureau of Energy Efficiency, Ministry of Power strictly.
Air quality monitoring and preservation	
1.	Notification GSR 94(E) dated 25.01.2018 of MoEF&CC regarding Mandatory Implementation of Dust Mitigation Measures for Construction and Demolition Activities for projects requiring Environmental Clearance shall be complied with.
1.	A management plan shall be drawn up and implemented to contain the current exceedance in ambient air quality at the site.
1.	The project proponent shall install system to carryout Ambient Air Quality monitoring for common/criterion parameters relevant to the main pollutants released (e.g. PM10 and PM2.5) covering upwind and downwind directions during the construction period.
1.	Diesel power generating sets proposed as source of backup power should be of enclosed type and conform to rules made under the Environment (Protection) Act, 1986. The height of stack of DG sets should be equal to the height needed for the combined capacity of all proposed DG sets. Use of low sulphur diesel. The location of the DG sets may be decided with in consultation with State Pollution Control Board.
1.	Construction site shall be adequately barricaded before the construction begins. Dust, smoke & other air pollution prevention measures shall be provided for the building as well as the site. These measures shall include screens for the building under construction, continuous dust/ wind breaking walls all around the site (at least 3-meter height). Plastic/tarpaulin sheet covers shall be provided for vehicles bringing in sand, cement, murram and other construction materials prone to causing dust pollution at the site as well as taking out debris from the site.
1.	Sand, murram, loose soil, cement, stored on site shall be covered adequately so as to prevent dust pollution.
1.	Wet jet shall be provided for grinding and stone cutting.
1.	Unpaved surfaces and loose soil shall be adequately sprinkled with water to suppress dust.
1.	All construction and demolition debris shall be stored at the site (and not dumped on the roads or open spaces outside) before they are properly disposed. All demolition and construction waste shall be managed as per the provisions of the Construction and Demolition Waste Management Rules 2016.
1.	The diesel generator sets to be used during construction phase shall be low sulphur diesel type and shall conform to Environmental (Protection) prescribed for air and noise emission standards.
1.	The gaseous emissions from DG set shall be dispersed through adequate stack height as per CPCB standards. Acoustic enclosure shall be provided to the DG sets to mitigate the noise pollution. Low sulphur diesel shall be used. The location of the DG set and exhaust pipe height shall be as per the provisions of the Central Pollution Control Board (CPCB) norms.
1.	For indoor air quality the ventilation provisions as per National Building Code of India.
Water quality monitoring and preservation	
1.	The natural drain system should be maintained for ensuring unrestricted flow of water. No construction shall be

	allowed to obstruct the natural drainage through the site, on wetland and water bodies. Check dams, bio-swales, landscape, and other sustainable urban drainage systems (SUDS) are allowed for maintaining the drainage pattern and to harvest rain water.
1.	Buildings shall be designed to follow the natural topography as much as possible. Minimum cutting and filling should be done.
1.	Total fresh water use shall not exceed the proposed requirement as provided in the project details.
1.	The quantity of fresh water usage, water recycling and rainwater harvesting shall be measured and recorded to monitor the water balance as projected by the project proponent. The record shall be submitted to the Regional Office, MoEF&CC along with six monthly Monitoring reports.
1.	A certificate shall be obtained from the local body supplying water, specifying the total annual water availability with the local authority, the quantity of water already committed, the quantity of water allotted to the project under consideration and the balance water available. This should be specified separately for ground water and surface water sources, ensuring that there is no impact on other users.
1.	At least 20% of the open spaces as required by the local building bye-laws shall be pervious. Use of Grass pavers, paver blocks with at least 50% opening, landscape etc. would be considered as pervious surface.
1.	Installation of dual pipe plumbing for supplying fresh water for drinking, cooking and bathing etc and other for supply of recycled water for flushing, landscape irrigation, car washing, thermal cooling, conditioning etc. shall be done.
1.	Use of water saving devices/fixtures (viz. low flow flushing systems; use of low flow faucets tap aerators etc) for water conservation shall be incorporated in the building plan.
1.	Separation of grey and black water should be done by the use of dual plumbing system. In case of single stack system separate recirculation lines for flushing by giving dual plumbing system be done.
1.	Water demand during construction should be reduced by use of pre-mixed concrete, curing agents and other best practices referred.
1.	The local bye-law provisions on rain water harvesting should be followed. If local bye-law provision is not available, adequate provision for storage and recharge should be followed as per the Ministry of Urban Development Model Building Byelaws, 2016. Rain water harvesting recharge pits/storage tanks shall be provided for ground water recharging as per the CGWB norms.
1.	A rain water harvesting plan needs to be designed where the recharge bores of minimum one recharge bore per 5,000 square meters of built up area and storage capacity of minimum one day of total fresh water requirement shall be provided. In areas where ground water recharge is not feasible, the rain water should be harvested and stored for reuse. The ground water shall not be withdrawn without approval from the Competent Authority.
1.	All recharge should be limited to shallow aquifer.
1.	No ground water shall be used during construction phase of the project.
1.	Any ground water dewatering should be properly managed and shall conform to the approvals and the guidelines of the CGWA in the matter. Formal approval shall be taken from the CGWA for any ground water abstraction or dewatering.
1.	The quantity of fresh water usage, water recycling and rainwater harvesting shall be measured and recorded to monitor the water balance as projected by the project proponent. The record shall be submitted to the Regional Office, MoEF&CC along with six monthly Monitoring reports.
1.	Sewage shall be treated in the STP with tertiary treatment. The treated effluent from STP shall be recycled/re-used

	for flushing, AC make up water and gardening. As proposed, no treated water shall be disposed in to municipal drain.
1.	No sewage or untreated effluent water would be discharged through storm water drains.
1.	Onsite sewage treatment of capacity of treating 100% waste water to be installed. The installation of the Sewage Treatment Plant (STP) shall be certified by an independent expert and a report in this regard shall be submitted to the Ministry before the project is commissioned for operation. Treated waste water shall be reused on site for landscape, flushing, cooling tower, and other end-uses. Excess treated water shall be discharged as per statutory norms notified by Ministry of Environment, Forest and Climate Change. Natural treatment systems shall be promoted.
1.	Periodical monitoring of water quality of treated sewage shall be conducted. Necessary measures should be made to mitigate the odour problem from STP.
1.	Sludge from the onsite sewage treatment, including septic tanks, shall be collected, conveyed and disposed as per the Ministry of Urban Development, Central Public Health and Environmental Engineering Organization (CPHEEO) Manual on Sewerage and Sewage Treatment Systems, 2013.
Noise monitoring and prevention	
1.	Ambient noise levels shall conform to residential area/commercial area/industrial area/silence zone both during day and night as per Noise Pollution (Control and Regulation) Rules, 2000. Incremental pollution loads on the ambient air and noise quality shall be closely monitored during construction phase. Adequate measures shall be made to reduce ambient air and noise level during construction phase, so as to conform to the stipulated standards by CPCB / SPCB.
1.	Noise level survey shall be carried as per the prescribed guidelines and report in this regard shall be submitted to Regional Officer of the Ministry as a part of six-monthly compliance report.
1.	Acoustic enclosures for DG sets, noise barriers for ground-run bays, ear plugs for operating personnel shall be implemented as mitigation measures for noise impact due to ground sources.
Energy Conservation measures	
1.	Compliance with the Energy Conservation Building Code (ECBC) of Bureau of Energy Efficiency shall be ensured. Buildings in the States which have notified their own ECBC, shall comply with the State ECBC.
1.	Outdoor and common area lighting shall be LED.
1.	Concept of passive solar design that minimize energy consumption in buildings by using design elements, such as building orientation, landscaping, efficient building envelope, appropriate fenestration, increased day lighting design and thermal mass etc. shall be incorporated in the building design. Wall, window, and roof u-values shall be as per ECBC specifications.
1.	Energy conservation measures like installation of CFLs/ LED for the lighting the area outside the building should be integral part of the project design and should be in place before project commissioning.
1.	Solar, wind or other Renewable Energy shall be installed to meet electricity generation equivalent to 1% of the demand load or as per the state level/ local building bye-laws requirement, whichever is higher.
1.	Solar power shall be used for lighting in the apartment to reduce the power load on grid. Separate electric meter shall be installed for solar power. Solar water heating shall be provided to meet 20% of the hot water demand of the commercial and institutional building or as per the requirement of the local building bye-laws, whichever is higher. Residential buildings are also recommended to meet its hot water demand from solar water heaters, as far as possible.

Waste Management	
1.	A certificate from the competent authority handling municipal solid wastes, indicating the existing civic capacities of handling and their adequacy to cater to the M.S.W. generated from project shall be obtained.
1.	Disposal of muck during construction phase shall not create any adverse effect on the neighbouring communities and be disposed taking the necessary precautions for general safety and health aspects of people, only in approved sites with the approval of competent authority.
1.	Separate wet and dry bins must be provided in each unit and at the ground level for facilitating segregation of waste. Solid waste shall be segregated into wet garbage and inert materials.
1.	Organic waste compost/Vermiculture pit/Organic Waste Converter within the premises with a minimum capacity of 0.3 kg /person/day must be installed.
1.	All non-biodegradable waste shall be handed over to authorized recyclers for which a written tie up must be done with the authorized recyclers.
1.	Any hazardous waste generated during construction phase, shall be disposed off as per applicable rules and norms with necessary approvals of the State Pollution Control Board.
1.	Use of environment friendly materials in bricks, blocks and other construction materials, shall be required for at least 20% of the construction material quantity. These include Fly Ash bricks, hollow bricks, AACs, Fly Ash Lime Gypsum blocks, Compressed earth blocks, and other environment friendly materials.
1.	Fly ash should be used as building material in the construction as per the provision of Fly Ash Notification of September, 1999 and amended as on 27th August, 2003 and 25th January, 2016. Ready mixed concrete must be used in building construction.
1.	Any wastes from construction and demolition activities related thereto shall be managed so as to strictly conform to the Construction and Demolition Waste Management Rules, 2016.
1.	Used CFLs and TFLs should be properly collected and disposed off/sent for recycling as per the prevailing guidelines/ rules of the regulatory authority to avoid mercury contamination.
Green Cover	
1.	No tree can be felled/transplant unless exigencies demand. Where absolutely necessary, tree felling shall be with prior permission from the concerned regulatory authority. Old trees should be retained based on girth and age regulations as may be prescribed by the Forest Department. Plantations to be ensured species (cut) to species (planted).
1.	A minimum of 1 tree for every 80 sqm of land should be planted and maintained. The existing trees will be counted for this purpose. The landscape planning should include plantation of native species. The species with heavy foliage, broad leaves and wide canopy cover are desirable. Water intensive and/or invasive species should not be used for landscaping.
1.	Where the trees need to be cut with prior permission from the concerned local Authority, compensatory plantation in the ratio of 1:10 (i.e. planting of 10 trees for every 1 tree that is cut) shall be done and maintained. Plantations to be ensured species (cut) to species (planted). Area for green belt development shall be provided as per the details provided in the project document.
1.	Topsoil should be stripped to a depth of 20 cm from the areas proposed for buildings, roads, paved areas, and external services. It should be stockpiled appropriately in designated areas and reapplied during plantation of the proposed vegetation on site.
Transport	

1.	A comprehensive mobility plan, as per MoUD best practices guidelines (URDPFI), shall be prepared to include motorized, non-motorized, public, and private networks. Road should be designed with due consideration for environment, and safety of users. The road system can be designed with these basic criteria. a. Hierarchy of roads with proper segregation of vehicular and pedestrian traffic. b. Traffic calming measures. c. Proper design of entry and exit points. d. Parking norms as per local regulation.
1.	Vehicles hired for bringing construction material to the site should be in good condition and should have a pollution check certificate and should conform to applicable air and noise emission standards be operated only during non-peak hours.
null	
1.	A detailed traffic management and traffic decongestion plan shall be drawn up to ensure that the current level of service of the roads within a 05 kms radius of the project is maintained and improved upon after the implementation of the project. This plan should be based on cumulative impact of all development and increased habitation being carried out or proposed to be carried out by the project or other agencies in this 05 Kms radius of the site in different scenarios of space and time and the traffic management plan shall be duly validated and certified by the State Urban Development department and the P.W.D./ competent authority for road augmentation and shall also have their consent to the implementation of components of the plan which involve the participation of these departments.
Human health issues	
1.	All workers working at the construction site and involved in loading, unloading, carriage of construction material and construction debris or working in any area with dust pollution shall be provided with dust mask.
1.	For indoor air quality the ventilation provisions as per National Building Code of India.
1.	Emergency preparedness plan based on the Hazard identification and Risk Assessment (HIRA) and Disaster Management Plan shall be implemented.
1.	Provision shall be made for the housing of construction labour within the site with all necessary infrastructure and facilities such as fuel for cooking, mobile toilets, mobile STP, safe drinking water, medical health care, crèche etc. The housing may be in the form of temporary structures to be removed after the completion of the project.
1.	Occupational health surveillance of the workers shall be done on a regular basis.
1.	A First Aid Room shall be provided in the project both during construction and operations of the project.
Miscellaneous	
1.	The project proponent shall prominently advertise it at least in two local newspapers of the District or State, of which one shall be in the vernacular language within seven days indicating that the project has been accorded environment clearance and the details of MoEFCC/SEIAA website where it is displayed.
1.	ii. environmental clearance shall be submitted by the project proponents to the Heads of local bodies, Panchayats and Municipal Bodies in addition to the relevant offices of the Government who in turn has to display the same for 30 days from the date of receipt.
1.	The project proponent shall upload the status of compliance of the stipulated environment clearance conditions, including results of monitored data on their website and update the same on half-yearly basis.
1.	The project proponent shall submit six-monthly reports on the status of the compliance of the stipulated environmental conditions on the website of the ministry of Environment, Forest and Climate Change at environment clearance portal.
1.	The company shall have a well laid down environmental policy duly approved by the Board of Directors. The

	environmental policy should prescribe for standard operating procedures to have proper checks and balances and to bring into focus any infringements/deviation/violation of the environmental/forest/wildlife norms/conditions. The company shall have defined system of reporting infringements/deviation/violation of the environmental/forest/wildlife norms/conditions and/or shareholders/stake holders. The copy of the board resolution in this regard shall be submitted to the MoEF&CC as a part of six-monthly report.
1.	A separate Environmental Cell both at the project and company head quarter level, with qualified personnel shall be set up under the control of senior Executive, who will directly report to the head of the organization.
1.	Action plan for implementing EMP and environmental conditions along with responsibility matrix of the company shall be prepared and shall be duly approved by competent authority. The year wise funds earmarked for environmental protection measures shall be kept in separate account and not to be diverted for any other purpose. Year wise progress of implementation of action plan shall be reported to the Ministry/Regional Office along with the Six Monthly Compliance Report
1.	The project proponent shall submit the environmental statement for each financial year in Form-V to the concerned State Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently and put on the website of the company.
1.	The project proponent shall inform the Regional Office as well as the Ministry, the date of financial closure and final approval of the project by the concerned authorities, commencing the land development work and start of production operation by the project.
1.	The project authorities must strictly adhere to the stipulations made by the State Pollution Control Board and the State Government.
1.	The project proponent shall abide by all the commitments and recommendations made in the EIA/EMP reportand also that during their presentation to the Expert Appraisal Committee.
1.	No further expansion or modifications in the plant shall be carried out without prior approval of the Ministry of Environment, Forest and Climate Change (MoEF&CC).
1.	Concealing factual data or submission of false/fabricated data may result in revocation of this environmental clearance and attract action under the provisions of Environment (Protection) Act, 1986.
1.	The Ministry may revoke or suspend the clearance, if implementation of any of the above conditions is not satisfactory.
1.	The Ministry reserves the right to stipulate additional conditions if found necessary. The Company in a time bound manner shall implement these conditions.
1.	The Regional Office of this Ministry shall monitor compliance of the stipulated conditions. The project authorities should extend full cooperation to the officer (s) of the Regional Office by furnishing the requisite data / information/monitoring reports.
1.	The above conditions shall be enforced, inter-alia under the provisions of the Water (Prevention & Control of Pollution) Act, 1974, the Air (Prevention & Control of Pollution) Act, 1981, the Environment (Protection) Act, 1986, Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016, and the Public Liability Insurance Act, 1991 along with their amendments and Rules and any other orders passed by the Hon'ble Supreme Court of India / High Courts and any other Court of Law relating to the subject matter.
1.	Any appeal against this EC shall lie with the National Green Tribunal, if preferred, within a period of 30 days as prescribed under Section 16 of the National Green Tribunal Act, 2010.
Specific Conditions	
1.	Recommendations of mitigation measures from possible accident shall be implemented based on Risk Assessment

	studies conducted for worst case scenarios using latest techniques.

4. Any Other Item(s)

N/A

5. List of Attendees

Sr. No.	Name	Designation	Email ID	Remarks
1	Rajesh Kemprai	Chairman, SEIAA	env**********@gmail.com	
2	Dr Sarat Phukan	SEIAA Member	sar********@gauhati.ac.in	
3	Sri Ramen Chandra Malakar	Member Secretary, SEIAA	che*******@gmail.com	

Signature Not Verified

Digitally Signed by : Sri Ramen Chandra Malakar
Member Secretary, SEIAA

Date: 07/08/2025

सत्यमेव जयते

File No: SEAC/SEIAA. 4198/2025

Government of India

Ministry of Environment, Forest and Climate Change

(Issued by the State Environment Impact Assessment Authority(SEIAA), ASSAM)

***

Dated **11/08/2025**

To,

Ripunjit Dutta
KAZIRANGA BIOTECH PRIVATE LIMITED
39 pub, Narakasur Path, Kahilipara, Dis-Kamrup Metro, Guwahati - 781019.
kaziranga.biotech@gmail.com

Subject: Grant of Terms of Reference under the provision of the EIA Notification 2006-regarding.

Sir/Madam,

This is in reference to your application for Grant of Terms of Reference under the provision of the EIA Notification 2006-regarding in respect of project M/s. Kaziranga Biotech Private Limited submitted to SEAC & SEIAA vide proposal number SIA/AS/INFRA2/540631/2025 dated .

2. The particulars of the proposal are as below :

(i) TOR Identification No.	TO25B3301AS5383896N
(ii) File No.	SEAC/SEIAA. 4198/2025
(iii) Clearance Type	Fresh ToR
(iv) Category	B1
(v) Project/Activity Included Schedule No.	7(da) Bio-Medical Waste Treatment Facilities
(vii) Name of Project	M/s. Kaziranga Biotech Private Limited
(viii) Name of Company/Organization	KAZIRANGA BIOTECH PRIVATE LIMITED
(ix) Location of Project (District, State)	JORHAT, ASSAM
(x) Issuing Authority	SEIAA
(xi) Applicability of General Conditions	no
(xii) Applicability of Specific Conditions	no

In view of the particulars given in the Para 1 above, the project proposal interalia including Form-1(Part A and B) were submitted to the State Expert Appraisal Committee (SEAC), Assam under the provision of EIA notification 2006 and its subsequent amendments.

The above-mentioned proposal has been considered by State Expert Appraisal Committee (SEAC) in the meeting held on 21/07/2025. The minutes of the meeting and all the Application and documents submitted (viz. Form-1 Part A and Part B) are available on PARIVESH portal which can be accessed by scanning the QR Code above.

The brief about configuration of plant/equipment, products and by products and salient features of the project along with environment settings, as submitted by the Project proponent in Form-1 (Part A and B) /presented during SEIAA are annexed to this EC as Annexure (1).

The SEIAA, in its meeting held on 02/08/2025, based on information & clarifications provided by the project proponent and after detailed deliberations recommended the proposal for grant of Terms of Reference (TOR) under the provision of EIA Notification, 2006 and as amended thereof subject to stipulation of specific and general conditions as detailed in Annexure (2).

The SEAC has examined the proposal in accordance with the Environment Impact Assessment (EIA) Notification, 2006 & further amendments thereto and after recommendations of the SEAC,the State Environment Impact Assessment Authority (SEIAA) hereby decided to grant Terms of Reference (TOR) for instant proposal of **Kaziranga Biotech Private Limited** under the provisions of EIA Notification, 2006 and as amended thereof.

The SEIAA reserves the right to stipulate additional conditions, if found necessary.

The Terms of Reference (TOR) to the aforementioned project is under provisions of EIA Notification, 2006. It does not tantamount to approvals/consent/permissions etc. required to be obtained under any other Act/Rule/regulation. The Project Proponent is under obligation to obtain approvals /clearances under any other Acts/ Regulations or Statutes, as applicable, to the project.

This issues with the approval of the Competent Authority.

TOR is approved for M/s. Kaziranga Biotech Pvt. Ltd. proposes to establish a new Common Bio-Medical Waste Treatment Facility (CBMWTF) at Plot - 1B, Titabor Industrial Estate, Mouza - Thengal, Village - Kundorgaon, District - Jorhat, Assam.

The total area provided/allotted for the facility is 4,050 Sq m out of which an area of about 1608.9 Sq m (39.7 % of the total plot area) will be allocated for Green Belt development with plantation of indigenous species. As per submitted land record, total project area is 0.405 Ha. Location of the project is within Titabor Industrial Estate. Land has been allotted by the Assam Industrial Development Corporation Ltd. (AIDC Ltd.) for the establishment of CBWTF. Total cost of the project is estimated at Rs 1,000 Lakh.

All other terms & conditions mentioned by SEAC, Assam remain unchanged.

Copy To

1. The Joint Secretary, Ministry of Environment, Forest and Climate Change, Government of India, MOEF&CC, Indira Paryavaran Bhawan, Jorbagh Rd, New Delhi-110003.
2. The Secretary to the Govt. of Assam, Environment & Forest Department, Dispur, Guwahati-6 Cum Member Secretary, SEIAA, Assam for favour of kind information.
3. The Member Secretary, PCB Assam for favour of kind information.
4. The Integrated Regional Office, Ministry of Environment, Forest & Climate Change, 4th Floor, Housefed Building, G.S. Road, Rukminigaon, Guwahati-22 for kind information.
5. Office Copy.

Annexure 1

Specific Terms of Reference for (Bio-medical Waste Treatment Facilities)

1. Specific Conditions By Seac

S. No	Terms of Reference
1.1	1) For development of Green Belt, the plant species to be planted being tolerant to the air pollution in the area which should invariably be given priority. Preferred plant species, so suitable for the area shall be Safed Siris (*Albizzia procera*), Kadam (*Neolamarckia cadamba*), Ow tenga *(Dillenia indica*), Thekera (*Garcinia morella*), Tepor tenga (*Garcinia xanthochymus*), Bor Thekera (*Garcinia pedunculata*), Cham (*Artocarpus chaplasha*), Bot gos (*Ficus benjamina*), Uriam (*Bischofia javanica*), Ajhar (*Lagerstroemia speciosa*), Chatiana (*Alstonia scholaris*), Hollock (*Termianlia myriocarpa*), Hilikha (*Terminalia chebula*), Leteku (*Baccaurea rammiflora*) etc etc. This shall also be in addition to the local and endemic species of broad leaved evergreen plants of Upper Assam which need to be considered for the purposes. 2) Use of Green Energy around the Project area needs to be proposed. 3) The Company shall tie up with the AEGCL for the CNG under guidance and advice of the PCB to discard use of Fuel wood, Coal etc . 4) Environment Management Plan is required to ensure support by way of livelihood generation to nearby community residing in villages, skill development programme etc. 5) CER activities as committed in the meeting while deliberation for installation/purchase of a special machinery namely MPAES (50% of the total cost not exceeding an amount of **Rs 12.50 Lakh**) required for the purposes of environmental monitoring and management, Hazardous Waste and Solid Waste management monitoring, food and beverage quality monitoring, heavy metal content in tree leaf, tree bark, air particulate, water and soil quality monitoring which shall boost the laboratory activity in the Department of Chemistry and the students shall immensely be benefited in their endeavour and pursuit for environmental studies etc in B Borooah College(Autonomous), Guwahati where in the two Bharat Ratna Awardee of entire Northeast, Sri Gopinath Bordoloi was the founder Principal of the College while Dr Bhupen Hazarika, the legendary personality of Assam was also a former faculty of the College. For the purpose of execution of the CER activity the PP shall contact the Principal, B Borooah College, Guwahati. 6) For the purpose of the EMP budget indicating the activities under the CSR , CER, etc, all the details with the proposed targets in physical terms showing financial expenditures are to be accordingly reflected for each year keeping in view the public demand / requirement for due consideration, deliberation and reasonable pragmatic decisions by the SEAC in due course.

Standard Terms of Reference for (Bio-Medical Waste Treatment Facilities)

1. Project Details

S. No	Terms of Reference
1.1	Importance and benefits of the project.
1.2	Reasons for selecting the site with details of alternate sites examined/rejected/selected on merit with comparative statement and reason/basis for selection. The examination should justify site suitability in terms of environmental damages, resources sustainability associated with selected site as compared to rejected sites. The analysis should include parameters considered along with weightage criteria for short-listing selected site.
1.3	The cost of the Project (capital cost and recurring cost) as well as the cost towards implementation of EMP should be clearly spelt out.
1.4	Details of various waste management units with capacities for the proposed project. Details of utilities indicating size and capacity to be provided.

S. No	Terms of Reference
1.5	List of waste to be handled and their characteristics. Details of temporary storage facility for storage of Bio-medical waste at project site.
1.6	Other chemicals and materials required with quantities and storage capacities.
1.7	Detailed design of pre-treatment and waste stabilization facility of Biomedical waste.
1.8	Project proponents would also submit a write up on how their project proposal conform to the stipulations made in the Bio-Medical Waste Management Rules, 2016 , notified by the MoEF&CC on 28th March, 2016.
1.9	Process description along with major equipment and machineries, process flow sheet (quantitative) from Bio-Medical waste material to disposal to be provided.
1.10	Details of man-power requirement (regular and contract).
1.11	A detailed layout of the project site indicating all the project components.

2. Road And Traffic

S. No	Terms of Reference
2.1	Submit the details of the road/rail connectivity along with the likely impacts and mitigative measures
2.2	Examine the details of transportation of Bio-Medical wastes, and its safety in handling.

3. Land Environment

S. No	Terms of Reference
3.1	Detailed soil analysis of the site including its permeability, water holding capacity be included.
3.2	Submit the present land use and permission required for any conversion such as forest, agriculture etc
3.3	Specify the land area and space allotted for each activity proposed within the facility. The area requirements for each activity shall be calculated as per the CPCB guidelines for the specified activity.
3.4	Status of the land purchases in terms of land acquisition Act. If acquisition is not complete, stage of the acquisition process and expected time of complete possession of the land.
3.5	The EIA would address to the conformity of site to the stipulations as made in the Bio-Medical Waste Management Rules, 2016 and Hazardous and Other Wastes (Management and Trans-boundary Movement) Rules, 2016 and will have a complete chapter indicating conformity to the said rules. NOC shall be obtained from State Pollution Control Board/Committee (SPCB/SPCC) regarding site suitability for establishment of Bio-Medical Waste Treatment Facilities.

S. No	Terms of Reference
3.6	Post project reclamation management program with financial allocation.

4. Environmental Monitoring And Management

S. No	Terms of Reference
4.1	Examine and submit the details of on line pollutant monitoring.
4.2	Project proponent must ensure Good Combustion Practice (GCP) to reduce the possibilities of formation of 'Total dioxins and furans'. In addition, GCP must be coupled with appropriate End-of-the-pipe treatment at low temperature to reduce the emission of 'Total dioxins and furans' below the standards. Further, the project proponent must provide detailed Standard operating procedure (SOPs) for sampling and monitoring of 'Total dioxins and furans'.
4.3	Environmental Management Plan should be accompanied with Environmental Monitoring Plan and environmental cost and benefit assessment. Regular monitoring shall be carried out for odour control
4.4	Water quality around the landfill site shall be monitored regularly to examine the impact on the ground water.
4.5	A detailed draft EIA/EMP report should be prepared in accordance with the above additional TOR and should be submitted to the Ministry in accordance with the Notification.
4.6	Air Quality Index shall be calculated for base level air quality.
4.7	Baseline data on Ground water quality is required.
4.8	Possible carbon footprint contribution from each activities and mitigation measures proposed shall be included as part of Environment Management Plan.

5. Waste Management

S. No	Terms of Reference
5.1	Examine and submit details of the proposed odour control measures.
5.2	The storage and handling of Bio-Medical wastes shall be as per the Bio-Medical Waste Management Rules, 2016.
5.3	Details of storage and disposal of pre-processing and post-processing rejects/inerts and products. List of proposed end receivers for the rejects/inerts/products should be provided. MoUs to be submitted in this regard.
5.4	Details of hazardous/solid waste generation and their management.

6. Water Environment

S. No	Terms of Reference
6.1	Detailed hydro-geological studies and possible impact if any accidental contamination occurs shall be included.
6.2	Examine and submit details of monitoring of water quality around the landfill site.
6.3	Examine and submit details of impact on water body and mitigative measures during rainy season.
6.4	Details of Drainage of the project up to 5 km radius of study area. If the site is within 1 km radius of any major river, peak and lean season river discharge as well as flood occurrence frequency based on peak rainfall data of the past 30 years. Details of Flood Level of the project site and maximum Flood Level of the river shall also be provided.

7. Water Management

S. No	Terms of Reference
7.1	Details of effluent treatment and recycling process.
7.2	A certificate from the local body supplying water, specifying the total annual water availability with the local authority, the quantity of water already committed, the quantity of water allotted to the project under consideration and the balance water available. This should be specified separately for ground water and surface water sources, ensuring that there is no impact on other users.

8. Energy Management

S. No	Terms of Reference
8.1	A certificate of adequacy of available power from the agency supplying power to the project along with the load allowed for the project.

9. Disaster Management Plan

S. No	Terms of Reference
9.1	Submit details of a comprehensive Disaster Management Plan including emergency evacuation during natural and man-made disaster.
9.2	Hazard identification and proposed mitigation measures.

10. Green Belt

S. No	Terms of Reference
10.1	A detailed Plan for green belt development.

11. Socioeconomic Environment

S. No	Terms of Reference
11.1	Public hearing to be conducted for the project in accordance with provisions of Environmental Impact Assessment Notification, 2006 and the issues raised by the public should be addressed in the Environmental Management Plan. The Public Hearing should be conducted based on the ToR letter issued by the Ministry and not on the basis of Minutes of the Meeting available on the web-site.
11.2	The project proponents shall satisfactorily address all the complaints/suggestions that have been received against the project till the date of submission of proposals for Appraisal.

12. Court Cases

S. No	Terms of Reference
12.1	Details of litigation pending against the project, if any, with direction /order passed by any Court of Law against the Project should be given.

13. Miscellaneous

S. No	Terms of Reference
13.1	Any further clarification on carrying out the above studies including anticipated impacts due to the project and mitigative measure, project proponent can refer to the model ToR available on Ministry website http://moef.nic.in/Manual/Incinerator

Signed by
Ramen Chandra Malakar
Date: 11-08-2025 16:16:56
Reason: Verified and signed

Guidelines for Common Bio-medical Waste Treatment and Disposal Facilities



CENTRAL POLLUTION CONTROL BOARD

(Ministry of Environment, Forest and Climate Change)

Parivesh Bhawan, East Arjun Nagar

DELHI -110 032

website: www.cpcb.nic.in

(April 12, 2025)

Abbreviations

APCD	-	Air Pollution Control Device
BMWM Rules	-	Bio-medical Waste Management Rules, 2016
CBWTF	-	Common Bio-medical Waste Treatment and Disposal Facility
CO	-	Carbon Monoxide
CO_2	-	Carbon Dioxide
CPCB	-	Central Pollution Control Board
CRZ	-	Coastal Regulation Zone
DG	-	Diesel Generator
EC	-	Environmental Clearance
EIA	-	Environment Impact Assessment
ETP	-	Effluent Treatment Plant
GPS	-	Global Positioning System
HCFs	-	Health Care Facilities
HCl	-	Hydrochloric Acid
HOWM & TM Rules	-	Hazardous and Other Waste (Management & Transboundary Movement) Rules, 2016
MHz	-	Mega Hertz
MoEF& CC	-	Ministry of Environment, Forest & Climate Change
KM	-	Kilometer
KW	-	Kilowatt
MoU	-	Memorandum of Understanding
NABL	-	National Accreditation Board for Testing and Laboratories
NO_x	-	Oxides of Nitrogen
O_2	-	Oxygen
PCC	-	Pollution Control Committee
PLC	-	Programmable Logical Control
SEIAA	-	State Environment Impact Assessment Authority
SLF	-	Secured Landfill
SPCB	-	State Pollution Control Board
TSDF	-	Treatment Storage and Disposal Facility
TOC	-	Total Organic Carbon
VOCs	-	Volatile Organic Compounds

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1) Introduction

A Common Bio-medical Waste Treatment and Disposal Facility (CBWTF) is a set up where biomedical waste generated from member health care facilities is imparted necessary treatment to reduce adverse effects that this waste may pose on human health and environment. The treated recyclable waste may finally be sent for disposal in a secured landfill or for recycling.

According to the Bio-medical Waste Management Rules, 2016, "bio-medical waste treatment and disposal facility" means any facility wherein treatment, disposal of bio-medical waste or processes incidental to such treatment and disposal is carried out, and includes common bio-medical waste treatment facilities and "operator of a common bio-medical waste treatment facility" means a person who owns or controls a Common Bio-medical Waste Treatment and Disposal Facility (CBWTF) for the collection, reception, storage, transport, treatment, disposal or any other form of handling of bio-medical waste.

The Bio-medical Waste Management Rules, 2016 (BMWM Rules) restricts occupier for establishment of on-site or captive bio-medical waste treatment and disposal facility, if a service of common bio- medical waste treatment and disposal facility is available within a distance of seventy-five kilometer, as installation of individual treatment facility by health care facility (HCF) requires comparatively high capital investment. In addition, it requires separate dedicated and trained skilled manpower and infrastructure development for proper operation and maintenance of treatment systems. The concept of CBWTF not only addresses such problems but also prevents proliferation of captive treatment facilities in a particular area. In turn, it reduces the monitoring pressure on regulatory agencies. By running the treatment equipment at CBWTF to its full capacity, the cost of treatment of per kilogram of bio-medical waste gets significantly reduced. Its considerable advantages have made CBWTF popular and proven concept in most part of the world.

The CBWTFs are also required to set up based on the need for ensuring environmentally sound management of bio-medical waste keeping in view the techno-economic feasibility and viable operation of the facility with minimal impact on human health and environment.

Since 1998, the CBWTF as an option for treatment of bio-medical waste also been legally introduced in India. Considering the likely impacts that may cause to the

patients undergoing treatment because of operation of the captive treatment equipment within the health care facilities (HCFs), now the Bio-medical Waste Management Rules, 2016 recommends the Occupier (i.e., HCF) for ensuring treatment and disposal of generated bio-medical waste through a CBWTF, located within a distance of 75 KM. Further, these rules eased the bottleneck in upbringing the CBWTF by making department in the business allocation of land assignment in the State or UT administration responsible for providing a suitable site (s) within its jurisdiction.

The concept of CBWTF is also being widely accepted in India among the healthcare units, medical associations and entrepreneurs. In order to set up a CBWTF to its maximum perfection, care shall be taken in choosing the right technology, development of CBWTF area, proper designing of transportation system to achieve optimum results etc. Key features of CBWTF have been addressed in the subsequent sections.

To facilitate the treatment and disposal of bio-medical waste generated from the HCFs, at present (as per Annual Report 2023 submitted by the State Pollution Control Boards/Pollution Control Committees), thereare 234 no. of CBWTFs in operation and 30 no. of CBWTFs are under construction. Also, the Bio-medical Waste Management Rules, 2016 mandates that the operator of a CBWTF authorised by the prescribed authority is required to take all necessary steps to ensure that the bio-medical waste collected from the occupier is transported, handled, stored, treated and disposed of, without any adverse effect to the human health and the environment, in accordance with the BMWM Rules and the guidelines issued by the Central Government or the Central Pollution Control Board (CPCB) from time to time. Therefore, these guidelines have been prepared with an aim to have uniformity in ensuring site selection, allowing and establishment of a state-of-the-art CBWTF, operation as well as verification of compliance to the BMWM Rules, 2016 throughout the country. However, any other aspects which are not been covered under these guidelines and needs attention, in such a case, the prescribed authority may take suitable action in the interest of protection of the environment in consultation with MoEF & CC/CPCB. Also, it is pertinent to mention here that these guidelines are mandatory henceforth under the Bio-medical Waste Management Rules, 2016

2) Criteria for development of a new Common Bio-medical Waste Treatment and Disposal Facility for a locality or region.

Prior to allowing any new CBWTF, following criteria or steps may be followed:

a) Prescribed authority under the BMWM Rules, 2016 [i.e., State Pollution Control Board (SPCB) in the respective State or Pollution Control Committee (PCC) in the respective Union Territory Administration] is required to prepare an inventory or review with regard to the bio-medical waste generation at least once in five years in the coverage areas of the existing bio-medical waste treatment and disposal facility. The prescribed authority is also required to extrapolate the coverage-area wise bio-medical waste generation for the next ten years.

b) SPCB/PCC is required to conduct gap analysis w.r.to coverage area of the bio-medical waste generation, its projection over a period of next ten years, adequacy of existing treatment capacity of the CBWTF in each coverage area of radius 75 KM, as given in **Annexure-I** and as per methodology for conduct of gap analysis given at **Appendix-I**.

Further, decision may be taken by concerned SPCB/PCC based on gap analysis report to allow new facility or expansion of an existing facility. Adequacy of the existing facility to handle quantum of biomedical waste and/or compliance with the norms prescribed under BMWM Rules, 2016 shall also be taken into account.

All the SPCBs and PCCs shall conduct the gap analysis and based on the gap analysis, action plan for development of new CBWTFs is required to be prepared and submitted to MoEF & CC & CPCB within six months' time. In case of States/UTs, where no CBWTF is available, in such a case, SPCB/PCC being prescribed authority under the BMWM Rules is required to ensure establishment new facilities. SPCB/PCC may submit the detailed proposal to MoEF & CC/MoH & FW through the respective State Government or UT Administration. Association of HCFs may also be encouraged to develop their own CBWTF following these guidelines. In case, any coverage area requires additional treatment capacity, in such a case, action may be initiated by the prescribed authority for allowing a new CBWTF in that locality based on the gap analysis report without interfering the coverage area of the existing CBWTF.

c) SPCB/PCC shall identify the coverage area, which require additional treatment facility and bring it to the notice of the concerned department in the business allocation of land assignment in the respective State Government or UT Administration. The department in the business allocation of land assignment shall be responsible for providing suitable site in the identified coverage area for setting up of a CBWTF, in

consultation with the prescribed authority (i.e., SPCB/PCC), other stakeholders and in accordance with these guidelines issued by CPCB from time to time.

d) Alternately, a CBWTF may also be allowed to be established on a land procured by an entrepreneur in accordance with the location criteria suggested under these guidelines.

e) The SPCB/PCC or concerned department in the business allocation of land assignment in the respective State Government or UT Administration may seek expression of interest from the proponents for development of new CBWTF (s) in the identified coverage area. Upon allocation of site to the proponent, the proponent is required to take necessary approvals as required under the Environment (Protection) Act, 1986 for development of the new CBWTF in accordance with these guidelines.

f) In the absence of expression of interest by any proponent, then SPCB/PCC shall insist health care facilities to form association and to develop its own CBWTF in line with these guidelines or to have captive treatment facilities (Only hilly or remote areas) for ensuring treatment and disposal of generated bio-medical waste as stipulated under the BMWM Rules.

g) In case of any regulatory action including closure of any existing CBWTF is inevitable, the respective SPCB/PCC may take action under the BMWM Rules including for making alternate arrangement to ensure safe disposal of the bio-medical waste generated from the member health care facilities of such default CBWTF through CBWTF located nearby.

h) In case of hilly areas considering the geography, only one CBWTF with adequate treatment capacity may be developed covering at least two districts to cater treatment services to the HCFs located in the respective Districts. The selection and allocation of site etc., should be done as per the criteria suggested under these guidelines. The treatment charges to be prescribed by the respective SPCB/PCC in consultation with the State Advisory Committee.

The criteria for development of CBWTFs in any coverage area is also depicted in **Figure 1**.

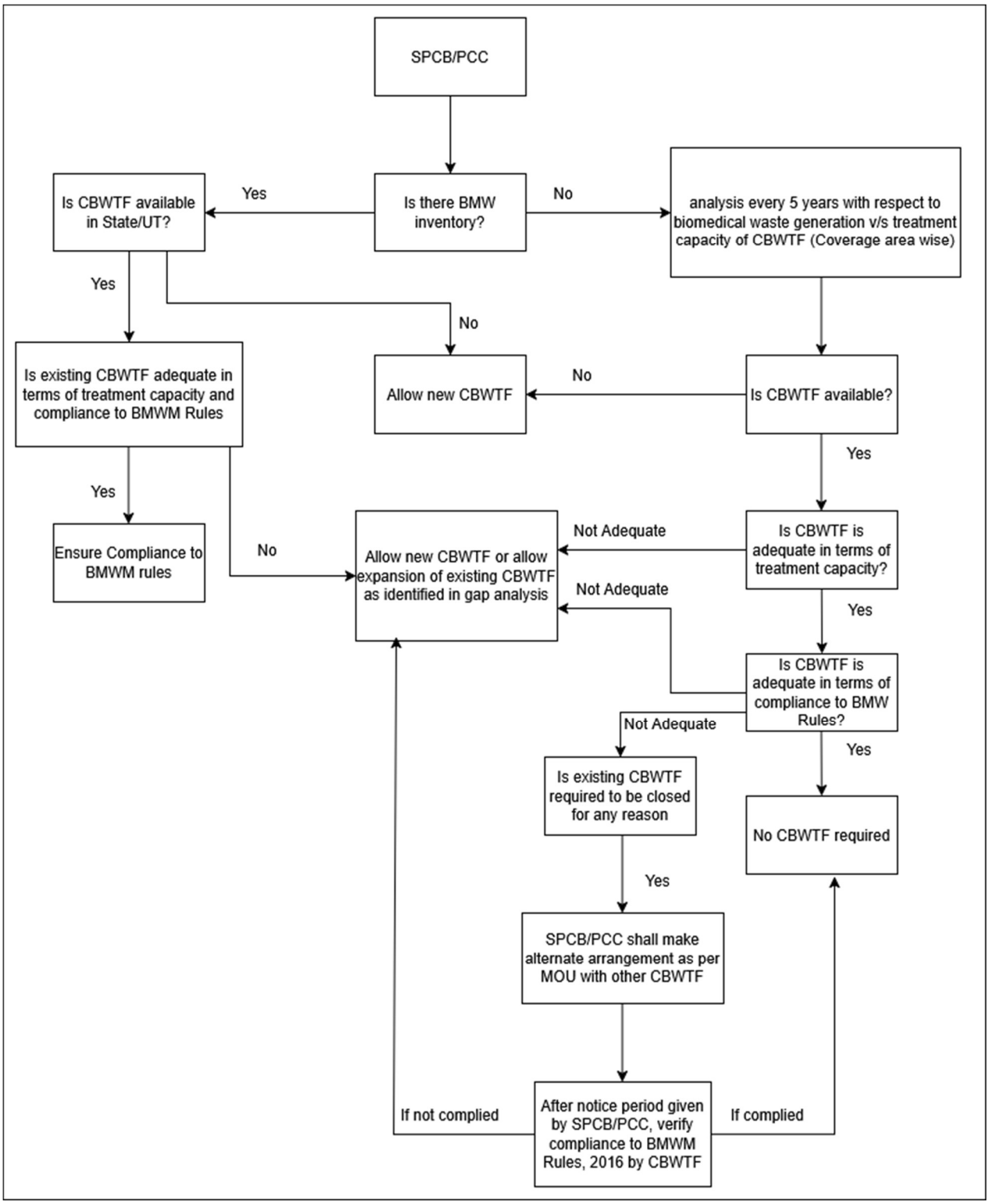


Figure 1. Criteria for Development of a CBWTF in a coverage area

3) Duties of the operator of a common bio-medical waste treatment and disposal facility

The duties of the operator of a common bio-medical waste treatment and disposal facility (CBWTF) as enunciated under Rule 5 of the Bio-medical Waste Management Rules, 2016 shall be ensured and complied with. All CBWTFs shall also comply w.r.to the residence time as well as emission norms including for Dioxins and Furans for incineration facility as prescribed under BMWM Rules, 2016. In addition to the above, to ensure proper management of bio-medical waste in the respective coverage area, as a mitigation measure, especially in the event of

(a) a temporary break down (not more than a week) of a CBWTF especially for rectification of the refractory lining of the incineration chambers or change of requisite APCD due to failure; and

(b) Closure of a CBWTF for violation of the provisions of the BMWM Rules or any other reason.

All CBWTFs are required to submit action plan (in case of closure), to the respective SPCB/PCC, for imposing suitable condition while granting authorisation under the BMWM Rules, 2016. The action plan should include:

(a) an MoU made with the nearest two CBWTF located within the respective State/UT as alternate arrangement ensuring that the bio-medical waste generated is collected, treated and disposed of within 48 hours as stipulated under the BMWM Rules. In case, if there is no CBWTF located nearby then such CBWTFshould have to install stand by treatment equipment (equal to the existing treatment capacity as per consents granted by the SPCB/PCC), and

(a) Decontamination plan of the CBWTF for execution of such plan prior to closure of a CBWTF.

4) Applicability of these guidelines

These guidelines are applicable to all the upcoming or new CBWTFs. In case of the existing CBWTFs, these guidelines shall be applicable

(a) the existing CBWTFs desires to expand or enhance the existing treatment capacity

(or)

(b) the existing CBWTFs desires to modernize the existing treatment equipment with the new equipment with enhancement in the existing treatment capacity.

5) Environmental laws applicable for commissioning or operation of a CBWTF

Operation of a CBWTF leads to air emissions as well as waste water generation as in case of an industrial operation. Most common sources of waste water generation in CBWTFs are vehicle washing, floor washing, and scrubbed liquid effluent from air pollution control systems attached with the incinerator/plasma pyrolysis. Incineration as well as DG Set is the general source of air emissions.

5.1 Any other approvals (such as Land Use /Change in Land Use as applicable) required from the concerned authorities under various laws have to be complied with by the proponent of the CBWTF prior to development of a CBWTF.

5.2 Consents under Water (Prevention and Control of Pollution) Act, 1974 and Air (Prevention and Control of Pollution) Act, 1981 as well as Authorization under the BMWM Rules, 2016

The project proponent of the CBWTF is required to obtain 'Consent to Establishment' under Section 25 of the Water (Prevention and Control of Pollution) Act, 1974 and Section 21 of the Air (Prevention and Control of Pollution) Act, 1981, from the respective prescribed authority i.e. SPCB/PCC. Upon installation of the requisite equipment, the CBWTF Operator is also required to obtain authorization under BMWM Rules, 2016 co-terminus with consent to operate under Water (Prevention and Control of Pollution) Act, 1976 & Air (Prevention and Control of Pollution) Act, 1981 from the respective SPCB/PCC prior to commencement of the CBWTF.

5.3 Environmental Clearance under EIA Notification 2006

Ministry of Environment, Forest & Climate Change (MoEF & CC), notified amendment to the EIA Notification 2006 and published vide MoEF & CC Notification of S.O. 1142 (E) dated April 17, 2015. According to this notification, the 'bio-medical waste treatment facility' is categorized under the Item 7 (da) in the schedule, requiring 'environmental clearance' from the State Environment Impact Assessment Authority (SEIAA). Therefore, the CBWTF operator is also required to obtain 'Environmental Clearance (EC)' from the respective SEIAA or Ministry of Environment, Forest& Climate Change (MoEF& CC), as the case may be, before any construction work, or preparation of land by the projects management, which include the following:

a) All new projects or activities pertaining to the bio-medical waste treatment facility; and

b) Expansion and modernization with additional treatment capacity of existing bio-medical waste treatment facility (excluding augmentation of incineration facility for compliance to the residence time as well as Dioxins and Furans without enhancing the existing treatment capacity).

c) Any expansion or modification in the treatment capacity or relocation of the existing CBWTF (requires compliance to the relevant provisions notified under the Environment (Protection) Act, 1986 by the MoEF & CC.

6) Location criteria

In the context of these guidelines, buffer zone represents a separation distance between the source of pollution in CBWTF and the receptor - following the principle that the degree of impact reduces with increased distance. The following parameters may be considered for ascertaining buffer distance on case-to-case basis:

(i) potential for spread of infection from wastes stored in the premises.
(ii) applicable standards for pollution control and the relative efficiency of the existing incinerators and emission control systems,
(iii) potential of fugitive dust emission from incinerators,
(iv) Quantity and quality of wastewater discharged
(v) the potential for odour production,
(vi) the potential for noise pollution,
(vii) the risk posed to human health due to exposure to emissions from incinerator,
(viii) the risk of fire and
(ix) significance of the residual impacts such as bottom ash and fly ash.

As far as possible, the CBWTF shall be located near to its area of operation in order to minimize the transportation distance in waste collection, thus enhancing its operational flexibility as well as for ensuring compliance to the time limit for treatment and disposal of bio-medical waste as stipulated under the BMWM Rules (i.e., within 48 hours). Also, the location of the CBWTF should be in conformity to the CRZ Norms and other provisions notified under the Environment (Protection) Act, 1986. The location shall be decided in consultation with the State Pollution Control Board (SPCB)/ Pollution Control Committee (PCC) and SEIAA or MoEF & CC, as the case may be. The location criteria for development of a CBWTF are as follows:

(a) A CBWTF shall preferably be developed in a notified industrial area without any requirement of buffer zone **(or)**

(b) A CBWTF can be located at a place reasonably far away from notified residential and sensitive areas and should have a buffer distance of preferably 500 m so that it shall have minimal impact on these areas. In case of non-availability of such a land, the buffer zone distance from the notified residential area may be reduced to less than 500 m by SPCB/PCC without referring the matter to CPCB by prescribing additional control measures such as (i) adoption of best available technologies (BAT) by the proponent of CBWTF; (ii) prescribing stringent standards for operation of the CBWTF by the SPCB/PCC; (iii) adoption of zero liquid discharge by the CBWTF and (iv) in case of any complaints from the public, then CBWTF should prove that the facility is not causing any adverse impact on environment and habitation in the vicinity.

(c) The CBWTF can also be developed as an integral part of the Hazardous Waste Treatment Storage and Disposal Facility (TSDF) subject to obtaining of necessary approvals from the authorities concerned including 'environmental clearance' as per Environmental Impact Assessment 2006 and further amendments notified under the Environment (Protection) Act, 1986, provided there is no CBWTF exist within 150 KM distance from the existing TSDF.

7) Land requirement

Sufficient land shall be allocated to the CBWTF to provide all requisite systems which include dedicated space for storage of waste (both treated and untreated), waste treatment equipment, vehicle washing bay, vehicle parking space, ETP, incineration ash storage provision, administrative room, space for DG Set etc.,.

(a) Preferably, a CBWTF shall be set up on a plot size of not less than one acre in all the areas. However, a CBWTF can be developed in adjacent plots but cannot be set up in two or more different plots located in different areas. Separate plots can be permitted only for vehicle parking if located in the close vicinity of the proposed CBWTFs or the existing CBWTFs.

(b) In case of upcoming or new CBWTFs (where municipal population is more than 25 lakhs), the land area requirement may be relaxed (but in any case not less than 0.5 acre) by the SPCB/PCC, with additional control measures such as zero liquid discharge, increase in stack height, stringent emission norms, odour control measures or any other measures felt necessary by the prescribed authority on case-to-case basis, only in consultation with SEIAA or MoEF &CC, as the case may be.

8) Coverage area of CBWTF

Suggested coverage area for development of a CBWTF is as follows:

a) A CBWTF located within the respective State/Union Territory may be allowed to cater to healthcare units situated within a radial distance of 75 kilometers, subject to the condition that the facility possesses adequate treatment capacity to handle the bio-medical waste generated within the said radius. For the purpose of determining adequacy, 90% of the total treatment capacity as authorized by the concerned State Pollution Control Board (SPCB) or Pollution Control Committee (PCC) shall be considered. It shall further be ensured that bio-medical waste generated is collected, treated and disposed of within 48 hours as stipulated under the BMWM Rules.

The concerned SPCB/PCC shall undertake a gap analysis, as per **Appendix-I**, to assess the quantum of bio-medical waste generated vis-à-vis the available treatment capacity of the CBWTF (considering 90% of the authorized treatment capacity). In case the analysis indicates a shortfall in treatment capacity or if the existing CBWTF is found to be non-compliant with the provisions of the Bio-Medical Waste Management Rules, 2016, the SPCB/PCC may consider proposals for establishing a new CBWTF or for expansion of an existing facility, ensuring that bio-medical waste generated is collected, treated and disposed of within 48 hours as stipulated under the BMWM Rules.

b) In case of hilly areas, considering the geography, only one CBWTF with adequate treatment capacity may be developed covering at least two districts to cater treatment services to the HCFs located in the respective Districts. The selection and allocation of site etc. should be done as per the criteria suggested under these guidelines. The treatment charges to be prescribed by the respective SPCB/PCC in consultation with the State Advisory Committee to be constituted under the BMWM Rules by the respective State Government or UT Administration.

9) Treatment equipment

The Common Bio-medical Waste Treatment Facility should treat the bio-medical waste as per BMWM Rules and as per the authorisation granted by the prescribed authority. The CBWTF should have the following treatment facilities:

a) Incineration/Plasma Pyrolysis

Incineration is a controlled combustion process where waste is completely oxidized and harmful microorganisms present in it are destroyed/ denatured under high temperature. The guidelines for "Design & Construction Requirements of Bio-medical Waste Incinerators" by CPCB from time to time shall be followed for selecting/or augmenting the incinerator.

Plasma Pyrolysis *is an alternate* to incinerator, Plasma Pyrolysis treatment technology can be installed for disposal of bio-medical waste categories as per BMWM Rules wherein destruction of bio-medical waste is similar to incineration can be achieved. In case of plasma pyrolysis, waste is treated at high temperature under controlled condition to form gases like methane, hydrogen and carbon monoxide which are subjected to combustion (oxidation) in secondary chamber. In the plasma pyrolysis process waste is converted into small clinker which can be disposed in secured landfills.

b) Autoclaving/Hydroclaving/Microwaving

(i) ***Autoclaving*** is a low-heat thermal process where steam is brought into direct contact with waste in a controlled manner and for sufficient duration to disinfect the wastes as stipulated under the Bio-medical Waste Management Rules. For ease and safety in operation, the system should be horizontal type and exclusively designed for treatment of bio-medical waste. For optimum results, pre-vacuum based system be preferred against the gravity type system. It shall have tamper-proof control panel with efficient display and recording devices for recording critical parameters such as time, temperature, pressure, date and batch number etc. as required under the BMWM Rules.

(ii) ***Hydroclaving*** is similar to that of autoclaving except that the waste is subjected to indirect heating by applying steam in the outer jacket. The waste is continuously tumbled in the chamber during the process.

(iii) ***Microwaving:*** *In microwaving*, microbial inactivation occurs as a result of the thermal effect of electromagnetic radiation spectrum lying between the frequencies 300 and 300,000MHz. Microwave heating is an inter-molecular heating process. The heating occurs inside the waste material in the presence of steam.

c) ***Chemical disinfection:*** Though chemical disinfection or alternates as stipulated under the BMWM Rules is also an option for treatment of certain categories of bio-medical waste such as glass waste but looking at the volume of waste to be disinfected at the CBWTF and the pollution load associated with the use of chemical disinfectants, the chemical disinfection for treatment of bio-medical waste as part of a CBWTF may be used sparingly or avoided as far as possible.

d) ***Dry heat sterilization:*** This is the additional option for treatment of waste sharps as stipulated under the BMWM Rules. In this method, waste sharps are treated using dry heat (hot air) at a temperature not less than 185^0C, at least for a residence period of 150 minutes in each cycle (with sterilization period of 90 minutes).

e) ***Shredder:*** Shredding is a process by which waste are de-shaped or cut into smaller pieces so as to make the wastes unrecognizable. It helps in prevention of reuse of bio-medical waste and also acts as identifier that the wastes have been disinfected and are safe to dispose of. A shredder to be used for shredding bio-medical waste shall confirm to the following minimum requirements:

(i) The shredder for bio-medical waste shall be of robust design with minimum maintenance requirement;

(ii) The shredder should be properly designed and covered to avoid spillage and dust generation. It should be designed such that it has minimum manual handling;

(iii) The hopper and cutting chamber of the shredder should be so designed to accommodate the waste bag full of bio-medical waste;

(iv) The shredder blade should be highly resistant and should be able to shred waste sharps, syringes, scalpels, blades, plastics, catheters, intravenous sets/ bottles, blood bags, gloves, bandages etc. It should be able to handle/ shred wet waste, especially after microwave/ autoclave/hydroclave;

(v) The shredder blade shall be of non-corrosive and hardened steel;

(vi) The shredder should be so designed and mounted so as not to generate dust, high noise & vibration;

(vii) If hopper lid or door of collection box is opened, the shredder should stop automatically for safety of operator;

(viii) In case of shock-loading (non-shreddable material in the hopper), there should be a mechanism to automatically stop the shredder to avoid any emergency/accident;

(ix) In case of overload or jamming, the shredder should have mechanism of reverse motion of shaft to avoid any emergency/accident;

(x) The motor shall be connected to the shredder shaft through a gear mechanism, to ensure low rpm and safety;

(xi) The unit shall be suitably designed for operator safety, mechanical as well as electrical;

(xii) The shredder should have low rotational speed (maximum 50 rpm). This will ensure better gripping and cutting of the bio-medical waste;

(xiii) The discharge height (from discharge point to ground level) shall be sufficient (minimum 3 feet) to accommodate the containers for collection of shredded material. This would avoid spillage of shredded material;

(xiv) The minimum capacity of the motor attached with the shredder shall be 3 KW for 50 Kg/hr, 5 KW for 100 kg/hr & 7.5 KW for 200 Kg/hr and shall be three phase induction motor. This will ensure efficient cutting of the bio-medical wastes as prescribed in the Bio-medical Waste Management Rules; and

(xv) The shredder also should be fitted with separate 'energy meter' for recording total energy consumed for operation of this equipment.

g) ***Sharp pit/ Encapsulation:*** A sharp pit or a facility for sharp encapsulation in a metal container or cement concrete shall be provided for treated sharps *(i.e., treatment by autoclaving or dry heat sterilization followed by shredding or mutilation).* An option may also be worked out for recovery of metal from treated and shredded waste sharps within the CBWTF or iron foundries having consent to operate from the SPCBs/PCCs and located nearby, as per the conditions imposed in authorization granted under BMWM Rules by the SPCB/PCC.

A sharp pit may be of circular or rectangular shape and shall be dug and lined with cement plastered brick masonry or concrete rings. The pit should be covered with a heavy concrete slab with a provision of galvanized steel pipe projecting about 1.5 meters above the slab, with an internal diameter of up to 50 mm or 1.5 times the length of vials, whichever is more. The top opening of the steel pipe shall have a provision of locking after the treated waste sharps are disposed into the sharp pit. When the pit is full, it can be sealed completely, after another pit is prepared. In case of high water table regions (i.e., where water table is less than 6 metres beneath the bottom of the sharp pit), a tank with above mentioned arrangements shall be made above the ground.

h) ***Deep burial:*** SPCB/PCC should not allow the 'deep burial' of bio-medical waste as a part of CBWTF.

i) ***Non-burn technology:*** Non-incineration technologies for disposal of bio-medical waste are adopted in some of the developed countries. Non-incineration technology comprises of shredding and disinfection by autoclaving/microwaving or chemical treatment. The treated waste can be disposed along with municipal solid waste in sanitary landfills or through waste to energy plants. Such option can also be adopted in places where the sanitary landfill or waste to energy plant for disposal of municipal solid waste is available. Such technology is permitted only after prior approval of MoEF & CC and only after obtaining authorization under the BMWM Rules from the respective SPCB/PCC for the purpose of carrying out trial runs for assessment of efficacy of the treatment equipment.

j) ***Vehicle/Containers washing facility:*** Every time a vehicle is unloaded, the vehicle and empty waste containers shall be washed properly and disinfected. Washing can be carried out in an open area but on an impermeable surface and liquid effluent so generated shall be conveyed and treated in an effluent treatment plant. The impermeable area shall be of appropriate size so as to avoid spillage of liquid during washing.

k) ***Effluent Treatment Plant:*** A suitable Effluent Treatment Plant (ETP) shall be installed to ensure that liquid effluent generated during the process of washing containers, vehicles, floors etc. is treated and reused after treatment. Proper treatment of waste water shall be ensured in case of zero discharge by recirculation of treated waste water for scrubbing. ETP may have treatment unit operations comprising collection tank, O & G trap, chemical dosing cum mixing (Flash and slow), coagulation chamber, primary settling tank (s), biological treatment process, secondary settling tank, pressure filter and activated carbon filter, pH Correction tank (wherever recirculation of treated water is practiced) so as to comply with the liquid discharge standards stipulated under the Bio-medical Waste Management Rules, 2016. ETP may also have the following provisions:

(i) separate 'energy meter' so as to know total consumption of electricity for operation of the machinery attached with the ETP.

(ii) pH meter so as to know pH level of treated water as well as pH level of treated water used for recirculated or recycling in APCD attached with the incinerator or any utility within the CBWTF.

(iii) A 'magnetic flow meter' should also be fitted at all the water supply extraction points of the CBWTF as well as the outlet to know the total wastewater treated for further end use or discharge in compliance to the BMWM Rules.

(iv) Provision of 'press filter' to reduce the moisture content of the ETP Sludge or it may be dried in 'sludge drying bed'. After removal of moisture content or drying, same need to be disposed of in an environmentally sound manner depending upon the hazardous constituents present in it as per Hazardous and Other Waste (Management and Transboundary Movement) Rules, 2016. In case, ETP sludge contains metal contents within the prescribed limits as per Hazardous & Other Waste (Management & Transboundary Movement) Rules, 2016, such ETP sludge shall be given to CBWTF for incineration or to hazardous waste treatment, storage and disposal facility (TSDF) for disposal in secured landfill.

Note:

a) If any CBWTF desires to adopt any other technology other than referred under Schedule –I of the BMWM Rules, may adopt new technology only with the prior approval from MoEF & CC and is also required to obtain authorization under the BMWM Rules from the respective SPCB/PCC for carrying out trial run for assessment of efficacy of the new technology.

b) All the treatment equipment should be operated and complied with the norms as stipulated under Schedule II of the Bio-medical Waste Management Rules, 2016 published by MoEF & CC vide GSR 343 (E) dated 28th March, 2016.

c) Incinerator / Plasma Pyrolyisis/ Autoclaving/Microwaving/ Hydroclaving/ Shredder/ Dry Heat Sterilization/ ETP should be fitted with separate 'energy meter' for recording total energy consumed for operation of these equipment.

d) In the event of temporary shutdown (not more than a week) due to any operational problems in the treatment equipment (such as restoration of refractory lining or maintenance or repairs in APCD), to ensure bio-medical waste collected from the member health care facilities is treated within the time limit as stipulated under the BMWM Rules, all CBWTF operators should also be provided with stand by treatment equipment especially incinerator/plasma pyrolysis/autoclave (or) alternately MoU made with the nearby CBWTF (located within the State/UT) shall be submitted to the respective SPCB/PCC, by all the existing CBWTF operators (whereas the upcoming facilities have to make such arrangement prior to commencement of the facility) so as to include such condition while granting authorisation under the BMWM Rules, 2016 to the concerned CBWTF operators (vice-versa).

(10) Infrastructure set up

The CBWTF shall have enough space within it to install required treatment equipment, untreated and treated waste storage area, vehicle-parking, vehicle and containers washing area, Effluent Treatment Plant (ETP), administration room or staff room etc. The required area for CBWTF would depend upon the projected amount of bio-medical waste to be handled by it. A CBWTF shall have the following infrastructure:

a) Treatment equipment room

A separate housing may be provided for each treatment equipment at the CBWTF such as incinerator room, autoclave room, microwave room etc., as applicable. Each room shall have well-designed roof and walls. Such room shall be well ventilated and easy to wash. The floor and interior finishing of the room shall be such that chances of sticking/harbouring of microorganisms are minimized. This can be attained by providing smooth & fine floor and wall surfaces (to a height of 2 meter from floor) preferably of tiles. The number of joints in such surfaces shall be minimal. The equipment room shall also have a separate cabin, to supervise the operation of the equipment and to record the waste handling and equipment operational data attached to each equipment room. There shall be two waste storage rooms, one for storage of untreated waste and another for treated waste and may be located at a distance from each other. The storage room shall have provisions similar to that of equipment room being well-ventilated with easy to wash floors & walls, smooth and fine surfaces etc. All the treatment equipment rooms and waste storage rooms should be provided with 'fly catcher/killing device'. The room shall be washed and cleaned with a suitable disinfectant every day.

b) Main waste storage space

Separate space shall be provided near the entry point of the CBWTF to unload and store all biomedical wastes that have been transported to the CBWTF by its own transportation vehicle. The size of the room shall be adequate to store all wastes transported to the CBWTF. The front portion of the room shall be utilized for unloading the wastes from the vehicle and back or side portion shall be utilized for shifting the wastes to the respective treatment equipment. In the front portion of the room where transportation vehicle is parked for unloading, the floor shall be made impermeable so that any liquid spillage during unloading does not percolates into the ground. The liquid generated during handling of wastes and washing, shall be diverted to the inlet

of effluent treatment plant (ETP). In the main storage room, wastes shall be stacked with clear distinction as per the color coding of the containers by providing partitions. From here, the colored containers may be sent to the respective treatment equipment by using suitable closed type of conveyance (trolley etc.,). The main storage room too shall have provisions similar to that of equipment room such as roofing, well ventilated, easy to wash floors & walls, smooth and fine surfaces etc.

Apart from the above, a CBWTF should have separate storage provision for storage of mercury bearing waste collected from the member health care facilities as per the procedure given in CPCB guidelines. Mercury storage provision should be provided as per the guidelines issued by CPCB (refer www.cpcb.nic.in). The capacity of the mercury storage provision should be maximum of 90 days and by which the collected mercury bearing waste shall have to be disposed of through a TSDF located nearby following the manifest as per Hazardous and Other Waste (Management and Transboundary Movement) Rules, 2016. The charges for collection and disposal of mercury bearing waste shall be collected by the CBWTF from the respective member HCF.

c) Treated waste storage room

Separate space should be provided to store the wastes treated in different treatment units. The wastes shall be stored in separate group as per the disposal options. Other provisions in the room shall be similar to the main storage room. Waste such as incineration ash/vitrified ash generated in the process of incineration/plasma pyrolysis respectively shall be stored safely in a separate area under the shed so as to avoid entry of rain water during the monsoon and for easy collection. In case, incineration ash/ vitrified ash is found to be hazardous waste in nature same should be disposed of through any authorized TSDF operator located nearby following the manifest as per Hazardous and Other Waste (Management and Transboundary Movement) Rules, 2016. In case of a State/UT where TSDF is not available, all the CBWTF operators have to store incineration ash safely as per these guidelines.

d) Administrative Room

This room shall be utilized for general administration, record keeping, billing etc.

e) Generator set

CBWTF shall have a generator set of adequate capacity as standby arrangement for power, with sufficient capacity to run the treatment equipment during the failure of power supply. The generator set shall comply with the necessary requirement as per DG Set norms notified under the Environment (Protection) Act, 1986.

f) Continuous emission monitoring system (CEMS)

Monitoring provision for continuous monitoring of the incinerator/plasma pyrolysis stack emission shall be installed by the CBWTF operators for the parameters as stipulated by the respective SPCB/PCC as per the authorisation granted under the BMWM Rules, 2016. Other-wise, at present, all the existing CBWTF operators are required to carry out stack emission monitored using continuous emission monitoring system for the flue gas parameters such as CO_2, O_2, CO as well as primary & secondary chamber temperatures, and records maintained. The continuous emission monitoring system for stack emission should be installed as per the guidelines issued by SPCB/PCC/CPCB. Also, the real time continuous stack emission monitoring data is also required to be transmitted to the servers of the respective SPCB/PCC as well as CPCB, by all the existing CBWTF operators

g) Vehicle Parking

Provision for parking shall be made within the confines of the site for parking of required number of vehicles, loading and unloading of the vehicles meant for transporting waste to and from the facility, etc. In case of a CBWTF with space constraints, multi-storey parking or a separate provision may be allowed only for parking of vehicles.

h) Display and sign board

An identification board (Display) of durable material and finish shall be displayed at the entrance to the facility. This shall clearly display the name of the facility, owner name, address and telephone number of the operator and the prescribed authority, no. of hours of operation & operational hours, telephone numbers of the personnel to be contacted in the event of an emergency, validity period of authorization as well as total daily waste treated and disposed. Also, sign boards should be provided at all the salient points (untreated waste storage area, treatment equipment, treated waste storage area, ETP, firefighting equipment) within the facility.

i) Washing Room

A washing room shall be provided for eye washing/hand washing/ bathing etc. for the workers.

j) Site Security

High walls, fencing and guarded gates shall be provided at the facility to prevent unauthorized access to the site by humans and livestock.

k) Fire safety

Fire safety equipment such as sand buckets and fire extinguishers should be provided at all the salient points of the CBWTF including at the diesel storage areas, diesel tanks connected with the incinerator etc. Fire alarm also should be provided within the CBWTF to prompt the workers in the event of any fire hazard. Workers should also be trained in First Aid administration.

l) First Aid Box

First Aid Box with necessary provisions need to be provided at all the salient points within the facility.

m) Green Belt

The open area available within the CBWTF shall be developed into green belt.

n) Website:

All CBWTFs shall develop own website and the upcoming CBWTF shall develop the website prior to the commencement of the facility. The website should be uploaded with relevant information periodically (on monthly basis) especially as detailed below:

(i) A copy of the Environmental Clearance obtained;
(ii) Copies of the Consents under the Water (Prevention and Control of Pollution) Act, 1974 and Air (Prevention and Control of Pollution) Act, 1981 as well as the Authorisation under the BMWM Rules obtained from the SPCB/PCC;

(iii) List of all the member Health Care Facilities with complete address, bedded or non-bedded HCFs, no. of beds, bar code, category-wise average bio-medical waste generation in kg/annum;
(iv) Charges levied on the member Health Care Facilities (HCFs) for treatment and disposal of bio-medical waste;
(v) Vehicles connected with a provision of GPS as per BMWM Rules and Vehicle-wise route chart for collection, transportation of bio-medical waste from the member HCFs;
(vi) Real time continuous online stack emission monitoring data;
(vii) Monthly details of total waste collected from the member HCFs, total waste treated, and treated recyclable plastic waste or glass waste sold to the parties and final mode of disposal of incineration ash;
(viii) A copy of the annual report submitted to the respective SPCB/PCC;
(ix) Monitoring results of the stack emissions, treated wastewater and incineration ash, as per the frequency stipulated under the BMWM Rules;
(x) List of HCFs (located within the coverage area) with complete address which have not taken membership of the CBWTF for disposal of Bio-medical waste;
(xi) Contact person, contact telephone number and e-mail addresses of the facility; and.
(xii) Provision to have access to the SPCB/PCC/CPCB/MoEF & CC/MoH & FW especially on GPS, online monitoring system and the data.

Besides the provisions suggested in the earlier paras, following important provisions should also be made in a CBWTF:

(i) A telephone shall be provided and maintained at the facility.
(ii) A First Aid Box shall be provided and maintained at the CBWTDF.
(iii) Proper lighting shall be provided at the facility.
(iv) Proper care shall be taken to keep the facility and surroundings free from odors.
(v) Measures shall be implemented to control pests and insects at the site.
(vi) Measures shall be implemented to control the escape of litter from the site.
(vii) Necessary provision shall be made to prevent and control noise generated, if any, due to the activities at the site.
(viii) Necessary protective gear for the waste handlers shall be provided.
(ix) Immunization to all the workers of CBWTF against all the diseases including especially Tetanus and Hepatitis -B as stipulated under the BMWM Rules.
(x) Workers should have provisions such as washing, toilet, and suitable place for eating.

(xi) Workers should also be provided with N-95 mask besides other PPEs such as hand gloves, gumboots, goggles etc.

Every CBWTF operator shall submit a work-plan to the Prescribed Authority. The work-plan should include the details of facilities at the CBWTF, collection, transportation & storage of the bio-medical wastes, operational details etc.

11) Record keeping

Maintenance of records for all operations carried out at the CBWTF is very important to monitor overall operation of the CBWTF. It also helps in submission of the required information to be submitted to the 'Prescribed Authority' by 30 th June of every year as per the format prescribed under the BMWM Rules or provided by the SPCB/PCC. A well-maintained record of all the activities at the CBWTF also enables the facility operator to produce all information of the activities on demand of the concerned prescribed authority. The record should include all information relating to each activity at the CBWTF site as per BMWM Rules which include accidents occurred (spills, injury, fire accident) and the measures taken and also, however, minimum requirement is outlined below:

a) Records of waste movements

Daily records shall be maintained for the waste accepted and treated waste removed from the site. This record shall include the following minimum details:

(i) **Waste accepted: -**Records on day-to-day basis (as per the format given at **Annexure-II**) shall be maintained with respect to the waste collection date, name of the healthcare unit with bar code, waste category as per BMWM Rules, category-wise quantity of waste accepted, vehicle registration number used for collection of bio-medical waste from member health care facilities, time at which waste collected from member HCFs, name of the vehicle driver and his signature and waste receiving date & time (at CBWTF site). Similar information to be acknowledged to the member health care facility by the CBWTF operator on daily basis.

(ii) **Treated waste to be disposed :-** Date, treated waste type, Quantity, vehicle number, disposal as stipulated under BMWM Rules.

b) Logbook for the treatment equipment

A logbook shall be maintained for each treatment equipment installed at the site and shall include the following:

(i) The weight of each batch.
(ii) The categories of waste as per the Rules.
(iii) The time, date and duration of each treatment cycle and total hours of operations.
(iv) The complete details of all operational parameters during each cycle.

Log book to be maintained for operating the incinerator/plasma pyrolysis as well as the autoclave as per the formats given at **Annexure –III.**

c) Monitoring and reporting of operations in the CBWTF:

The monitoring of the key operating parameters of treatment equipment provides several benefits. First, monitoring provides the operator with information needed to make decisions on necessary combustion control adjustments. Second, properly maintained monitoring records can provide useful information for identifying operating trends and potential maintenance problems. Following are the suggested parameters for monitoring of the treatment equipment

(i) Monitoring of operating parameters of the incinerator/plasma pyrolysis: Following operating parameters can be monitored in case of incinerator/plasma pyrolysis:

- Waste charge rate.
- Combustion gas temperature in primary and secondary chamber as well as the temperature of the stack exit gas (flue gas).
- Condition of the draft (negative draft in primary chamber).
- Combustion gas oxygen level in primary and secondary chamber as well as stack exit gas.
- Air flow rate through the incinerator/plasma pyrolysis.
- Carbon-Di-Oxide (CO_2), Oxygen (O_2) and Carbon Monoxide (CO) level in the flue gas.

- Quantity of auxiliary fuel usage as well as the power consumption (in every batch).
- Pressure drop in the primary chamber and APCD attached with the incinerator/plasma pyrolysis and
- Bottom ash or slag quality (for Total Organic Carbon (TOC) as well as loss on ignition and the hazardous constituents (at least once in a quarter).

(ii) Monitoring of operating parameters of the Autoclave: Following operating parameters can be monitored during the sterilization using autoclave:

- Time at which sterilization started and time at which sterilization completed.
- Temperature conditions maintained throughout the sterilization
- Conditions of pressure maintained throughout the sterilization
- Duration of sterilization
- Validation test results

Records concerning the above parameters need to be maintained and checked periodically for taking remedial measures during the operation of the incinerator or plasma pyrolysis or autoclave. In case of other treatment processes, the operational conditions as well as the efficacy tests to be complied with as per the standards prescribed under the BMWM Rules.

(iii) Frequency of monitoring:

The CBWTF operator shall carry out following tests through a NABL approved laboratory or a laboratory approved under the Environment (Protection) Act, 1986, as per the frequency stipulated under the BMWM Rules or as prescribed by the SPCB/PCC and record of such analysis results shall be maintained and submitted to the prescribed authority (SPCB/PCC), as suggested below:

- **Liquid effluent**: Parameters such as pH, Suspended Solids, Oil & Grease, BOD, COD, Bio-assay for liquid effluent being discharged from the CBWTF be monitored as per the Consent conditions or once in a quarter and such records maintained and submitted to SPCB/PCC.

- **Stack emission monitoring:**

In case of the BMW incinerators, the Stack Emission shall be monitored (under optimum capacity) for parameters such as Particulate Matter, HCl, NO_x, Hg & compounds and combustion efficiency once in three months as required under schedule II of the Bio-medical Waste Management Rules 2016 (All monitored values shall be corrected to 11% Oxygen on dry basis). In case of dioxins and furans, monitoring should be done once in a year (monitored values shall be corrected to 11% Oxygen on dry basis).

- **Validation test of autoclave/microwave/chemical treatment/Dry heat sterilization:**

Suggested validation test for treatment of bio-medical waste by autoclave/microwave/chemical treatment/Dry heat sterilization is given in **Table 1.**

Table 1: Suggested validation test for treatment of bio-medical waste by autoclave/microwave/chemical treatment/Dry heat sterilization

S. No	Type of equipment used for treatment of bio-medical waste	Type of Validation Test	Frequency
(i)	Autoclave	(i) biological indicator strips or vials Geobacillus stearothermophilus spores with at least $1X10^6$ spores),	once in three months
		(ii) chemical indicator strip or tape	each batch of waste treated
(ii)	Microwave	Bacillus atrophaeus spores using vials or spore strips with at least 1 x 10^4spores per detachable strip	Recommended: once in three months
(iii)	Chemical treatment followed by shredding	Bacillus Subtilis (ATCC 19659)- 4 Log10 reduction or greater	Once in a week
(iv)	Dry heat sterilization	consistently kill the biological indicator Geobacillus Stearothermophillus or	Once in three months

S. No	Type of equipment used for treatment of bio-medical waste	Type of Validation Test	Frequency
		Bacillus Atropheaus spores using vials with at least 6 log10 spores per ml.	
		A chemical indicator strip or tape	Once in a week

d) Site Records:

Site records shall include the following:

(i) All the approvals obtained from other concerned departments other than the prescribed authority;
(ii) Details of construction or engineering works;
(iii) Maintenance schedule, breakdowns/trouble shootings and remedial actions;
(iv) Emergencies;
(v) Incidents of unacceptable waste received and the action taken; and
(vi) Details of site inspections by the officials of the regulatory authorities, purpose of visits with date and necessary actions initiated on the observations.

Daily, monthly and annual summary records of all the above shall be maintained and made available at the site for inspection and same submitted whenever required by an authorized official of the concerned regulatory authorities.

12) Collection and transportation of bio-medical waste

The collection and transportation of bio-medical waste shall be carried out in a manner so as to prevent any possible hazard to human health and environment. Collection and transportation are the two operations where the chances of segregated bio-medical waste coming in contact with the public, rag pickers, animals/birds, etc. are high. Therefore, all care shall be taken to ensure that the segregated bio-medical waste handed over by the healthcare units reach CBWTF without any damage, spillage or unauthorized access by public, animals etc. A responsible person from the CBWTF operator shall always accompany the vehicle to supervise the collection and transportation of bio-medical waste. Also, the private transport vehicles should not be

authorised by the SPCBs/PCCs only for transportation of the Bio-medical Waste. The CBWTF operator should be made responsible for collection and transportation of bio-medical waste.

a) Collection of bio-medical waste:

Generator of the bio-medical waste is responsible for providing segregated waste in accordance with the provisions of the Bio-medical Waste Management Rules, 2016, to the CBWTF operator. Dedicated temporary storage at healthcare unit shall be designated. The coloured bags handed over by the healthcare units shall be collected in similar coloured containers with proper cover. Each bag shall be labeled as per Schedule IV of the Bio-medical Waste Management Rules as well as with bar coding system (to be complied by the occupier or operator of a CBWTF as per BMWM Rules) so that at any time, the healthcare units can be traced back that are not segregating the bio-medical wastes as per BMWM Rules. The coloured containers should be strong enough to withstand any possible damage that may occur during loading, transportation or unloading of such containers. These containers shall also be labeled as per Schedule IV of the Rules. Sharps shall be collected in puncture resistant container. The person responsible for collection of bio-medical wastes shall also carry a register with him to maintain the records such as name of the healthcare unit, the type and quantity of waste received, time at which waste collected from the member HCF, signature of the authorised person from the healthcare unit etc**.** During transportation, the containers should be covered in order to prevent exposure of public to odours and contamination.

(b) Transportation of the collected bio-medical waste to the CBWTF:

All the vehicles used by the CBWTF operator shall not be sub-letted or contract vehicles should not be used by the CBWTF operator. All the vehicles owned by the CBWTF operator and intended only for collection of bio-medical waste from the member health care facilities should be registered under the Motor Vehicle Act with the respective RTO/Transport Department and such vehicle numbers should also be registered with the respective SPCB/PCC for the purpose of collection of bio-medical waste from the member health care facilities. The bio-medical waste collected in designated coloured containers shall be transported to the CBWTF in a fully covered vehicle. Such vehicle shall be dedicated for transportation of bio-medical waste only. Depending upon the volume of the wastes to be transported, the vehicle may be a

two or three-wheeler, light motor vehicle or heavy duty vehicle. In either case, the vehicle must possess the following:

(i) Transportation vehicle shall be fitted with GPS to track the movement of the vehicle.

(ii) Separate cabins shall be provided for driver/staff as well as for placing the designated colour coded bio-medical waste containers.

(iii) Two wheeler registered under the Motor Vehicle Act shall be permitted for collection of bio-medical waste only from the clinics or dispensaries located in places where the lanes are narrow and not easily accessible to four wheeler vehicles. Such two wheeler vehicle (s) should have a provision of a suitable fixed waste collection box marked with bio-hazard symbol, contact details, proper lid, emergency spill collection procedure, first aid box and manifest record in accordance with the BMWM Rules

(iv) The base of the waste cabin shall be leak proof to avoid pilferage of liquid during transportation.

(v) The waste cabin may be designed for storing waste containers in tiers and also should be provided with a lighting provision.

(vi) The waste cabin shall be so designed that it is easy to wash and disinfect.

(vii) The inner surface of the waste cabin shall be made of smooth surface to minimize water retention.

(viii) The waste cabin shall have provisions for sufficient openings in the rear and/or sides so that waste containers can be easily loaded and unloaded.

(ix) The vehicles used for the purpose of collection and transportation of bio-medical waste must be labelled with the bio-hazard symbol (as per Schedule IV of the BMWM Rules, 2016) in red/black colour and should display the name, address, and contact number of the CBWTF operator in green colour. CBWTF authorized by *("Name of SPCB/PCC")* shall also be mentioned below name,

address and contact number of the CBWTF operator in green colour, as given in **Annexure-VII**.

(x) All the existing vehicles used for the purpose of collection and transportation of biomedical waste shall be labelled with the bio-hazard symbol and shall display the name, address, and contact number of the CBWTF operator on white background (as given in **Annexure-VII**). Further, vehicles registered with the respective SPCB/PCC for the purpose of collection and transportation of biomedical waste after June, 2025 shall be white in colour.

(xi) Bio-hazard symbol size and font size shall be in minimum proportion of 12:3 and 12:1, respectively, with respect to body height of the vehicle used for transportation of biomedical waste. For Example: If body height is 6 feet i.e. 72" then minimum font size will 6" and minimum size of bio-hazard symbol will be 18"as given in **Annexure-VII**.

(xii) The vehicle driver should carry always valid registration of the vehicle obtained from the concerned transport authority and also carry valid 'pollution under control certificate' issued by the authorized certificate issuing agency.

Depending upon the area to be covered under the CBWTF, the route of transportation shall be worked out. The transportation routes of the vehicle shall be designed for optimum travel distance and to cover all member healthcare units of the CBWTF. The CBWTF operator should ensure online and real time tracking & monitoring provisions (GPS provision) should be given access with passwords to the SPCB/PCC and CPCB to cross check the movement of the transportation vehicles on any time by the SPCB/PCC/CPCB. As far as possible, the transportation shall be carried out during non-peak traffic hours. If the area to be covered is very large, a satellite station may be established to store the bio-medical waste collected from the adjoining areas. The wastes so stored at satellite station may then be transported to the CBWTF in a big vehicle. It shall be ensured that the total time taken from generation of bio-medical waste to its treatment, which also includes collection and transportation time, shall not exceed 48 hours.

13) Disposal option of solid waste generated from the CBWTF

Treated plastic waste, incineration ash, treated waste sharps and glass waste, Oil & Grease waste and ETP sludge are generally generated from the CBWTF from the treatment systems such as autoclaving/microwaving, incineration, chemical disinfection and effluent treatment plant respectively. The treated bio-medical waste shall be disposed as per the options suggested in the **Table 2** given below:

Table 2: Suggested Disposal option of solid waste generated from the CBWTF

Sl. No.	Treated Waste Category	Suggested Treatment and Disposal Options
1.	Plastic wastes	Plastic waste should not be sent to landfill sites. Plastic waste after disinfection and shredding , is required to be (i) sent to registered or authorized recyclers (or) (ii) for energy recovery (or) (iii) diesel or fuel oil recovery (or) (iv) for road making, whichever is possible.
2.	Disinfected Sharps (including needles and syringes)	Treatment by Autoclaving or Dry Heat Sterilization followed by shredding or mutilation or combination of shredding cum autoclaving. Treated sharps need to be disposed of (i) by encapsulation in metal container or cements concrete; (or) (ii) sent for final disposal to iron foundries (having consent to operate from the SPCBs/PCCs) (or) (iii) Disposal in sanitary landfill; (or) (iv) Disposal in designated concrete waste sharp pit.
3.	Incineration ash	Incineration ash from incineration of any bio-medical waste shall be disposed through hazardous waste treatment, storage and disposal facility (TSDF), if toxic or hazardous constituents are present beyond the prescribed limits as given in Schedule –II of the Hazardous and Other Waste Management & Transboundary Movement Rules or as revised from time to time.
4.	Other treated solid wastes like Glass waste	Disinfection (by soaking the washed glass waste after cleaning with detergent and Sodium Hypochlorite

Sl. No.	Treated Waste Category	Suggested Treatment and Disposal Options
		treatment) or through autoclaving or microwaving or hydroplaning and then sent for recycling.
5.	Oil & Grease	By Incineration
6.	ETP Sludge	After drying in sludge drying beds or removal of moisture content using 'Filter Press' and such ETP sludge shall be given to CBWTF for incineration or to the hazardous waste treatment, storage and disposal facility (HWTSDF) for disposal in Secured Landfill
7.	Hazardous Waste	Disposal through a TSDF located nearby following the manifest as per the Hazardous and Other Waste (Management & Transboundary Movement) Rules, 2016

14) Cost to be charged by the CBWTF Operator for the Health Care Facilities

Cost to be charged from the healthcare facilities plays an important role in financial viability and sustainable operation of a CBWTF project, for providing the best treatment services to the Health Care Units and for ensuring compliance to the BMWM Rules. The cost shall be so worked out that neither it becomes a monopoly of the CBWTF operator nor the interest of the CBWTF operator is overlooked. It is recommended that cost to be charged from the healthcare units, depending on the size, no, of beds and the distance from the location of the CBWTF and same shall be worked out in consultation with the concerned SPCB/PCC and the local Medical Association, keeping in view the following options:

(a) In case of non-bedded health care units, fixed charges depending on the average quantity of waste generation per day, in case of the nursing homes/clinics/sample collection Centres /Dental HCentres, dispensary, pathological laboratory, blood banks, and other non-bedded hospitals irrespective of their system of medicine including ayush hospitals.

(b) In case of bedded hospitals, fixed charges per bed per day basis and based on the no. of beds for which consents under the Water Act, 1974/Air Act, 1981 and authorization granted under the BMWM Rules, by the prescribed authority

Note:

(i) Rates are required to be revised once in a year based on the Wholesale Price Index (WPI Index) or Consumer Price Index (CPI Index) (considering the prevailing market price especially in respect of the labour expenses, diesel prices, electricity, operating cost etc.,.), by the State Advisory Committee in consultation with the concerned SPCB/PCC, local Medical Association and the representatives of the CBWTF Association

(ii) *The Health Care Facilities are required to ensure timely payments to the CBWTFs for ensuring timely treatment services in compliance to the BMWM Rules as well as agreement made with the concerned CBWTF Operator.*

15) Check list for development of CBWTF

The criteria for development of CBWTDF have been discussed in detail in the Previous sections. However, to have at a glance check in developing CBWTF, checklist is reproduced for convenience and is annexed **(Annexure-IV).**

16) Periodic inspection/monitoring or performance evaluation of the CBWTF

To have uniformity in performance evaluation of the CBWTF throughout the country, a check list for performance evaluation of the CBWTF for carrying out inspection/monitoring/compliance verification has been prepared and is annexed **(Annexure –V)**. All the prescribed authority (SPCB/PCC) shall inspect the CBWTF at least once in six months located in the respective State/UT and a copy of the inspection reports shall be submitted to CPCB and MoEF & CC along with a copy of the action taken for ensuring compliance to the BMWM Rules and CPCB guidelines issued from time to time and also such information is required to be uploaded in SPCB/PCC website. CPCB shall carryout random inspection of the CBWTFs once in a quarter and any violations observed further actions shall be initiated by CPCB if required under the Environment (Protection) Act, 1986.

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Appendix-I

Methodology to Conduct gap analysis with respect to generation and treatment of biomedical waste - Revision 1

Guidelines for Common Biomedical Waste Treatment Facilities was prepared by CPCB with an aim to have uniformity in ensuring site selection, allowing and establishment of a state-of-the-art Common Biomedical Waste Treatment Facilities (CBWTFs), operation as well as verification of compliance to the BMWM Rules, 2016 throughout the country. As per the said guideline, SPCB/PCC is required to prepare an inventory or review with regard to the bio-medical waste generation at least once in five years in the coverage areas of the existing CBWTF and conduct gap analysis as per format given in Annexure-I of the guideline.

Further, methodology for conducting gap analysis with respect to generation and treatment of biomedical waste prepared by CPCB and circulated to all SPCBs/PCCs. Accordingly, 12 SPCBs/PCCs have conducted gap analysis and submitted the report to CPCB. However, non-uniformity and ambiguity was observed specifically with regard to the method for extrapolating the data on biomedical waste generation and requirement of adequate treatment capacity in the gap analysis reports submitted by SPCBs/PCCs. Therefore, revised methodology have been prepared with an aim to have uniformity in the method for carrying out the gap analysis by State Pollution Control Boards/Pollution Control Committees.

The methodology for conducting gap analysis may be based on following parameters:

S. No.	Parameters	Details
1.	Coverage area of CBWTF	Mention farthest distance covered by CBWTF
2.	No. of HCFs (Bedded and non-bedded)	In Number
3.	No. of Beds covered	In Number
4.	Total biomedical waste generation (in Kg/day)	The generation of biomedical waste may be calculated by considering following aspects: a) Generation from bedded HCFs: The biomedical waste generation rate may be considered as 277* grams per bed per day

		b) Generation from non-bedded HCFs: The biomedical waste generation may be considered as 274** grams per day c) Biomedical waste generated from occasional waste generators such as health camps, institutions, vaccination camps etc as defined under CPCB guidelines may also be considered. * Reference: Report on Health-care Waste Management status in countries of the South-East Asia Region by WHO which is also nearly equal to the average biomedical waste generation per day per bed as per AR information received from States/UTs. **The value is taken based on the data given by CBWTF Associations regarding current average biomedical waste generation from non-bedded HCFs.
5.	Extrapolate the biomedical waste generation for next 10 years	Linear method may be adopted for extrapolation of biomedical waste generation
6.	Total existing treatment capacity (in Kg/day) (Sum of Incineration Capacity and Autoclave/Microwave/Hydroclave Capacity)	For calculation of existing treatment capacity, maintenance time (not more than 12-18 hrs/month) may be considered for calculating operational hours of equipment as below: a) Operational Hours for static incinerator 20 hrs/day b) Operational hours for Rotary incinerator 22 hrs/day c) 18 cycle per day for autoclave

		The actual capacity may also be considered as 90% of available capacity keeping 10% margin for diverted/extra waste etc.
7.	Total Biomedical Waste treated and disposed (Kg/day)	Sum of all categories of biomedical waste treated and disposal.
8.	Gap between total extrapolated biomedical waste generation (for next 10 years) and existing biomedical waste treatment capacity	Extrapolated biomedical waste generation minus total existing treatment capacity

Annexure-I

Coverage area-wise gap analysis for assessing additional BMW treatment capacity requirement

S. No	Coverage area (pl. indicate areas covered by a CBWTF in the State/UT)	No. of HCFs		No. of Beds covered	Total estimated BMW generation in Kg/day	Total existing treatment capacity in Kg					Total BMW Treated and Disposed in Kg/day	Gap between total BMW Generation and the Existing BMW Treatment Capacity in Kg	Remarks (Whether additional Treatment Capacity is required or not)	
		Bedded	Non-bedded			Incineration	Autoclaving/ Hydroclaving /microwaving	Chemical disinfection	Deep burial	Any other mode of disposal			Yes	No
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)

Note: Above gap analysis coverage area-wise is required to be prepared once in five years and should be shown or depicted in a Map of State/UT.

Annexure- II

Format for maintaining the records by the CBWTF Operator alongwith the transportation Vehicle used for collection of bio-medical waste from the member HCFs

Name of the CBWTF :
Address of the CBWTF with contact details :
Vehicle Registration Number (certificate to be carried by the vehicle driver) :
Route covered (indicate places) by the vehicle :

Note: Above format is required to be maintained in duplicate both by the CBWTF Operator and the member HCF

Date	Vehicle number and the Time of arrival of the vehicle	Vehicle Speedo meter mileage readings in KM		Name of the HCF with address and the bar code number from whom waste collected	Category-wise quantity of bio-medical waste received in kg					Total BMW collected by the CBWTF		Name of the Vehicle driver with	Signatures	
		Initial	Final		Yellow	Red	Blue	Out dated medicines	White - waste sharps	Total No. of Bags	Total waste		Vehicle Driver	Representative of the HCF
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)		(12)	(13)	(14)

Annexure - III

Log book for Operating the Incinerator/Plasma Pyrolysis

Date	Time of operation of the Incineration		Quantity of hourly BMW charged in Kg (Total BMW charged in a day in Kg)	Temperature maintained in ^{O} C			Negative draft in primary chamber *(in mm of water column) (Pl. indicate range i.e., min. to max)*	Pressure drop across APCD *(in mm of water column) (Pl. indicate range i.e, min. to max)*	p^{H} level of scrubbed liquid used *(Pl. indicate range - min. to max.)*	Average values of flue gas analysis results (continuous online) observed during the incineration/plasma pyrolysis process operation				Consumption of electricity/ Diesel whichever is applicable			Net Quantity of bio-medical waste received in Kg	Net Quantity of bio-medical Waste left over in a day (in Kg)
				Primary Chamber	Secondary Chamber	After scrubbing in exit stack gas				CO in mg/Nm^3	O_2 in %	CO_2 in %	% combustion Efficiency	Power (indicate electricity meter reading)		Diesel in liters (pl. indicate daily or weekly diesel consumption)		
	Start	End												Initial reading	Final reading			(19)= (18) – (4)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	16)	(17)	(18)	(19)

Note: Fill the details whichever is applicable

Log Book for Operating the Autoclave/Hydroclave

Date	Time of operation of the Autoclave or Hydroclave		Batch number	Quantity of waste feeding per batch in Kg (Total waste treated by autoclaving/ hydroclave in Kg)	Temperature and Pressure ~~in every ten minutes~~		Strip test result (pl. paste the strip test for each batch with a proof)	Consumption of electricity (indicate electricity meter reading)		Net Quantity of waste received in Kg	Net Quantity of Waste left over in Kg
	Start	End			Temperature in ^{O} C	Pressure in psi		Initial reading	Final reading		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)=(11)-(5)

Annexure – IV

Check List for Development of a Common Bio-medical Waste Treatment and Disposal Facility & For issuing 'Consent to Establishment under Water & Air Acts

1. Name of the Proponent :
2. Proposed location of the CBWTF :
3. No. of HCFs in the locality :
4. No. beds :
5. Total Bio-medical Waste Generation in kg/day :
(i) Incinerable in kg/day :
(ii) Autoclavable in kg/day :
(iii) Glass waste in kg/day :
(iv) Waste sharps in kg/day :

6. **Proposed location of the CBWTDF**: located away from

a) Residential area : Yes □ No □
b) Sensitive area : Yes □ No □
c) Industrial area : Yes □ No □
d) Is it as a part of TSDF : Yes □ No □
e) Is the facility proposed in Hilly areas : Yes □ No □
d) Buffer distance of 500 m available : Yes □ No □

7. **Proposed land area for CBWTF:**
a) Area about 1 acre : Yes □ No □
b) Area less than 1 Acre : Yes □ No □
c) Area more than 1 Acre : Yes □ No □

8. **Proposed coverage area of the CBWTF:**
a) Any facility located : Yes □ No □
upto a radius of 75 KM
from the proposed locality
b) No. of beds covered by the existing facility/proposed facility:
(i) more than 10, 000 beds : Yes □ No □
(ii) less than 10,000 beds : Yes □ No □
c) Is there any CBWTF within the radius of 75 KM : Yes □ No □
d) BMW Waste generation in a coverage area under consideration: ..... Kg/day

e) Existing CBWTF treatment Capacity :
   (a) Incineration/plasma pyrolysis :..... Kg/day
   (b) Autoclave/hydroclave : .....Kg/day
   (c) Chemical Disinfection :..... Kg/day

f) Is locality requires any additional capacity (within a radius of 75 KMs)?.
   : Yes □ No □
   (i) If so, indicate reason:.....

9. Requirement of Treatment Facility: Following treatment facilities shall be provided in a CBWTF:

a) Incineration : Yes □ No □
b) Autoclave (Pre-vacuum horizontal feeding) / Hydroclave / Microwave.
   : Yes □ No □
c) Shredder : Yes □ No □
d) Sharp pit (with drawing details) : Yes □ No □
e) Provision for floor washing/vehicle washing: Yes□ No □
f) Effluent Treatment Plant : Yes □ No □
g) Secured land fill/Disposal of ash in TSDF : Yes □ No □
h) Other provisions as per CPCB guidelines : Yes □ No □

10. Segregation

(i). Segregation shall be as per the Bio-medical Waste Management Rules, 2016 as amended as well as compatible with treatment facilities at CBWTF
(ii). Occupier/Generator is responsible for providing segregated waste to the operator.

11. Collection

(i) Respective coloured bags provided with bar code should be kept in similar coloured container i.e. coloured bags shall not be directly kept in vehicle.
(ii) Sharps shall be collected in puncture resistant, leak proof, rigid containers.
(iii) Temporary storage at healthcare unit shall be designated.

12. Transport Vehicle

(I) Dedicated vehicles for collection of Bio-medical waste : Yes □ No □

(II) Separate cabins shall be provided for driver/staff and the bio-medical waste containers : Yes □ No □

(III) The base of the waste cabin shall be leak proof to avoid pilferage of liquid during transportation : Yes □ No □

(I) The waste cabin may be designed for storing waste containers in tiers : Yes □ No □

(V) The waste cabin shall be so designed that it is easy to wash and disinfect. : Yes □ No □

(VI) The inner surface of the waste cabin shall be made of smooth surface to minimize water retention :Yes □ No □

(VII) The waste cabin shall have provisions of sufficient openings in the rear and/or sides so that waste containers can be easily loaded and unloaded : Yes □ No □

(VIII) The vehicle shall be labeled with the bio-hazard symbol (as per Schedule IV of BMWM Rules) and should display the name, address and telephone number of the CBWTF : Yes □ No □

(IX) Other provision as per CPCB guidelines : Yes □ No □

13. Storage

(I) Sufficient ventilated storage space for untreated and treated bio-medical waste shall be provided. : Yes □ No □

(II) The flooring and walls (to a height of 2M from floor) shall be finished with smooth and fine material. There shall be minimum number of joints. : Yes □ No □

14. Record Keeping

(I) Documents such as collection advice taken from health care units for each category of waste, records of waste movements, logbook for the equipment and site records shall be maintained. : Yes □ No □

(II) All the record (five year) shall be available at the CBWTF site for inspection. : Yes □ No □

15. Proposed Treated Waste Disposal method:

(i). Incineration ash - Secured landfill/near by TSDF : Yes□ No□

(ii). Plastic waste after disinfection and shredding –Registered Recycling Unit : Yes □ No □

(iii). Sharps, after disinfection (if encapsulated) - Municipal landfill : Yes □No □

(iv). Treated wastewater –Discharge into sewer/drain or recycling in APCD : Yes □ No □

(v). Oil & grease –By incineration: : Yes □ No □

(VI). Any other mode of disposal of recyclable waste:
(If so, pl. indicate .....)

16. Estimated energy consumption and fuel consumption per month :

(i) Estimated energy consumption per month

(a)	General lighting in the facility	:
(b)	Incinerator	:
(c)	Autolcave/microwave	:
(d)	Shredder	:
(e)	ETP	:
(f)	Any other	:

(ii) Estimated fuel consumption:

(a)	Diesel consumption	:..... in Kl per month
(b)	No. of hours of operation of DG Set	:
(c)	No. of hours of incineration	:

17. Whether the proponent obtained necessary approvals from the concerned departments as required : Yes □ No □

(i) If yes, attach details

18. Whether the proponent obtained EC as per EIA 2006 and the amendments made thereof : Yes □ No □

(i) If yes, attach a copy of the EC obtained from the concerned

19. Whether the proposal recommended for issuing consent to establish

: Yes □ No □

(Signature of the official verified with date)

Annexure – V

Check List for Performance Evaluation of the
Common Bio-medical Waste Treatment and Disposal Facility (CBWTF)

S.No.	Details		Particulars
01.	Name of CBWTF with contact details	:	
02.	Date of visit	:	
03.	Location details of the CBWTF	:	a) Near to Residential area: :Yes □ No □ b) In/near Sensitive area: Yes □ No□ c) In Industrial area : Yes □ No □ d) Is there a buffer zone of 500 m: Yes □ No □ Indicate exact distance: in KM e) Is it as a part of TSDF: Yes □ No □ If so, distance of TSDF from the nearest CBWTF: ……KM.. f) Is the facility proposed in Metropolitan city: Yes □ No □ (i)Name of the City: …… (ii)Population of the City (as per latest census): …… g) Is the facility proposed in Hilly area : Yes □ No □ (i)Name of the Town/City: ……
04	Month / year of establishment and the Consents status	:	Establishment Month/Year :
05.	CBWTF set up by	:	
06.	CBWTF operated by	:	
07.	Total number of healthcare facilities and beds covered (as on date of visit)	:	No. of HCFs : No. of Beds : No. of HCFs and beds upto 75 KM radius:

S.No.	Details		Particulars
08.	Total BMW Treatment Capacity of CBWTF (in kg / day)	:	Incineration : Autoclave : Chemical Disinfection: Any other treatment and disposal:
09.	**Consents and Authorization details :**		
9.1	Consent under Water (Prevention and Control of Pollution) Act, 1974	:	□Applied for □ Not Applied for □ Possess Valid Consent □ Not renewed □ No consent If obtained: Consent is valid upto ..... and issued by .....SPCB/PCC vide letter dated .....
9.2	Consent under Air (Prevention and Control of Pollution) Act, 1981	:	□Applied for □ Not Applied for □ Possess Valid Consent □ Not renewed □ No consent If obtained: Consent is valid upto ..... and issued by .....SPCB/PCC vide letter dated .....
9.3	**Environmental Clearance (EC)**		□Applied for □ Not applied □ Obtained □ Not obtained If obtained: EC issued by SEIAA or MoEF& CC vide letter dated .....
9.4	Authorization under BMW Rules, 1998	:	□ Applied for □ Not Applied for □ Possess Valid Authorisation □ Not renewed □ No Authorisation If obtained: Authorisation is valid upto ..... and issued by .....SPCB/PCC vide letter dated .....
10.	Investment in setting up the CBWTF	:	
11.	Area of plot size for CBWTF (Sq. ft.)	:	
12	Annual Report submission for the year	:	Submitted before due date : :Yes □ No □ If yes, provide details of waste collected, received and treated & disposed of: .....
12.	Coverage area of CBWTF (radius in KM covered)	:	Coverage area upto 75 km radius: Yes □ No □

S.No.	Details		Particulars
13.	Name of Districts/Cities / places being covered	:	(Pl. indicate Districts or places covered:..... .....) W.r.to the CBWTF (i) Farthest HCF located at :.. .....KM (ii) Nearest HCF located at :.....KM.
14.	Daily operation schedule (timings)	:	(i) Collection: ...AM to .... PM. (ii) Incineration:....AM to ....PM (iii) Whether waste from member HCFs collected in holidays: □ Yes □ No
15.	Cost charged to the healthcare facilities	:	(i) Charges in Rs..... (ii) Is the cost to be levied suggested by: .....Organisation
16.	**Total quantity of bio-medical waste treated: kg/day (avg.)**		
16.1	Incinerable	:	..... %
16.2	Autoclaving	:	.....%
16.3	Chemical Disinfection	:	.....%
16.4	Others (please specify waste type-wise)	:	.....%
17.	**Staff involvement in CBWTF operation (number of persons):**		
17.1	Managerial / Administration	:	
17.2	Equipment operations	:	
17.3	Transportation of BMW	:	No. of Drivers: No. of Helpers:
17.4	Sanitation and others	:	
17.5	Total persons excluding managers	:	
18.0	**Collection and Transportation of bio-medical waste from member HCFs :**		
18.1	No. of Vehicles used for collection of waste from member HCFs	:	(i) Four Wheelers: .....Nos and Vehicle Numbers: ..... (ii) Two Wheelers :.....Nos and Vehicle Numbers:.....
18.2	Vehicles are labeled as per BMWM Rules, 2016	:	□ Satisfactory □ No satisfactory
18.3	Vehicles used are as per CPCB Guidelines	:	□ Satisfactory □ No satisfactory

<table>
<tr><th>S.No.</th><th>Details</th><th></th><th>Particulars</th></tr>
<tr><td>18.4</td><td>Vehicles attached with the GPS provision as per BMWM Rules 2016</td><td></td><td>□ Satisfactory □ No satisfactory</td></tr>
<tr><td>18.5</td><td>Whether waste collected from member HCFs adopted Bar coding system ?</td><td></td><td>□ Yes □ No</td></tr>
<tr><td>19.0</td><td>Temporary untreated waste storage area</td><td>:</td><td>□ Satisfactory □ No satisfactory</td></tr>
<tr><td>20.0</td><td>Mode of conveyance of bio-medical waste from untreated waste storage area to the treatment equipment within the CBWTF</td><td>:</td><td>□ Closed Trolley/Pull cart with bio-hazard symbol
□ No Closed Trolley/Pull cart
□ Others like .....</td></tr>
<tr><td>21.0</td><td colspan="3">Treatment equipment installed at CBWTDF</td></tr>
<tr><td>21.1</td><td>Incinerator/plasma pyrolysis capacity and make</td><td>:</td><td>(i) No. of Incinerators including standby:
(ii) Incineration capacity: ..... kg /hr .....Kg/day.</td></tr>
<tr><td>21.2</td><td>Daily Operation schedule of the incinerator /plasma pyrolysis (timings)</td><td>:</td><td>.....AM to .....PM (or)
.....PM to .....AM
Whether bio-medical waste collected from member HCFs is treated during holidays:
Yes □ No □</td></tr>
<tr><td>21.3</td><td>Consumption of auxiliary fuels</td><td>:</td><td><table><tr><th>S. No</th><th>Type of Fuel</th><th>Consumption Quantity in liters per day</th><th>Bill numbers of purchase of fuel</th></tr><tr><td>a)</td><td></td><td></td><td></td></tr><tr><td>b)</td><td></td><td></td><td></td></tr></table></td></tr>
<tr><td>21.4</td><td>Stack attached with the incinerator /plasma pyrolysis</td><td>:</td><td>(i) Stack Diameter: m
(ii) Stack Height : m above Ground Level</td></tr>
<tr><td>21.5</td><td>Monitoring provision attached with the stack</td><td>:</td><td>□ Platform □ Porthole □ access to the platform (Steps/Monkey Ladder/any other.....)</td></tr>
<tr><td>21.6</td><td>Is stack monitoring provision satisfactory</td><td>:</td><td>□ Yes □No</td></tr>
</table>

S.No.	Details		Particulars
	and as per CPCB guidelines		
21.7	air pollution control systems attached with the incinerator/plasma pyrolysis	:	(i) Quenching : □ Yes □ No (ii) Venturi scrubber : □ Yes □ No (iii) Droplet separator : □ Yes □ No (iv) Mist eliminator : □ Yes □ No (v) Filters : □ Yes □ No (vi) Lime and Activated Carbon injection: : □ Yes □ No (vii) ID Fan : □ Yes □ No (viii) Any other : (Pl. indicate)
21.8	Waste feeding mechanism	:	(i) Manual feeding : □ Yes □ No (ii) PLC based Automatic feeding : □ Yes □ No
21.9	Is PLC and automatic recording system (for recording operating parameters of the incinerator) attached with the incinerator/plasma pyrolysis	:	(i) PLC synchronized with waste feeding mechanism & in working condition: □ Yes □ No (I) PLC synchronized and recording system attached with incinerator and in working condition: □ Yes □ No
21.10	Operational conditions of the Incineration/plasma pyrolysis as observed during the visit	:	(i) Whether burners in working condition: □ Yes □ No (ii) Temperature maintained in Primary Chamber (range) : ……..^{O} C (iii) Temperature maintained in Secondary Chamber (range):……..^{O} C (iv) Negative draft in Primacy Chamber : ……..mm of water column (v) Pressure drop in the Venturi: …… mm of water column
21.11	Is continuous on-line monitoring system/Flue gas analyser attached with the incinerator/plasma pyrolysis for flue gas	:	(i) Is continuous online monitoring system (COMS) attached with incinerator: □ Yes □ No (ii) Observed values of flue gas parameters: CO_2:: .% ;O_2: …… % and CO: …… % (iii) Observed Combustion Efficiency: ……%

S.No.	Details		Particulars
	analysis (i.e CO, O_2 and CO_2)		(iv) Observed values of stack emissions as per COMS .....
21.12	Emergency and Fire safety measures adopted within the facility is adequate	:	Is Emergency stack attached with the incinerator: □ Yes □ No Whether fire safety measures adopted (Fire Extinguishers, Sand buckets etc.): □ Yes □ No
21.13	Log book for incinerator/ plasma pyrolysis is maintained and satisfactory	:	Log Book Maintained: □ Yes □ No Log Book Maintained is satisfactory : □ Yes □ No
21.14	Details of heat recovery system installed with incinerator/plasma pyrolysis	:	□ Yes □ No
22.0	**Capacity of autoclave and-- make**	:	Autoclave of capacity .....kg/cycle and make ..... installed.
22.1	Operating conditions of autoclave/microwave as observed during the visit	:	Operating parameters observed: (i) Temperature : in ^{O}C (ii) Pressure : in psi **(iii)** Residence time : in minutes
22.2	Provision made for the autoclave /micorwave	:	Trolley for waste feeding : □ Yes □ No Graphic or computer recording device attached: □ Yes □ No
22.3	Spore test or strip test conducted regularly and records maintained	:	□ Yes □ No Pl. indicate frequency of Strip test conducted: every batch /once in a week /quarterly /yearly Pl. indicate frequency of Spore test conducted: every batch /once in a week /quarterly /yearly
22.4	Performance of autoclave by spore testing or routine test	:	□ Satisfactory □ Not satisfactory
22.5	Log book maintained for autoclave is satisfactory	:	Log Book Maintained: □ Yes □ No Log Book Maintained is satisfactory : □ Yes □ No
23.0	**Capacity of shredder and make**	:	..... kg/hr. Self-designed & got fabricated locally.

<table>
<tr><th>S.No.</th><th>Details</th><th></th><th>Particulars</th></tr>
<tr><td>24.0</td><td>Details of sharp pit / Encapsulation facility</td><td>:</td><td>(i) Sharp Pit provided : □ Yes □No
(ii) Is it as per CPCB guideline : □ Yes □No
(iii) Records maintained : □ Yes □No
(iv) Total quantity of waste sharps stored:
(v) Total quantity of waste sharps treated and disposed:</td></tr>
<tr><td>25.0</td><td colspan="3">Water Balance</td></tr>
<tr><td>25.1</td><td>Source and quantity of water intake per day (cu.m / day)</td><td>:</td><td>Water consumption source: .....
Water is drawn at ..... KLD approximately.
Is magnetic water flow meter attached to the water source/water storage tank : □ Yes □No

Magnetic water flow meter readings as per record (for last month):
1 St Day of Month :
Last day of month :
Magnetic Flow meter as observed during the visit:
<table>
<tr><th rowspan="2">S. No</th><th rowspan="2">Month</th><th colspan="2">Magnetic flow meter reading</th></tr>
<tr><td>Initial</td><td>Final</td></tr>
<tr><td>(1</td><td>Previous month .....</td><td></td><td></td></tr>
<tr><td>(2)</td><td>On the date of visit:.....</td><td></td><td></td></tr>
</table>

If water requirement is met from outside through tankers, pl. provide No. of Tankers procured in a previous six months:

Total quantity of water consumed during the previous six months : .. .. in KLD</td></tr>
<tr><td>25.2</td><td>Break up of water usage (such as washing, scrubbing etc.)</td><td>:</td><td>Scrubber – KL/hr or KLD
Washing – KLD
Disinfections – KLD
Gardening – KLD
Domestic – KLD</td></tr>
</table>

S.No.	Details		Particulars
26.0	**Total wastewater effluent generated per day**	:	About .....KLD generated Quantity of treated water reused/recycled in %: Any other mode of disposal:
27.	**Effluent treatment plant details**		
27.1	ETP Capacity	:	..... KL/Cycle
27.2	Flow Chart of ETP	:	ETP comprising of: ..... Unit operations
27.3	Intake and Discharge of ETP	:	(i) Magnetic Flow measuring device provided at the outlet of ETP: □ Yes □ No (ii) Energy meter attached to the ETP: □ Yes □ No (iii) Energy consumed over a period of one month: = ... Units (iv) pH meter attached at the outlet of ETP: □ Yes □ No
27.4	Final mode of disposal of treated water	:	(i) Is treated wastewater complying with the discharge norms □ Yes □ No (ii) Is Treated water is reused in the scrubber: □ Yes □ No (ii) Is Treated water is reused for gardening: □ Yes □ No (iii) Is Treated water is discharged in drain: □ Yes □ No (iv) Is Treated water is discharged in open area: □ Yes □ No
28.	**Status of infrastructure provided (Pl. indicate 'Yes / No' whichever is applicable)**		
28.1	Separate treatment equipment room	:	□ Yes □ No
28.2	Main waste storage room	:	□ Yes □ No
28.3	Treated waste storage room	:	□ Yes □No
28.4	Administrative room	:	□Yes □No
28.5	Generator set	:	□ Yes □No

S.No.	Details		Particulars
	(i) Capacity	:	
	(ii) Is Stack attached as per DG Set norms	:	□Yes □ No
	(iii) Is Acoustic enclosure provided as per DG Set norms	:	□ Yes □ No
	(iv) Is DG Set complying to the emissions norms and noise level norms	:	□Yes □ No If so, pl. indicate latest monitoring results: .....
28.6	Site security (high walls, fencing, guarded gates etc.)	:	High walls on all four sides :□ Yes □No Fencing on all the sides : □ Yes □ No Guarded Gates : □Yes □ No Any other observation pl indicate:.....
28.7	Parking facility	:	□ Yes □ No
28.8	Sign board	:	□ Yes □ No
28.9	Green belt	:	□ Yes □ No
28.10	Washing room	:	□ Yes □ No
28.11	First aid box	:	□ Yes □ No
28.12	Lighting arrangements in the facility	:	□ Yes □ No
28.13	Odour problem remedial measures	:	□ Yes □ No
28.14	Fire fighting and emergency facilities	:	□ Yes □ No
28.15	Measures for control of pests / insects etc.	:	□ Yes □ No
28.16	Protective gear for waste handlers	:	□ Yes □ No
28.17	Telephone facility	:	□ Yes □ No
28.18	Provision of washing, toilets and safe place for eating for the workers		□ Yes □ No
28.19	File alarm system provided in the facility		□ Yes □ No

S.No.	Details		Particulars
29.	**Record maintenance and record keeping details (Pl. indicate 'Yes / No' whichever is applicable)**		
29.1	Waste Movement /Manifest record	:	□ Yes □ No
29.2	Log book for treatment equipment	:	□ Yes □ No
29.3	Site records	:	□ Yes □ No
29.4	Incineration ash generation and final disposal records	:	□ Yes □ No
29.5	Treated plastic waste generation and its sale to the registered recycler	:	□ Yes □ No
29.6	Syringes treated and its final disposal record	:	□ Yes □ No
29.7	Workers health status records		□ Yes □ No
29.8	Workers immunization records		□ Yes □ No
29.9	Medical and para-medical workers training records		□ Yes □ No
29.10	Whether records maintained with regard to the accidents (such as fire, spills and injury and measures taken)		□ Yes □ No
30.	**Collection and transportation status (Yes / No)***		
30.1	Whether waste collected in a container of similar colour with label as per the Rules?	:	□ Yes □ No
30.2	Whether the person who collects BMW maintain a register with him / her?	:	□ Yes □ No

S.No.	Details		Particulars
30.3	Has due attention have been given in vehicles to prevent spillage / pilferage/ loading / unloading etc.?	:	□ Yes □ No
30.4	Is the vehicle labeled with the symbol and display the name, address, telephone number etc.?	:	□ Yes □ No
30.5	Does the CBWTF operator use satellite station to store the waste?	:	□ Yes □ No (If yes, give details.....)
30.6	The CBWTF operator collects waste daily or alternate day including holidays?	:	□ Yes □ No
30.7	Whether waste treatment criterion of 48 hours is complied?		□ Yes □ No
31.	**Disposal of treated waste:**		
31.1	Plastic waste after treatment	:	Plastic waste Sold to: M/s. ..... and approved by .....SPCB/PCC
31.2	Treated sharps	:	Treated syringes disposal by:..... or through M/s.....and approved by .....SPCB/PCC
31.3	Incineration ash	:	Incineration ash disposal by: Disposal in Sanitary Landfill:□ Yes □ No Disposal through TSDF:□ Yes □ No Any other mode :.....
31.4	Other treated solid wastes	:	
31.5	Oil & grease	:	
31.6	Treated wastewater	:	

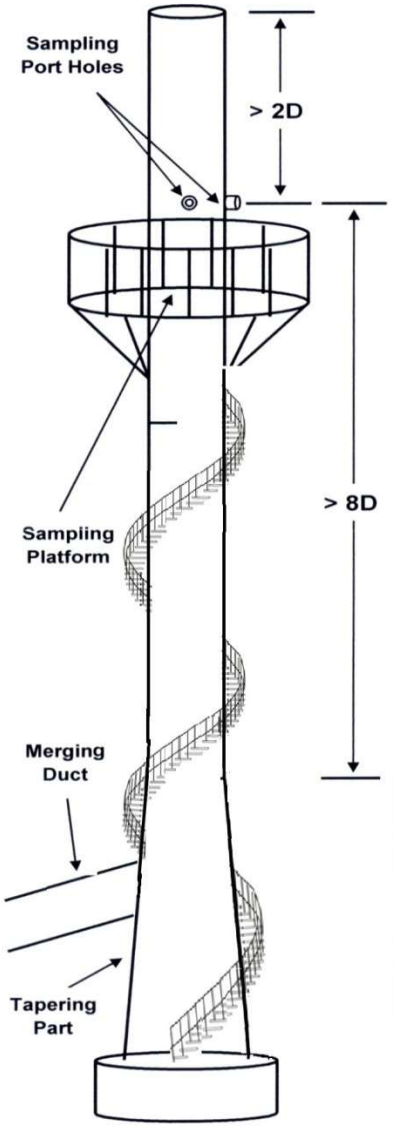
<table>
<tr><th>S.No.</th><th>Details</th><th></th><th>Particulars</th></tr>
<tr><td>32.</td><td>Frequency of incinerator / autoclave / microwave / hydroclave / ETP discharge effluent testing and name of the laboratory (specify approved or not under E(P) Act, 1986 or NABL Accredited Lab.). Give details of compliance / non-compliance)</td><td>:</td><td>(i) Reported monitoring frequency:
(ii) Stack monitoring : Quarterly :□ Yes □ No
(iii) Waste water : Monthly/Quarterly/Yearly
(iv) Incineration ash : Monthly/Quarterly/Yearly
(v) Name of the Laboratory conducted test: .....
(vi) Is the Laboratory approved under E (P) Act, 1986/.....SPCB/PCC/ NABL: :□ Yes □ No
(vii) Copies of the analysis reports of treated effluent, incinerated ash, stack monitoring as (Annexures.....)</td></tr>
<tr><td>32.1</td><td>Frequency of site inspection by SPCBs/PCCs/CPCB/any other agencies</td><td>:</td><td>(i) No. of times in a year inspected by the SPCB/PCC: .....
(ii) No. of times in a year inspected by the CPCB .....</td></tr>
<tr><td>33.</td><td colspan="3">Monitoring Results :</td></tr>
<tr><td>33.1</td><td>Incinerator stack emission (parameters stipulated in the Rules, temperature attainment in the chambers, residence time in the secondary chamber etc.)</td><td>:</td><td><table><tr><th>Parameter</th><th>PM</th><th>HCl</th><th>NOx</th><th>Hg & com-pounds</th><th>Dioxins and Furans</th><th>C.E.</th></tr><tr><td>Date</td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>LIMIT</td><td>50</td><td>50</td><td>400</td><td>0.05</td><td>0.1 ng TEQ per Nm^3</td><td>99.00%</td></tr></table>Date of monitoring:
Note: All values are in mg/Nm^3, except CE</td></tr>
<tr><td>33.2</td><td>Whether Stack emission norms are complied with by the CBWTF</td><td></td><td>□ Yes □ No</td></tr>
<tr><td>33.3</td><td>Incineration ash characteristics</td><td>:</td><td>Characteristics as per Schedule –II of HOW (M& TM) Rules,2016 (Annexure-----)
Is it hazardous waste as per HOWM&TM Rules, 2016: □ Yes □No</td></tr>
<tr><td>33.4</td><td>ETP inlet/outlet characteristics</td><td>:</td><td><table><tr><th>Parameter</th><th>pH</th><th>TSS</th><th>COD</th><th>BOD</th><th>O&G</th></tr><tr><td>ETP Inlet Result</td><td></td><td></td><td></td><td></td><td></td></tr></table></td></tr>
</table>

S.No.	Details		Particulars
			ETP Outlet Result | | | | | | All values are in mg/l except pH
33.5	Whether liquid effluent discharge norms are complying by the CBWTF	:	□ Yes □ No
33.6	Whether CBWTF is submitting the annual report within the due date for the preceding year	:	□ Yes □ No If Yes, annual report submitted vide letter No..... dated.....
34.	Any other relevant observations	:	(pl. enclose as annexure)
35.	Name of the officials with designation inspected /monitored the CBWTF and the signature	:	

Annexure-VI

STATIONARY SOURCE EMISSION MONITORING

MODIFICATIONS TO BE MADE TO SAMPLING PLATFORM AND SAMPLING PORT HOLE



Number of Port Holes : Minimum two numbers of Port Holes at 90° apart from each other at a horizontal plane.

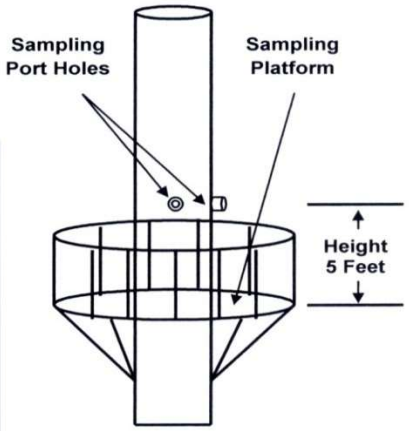
Location of Port Holes : Minimum 8 times of Internal Diameters of Stack downstream (upward direction of stack) from any duct confluence, bends and tapering & minimum 2 times of Internal Diameters of Stack upstream (downward direction of stack) from stack exit.

Location of Sampling Platform : 5 feet upstream (downward direction of stack) from the Port Hole as determined above.

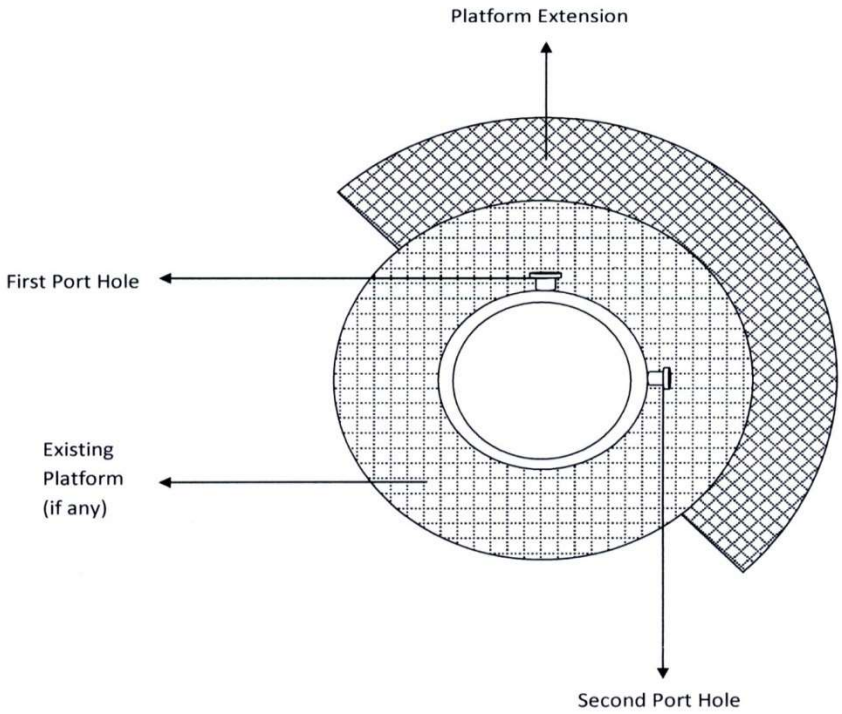
Port Hole Flange : If the internal diameter of the flange is 4 inch or more then there is no need to change, if it is less than 4 inch than it has to be replaced with 4 inch flange. The flange should not protrude out more than 6 inches from the outer wall of the stack (it shall be kept as less as possible).

Sampling Platform Modification : A semi-circular extension of the existing platform (width extending outward by 6 feet from outside wall of the stack and covering at least one third of the circumference) may be provided for access to both the Port Holes. This area can be extended from the existing Platform and if deemed necessary for safety of the personnel a counter extension in opposite direction may also be provided. The extended Platform shall be strengthened with requisite support from the stack.

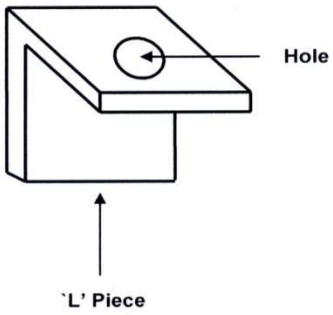




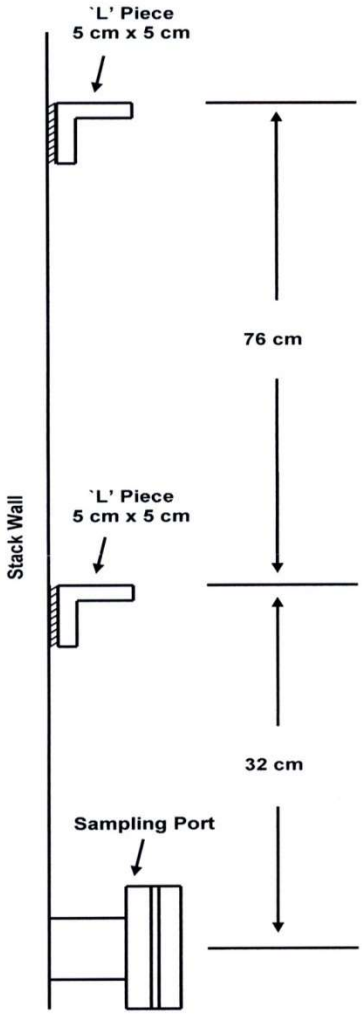
Note: Alternatively, safe access to monitoring platform may be provided with seperate scaffolding-cum-staircase arrangement



Sampling Platform Modification / Extension



**Fixing of `L' Pieces on the stack wall :** Two `L' shaped pieces are to be fixed on the stack wall for mounting the Mono-Rail & Chain (part of the Sampling Kit for movement of sampling Train in & out through the Sampling Port Hole). The `L' pieces shall be made of approximately 6 mm thick galvanized iron to have 5 cm long arms. One arm of the `L' piece shall be welded on the stack wall and another arm shall have a hole of 14 mm diameter near the open end. Both the `L' Pieces shall be welded on the stack wall at specified distances (as shown in the diagram on the next page) from the centre of Sampling Port Hole (in a vertical axis on the Stack Wall).



Fixing of `L' Pieces on the Stack Wall

ANNEXURE – VII

The vehicle shall be labeled with the bio-hazard symbol (as per Schedule IV of the BMWM Rules) and should display the name, address and contact telephone and mobile number of the CBWTF.

Bio Medical Waste Vehicle



Name and address of CBWTF with Contact number of CBWTF operator

Authorized by *(Name of)* State Pollution Control Board/Pollution Control Committee

Vehicle Side-1

Bio Medical Waste Vehicle



Name and address of CBWTF with Contact number of CBWTF operator

Authorized by *(Name of)* State Pollution Control Board/Pollution Control Committee

Vehicle Side-2



Bio- Hazard symbol at back side of the vehicle

Note: Proportion of Font size with respect to body height of the vehicle-12:1 (Minimum)

Proportion of Bio-hazard symbol with respect to body height of the vehicle-12:3 (Minimum)

Example: If body height is 6 feet i.e. 72" then minimum font size will 6" and minimum size of bio-hazard symbol will be 18".

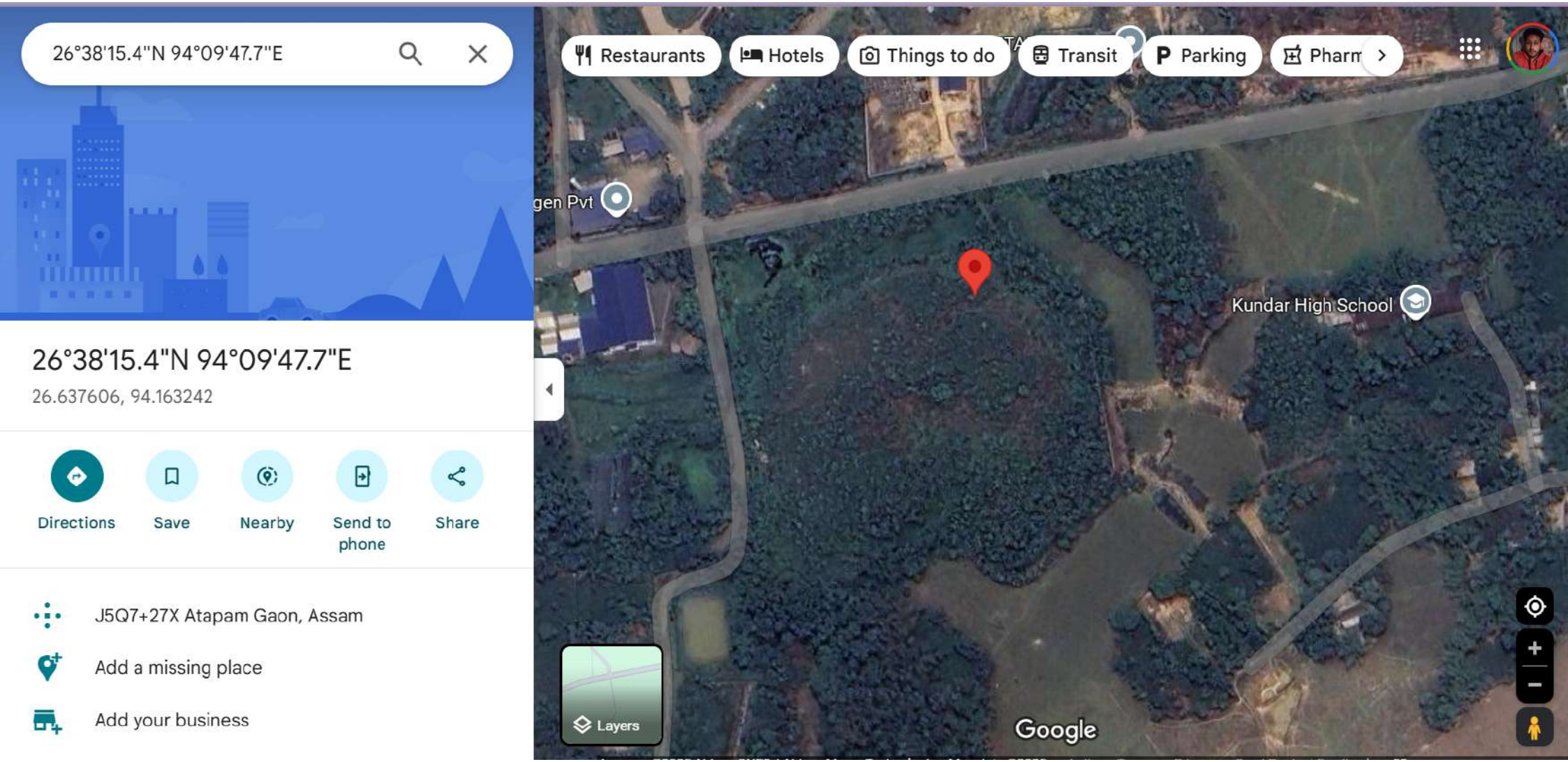
REFERENCES

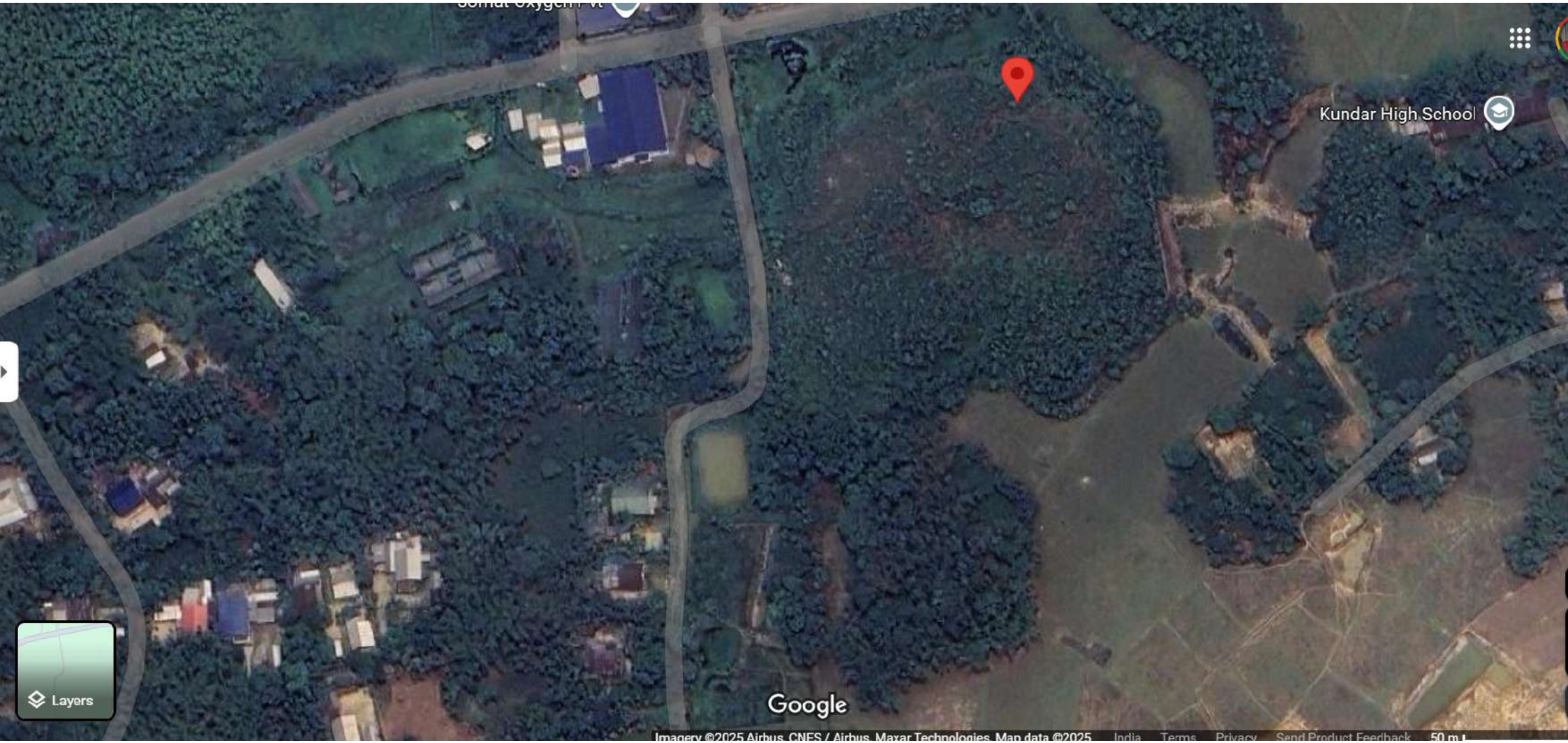
1. Bio-medical Waste Management Rules, 2016.
2. Revised Guidelines for Common Bio-medical Waste Treatment Facilities (2016).
3. CPCB Guidelines for BMW Incinerators.
4. 'Disposal of Bio-medical Waste generated during Universal Immunization Programme' issued by CPCB.
5. 'Guidelines for Environmentally Sound Management of Mercury Waste Generated from the Health Care Facilities' issued by CPCB.
6. Annual Report 2023 submitted to CPCB by the SPCBs/PCCs.
7. Stationary Source Emission Monitoring –Modifications to be made to the Sampling Platform and Sampling Port Hole issued by National Reference Trace Organics Laboratory (NRTOL), CPCB.

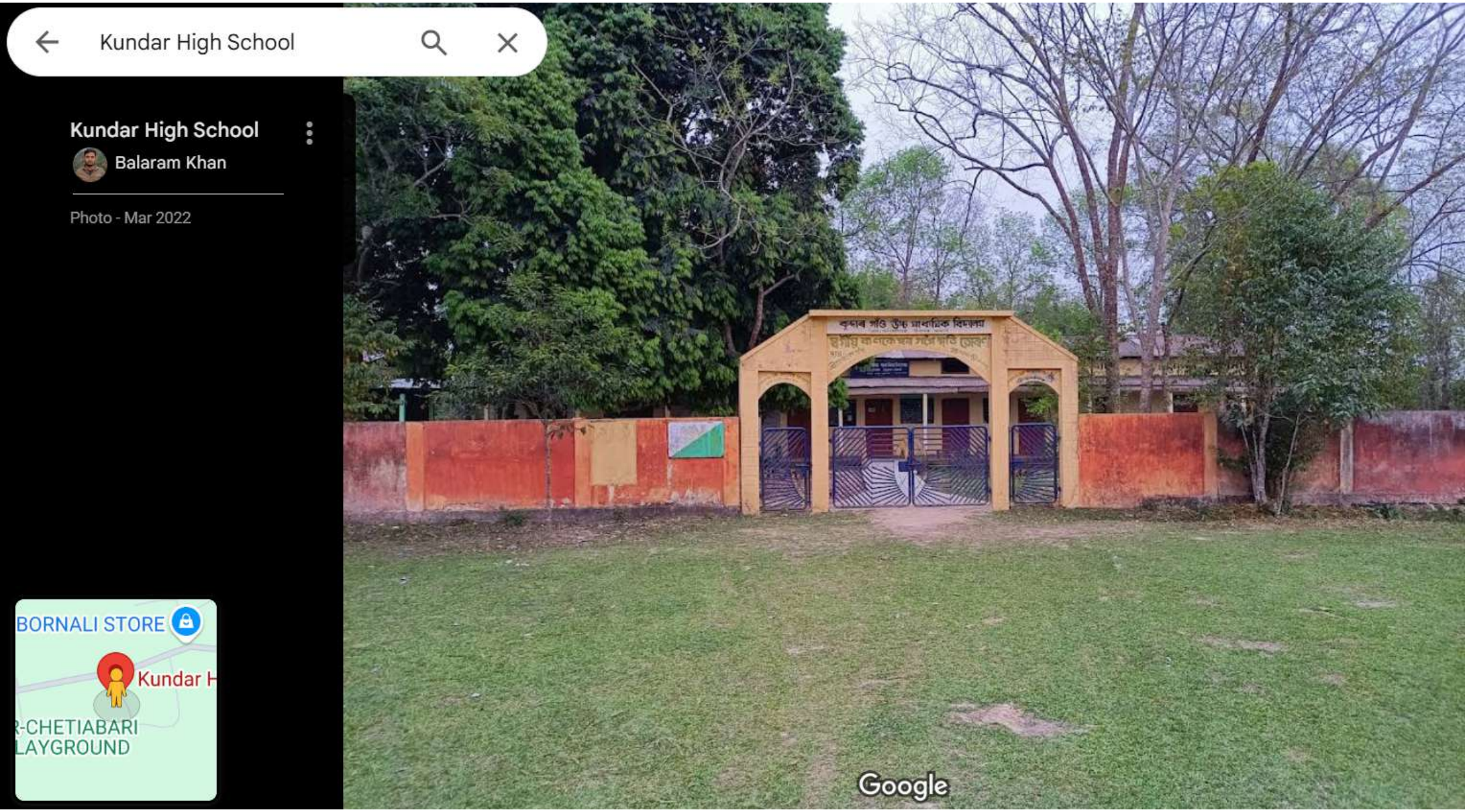
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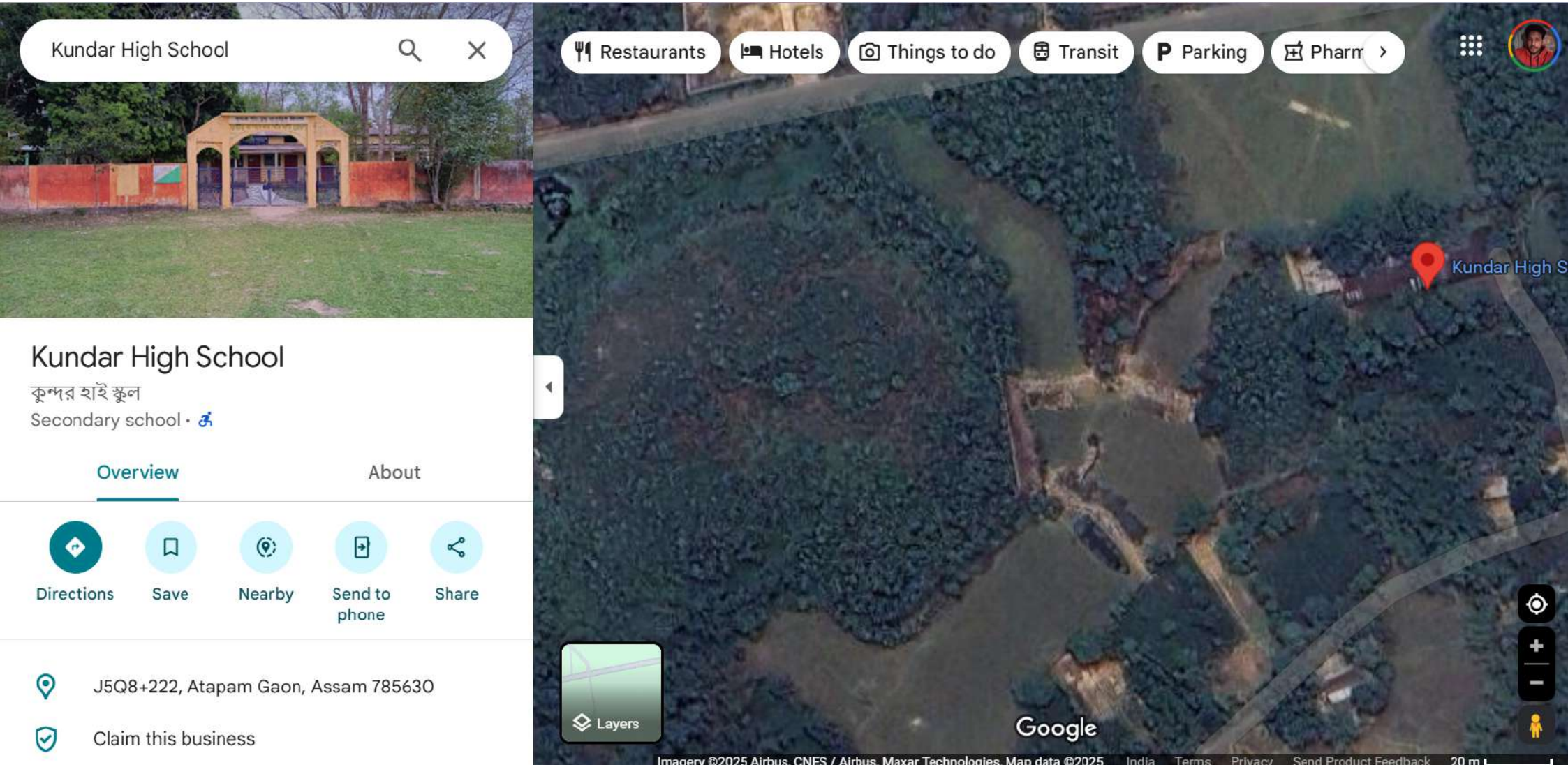
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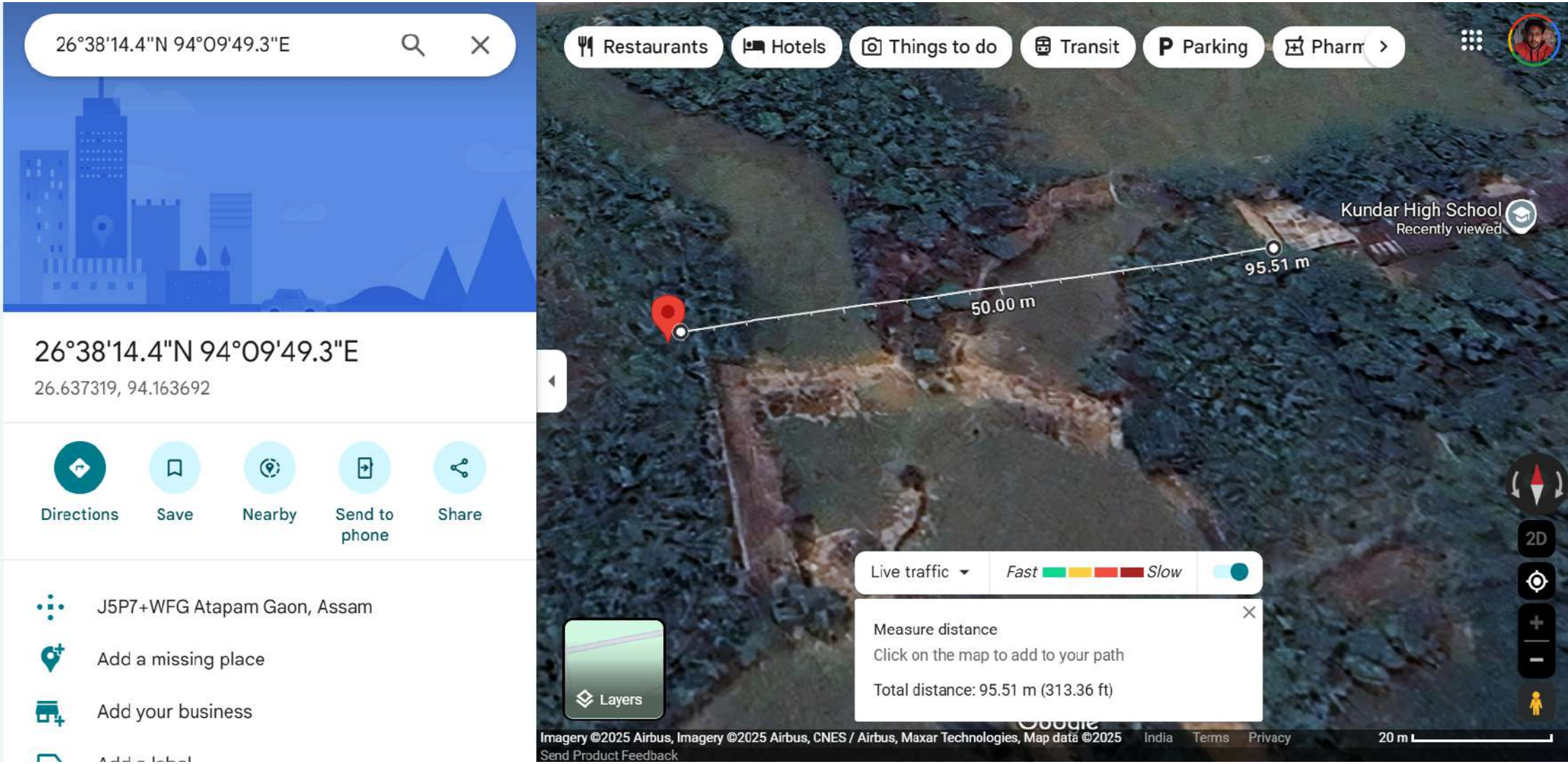


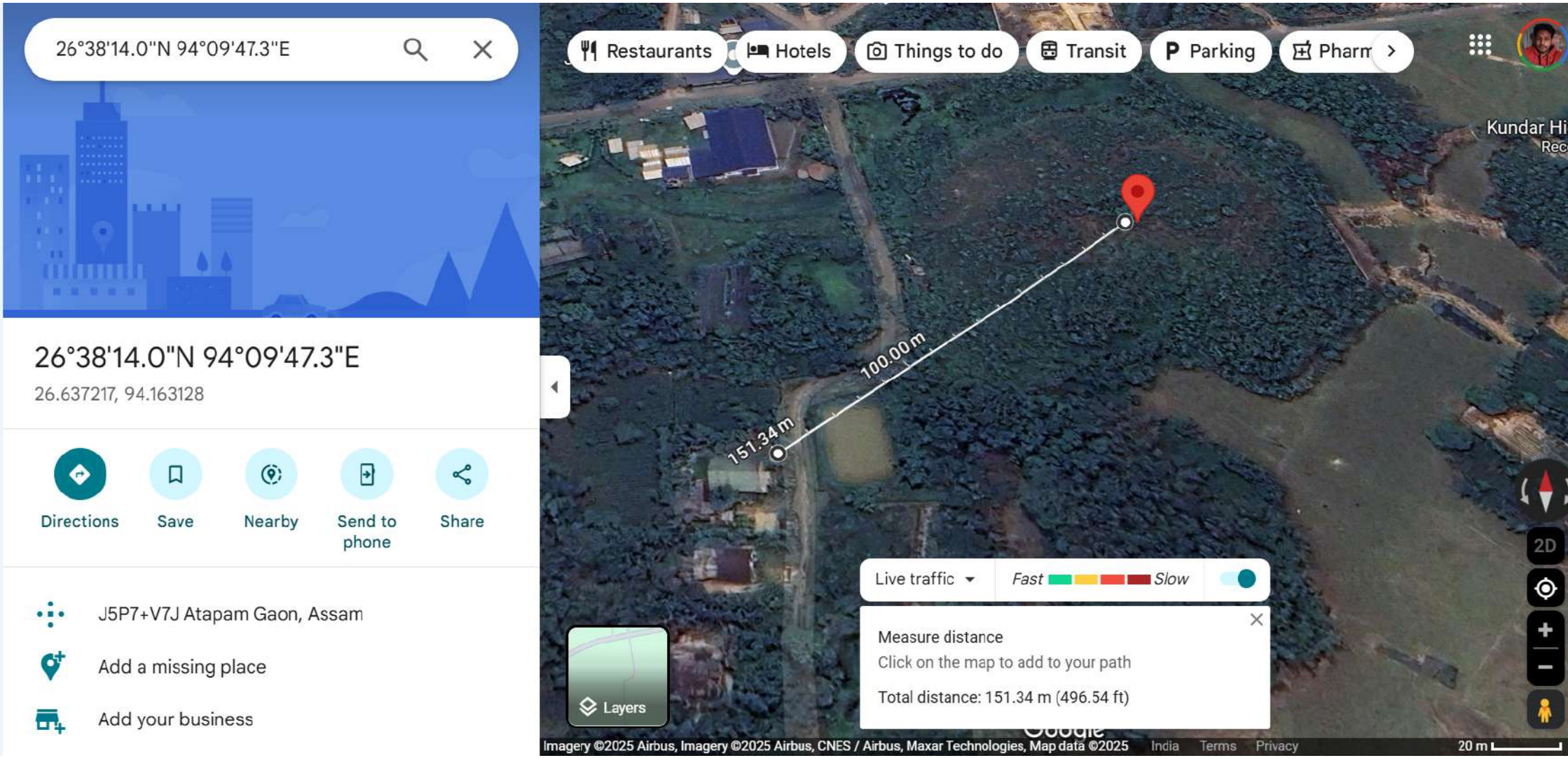

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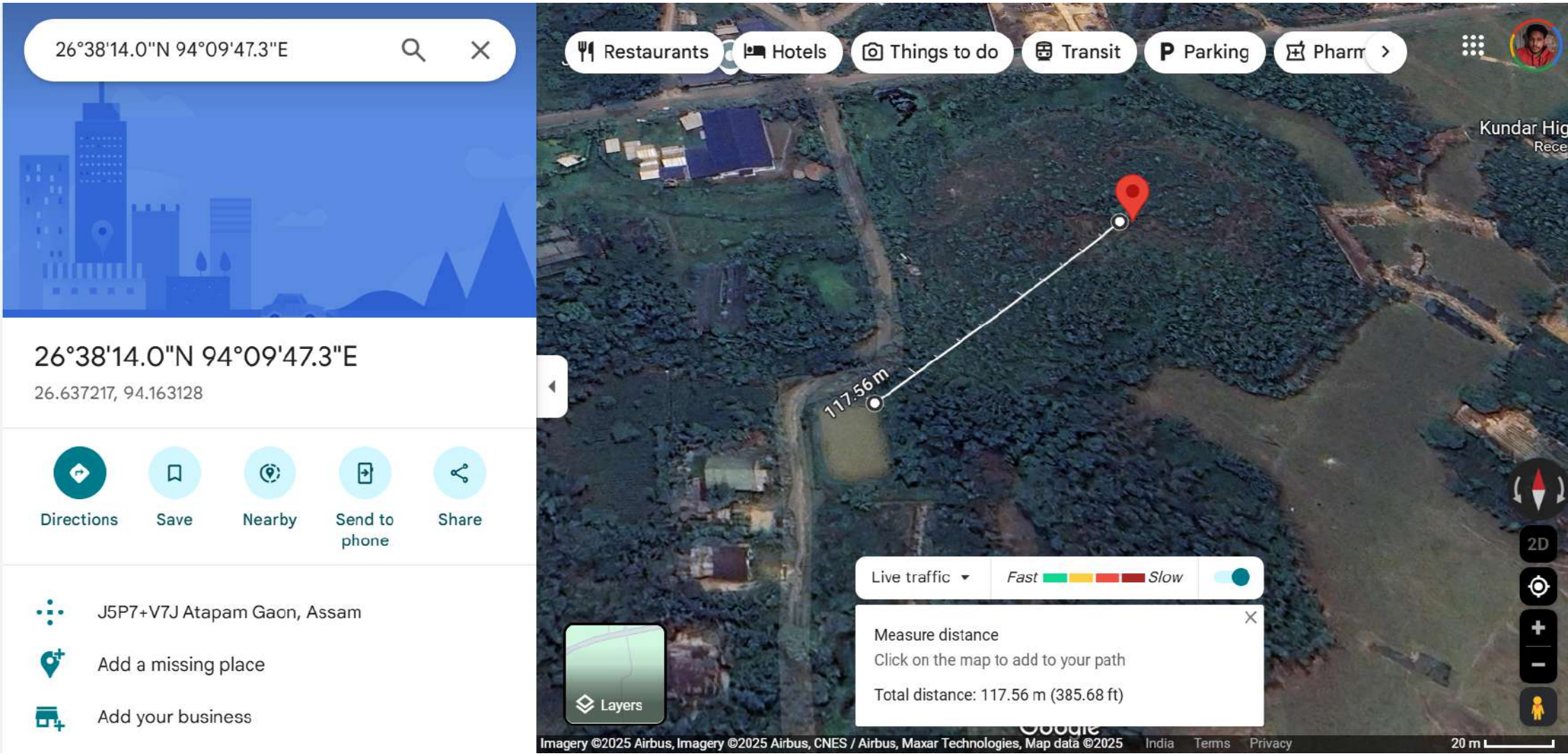

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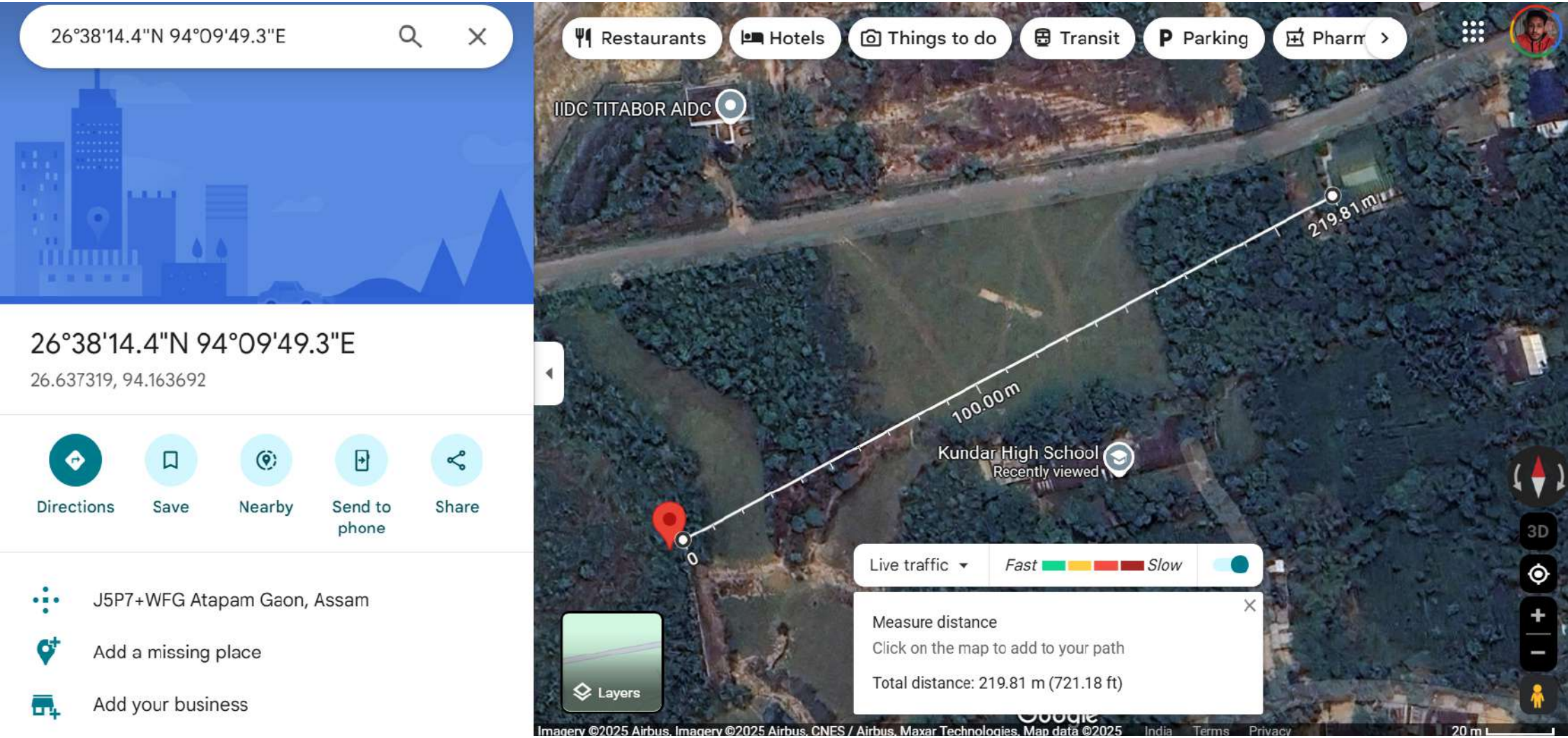

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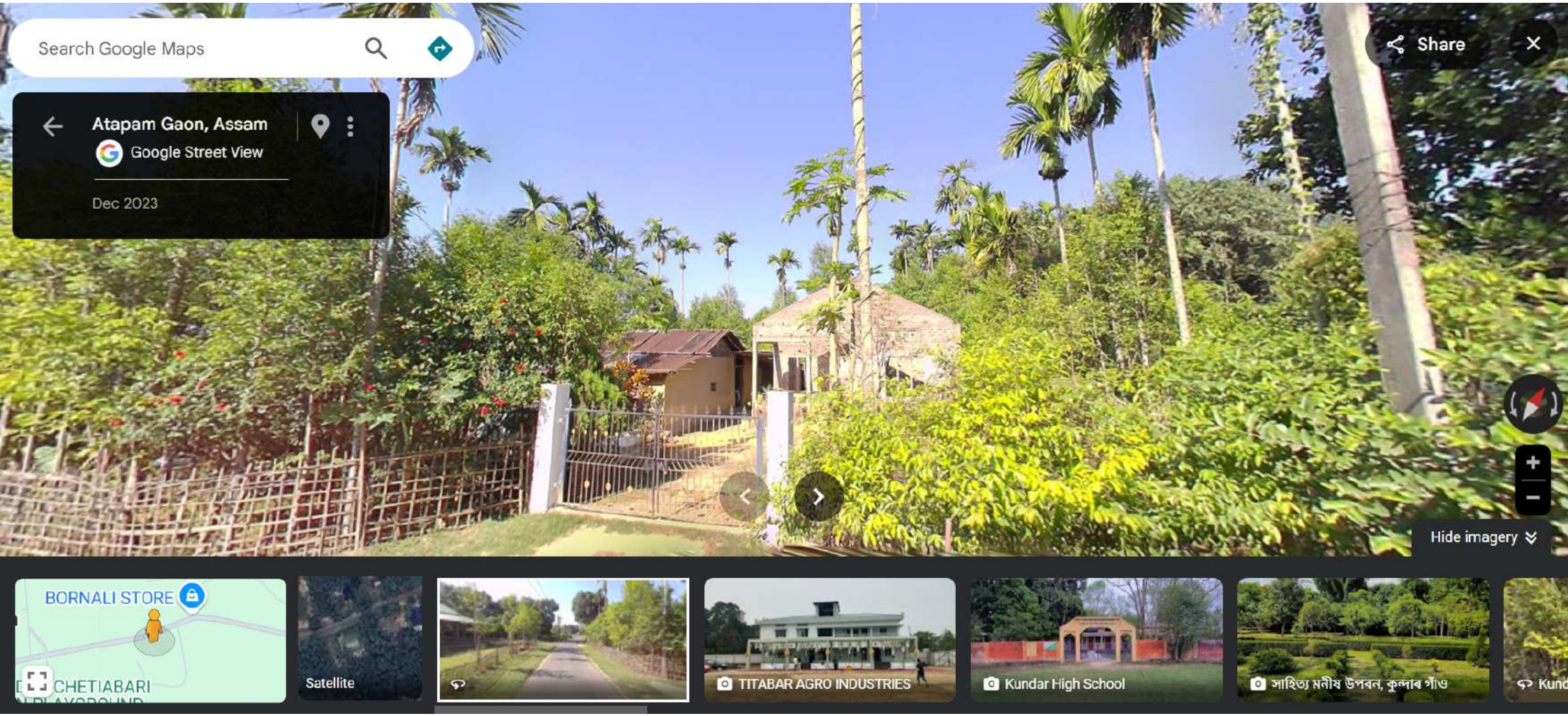

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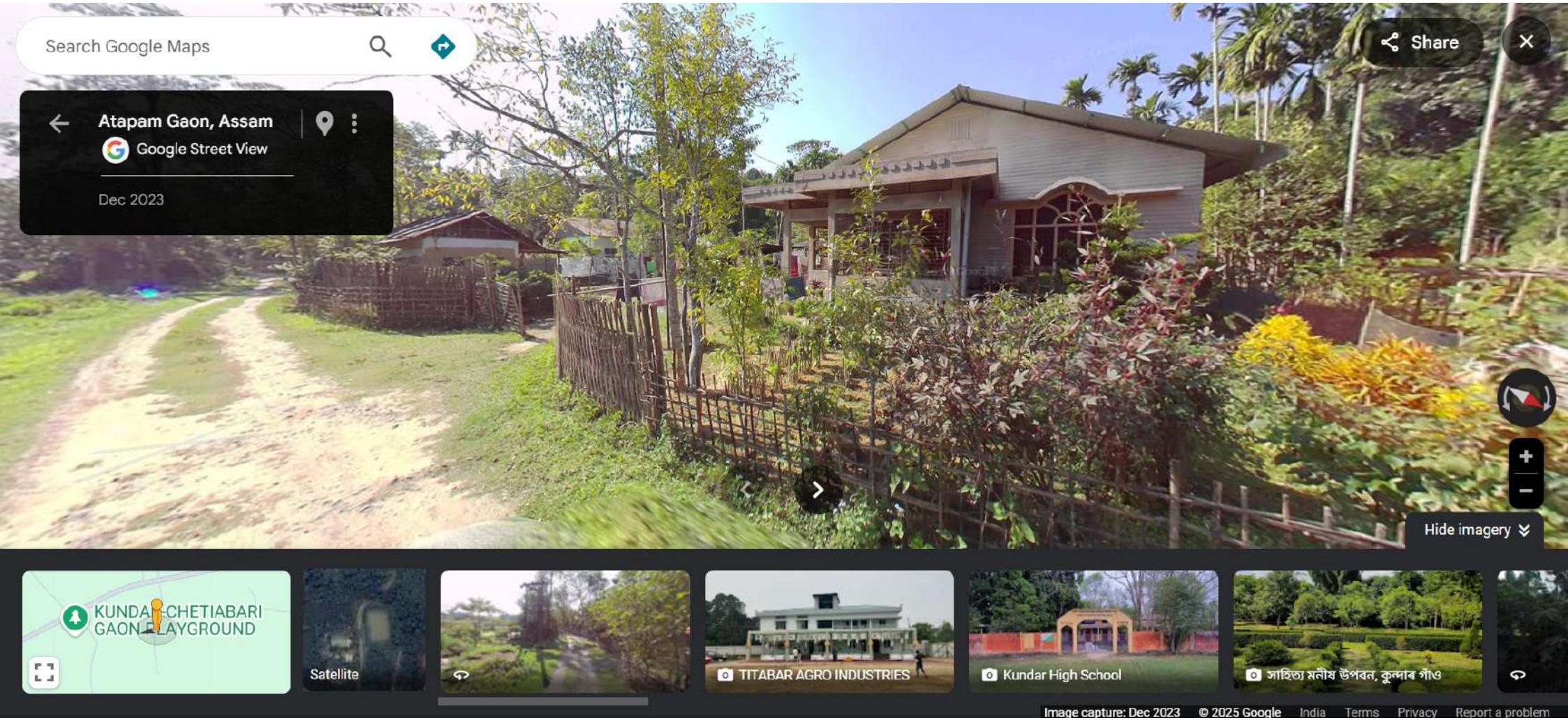

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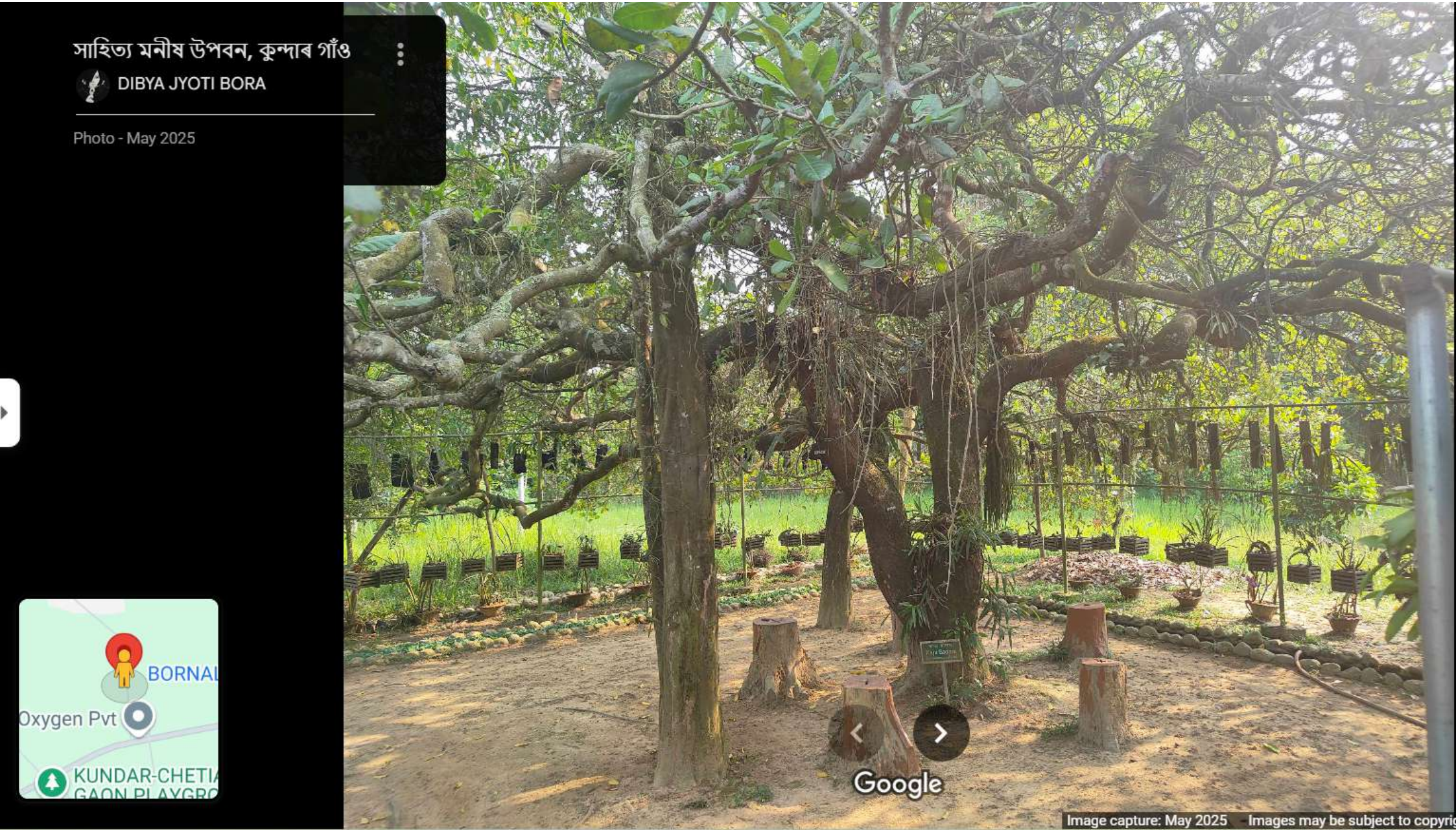

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A Abhinandan Buragohain

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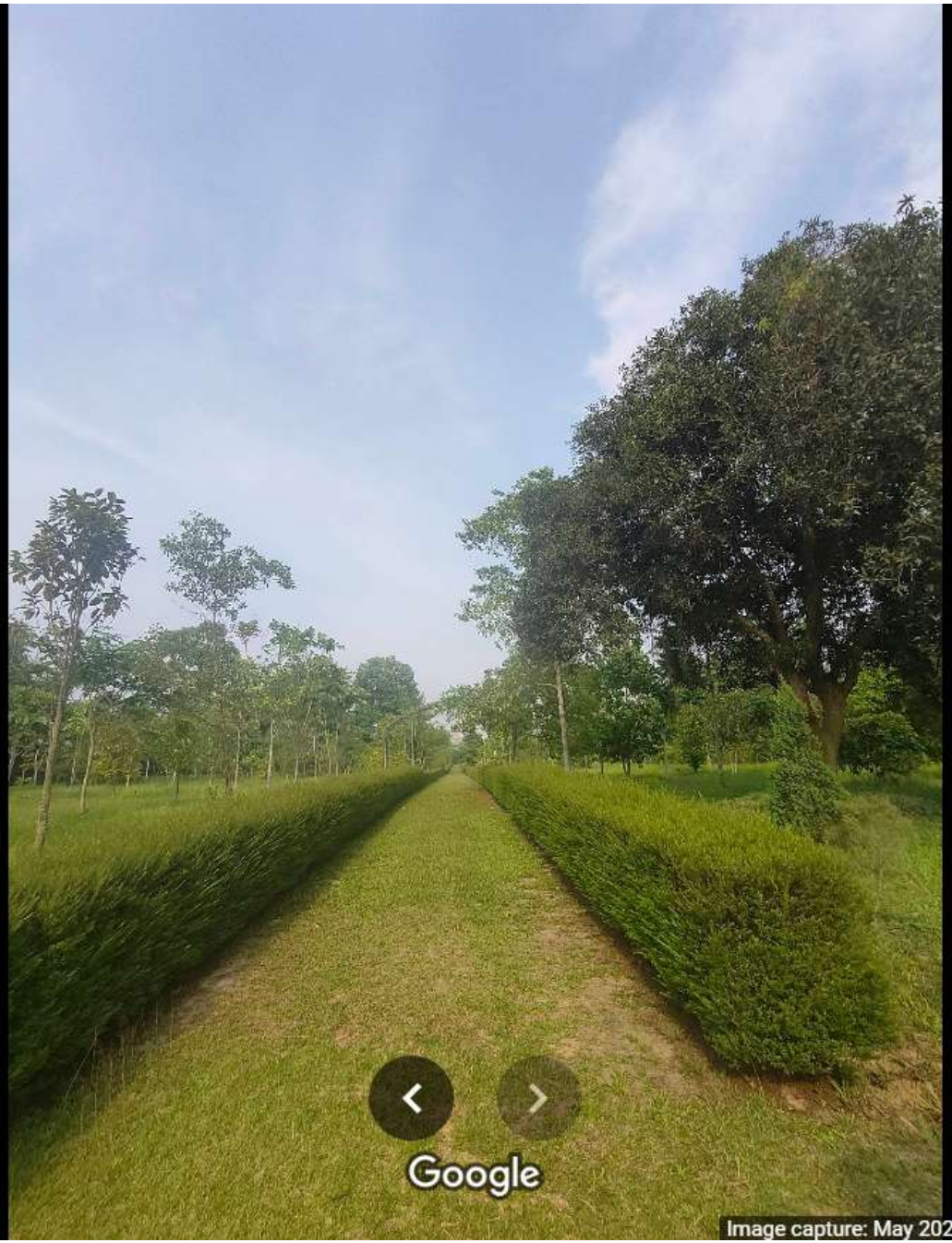


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DIBYA JYOTI BORA

Photo - May 2025





KSEPYA ENVIRONMENT MANAGEMENT PVT LTD
HELONARPAM, PO-HOWLY, DT-BARPETA, ASSAM, INDIA
PIN NO-781316 ,EMAIL ID –ksepyaenvironment@gmail.com
Mobile no-6002150473/9706099702 , CIN NO – U90001AS2019PTC019132

CERTIFIED TRUE COPY OF THE RESOLUTION PASSED BY THE BOARD OF DIRECTORS OF M/s. KSEPYA ENVIRONMENT MANAGEMENT PRIVATE LIMITED, CIN No. U90001AS2019PTC019132, HELD ON 19TH AUGUST, 2025, AT THE REGISTERED OFFICE OF THE COMPANY AT VILLAGE- HELANARPAN, P.O. HOWLY, HOWLY, DISTRICT: BARPETA, ASSAM – 781316 AT TIME 11 AM.

AGENDA: AUTHORIZATION OF MR. RAJU SAIKIA, DIRECTOR, TO REPRESENT COMPANY BEFORE THE NATIONAL GREEN TRIBUNAL, EZ.

"RESOLVED THAT, with the consent of the Board of Director of the Company be and is hereby accorded to authorize Mr. Raju Saikia, Aadhar No. 3912- 7942-9991, DIN No. 08909863, one of the Director of the Company, to represent the Company in all legal proceedings, regulatory filings, etc. initiated before the Hon'ble Court / Tribunal, and to take necessary actions on related issues, e.g., registration, compliance, etc., including but not limited to presenting documents / records, liaising / signing and affirming Affidavits, Replies and representing for the Company, and making any alterations, additions, corrections to the documents, papers, forms, etc., filed before the relevant authorities as and when required.

FURTHER RESOLVED THAT Mr. Raju Saikia, Director of the company, be and is hereby authorized to engage any Advocate / Solicitors / Consultants and to submit Vakalatnama, statements, documents, evidence, declarations, etc. and also to sign the returns, documents, letters, correspondences, etc., and to represent on behalf of the Company for filing of Applications, Appeals, or otherwise before the Hon'ble High Court, Hon'ble Supreme Court, Ld. Tribunals and/or any other authorities as and when required and/or the Police Authorities for and on behalf of the Company.

FOR AND ON BEHALF OF THE BOARD,

M/s. KSEPYA ENVIRONMENT MANAGEMENT Pvt. Ltd.,

Golam Mostafa Kamal
Director
Ksepya Environment Management Pvt. Ltd.

Mr. Golam Mostafa Kamal,

Director

DIN No. 08407854,

Raju Saikia
Director
Ksepya Environment Management Pvt. Ltd.

Mr. Raju Saikia,

Director

DIN No. 08909863

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भारतीय विशिष्ट पहचान प्राधिकरण
Unique Identification Authority of India

Enrollment No.: 2786/25187/00779

To
Raju Saikia
C/O: Ram Saikia,
Vill-Sundaridia, PO-Sundaridia,
VTC: Sundaridia,
PO: Sundaridia,
Sub District: Barpeta, District: Barpeta,
State: Assam,
PIN Code: 781314,
Mobile: 9706099702

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आपका आधार क्रमांक / Your Aadhaar No. :

3912 7942 9991

मेरा आधार, मेरी पहचान

भारत सरकार
Government of India



Raju Saikia
DOB : 01/12/1976
Male

3912 7942 9991

Raju Saikia

Director
Ksepya Environment Management Pvt. Ltd.

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