

GUIDELINES

BIO-MEDICAL WASTE MANAGEMENT

AT HEALTH CARE FACILITIES



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**Assam State Secondary Healthcare Initiative for Service Delivery
Transformation (ASSIST) Project**

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Preamble

Assam Health Infrastructure Development & Management Society (**AHIDMS**) has been created under Medical Education & Research Department, Govt. of Assam, with the principal goal to function as an apex autonomous body of the Government of Assam. The society is preparing Assam State Secondary Healthcare Initiative for Service Delivery Transformation (**ASSIST**) Project for funding by the World Bank. Main aim of the project is to improve the district level healthcare services in Assam by improving quality, access and management capacity in selected district hospitals. The specific objectives of the project are (i) Improve quality and access to secondary health facilities by improving physical infrastructure and institutional reforms in district hospitals; (ii) Build responsive health services to meet local demands and needs, following global and national best practices for redesigning service delivery and innovation; (iii) Strengthen management capacity and accountability in district hospitals through outcome-based financial approaches; (iv) Support coordination and complementarity with national programs focused on improving service delivery and health care infrastructure. The main components of the project are:

- i) Construction of new 100/200 bedded district hospitals in 10 districts with operating costs for 2.5 years
- ii) Improve the performance of existing health infrastructure in 25 district hospitals based on comprehensive gap assessment.
- iii) PPP in health to improve quality and efficiency by contracting specialist services and contracting related services after performance-based contracts.
- iv) Strengthen hospital management cadre by developing comprehensive capacity building protocols.
- v) An integrated HMIS, EMR. Strengthen management and data systems including systems.
- vi) Support improvement/ pilot innovation in pre-service training in nursing colleges
- vii) Outcomes based financing to improve the quality of healthcare with performance indicators around quality of care, patient satisfaction, diagnostics.

ASSIST envisages infrastructure development and renovations to follow the principles of Green Hospitals and Human-centered design. The project will design interventions focused on making hospitals environmentally friendly and energy efficient. At the same time, waste management at the hospital could be a major challenge due to the increased footfall of in-patients and out-patients. Project's Environment and Social commitments will focus on the implementation of Bio-medical Waste Management Rules, 2016 notified by Ministry of Environment Forests & Climate Change and came into effect from 28.03.2016.

As a first foot forward, project has designed these guidelines which will be beneficial to the Hospital Authorities. These guidelines detailed on the regulatory requirements as well as the waste management criteria to be followed by the hospitals.

ASSIST is also working with Assam Pollution Control Board (**ASPCB**) on the practical difficulties that the HCF face or may face after upgradation of the facility. Some of the practical issues as on date are payment of Consent Fees for Authorization; BMW disposal in current situation when there are limited CBMWT facilities available in the state; the waiver period for functioning of incinerators within which this facility sets up; testing of ETP discharge; disposal of radioactive waste etc. This Document is developed in collaboration with ASPCB. AHIDMS appreciates the support and co-operation of Chairman, Member Secretary and Officers from APCB for their valuable input in developing this document.

Looking forward,

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Background

Assam is the largest economy in northeast (NE) India, a commercial hub for the region, and India's gateway to Southeast Asia. Public hospitals are a large source of healthcare and in particular the inpatient care for the rural population in the state. However, the quality of infrastructure in these hospitals is poor, which impacts patient safety, demand, and utilization. Assam State Secondary Healthcare Initiative for Service Delivery Transformation (**ASSIST**) Project is designed with the main objective to improve district level health services in Assam by improving quality, access and management capacity in selected district hospitals. Construction of new 150-bed district hospitals in 10 districts with operating costs for 2.5 years; Improve the efficiency of existing health infrastructure in 25 district hospitals based on a comprehensive gap assessment; PPP in health to improve quality and efficiency by contracting specialist services and contracting related services after performance-based contracts.

Problem

Medical waste is a source of generation of hazardous biomedical waste. Medical waste generation and disposal is an important aspect, especially in countries with poor hygiene and high population. Medical centers including hospitals, clinics, and places where diagnosis and treatment are conducted generate wastes that are highly hazardous and put people under risk of fatal diseases. The waste includes infectious waste (15%–25% of total health-care waste), among which are sharps waste (1%), body part waste (1%), chemical or pharmaceutical waste (3%), and radioactive and cytotoxic waste or broken

thermometers (less than 1%). High-income countries generate on average up to 0.5 kg of hazardous waste per bed per day; while low-income countries generate on average 0.2 kg. Health-care waste contains potentially harmful microorganisms, which can infect hospital patients, health workers, and the general public. Other potential infectious risks may include the spread of drug-resistant microorganisms from health facilities into the environment; release of dioxins, furans, and other toxic air pollutants as emissions from incinerators.

Lack of awareness about the health hazards related to health-care waste, inadequate training in proper waste management, absence of waste management and disposal systems, insufficient financial and human resources, and the low priority given to the topic are the most common problems connected with health-care waste. It is important to properly dispose of the medical waste—but when improperly handled, biomedical waste could cause several diseases.

To safeguard the patients and hospital staff against coming in contact with any pathogens or medical hazards shall be our foremost priority. The World Health Organization has reported that the pathogens that exist within medical waste can be linked to the diseases like Parasitic infections, Meningitis, Skin infections, Candida, Bacteremia, Hepatitis B and Hepatitis C etc.

Types of Waste

Waste and by-products cover a diverse range of materials, as the following list illustrates:

- Infectious waste: waste contaminated with blood and other bodily fluids (e.g., from discarded diagnostic samples), cultures and stocks of infectious agents from

laboratory work (e.g., waste from autopsies and infected animals from laboratories), or waste from patients in isolation wards and equipment (e.g., swabs, bandages, and disposable medical devices);

- Pathological waste: human tissues, organs or fluids, body parts, and contaminated animal carcasses;
- Sharps: syringes, needles, disposable scalpels and blades, etc.;
- Chemicals: for example, solvents used for laboratory preparations, disinfectants, and heavy metals contained in medical devices (e.g., mercury in broken thermometers) and batteries;
- Pharmaceuticals: expired, unused, and contaminated drugs and vaccines;
- Genotoxic waste: highly hazardous, mutagenic, teratogenic, or carcinogenic, such as cytotoxic drugs used in cancer treatment and their metabolites;
- Radioactive waste: such as products contaminated by radionuclides including radioactive diagnostic material or radio-therapeutic materials; and
- Non-hazardous or general waste: waste that does not pose any particular biological, chemical, radioactive, or physical hazard.

Health Risks

Health-care waste contains potentially harmful microorganisms which can infect hospital patients, health workers, and the general public. Other potential infectious risks may include the spread of drug-resistant microorganisms from health facilities into the environment. Health risks associated with waste and by-products also

include:

- Radiation burns;
- Sharps-inflicted injuries;
- Poisoning and pollution through the release of pharmaceutical products, in particular, antibiotics and cytotoxic drugs; and
- Poisoning and pollution through waste water; and by toxic elements or compounds such as mercury or dioxins that are released during incineration.

Environmental Impact

Treatment and disposal of health-care waste may pose health risks indirectly through the release of pathogens and toxic pollutants into the environment.

- Landfills can contaminate drinking water if they are not properly constructed. Occupational risks exist at disposal facilities that are not well-designed, run, or maintained.
- Captive incineration of waste has been widely practised, but inadequate incineration or the incineration of unsuitable materials results in the release of pollutants into the air and of ash residue. Incinerated materials containing chlorine can generate dioxins and furans, which are human carcinogens and have been associated with a range of adverse health effects. Incineration of heavy metals or materials with high-metal content (in particular lead, mercury, and cadmium) can lead to the spread of toxic metals in the environment.

Only modern incinerators operating at 850–1100°C and fitted with special gas-cleaning equipment are able to comply with the

international emission standards for dioxins and furans. Alternatives to incineration are now available, such as autoclaving, microwaving, steam treatment integrated with internal mixing, and chemical treatment.

Solution

There is a one stop solution for the issues related to bio-medical waste management i.e. Bio-medical Waste Management Rules, 2016 notified by Ministry of Environment, Forests & Climate Change and came into effect from 28.03.2016. To implement these rules more effectively and to improve the collection, segregation, processing, treatment and disposal of these bio-medical wastes in an environment sound management thereby, reducing the bio-medical waste generation and its impact on the environment MOEF & CC notified “Bio-Medical Waste Management Rules, 2016” in G.S.R NO 343(E), dated 28th March, 2016 suppressing the earlier Rules and MOEF & CC notified “Bio-Medical Waste Management Amendment Rules, 2018” in G.S.R NO. 234(E), dated 16th March, 2018 and subsequently “Bio-Medical Waste Management (Amendment) Rules, 2019” vide G.S.R. 129(E) dated 19th February 2019 and “Bio-Medical Waste Management (Second Amendment) Rules, 2019” vide G.S.R NO. 360(E), dated 10th May 2019, amending the earlier Rules, 2016.

As per the Bio-medical Waste rules, it shall be the duty of every occupier of HCF (Health Care Facility) & operator of CBMWTF (Common Bio-Medical Waste Treatment Facility) to take all the steps to ensure that the Bio-Medical waste is properly handled and disposed without any adverse effect to human health and the

environment. These rules shall apply to all persons who generate, collect, receive, store, transport, treat, dispose, or handle bio medical waste in any form including 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.

1. Bio-medical Waste Management Rules, 2016 and Amendments

The ambit of the rules includes vaccination camps, blood donation camps, surgical camps or any other healthcare activity. The rules are accessible on the Pollution Control Board, Assam website link http://pcbassam.org/rules/BMWRules2016_1.pdf. Salient features of the BMW Rules 2016 are as mentioned below.

- ✓ The ambit of the rules include vaccination camps, blood donation camps, surgical camps or any other healthcare activity
- ✓ Phase-out the use of chlorinated plastic bags excluding blood bags and gloves by 27.03.2019
- ✓ Pre-treatment of the laboratory waste, microbiological waste, blood samples and blood bags through disinfection or sterilization on-site
- ✓ ***Or Pre-treatment can also be done by using non-chlorinated chemical disinfectants like aldehydes, lime based powders or solutions, ozone gas, ammonium salts and phenolic compounds.***
- ✓ Provide training to all its health care workers

- and immunize all health workers regularly;
- ✓ ***Waste generated is collected and disposed within 48 hours.***
- ✓ Establish a Bar-Code System for bags or containers containing bio-medical waste for disposal by 27.03.2019
- ✓ Report major accidents
- ✓ Existing incinerators to achieve the standards for retention time in secondary chamber and Dioxin and Furans within two years
- ✓ Bio-medical waste classified in to 4 categories instead 10 to improve the segregation of waste at source
- ✓ Automatic authorization for bedded hospitals. The validity of authorization synchronized with validity of consent orders for Bedded HCFs. One time Authorization for Non-bedded HCFs
- ✓ State Government to provide land for setting up common bio- medical waste treatment and disposal facility
- ✓ No occupier shall establish on-site treatment and disposal facility, if a service of common bio-medical waste treatment facility is available at a distance of seventy-five kilometers
- ✓ Operator of a common bio-medical waste treatment and disposal facility to ensure the timely collection of bio-medical waste from the HCFs and assist the HCFs in conduct of training.

Schedules

- **Schedule I** –Biomedical wastes categories and their segregation, collection, treatment, processing and disposal

- This Schedule is based on the Rules 3 (e), 4(b), 7(1), 7(2), 7(5), 7 (6) and 8(2)of the BMW Rules 2016 which is bifurcated in two parts as Part I & Part II.
- The BMW is segregated in four categories as Yellow, Red White and Blue in Part I of the Schedule and subsequently stipulates norms for collection, treatment, processing and disposal options.
- Part II of the schedule I instructs further on the method, procedure, process etc. during collection, pre-treatment, treatment etc.

Detailed guidelines are elaborated in Annexure 1.0 of the guidelines.

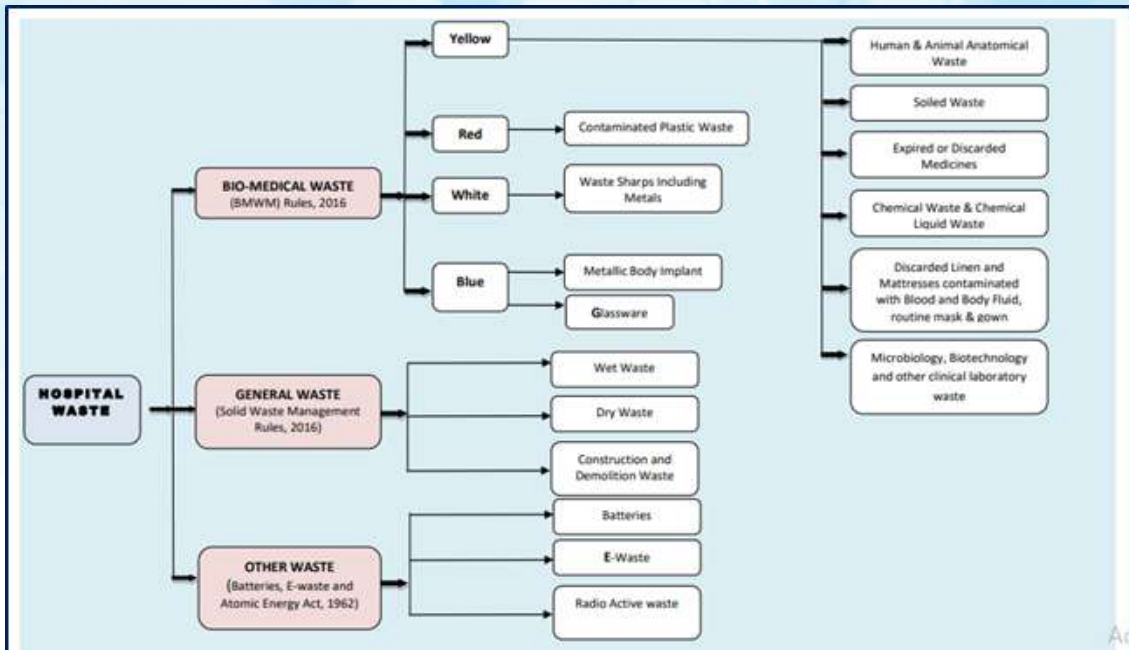
Categorization & Classification of Wastes in Health Care Facilities

Bio-medical Waste

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. Bio-Medical waste includes all the waste generated from the Health Care Facility which can have any adverse effect to the health of a person or to the environment in general if not disposed properly. All such waste which can adversely harm the environment or health of a person is considered as infectious and such waste has to be managed as per BMW Rules, 2016 and amendments.

General Waste

General waste consists of all the waste other than bio-medical waste and which has not been in contact with any hazardous or infectious,



chemical or biological secretions and does not include any waste sharps. This waste consists of mainly:

- i) News paper, paper and card boxes (dry waste)
- ii) Plastic water bottles (dry waste)
- iii) Aluminium cans of soft drinks (dry waste)
- iv) Packaging materials (dry waste)
- v) Food Containers after emptying residual food (dry waste)
- vi) Organic / Bio-degradable waste - mostly food waste (wet waste)

Green bins shall be provided for bio-degradable wastes and blue bin for dry wastes. Colour coded bins may be either painted or labelled with particular colour.

HCFs having more than 5,000sqm area should set-up on-site compost plants as far as possible.

vii) Construction and Demolition wastes

These general wastes are further classified as dry wastes and wet wastes and should be collected separately. This quantity of such waste is around 85 % to 90 % of total waste generated from the facility. Such waste is required to be handled as per Solid Waste Management Rules, 2016 and Construction & Demolition Waste Management Rules, 2016, as applicable.

Other Wastes

Other wastes consist of used electronic wastes, used batteries, and radio-active wastes which are not covered under biomedical wastes but have to be disposed as and when such wastes are generated as per the provisions laid down under E-Waste (Management) Rules, 2016, Batteries (Management & Handling) Rules, 2001, and Rules/guidelines under Atomic Energy Act, 1962 respectively.

- **Schedule II** – Standards for treatment and

disposal of bio-medical wastes

- This Schedule is based on the Rules 4(t), 7(1) and 7(6) of the BMW Rules 2016.
- This Schedule sets out standards to be met during treatment of disposal of the BMW by the HCF as well as the CBWTF such as

- **Standards for Incineration**

Sr. No.	Parameter	Standards	
(1)	(2)	(3)	(4)
		Limiting Concentration in mg/Nm³ unless stated	Sampling Duration in minutes, unless stated
1.	Particulate matter	50	30 or INM 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 INM 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

The temperature of the primary chamber shall be a minimum of 800°C and the secondary chamber shall be minimum of 1050°C + or - 50°C. Expired cytotoxic drugs and items contaminated with cytotoxic drugs to be incinerated at a temperature of ≥ 1200°C. There will be no chemical pre-treatment before incineration of waste, except for microbiological, laboratory and highly infectious waste. 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 EPA, 1986 and in accordance with the Central Pollution Control Board Guidelines of Emission Regulation Part-III.

- **Operating and Emission Standards for Disposal by Plasma Pyrolysis or Gasification**

All the operators of the Plasma Pyrolysis or Gasification shall meet the operating and emission standards. Combustion Efficiency (CE) shall be at least 99.99%. The temperature of the combustion chamber after plasma gasification shall be 1050 ± 50 o C with gas residence time of at least 2(two) second, with minimum 3 % Oxygen in the stack gas. The Stack height should be minimum of 30 m above ground level and shall be attached with the necessary monitoring facilities as per requirement of monitoring of 'general parameters' as notified under the EPA, 1986 and in accordance with the CPCB Guidelines of Emission Regulation Part-III. Suitably designed air pollution control devices shall be installed or retrofitted with the 'Plasma Pyrolysis or

Gasification to achieve the above emission limits, if necessary. Wastes to be treated shall not be chemically treated with any chlorinated disinfectants and chlorinated plastics shall not be treated in the system. The ash or vitrified material generated from the 'Plasma Pyrolysis or Gasification shall be disposed off in accordance with the Hazardous Waste (Management, Handling and Transboundary Movement) Rules 2008 and revisions made thereafter in case the constituents exceed the limits prescribed under Schedule II of the said Rules or else in accordance with the provisions of the Environment (Protection) Act, 1986, whichever is applicable.

For others terms & condition for disposal of Bio-medical waste may follow the "Revised Guidelines for Common Bio-medical Waste Treatment and Disposal Facilities" published by Central Pollution Control Board, New Delhi on December 21,2016.

▪ **Standards for Autoclaving of Bio-Medical Waste**

FOR VACUUM AUTOCLAVE:

1. A temperature of not less than 121°C and pressure of 15 pound per square inch (psi) for an autoclave residence time of not less than 45 minutes; or
2. A temperature of not less than 135°C and a pressure of 31 psi for an autoclave residence time of not less than 30 minutes

FOR GRAVITY FLOW AUTOCLAVE:

1. A temperature of not less than 121° C

and pressure of 15 psi for an autoclave residence time of not less than 60 minutes; or

2. A temperature of not less than 135° C and a pressure of 31 psi for an autoclave residence time of not less than 45 minutes; or
3. A temperature of not less than 149° C and a pressure of 52 psi for an autoclave residence time of not less than 30 minutes

▪ **Standards of Microwaving**

The microwave should completely and consistently kill the bacteria and other pathogenic organisms that are ensured by approved biological indicator at the maximum design capacity of each microwave unit. Biological indicators for microwave shall be Bacillus atrophaeus spores using vials or spore strips with at least 1 x 10⁴ spores per detachable strip. The biological indicator shall be placed with waste and exposed to same conditions as the waste during a normal treatment cycle.

▪ **Standards for Deep Burial**

- (1) A pit or trench should be dug about two meters deep. It should be half filled with waste, then covered with lime within 50 cm of the surface, before filling the rest of the pit with soil.
- (2) It must be ensured that animals do not have any access to burial sites. Covers of galvanised iron or wire meshes may be used.
- (3) On each occasion, when wastes are added to the pit, a layer of 10 cm of soil

shall be added to cover the wastes.

- (4) Burial must be performed under close and dedicated supervision.
- (5) The deep burial site should be relatively impermeable and no shallow well should be close to the site.
- (6) The pits should be distant from habitation, and located so as to ensure that no contamination occurs to surface water or ground water. The area should not be prone to flooding or erosion.
- (7) The location of the deep burial site shall be authorised by the prescribed authority.
- (8) The institution shall maintain a record of all pits used for deep burial.
- (9) The ground water table level should be a minimum of six meters below the lower level of deep burial pit.

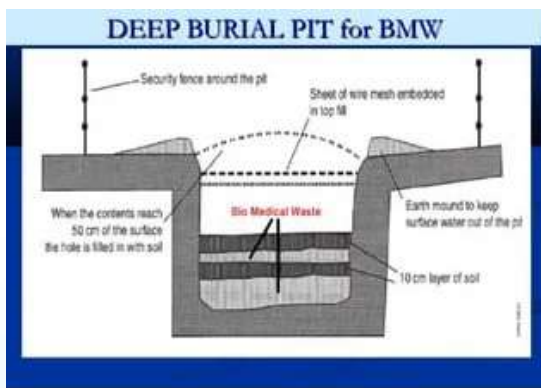


Fig: Cross Section of Deep Burial Pit

Approval for Deep Burial Pits (For HCFs Not Under Agreement with CBWTF)

HCF if intends dispose BMW through deep burial pits, they shall obtain authorization from the respective prescribed authority i.e. SPCB/PCC office for establishment of deep burial pits

and records of such pits needs to maintained. 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.

▪ **Standards for Efficacy of Chemical Disinfection**

Microbial inactivation efficacy is equated to “Log10 kill” which is defined as the difference between the logarithms of number of test microorganisms before and after chemical treatment. Chemical disinfection methods shall demonstrate a 4 Log10 reduction or greater for *Bacillus Subtilis* (ATCC 19659) in chemical treatment systems.

▪ **Standards for Dry Heat Sterilization**

Waste sharps can be treated by dry heat sterilization at a temperature not less than 185°C, at least for a residence period of 150 minutes in each cycle, which sterilization period of 90 minutes. There should be automatic recording system to monitor operating parameters.

II. **Effluent Treatment Plant**

As per the “Guidelines for Management of Healthcare Waste as per Biomedical Waste Management Rules, 2016” published by Central Pollution Control Board, New Delhi on June, 2018; the Effluent Treatment Plant should be provided in every HCF to treat the wastewater

generated from the hospital in order to comply with the effluent standards prescribed under the BMWM Rules, 2016. Sources of wastewater generation from the hospital are wards, laboratories, used disinfectants, floor washing, washing of patient's area, hand washing, laundry, discharge of accidental spillage, fire fighting, bathroom/toilet etc. Liquid waste generated due to use of chemicals or discarded disinfectants, infected secretions, aspirated body fluids, liquid from laboratories and floor washings, cleaning, house-keeping and disinfecting activities should be collected separately and pre-treated prior to mixing with rest of the wastewater from HCF. The combined wastewater should be treated in the ETP having three levels of treatment; primary, secondary and tertiary;

Primary Treatment: equalisation, neutralization, precipitation and clarification

Secondary Treatment: High rate aerobic biological treatment, secondary settling

Tertiary Treatment: Pressure Filtration, Disinfection and disposal to drain/sewer

Water consumption per day per bed: 450 ltrs/day

Typical flow chart for the Effluent Treatment Plant is given below:

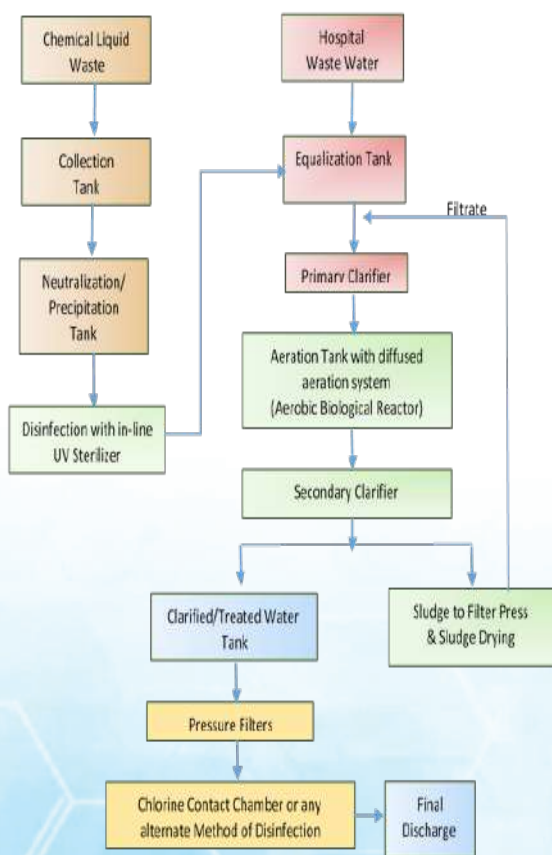


Fig. : Scheme for Wastewater Treatment

Options for reuse of treated wastewater: Wastewater generated from the HCF is treated in the ETP and shall be disposed into drain / sewer or could be reused in: Flushing, Horticulture, and Scrubber.

▪ Standards for Liquid Waste

(1) 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*

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.

*1. Above limits are applicable to the occupiers of Health Care Facilities (bedded) which are either connected with sewerage network without terminal sewage treatment plant or not connected to public sewers. 2. For discharge into public sewers with terminal facilities, the general standards as notified under the Environment (Protection) Act, 1986 (29 of 1986) shall be applicable. 3 Health Care Facilities having less than ten beds shall have to install Sewage Treatment Plant by the 31st December, 2019. 4 Non-bedded occupiers shall dispose infectious liquid wastes only after treatment by disinfection as per Schedule – II (6) of the principal rules.

(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.

III. Prescribed Authorities and Corresponding duties

Schedule III – List of Prescribed Authorities and Corresponding duties

- (a) This Schedule is based on the Rules 6 and 9(3) of the BMW Rules 2016.
- (b) List of the Prescribed Authorities and their corresponding duties under the rules are prescribed in detail.
- (c) The Authorities prescribed are
 - i) Ministry of Environment, Forest and Climate Change, Government of India;
 - ii) Central or State Ministry of Health and Family Welfare, Central Ministry for Animal Husbandry and Veterinary or

State Department of Animal Husbandry and Veterinary;

- iii) Ministry of Defence;
- iv) Central Pollution Control Board;
- v) State Government of Health or Union Territory Government or Administration;
- vi) State Pollution Control Boards or Pollution Control Committees;
- vii) Municipalities or Corporations, Urban Local Bodies and Gram Panchayats

IV. Labelling the Containers

Schedule IV – Label for Bio-medical Waste Containers or Bags

- This Schedule is based on the Rules 8(3) and (5) of the BMW Rules 2016, which is further bifurcated in two parts as Part A and Part B as shown below:
- Part A stipulates norms on label for bio-medical waste containers or bags
- Part B stipulates norms on label for transporting bio-medical waste bags or containers



Hazardous and
Other waste*



LABEL FOR TRANSPORTING BIO-MEDICAL WASTE BAGS OR CONTAINERS

DayMonth

Year

Date of generation

Waste category Number

Waste quantity.....

Sender's Name and Address

Phone Number

Fax Number.....

Contact Person

In case of emergency please contact :

Name and Address :

Phone No.

Note :Label shall be non-washable and prominently visible.

Receiver's Name and Address:

Phone Number

Fax Number

Contact Person

V. Forms

• Form I – Accident Reporting

- In case of any major accident at any institution or facility or any other site while handling BMW, the authorized person shall intimate immediately to the prescribed authority about such accident and forward a report within twenty-four hours in writing regarding the remedial steps taken in Form I attached as Annexure 2.0.

• Form II – Application for Authorisation or Renewal of Authorisation

- As per Rule 10, every occupier or operator handling Bio-Medical waste, irrespective of the quantity shall make an application in Form II to the prescribed authority.
- Every HCF/CBWTF shall make an application in Form II for Consent to Establish, Consent to Operate and subsequent renewal of authorisation as the case may be.

Form II is attached as Annexure 3.0.

• Form III – Authorisation

- SPCB/PCC shall grant provisional authorization for bedded HCFs & CBWTF in Form III attached as Annexure 4.0.
- Validity of the authorization will be synchronized with validity of Consents

• Form IV – Annual Report

- Every Occupier and Operator shall submit annual report to SPCB/PCC by 30th June of every year of the preceding calendar year.
- Information regarding all other accidents and remedial steps taken shall be provided in the annual report in accordance with rule by the occupier.
- Annual Report shall available online on website of Occupiers, Operators, SPCBs/PCCs and CPCB

Form IV is attached as Annexure 5.0.

• Form V – Application for filing appeal against order passed by the Prescribed Authority

- Any person aggrieved by an order of

PCB/PCC can file an appeal in Form V within 30 days from the date of the order to The Secretary (Environment) of the State or UT.

- Any person aggrieved by an order of DGAFMS can file an appeal in Form V within 30 days from the date of the order to The Secretary, MoEF& CC.

Form V is attached as Annexure 6.0.

VI. **Duties of the Health Care Facilities**

- a. To ensure that all the legal requirements related to the Bio Medical Waste Management are complied with and are regularly updated.
 - b. To ensure that annual reports and accidents reports are submitted to SPCB in a timely manner.
 - c. To ensure that bio-medical waste is handled without any adverse effect to human health and the environment.
 - d. To make a provision within the premises for a safe, ventilated and secured location for storage of segregated biomedical waste in colored bags or containers as specified in Annexure 1.0,
 - e. 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 these rules to the common bio-medical waste treatment facility or for the appropriate treatment and disposal, as the case may be
 - f. To pre-treat the laboratory waste, microbiological waste, blood samples and blood bags through disinfection or sterilisation on-site in the manner as prescribed by the World Health Organisation (WHO) guidelines on Safe management of wastes from health care activities and WHO Blue Book, 2014 and then send to Common bio-medical waste treatment facility for final disposal;
- g. To phase out use of chlorinated plastic bags (excluding blood bags) and gloves; “Explanation.- For removal of doubts, it is hereby clarified that the expression “Chlorinated plastic bags” shall not include urine bags, effluent bags, abdominal bags and chest drainage bags”.
 - h. To 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;
 - i. Do not to dispose of treated bio-medical waste with municipal solid waste;
 - j. To provide training to all 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;
 - k. To immunise all 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 bio-medical waste, in the manner as prescribed in the National Immunisation Policy or the

guidelines of the Ministry of Health and Family Welfare issued from time to time

- l. To establish a Bar- Code System for bags or containers containing bio-medical waste to be sent out of the premises or for the further treatment and disposal in accordance with the guidelines issued by Central Pollution Control Board;
- m. To ensure segregation of liquid chemical waste at source and ensure pre-treatment or neutralisation prior to mixing with other effluent generated from health care facilities;
- n. To ensure treatment and disposal of liquid waste in accordance with the Water (Prevention and Control of Pollution) Act, 1974 (6 of 1974);
- o. To ensure occupational safety of all health care workers and others involved in handling of biomedical waste by providing appropriate and adequate personal protective equipments;
- p. To conduct health check up at the time of induction and at least once in a year for all health care workers and others involved in handling of bio- medical waste and maintain the records for the same;
- q. In case of all bedded health care units, maintain and update on day to day basis the bio-medical waste management register as per Annexure 9.0 and display the monthly record on its website according to the bio-medical waste generated in terms of category and colour coding as specified;
- r. To 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;

- s. In case of all bedded health care facilities (any number of beds), make available the annual report on hospital web-site within a period of two years from the date of publication of the Bio-Medical Waste Management (Amendment) Rules, 2018;

t. Bio Medical Waste Management Committee:

- HCFs having 30 beds or more shall have Quality Team/ Infection Control Committee/ Bio Medical Waste Management Committee.
- It has been suggested that HCF must frame new committee at the facility level for monitoring of the BMW activities, which is to be termed as Bio Medical Waste Management Committee.
- The suggested composition of such committee is as follows:
 - SMO/ CMO/ Medical Superintendent (Chairperson)
 - District Quality Consultant/ District BMW Officer (Invitee Members)
 - Quality Manager
 - Hospital Infection Control Nurse/ Officer
 - Nursing in-charge
 - Medical Officer (Surgery)
 - Medical Officer (Emergency)
 - Medical Officer (Gynae & Obs)
 - Microbiologist/ Pathologist
 - OT Nurse / Technician/ Assistant

- Lab Technician
 - Blood Bank/ Storage Unit Technician
 - Housekeeping in-charge
 - Pharmacist
- ✓ 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 Pollution Control Board
 - ✓ HCFs having less than 30 beds should designate Bio Medical Waste Supervisor and submit the annual report
 - ✓ To maintain all record for operation of incineration, hydro or autoclaving etc., for a period of five years;
 - ✓ HCFs may have a dedicated budget for BMWM as a part of annual budget of the health care facilities. Such budget must include both recurring and non-recurring costs expected to be incurred by HCFs, related to Bio Medical Waste Management.

VII. **Authorization**

Permission granted by the prescribed authority for the generation, collection, reception, storage, transportation, treatment, processing, disposal or any other form of handling of bio-medical waste in accordance with these rules and guidelines issued by the Central Government or Central Pollution Control Board (CPCB). The Occupier who is a person having administrative control over the institution and the premises generating bio-medical waste, which includes a hospital, nursing home, clinic, dispensary, veterinary institution, animal house, pathological laboratory, blood bank, health care facility

and clinical establishment, irrespective of their system of medicine, shall apply to the prescribed authority for obtaining authorization under the Rules. The hospitals shall not only apply for authorization under BMW Rules, but also under Water Act, 1974 as effluent will be generated at various sources as well as Air Act, 1981 as dust generation will be there during construction and post operation, Diesel Generators will be operated.

In the context of public health systems in India, the role of an Occupier will be performed by designated Medical Superintendent (MS)/Chief Medical Officer (CMO)/Senior Medical Officer (SMO)/ Principal Medical Officer (PMO) of the District Hospital, Sub Divisional Hospital and Community Health Centre (CHC). In case of Primary Health Centre (PHC) and Sub Centre, the duties of occupier are to be performed by designated Medical Officer in charge (MO I/C) of the PHC. The CMO/ SMO/ MS/Medical Officer in charge of the HCFs is responsible and liable for implementing, monitoring and review of activities related to Bio Medical Waste Management.

Validity of Authorization

(a) For bedded Healthcare Facilities

The validity of this authorization is synchronized with the validity of:

- 1) Consent under Air (Prevention and Control of Pollution) Act, 1981:
- 2) Consent under the Water (Prevention and Control of Pollution) Act, 1974

(b) For non-bedded Healthcare Facilities

One-time authorization is required to be obtained from respective SPCBs/PCCs in case of

non-bedded health care facilities such as clinic, dispensary, veterinary institution, animal house, pathological laboratory, blood bank, etc. These HCFs have to apply for a fresh authorization to amend earlier authorisation in case there is any change or variance in relation to the activities of HCF.

Pre-Establishment:

- Application for Consent to Establish (under Water Act, 1974 and Air Act, 1981)

Pre-Operation:

- Application for Consent to Operate (under Water Act, 1974 and Air Act 1981)
- Application for Authorization under the Bio Medical Waste Management Rules, 2016 - Form II

Post Commencement:

- Renewal for Consent to Operate (under Water Act, 1974 and Air Act, 1981)
- Application for annual report to be submitted by the occupier of health care facility (HCF) or common bio-medical waste treatment facility (CBWTF) under the Bio Medical Waste Management Rules, 2016 (Form-IV)
- Application for renewal of authorization under the Bio Medical Waste Management Rules, 2016. (Form II) (for bedded HCFs)

Other Approvals:

Application Form for Accident Reporting under the Bio Medical Waste Management Rules, 2016 (Form I).

For existing hospitals, application for consent to operate shall be submitted to SPCB under stipulated Acts and Rules. For setting up of new facilities, prior consent to establishment shall

be obtained before undertaking any activity on site and then apply for consent to operate before initiation the operation at the facility. Common Application for Consent under Water (Prevention and Control of Pollution) Act, 1974, Air (Prevention and Control of Pollution) Act, 1981) and authorisation under Hazardous Wastes (Management and Handling) Rules, 1989, as amended is attached as Annexure 7.0. List of Regional Office and contact persons of Assam Pollution Control Board is attached as Annexure 8.0.

Process for obtaining the Authorization and Consent

The applicant can apply online through Online Consent Management & Monitoring System, Ministry of Environment, Forest and Climate Change, Government of India web portal link <https://asocmms.nic.in/OCMMS/>.

For registration, user needs to go with “New Industry Registration” link. Registration page will appear on screen. On this page, user needs to fill up all the details regarding industry and Occupier. If user has ID and password they can login directly. There are two types of logins, 1st is for the board user, “ASPCB login” and the 2nd is “Industrial login”. Industry user need to select “Industrial login” after registration.

Maintenance of Records: All records related to the generation, collection, reception, storage, transportation, treatment, disposal or any other form of handling of bio-medical waste shall be maintained for a period of five years, in accordance with these rules and guidelines issued by the Central Government or the Central Pollution Control Board or the prescribed authority. All records shall be subject to inspection and

verification by the prescribed authority or the Ministry of Environment, Forest and Climate Change at any time.

Reporting: Annual Reports shall be available online on the websites of Occupiers, State Pollution Control Boards and Central Pollution Control Board. In case of any major accident at any institution or facility or any other site while handling bio-medical waste, the authorised person shall intimate immediately to the prescribed authority about such accident and forward a report within twenty-four hours in writing regarding the remedial steps taken in Form I. Information regarding all other accidents and remedial steps taken shall be provided in the annual report.

VIII. Specific Instructions to the HCF

1. Segregation

Waste must be segregated at the point of generation of source and not in later stages. “Point of Generation” means the location where wastes initially generate, accumulate and is

under the control of doctor / nursing staff etc. who is providing treatment to the patient and in the process generating bio-medical waste.

- Posters / placards for bio-medical waste segregation should be provided in all the wards as well as in waste storage area.
- Adequate number of colour coded bins / containers and bags should be available at the point of generation of bio-medical waste.
- Colour coded plastic bags should be in line with the Plastic Waste Management Rules, 2016. Specifications for plastic bags and containers given at Annexure 1.0.
- Provide Personnel Protective Equipment to the bio-medical waste handling staff. PPE should include:
 - Heavy Duty Gloves (Workman's Gloves)
 - Gum Boots or safety shoes for waste collectors
 - Face mask

- Head Cap
- Splash Proof Gowns or aprons etc.
- Disposal gloves



- Collection should be daily for most wastes, with collection timed to match the pattern of waste generation during the day. For example, in an IPD ward where the morning routine begins with the changing of dressings, infectious waste could be collected mid-morning to prevent soiled bandages remaining in the area for longer than necessary.
- General waste collection, must be done immediately after the visiting hours of the HCFs, as visitors coming to facility generate a lot of general waste and in order to avoid accumulation of such general waste in the HCF. The collection timings must enable the HCF to minimize or nullify the use of interim storage of waste in the departments.
- Bio-medical waste collected by the staff, should be provided with PPEs.

2. Collection

- Bio-medical waste should be collected on daily basis from each ward of the hospital at a fixed interval of time. There can be multiple collections from wards during the day.
- HCF should ensure collection, transportation, treatment and disposal of bio-medical waste as per Schedule I and HCF should also ensure disposal of human anatomical waste, animal anatomical waste, soiled waste and biotechnology waste within 48 hours.
- Collection times should be fixed and appropriate to the quantity of waste produced in each area of the health-care facility.
- General waste should not be collected at the same time or in the same trolley in which bio-medical waste is collected.

3. Packaging

- Bio-medical waste bags and sharps containers should be filled to no more than three quarters full. Once this level is reached, they should be sealed ready for collection.
- Plastic bags should never be stapled but may be tied or sealed with a plastic tag or tie.
- Replacement bags or containers should be available at each waste-collection location so that full ones can immediately be replaced.
- Colour coded waste bags and containers should be printed with the bio-hazard symbol, labelled with details such as date, type of waste, waste quantity, senders name and receivers details as well as bar coded label to allow them to be tracked till final disposal.

- Ensure that Bar coded stickers are pasted on each bag as per the guidelines of CPCB.

4. Labelling

All the bags/ containers/ bins used for collection and storage of bio-medical waste, must be labelled with the Symbol of Bio Hazard or Cytotoxic Hazard as the case may be as per the type of waste in accordance with the BMWM Rules, 2016. Bio-medical waste bags / containers are required to be provided with bar code labels in accordance with CPCB guidelines for “Guidelines for barcode System for Effective Management of Biomedical Waste”.



OR



5. Interim Storage

- Interim storage of bio medical waste is discouraged in the wards / different departments of HCF.
- If waste is needed to be stored on interim basis in the departments it must be stored in the dirty utility/sections.
- No waste should be stored in patient care area and procedures areas such as Operation Theatre. All infectious waste should be immediately removed from such areas.
- In absence of dirty utilities/ sections such BMW must be stored in designated place away from patient and visitor traffic or low traffic area.

6. In House Transportation of Bio Medical Waste

In house transportation of Bio Medical Waste from site of waste generation/ interim storage to central waste collection centre, within the premises of the hospital must be done in closed trolleys / containers preferably fitted with wheels for easy manoeuvrability. Such trolleys or carts are designated for the purpose of Bio Medical Waste Collection only. Patient trolleys must not be used for BMW transportation. Size of such waste transport trolleys should be as per the volume of waste generated from the HCFs.

Bio-Medical Waste Generated from different wards or laboratories in the Health care facilities must be transported in the covered trolleys/carts through a route which has low traffic flow of patients and visitors.

Route of transportation preferably be planned in such a way that:



- ✓ Transportation does not occur through high risk areas
- ✓ Supplies and waste are transported through separate routes.

- ✓ Waste is not transported through areas having high traffic of patients and visitors
- ✓ Central Waste collection area can be easily accessed through this route
- ✓ Safe transportation of waste is undertaken to avoid spillage and scattering of waste

7. **Central Waste Collection Room for Bio-medical Waste**

Each Healthcare facility should ensure that there is a designated central waste collection room situated within its premises for storage of bio-medical waste, till the waste is picked and transported for treatment and disposal at CBWTF. Such room should be under the responsibility of a designated person and should be under lock & key. The following points may be considered for construction of central waste collection room:



- ✓ The location of central waste collection room must be away from the public/visitors access.
- ✓ The space allocation for this room must be as per the quantity of waste generated from

the hospital.

- ✓ The planned space must be sufficient so as to store at least two days generation of waste.
- ✓ Central waste collection room must be roofed and manned and should be under lock and key under the responsibility of designated person.
- ✓ The entrance of this centre must be accessible through a concrete ramp for easy transportation of waste collection trolleys.
- ✓ Flooring should be of tiles or any other glazed material with slope so as to ease the cleaning of the area.
- ✓ Exhaust fans should be provided in the waste collection room for ventilation.
- ✓ It is to be ensured by the health care facility that such central storage room is safety inspected for potential fire hazard and based on such inspection preventive measure has to be taken by the health care facility like installation of fire extinguisher, smoke detector etc.
- ✓ There should also be provision for water supply adjacent to central waste storage area for cleaning and washing of this station and the containers. The drainage from the storage and washing area should be routed to the Effluent Treatment Plant.
- ✓ Sign boards indicating relevant details such as contact person and the telephone number should be provided.
- ✓ The entrance of this station must be labelled with “Entry for Authorized Personal Only” and Logo of Bio Medical Waste Hazard.
- ✓ It is to be ensured that no general waste is

stored in the central waste collection area.

Other Considerations for Central Waste Collection Area

- ✓ To ensure there is no pilferage of recyclables, it is to be ensured that central storage area is under lock & key, guarded by a designated person.
- ✓ Healthcare facilities need to maintain the record of waste generated and handed over to the authorized recyclers.
- ✓ To ensure protection from the animals, it is to be ensured by the health care facility that there is no stray animal in the health care facility premises and health care facility has installed cattle traps at the entrance of the health care facility.
- ✓ To ensure protection against the pests it is to be ensured by the HCFs that it has engagement of the pest control agency for taking the pest control measures in the central storage area on regular basis.

IX. **General Instructions for Health Care Workers handling waste in Hospitals**

1. The Health care workers shall always wear personal protective equipment such as Apron, Shoes, Gloves, Head cap, Mask, Goggles/face shield while handling the waste.

2. Disinfect or wash the PPE regularly. Always wear disinfected PPEs.
3. The spillages shall be handled as per the instructions on the labels of the bottle/can or as instructed by the authority. For example, for any chemical spillage, isolate the place and neutralize the chemical first and thereafter mop with absorbent cloth or paper, disinfect properly. Collect in separate liners for appropriate disposal.
4. Always handle the waste and collect in the appropriate bags or containers as instructed by the authority.
5. Plastic bags with waste should be handled carefully so that it should not leak from anywhere.
6. Collected biomedical waste should be stored separately in temporary storage room prior to handing over to authorized staff of Common Biomedical Waste Treatment Facility (CBWTF)
7. Do not eat, drink, smoke during handling of the waste.
8. Regularly go for medical check-up. Do not handle waste when unfit or unwell.

ANNEXURE-1

Biomedical wastes categories and their Segregation, Collection, Treatment, Processing and Disposal

Part 1



- Biomedical Waste & General Waste shall not be mixed. Untreated bio-medical waste shall not be mixed with other wastes.
- BMW shall be segregated into colour coded bin/containers or bags at the point of generation in accordance with Schedule I prior to its storage, transportation, treatment and disposal.
- Containers or bags shall be labelled as specified in Schedule IV of the Rules.
- Bar code and global positioning system shall be added by the Occupier and common bio-medical waste treatment facility.
- Temporary storage of biomedical waste in central storage area - Treatment and Disposal of biomedical waste through CBWTF or Captive facility
- Storage time of waste should be as less as possible so that waste storage, transportation and disposal is done within 48 hours.
- No secondary handling or pilferage of waste shall be done at healthcare facility. If CBWTF facility is available at a distance of 75 km from the HCF, bio-medical waste

should be treated and disposed only through such CBWTF operator.

- Only Laboratory and Highly infectious waste shall be pre-treated onsite before sending for final treatment or disposal through a CBWTF Operator.
- CBMWTF shall transport the BMW from the premises of an occupier to any off-site BMWTF 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.
- Vehicles used for transportation should be as per authorization of SPCB/PCC and register under Motor Vehicle Act, 1988.

Treatment and Disposal of BMW

Type of Waste	Type of Bag or Container to be used	Treatment and Disposal options
Human or Animal anatomical waste	Yellow coloured non-chlorinated plastic bags	Incineration or Plasma Pyrolysis or deep burial
Soiled Waste		Incineration or Plasma Pyrolysis or deep burial* In absence of above facilities, autoclaving or micro-waving/hydroclaving followed by shredding or mutilation or combination of sterilization and shredding. Treated waste to be sent for energy recovery.
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	<ul style="list-style-type: none"> • Expired cytotoxic drugs and items contaminated with cytotoxic drugs to be returned back to the manufacturer or supplier for incineration at temperature >1200 °C or to common bio-medical waste treatment facility or hazardous waste treatment, storage and disposal facility for incineration at >1200°C Or Encapsulation or Plasma Pyrolysis at >1200°C. • All other discarded medicines shall be either sent back to manufacturer or disposed by incineration.
Chemical Waste (Chemicals used in production of biological and used or discarded disinfectants)	Yellow coloured non-chlorinated plastic bags	Disposed of by incineration or Plasma Pyrolysis or Encapsulation in hazardous waste treatment, storage and disposal facility.

<p>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 Formalin, infected secretions, aspirated body fluids, liquid from laboratories and floor washings, cleaning, house-keeping and disinfecting activities etc.</p>	<p>Separate collection system leading to effluent treatment system</p>	<p>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 ScheduleIII.</p>
<p>Discarded linen, mattresses, beddings contaminated with blood or body fluid, routine mask and gown</p>	<p>Non-chlorinated yellow plastic bags or suitable packing material</p>	<ul style="list-style-type: none"> • Non- chlorinated chemical disinfection followed by incineration or Plasma 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 Plasma Pyrolysis.
<p>Microbiology, Biotechnology and other clinical laboratory waste (Blood bags, Laboratory cultures, stocks or specimens of micro-organisms, 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)</p>	<p>Autoclave or Microwave or Hydroclave safe plastic bags or containers</p>	<ul style="list-style-type: none"> • Pre-treat to sterilize with non-chlorinated chemicals on-site as per World Health Organisation (WHO) guidelines on Safe management of wastes from health care activities and WHO Blue Book, 2014 and then sent for Incineration.
<p>Contaminated Waste (Recyclable) (a) Wastes generated from disposable items such as tubing, bottles, intravenous tubes and sets, catheters, urine bags, syringes (without needles and fixed needle syringes and vaccutainers with their needles cut) and gloves.</p>	<p>Red coloured non-chlorinated plastic bags or containers</p>	<p>Autoclaving or micro-waving/ hydroclaving 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.</p>

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.
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 colored marking	Disinfection (by soaking the washed glass waste after cleaning with detergent and Sodium Hypochlorite treatment) or through autoclaving or microwaving or hydroclaving and then sent for recycling.
Metallic Body Implants	Puncture proof and leak proof boxes or containers with blue colored marking	

Part 2

1. All plastic bags shall be as per BIS standards as and when published, till then the prevailing Plastic Waste Management Rules 20016 shall be applicable.
2. ***In case of use of compostable plastic bags, there should be a label “COMPOSTABLE” and shall conform to the Indian Standard: IS or ISO 17088:2008 titled as Specifications for “Compostable Plastics”. Thickness criteria would not apply in case of compostable plastic bags.***
3. Chemical treatment using at least 1% to 2% Sodium Hypochlorite having 30% residual chlorine for twenty minutes or any other equivalent chemical reagent that should demonstrate Log10⁴ reduction efficiency for microorganisms as given in Schedule- III.
4. Mutilation or shredding must be to an extent to prevent unauthorized reuse.
5. There will be no chemical pre-treatment before incineration, except for microbiological, lab and highly infectious waste.
6. 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, 2008 or as revised from time to time.

7. Dead Foetus 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.
8. Cytotoxic drug vials shall not be handed over to unauthorised 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 $>1200^{\circ}\text{C}$.
9. 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.
10. On-site pre-treatment of laboratory waste, microbiological waste, blood samples, blood bags should be disinfected or sterilized as per the Guidelines of World Health Organisation or National AIDS Control Organisation and then given to the common bio-medical waste treatment and disposal facility.
11. 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 authorisation from the State Pollution Control Board.
12. 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.
13. 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 pickup this waste from the Material Recovery Facility (MRF) or from the house hold directly, for final disposal in the manner as prescribed in this Schedule.

Environmental Compensation for Healthcare Facilities (HCFs)

As per the CPCB Guidelines for Imposition of Environmental Compensation Charges against

Healthcare Facilities and Common Biomedical Waste Treatment Facilities (As per Hon'ble National Green Tribunal's Order dated 12.03.2019 in the matter of O.A. 710 of 2017) , the following cases will be considered for taking cognizance of non-compliance and fit for levying Environmental Compensation:

- i) No Authorization under BMW Rules, 2016;
- ii) No arrangement with CBWTF for disposal of biomedical waste;
- iii) Improper Segregation of generated biomedical waste as per color coded system prescribed under BMW Rules, 2016;
- iv) No facility for pre-treatment of yellow
- v) (h) Category waste (microbiology, biotechnology and other clinical laboratory waste);
- vi) Storage facility not provided for segregated biomedical waste (applicable for bedded hospitals);
- vii) Not provided Effluent Treatment Plant for treatment of wastewater ; and
- viii) Non-compliance to other responsibilities as stipulated for Healthcare Facilities under BMW Rules, 2016.

**Environmental Compensation for
HCFs = HR x T x S x R x N**

Where;

HR – Health Risk factor

T- Type of Healthcare Facility

S – Size of Health Care Facility

R – Environmental Compensation factor

N – Number of days of Violation

HR- Health Risk (HR) is a number from 0 to 100 and increasing HR value denotes the increasing degree of health risk due to improper handling of BMW in healthcare facility.

	No arrangement for disposal of BMW with CBWTF (1)	Not Applied for Authorization (2)	Improper Segregation of BMW (3)	No pre-treatment (4)	On-site storage not provided or not adequate (5)	No ETP Despite requirement (6)	Score for each of Other Violations of BMW Rules, 2016 (7)
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Heath Risk Score (HR)	30	10	20	10	10	15	5
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Note: Score of 5 to be added for each of other violations at column (7), with sum of HR limited to 100

HR is sum of (1) + (2) + (3) + (4) + (5) + (6) + (7) [restricted to 100] T is a factor for type of healthcare facility, as given below:

Type of Healthcare Facility	T Factor
Bedded Hospitals	1.0
Bedded Ayush Hospitals	0.5
Non-bedded (veterinary hospital, pathological laboratory, blood bank)	1.0
Non-bedded (clinic, dispensary, and clinical establishment)	0.5
Animal Test Houses	1.0

S is a factor for size of Healthcare Facility (HCFs) based on number of beds of the Healthcare Facility, as given below:

Size of Healthcare Facility (HCFs)	S factor
Non-bedded (clinic, dispensary, and clinical establishment)	0.15
Non-bedded (veterinary institution, pathological laboratory, blood bank)	0.2
1 to 10 bedded HCFs	0.20
10 to 50 bedded HCFs	0.30
50 to 100 bedded HCFs	0.50
100 to 500 bedded HCFs	1.00
500 and more bedded HCFs	1.50
Animal Test House	1.00

N Number of days for which violation took place is the period between the day of violation observed/due date of implementation as per BMW Rules, 2016/due date of compliance

of directions and the day of compliance verified by CPCB/SPCB/PCC.

R is a factor in Rupees, taken as 250

Further, in any case minimum Environmental Compensation in respect to Healthcare Facility shall not be less than Rs.1200/- per day.

Deterrent Factor for Healthcare Facilities

In order to make scale of environmental compensation deterrent in rendering violation of Rules to be non-profitable, a deterrent factor has been introduced in case of recurrent violations. ECC charges may increase by multiple times when;

- Healthcare facility fails to comply with action points within stipulated time as may be directed by CPCB/SPCB/PCC; or
- Fails to comply during re-inspections

Incremental effect on Environmental compensation charges are given below:

Scenario	Applicable ECC
Up to 15 days from target date	Original ECC
Between 15 to 30 days beyond target date	Two times
Fails to comply in 2 nd inspections including new violations if any	Two times
Between 30 to 45 days beyond target date	Four times
Fails to comply in 3 rd inspections including new violations if any	Four times
Beyond 60 days from target date	Closure of HCF
Fails to comply in 4 th consecutive inspection	Closure of HCF

ANNEXURE-2

FORM – I

[(See rule 4(o), 5(i) and 15 (2))]

ACCIDENT REPORTING

1. Date and time of accident :
2. Type of accident :
3. Sequence of events leading to accident :
4. Has the Authority been informed immediately :
5. The type of waste involved in accident :
6. Assessment of the effects of the accidents on human health and the environment:
7. Emergency measures taken :
8. Steps taken to alleviate the effects of accidents :
9. Steps taken to prevent the recurrence of such an accident :
10. Does your facility have an Emergency Control policy? If yes give details:

Date :

Signature

Place:

Designation

ANNEXURE-3

FORM - II

(See rule10)

APPLICATION FOR AUTHORISATION OR RENEWAL OF AUTHORISATION

(To be submitted by occupier of health care facility or common bio-medical waste treatment facility)

To

The Prescribed Authority
(Name of the State or UT Administration)
Address.

1. Particulars of Applicant:

(i) Name of the Applicant:
(In block letters & in full)

(ii) Name of the health care facility (HCF) or common bio-medical waste treatment facility (CBWTF) :

(iii) Address for correspondence:

Tele No., Fax No.:

(v) Email:

(vi) Website Address:

2. Activity for which authorisation is sought:

Activity	Please tick
Generation, segregation	
Collection,	
Storage	
packaging	
Reception	
Transportation	
Treatment or processing or conversion	
Recycling	
Disposal or destruction	
use	
offering for sale, transfer	
Any other form of handling	

3. Application for fresh or renewal of authorisation (please tick whatever is applicable):

(i) Applied for CTO/CTE Yes/No

(ii) In case of renewal previous authorisation number and date:

(iii) Status of Consents:

(a) under the Water (Prevention and Control of Pollution) Act, 1974

 (b) under the Air (Prevention and Control of Pollution) Act, 1981:

4. (i) Address of the health care facility (HCF) or common bio-medical waste treatment facility (CBWTF):
- (ii) GPS coordinates of health care facility (HCF) or common bio-medical waste treatment facility (CBWTF):
5. Details of health care facility (HCF) or common bio-medical waste treatment facility (CBWTF):
 - (i) Number of beds of HCF:
 - (ii) Number of patients treated per month by HCF:
 - (iii) Number healthcare facilities covered by CBMWTF: _____
 - (iv) No of beds covered by CBMWTF: _____
 - (v) Installed treatment and disposal capacity of CBMWTF: _____ Kg per day
 - (vi) Quantity of biomedical waste treated or disposed by CBMWTF: _____ Kg/ day
 - (vii) Area or distance covered by CBMWTF: _____
 (pl. attach map a map with GPS locations of CBMWTF and area of coverage)
 - (viii) Quantity of Biomedical waste handled, treated or disposed:

Category	Type of Waste	Quantity Generated or Collected, kg/day	Method of Treatment and Disposal (Refer Schedule-1)
(1)	(2)	(3)	(4)
Yellow	(a) Human Anatomical Waste:		
	(b) Animal Anatomical Waste :		
	(c) Soiled Waste:		
	(d) Expired or Discarded Medicines:		
	(e) Chemical Solid Waste:		
	(f) Chemical Liquid Waste :		
	(g) Discarded linen, mattresses, beddings contaminated with blood or body fluid.		
	(h) Microbiology, Biotechnology and other clinical laboratory waste:		
Red	Contaminated Waste (Recyclable)		
White (Translucent)	Waste sharps including Metals:		
Blue	Glassware:		
	Metallic Body Implants		

6. Brief description of arrangements for handling of biomedical waste (attach details):
 - (i) Mode of transportation (if any) of bio-medical waste:
 - (ii) Details of treatment equipment (please give details such as the number, type & capacity of each unit)

No of units Capacity of each unit

Incinerators:
Plasma
Pyrolysis:
Autoclaves:
Microwave:
Hydroclave:
Shredder:
Needle tip cutter
or destroyer
Sharps encapsulation
or concrete pit:
Deep burial pits:
Chemical
disinfection: Any
other treatment
equipment:

7. Contingency plan of common bio-medical waste treatment facility (CBWTF)(attach documents):
8. Details of directions or notices or legal actions if any during the period of earlier authorisation

9. Declaration

I do hereby declare that the statements made and information given above are true to the best of my knowledge and belief and that I have not concealed any information.

I do also hereby undertake to provide any further information sought by the prescribed authority in relation to these rules and to fulfill any conditions stipulated by the prescribed authority.

Date :

Signature of the Applicant

Place :

Designation of the Applicant

ANNEXURE-4

FORM –III

(See rule 10)

AUTHORISATION

(Authorisation for operating a facility for generation, collection, reception, treatment, storage, transport and disposal of biomedical wastes)

1. File number of authorisation and date of issue.....

2. M/s _____ an occupier or operator of the facility located at _____ is hereby granted an authorisation for;

Activity

Please tick

Generation, segregation

Collection,

Storage

packaging

Reception

Transportation

Treatment or processing or conversion

Recycling Disposal or destruction

use

offering for sale, transfer

Any other form of handling

3. M/s _____ is hereby authorized for handling of biomedical waste as per the capacity given below;

(i) Number of beds of HCF:

(ii) Number healthcare facilities covered by CBMWTF: _____

(iii) Installed treatment and disposal capacity: _____ Kg per day

(iv) Area or distance covered by CBMWTF: _____

(v) Quantity of Biomedical waste handled, treated or disposed:

Type of Waste Category	Quantity permitted for Handling
Yellow	
Red	
White (Translucent)	
Blue	

3. This authorisation shall be in force for a period of Years from the date of issue.

4. This authorisation is subject to the conditions stated below and to such other conditions as may be specified in the rules for the time being in force under the Environment (Protection) Act, 1986.

Date :

Signature

Place:

Designation

Terms and conditions of authorisation *

1. The authorisation shall comply with the provisions of the Environment (Protection) Act, 1986 and the rules made there under.
2. The authorisation or its renewal shall be produced for inspection at the request of an officer authorised by the prescribed authority.
3. The person authorized shall not rent, lend, sell, transfer or otherwise transport the biomedical wastes without obtaining prior permission of the prescribed authority.
4. Any unauthorised change in personnel, equipment or working conditions as mentioned in the application by the person authorised shall constitute a breach of his authorisation.
5. It is the duty of the authorised person to take prior permission of the prescribed authority to close down the facility and such other terms and conditions may be stipulated by the prescribed authority.

ANNEXURE-5

**Form – IV
(See rule13)
ANNUAL REPORT**

[To be submitted to the prescribed authority on or before 30th June every year for the period from January to December of the preceding year, by the occupier of health care facility (HCF) or common bio-medical waste treatment facility (CBWTF)]

Sl. No	Particulars		
1.	Particulars of the Occupier	:	
	(i) Name of the authorised person (occupier or : operator of facility)	:	
	(ii) Name of HCF or CBMWTF	:	
	(iii) Address for Correspondence	:	
	(iv) Address of Facility		
	(v)Tel. No, Fax. No	:	
	(vi) E-mail ID	:	
	(vii) URL of Website		
	(viii) GPS coordinates of HCF or CBMWTF		
	(ix) Ownership of HCF or CBMWTF	:	(State Government or Private or Semi Govt. or any other)
	(x). Status of Authorisation under the Bio-Medical Waste (Management and Handling) Rules	:	Authorisation No.:valid up to
	(xi). Status of Consents under Water Act and Air Act	:	Valid up to:
2.	Type of Health Care Facility	:	
	(i) Bedded Hospital	:	No. of Beds:.....
	(ii) Non-bedded hospital	:	

	<p style="text-align: center;">Laborator (Clinic or Blood Bank or Clinical y or Research Institute or Veterinary Hospital or any other)</p>		
	(iii) License number and its date of expiry		
3.	Details of CBMWTF	:	
	(i) Number healthcare facilities covered by CBMWTF	:	
	(ii) No of beds covered by CBMWTF	:	
	(iii) Installed treatment and disposal capacity of CBMWTF:	:	_____ Kg per day
	(iv) Quantity of biomedical waste treated or disposed by CBMWTF	:	_____ Kg/day
4.	Quantity of waste generated or disposed in Kg per annum (on monthly average basis)	:	Yellow Category :
			Red Category :
			White:
			Blue Category :
			General Solid waste:
5	Details of the Storage, treatment, transportation, processing and Disposal Facility		
	(i) Details of the on- site storage facility	:	Size :
			Capacity :
			Provision of on-site storage : (cold storage or any other provision)

disposal facilities		Type of treatment equipment	No of units	Capacity Kg/day	Quantity treated or disposed in kg per annum
(iii) Quantity of recyclable wastes sold to authorized recyclers after treatment in kg per annum.	:	Red Category (like plastic, glass etc.)			
(iv) No of vehicles used for collection and transportation of biomedical waste	:				
(v) Details of incineration ash and ETP sludge generated and disposed during the treatment of wastes in Kg per annum		Incineration Ash ETP Sludge	Quantity generated	Where disposed	
(vi) Name of the Common Bio- : Medical Waste Treatment Facility Operator through which wastes are disposed of					
(vii) List of member HCF not handed over bio-medical waste.					
6 Do you have bio-medical waste management committee? If yes, attach minutes of the meetings held during the reporting period					
7 Details trainings conducted on BMW					
(i) Number of trainings conducted on BMW Management.					

	(ii) number of personnel trained		
	(iii) number of personnel trained at the time of induction		
	(iv) number of personnel not undergone any training so far		
	(v) whether standard manual for training is available?		
	(vi) any other information)		
8	Details of the accident occurred during the year		
	(i) Number of Accidents occurred		
	(ii) Number of the persons affected		
	(iii) Remedial Action taken (Please attach details if any)		
	(iv) Any Fatality occurred, details.		
9.	Are you meeting the standards of air Pollution from the incinerator? How many times in last year could not met the standards?		
	Details of Continuous online emission monitoring systems installed		
10	Liquid waste generated and treatment methods in place. How many times you have not met the standards in a year?		
11	Is the disinfection method or sterilization meeting the log 4 standards? How many times you have not met the standards in a year?		
12	Any other relevant information	:	(Air Pollution Control Devices attached with the Incinerator)

Certified that the above report is for the period from

.....
.....
.....
.....

Name and Signature of the Head of the Institution

Date:
Place

ANNEXURE-6

FORM -V

37 (See rule 16)

Application for filing appeal against order passed by the prescribed authority

1. Name and address of the person applying for appeal :
2. Number, date of order and address of the authority which passed the order, against which appeal is being made (certified copy of order to be attached):
3. Ground on which the appeal is being made:
4. List of enclosures other than the order referred in para 2 against which appeal is being filed:

Signature

Date :

Name and Address.....

ANNEXURE-7

SCHEDULE-I

Common Application for Consent under Water (Prevention and Control of Pollution) Act, 1974, Air (Prevention and Control of Pollution) Act, 1981) and authorisation under Hazardous Wastes (Management and Handling) Rules, 1989, as amended

No.

Accompanying form in triplicate to be submitted by the applicant. One copy may be retained by the applicant.

Explanatory note for filling in application form for Consent / Authorisation

- (1) Any applicant knowingly giving incorrect information or suppressing any information pertaining to any of the items of the application shall be liable for punishment as per provisions under the relevant Act.
- (2) The application form shall be submitted at the head-quarter office of the Board at the address given on the first page of the application form or to the respective Zonal or Regional or Sub-Regional office or District Office of the Board / Pollution Control Committee under whose jurisdiction the applicants activity falls.
- (3) The application shall be accompanied by the consent fee in the form of Demand Draft in favour of State Pollution Control Board / Pollution Control Committee. Fee paid is not refundable.
- (4) For the items marked * strike out which is not relevant.
- (5) If any of the items is not relevant to the activity of the applicant, please state 'Not Applicable'.
- (6) If the space for reply provided for any item is inadequate, use additional sheets, duly referenced.
- (7) Item 1 : Give the name of the person who is authorised by the applicant to transact their business.
- (8) Item 2 : Also state the concerned institutions under whose administrative area the unit falls.
- (9) The form shall be accompanied by the relevant documents specified. on the last page of the application form.
- (10) Capital Investment - Consent fee is to be paid based on gross fixed capital investment of the unit without depreciation till the date of application. The gross capital investment shall include cost of ""land, building, plant and machinery without depreciation.

Application form for Consent / Authorisation

From :

To
 The.....
 Pollution Control Board

Sir,

I / We hereby apply for *

- (i) Consent to Establish / Operate / Renewal of consent under section 25 and 26 of the Water (Prevention and Control of Pollution) Act, 1974, as amended.
- (ii) Consent to establish / operate / renewal of consent under Section 21 of the Air (Prevention and Control of Pollution) Act, 1981, as amended.
- (iii) Authorisation / renewal of authorisation under rule 5 of the Hazardous Wastes (Management and Handling) Rules, 1989, as amended in connection with my / our existing / proposed / altered / additional manufacturing ! processing activity from the premises as per the details given below.

Part A : General

1. Name, designation, office address with telephone, fax numbers, e-mail of the applicant / occupier / Industry / Institution/ Local Body :

- 2.(a) Name and location of the industrial unit / premises for which the application is made. (Give revenue Survey Number / plot number, name of Taluka and District, also telephone and fax number) :

- (b) Details of the planning permission obtained from the local body / Town and Country Planning authority / metropolitan development authority / designate authority :

- (c) Name of the local body under whose jurisdiction the unit is located and name of the licence issuing authority :

3. Names, addresses with telephone and fax number of Managing Director/Managing Partner and officer responsible for matters connected with pollution control and / or hazardous waste disposal. :

4. (a) Are you registered as a small-scale industrial unit ? :
- (b) If yes, give the number and date of registration. :

5. Gross capital investment of the unit without depreciation till the date of application (Cost of building, land, plant and machinery). :
- (To be supported by an affidavit, Annual Report or certificate from a Chartered Accountant. For proposed unit(s), give estimated figure) :

6. If the site is located near sea-shore / river bank / other water bodies; indicate the distance and the name of the water body, if any. :

7. Does the location satisfy the requirements under relevant Central / State Govt. notifications such as Coastal Regulation Zone, Notification on Ecologically Fragile Area, Industrial location policy, etc. If so, give details. :

8. If the site is situated in notified industrial estate,
 - (a) whether effluent collection, treatment and disposal system has been provided by the authority
 - (b) will the applicant utilise the system, if provided
 - (c) if not provided, details of proposed arrangement.

9. Total plot area, built-up area and area available for the use of treated sewage / trade effluent :

10. Month and year of proposed commissioning of the unit :

11. Number of workers and office staff. :

12. (a) Do you have a residential colony within the premises in respect of which the present application is made ? :
- (b) If yes, please state population staying : :
- (c) Indicate its location and distance with reference to plant site. :
13. List of products and by-products manufactured in tonnes / month, kl / month or numbers / month (Give figure corresponding to maximum installed production capacity) :
14. List of raw materials and process chemicals with annual consumption corresponding to above stated production figures, in tonnes / month or kl / month or numbers / month. :
15. Description of process of manufacture for each of the products showing input, output, quality and quantity of solid, liquid and gaseous wastes, if any from each unit process. (To be supported by flow sheet and / or material balance and water balance sheet). :

Part B : Waste water aspects

16. Water consumption for different uses (m^3 / day) :
- (i) Industrial cooling, spraying – in mine pits or boiler feeds.
- (ii) Domestic purpose -
- (iii) Processing whereby water gets polluted and the pollutants are easily biodegradable -
- (iv) Processing whereby water gets polluted and the pollutants are not easily bio-degradable and are toxic
- (v) Others such as agriculture, gardening etc. (specify)

Total :

17. Source of water supply.
Name of authority granting permission
if applicable and quantity permitted :
18. Quantity of waste water (effluent) generated
(m³ / day)
- (i) Domestic : (v) Boiler Blowdown :
- (ii) Industrial : (vi) Cooling water blowdown :
- (iii) Process : (vii) DM Plant / Softening
Plant washings :
- (iv) Washings :
19. Water budget calculations accounting
for difference between water consumption
and effluent generated. :
20. Present treatment of sewage / canteen
effluent (Give sizes / capacities of
treatment units). :
21. Present treatment of trade effluent
(Give sizes / capacities of treatment units).
(A schematic diagram of the treatment
scheme with inlet / outlet characteristics
of each unit operation / process is to be
provided. Include details of residue
management system (ETP sludges)) :
22. (a) Are sewage and trade effluents
mixed together ? :
- (b) If yes, state at which stage –
Whether before, intermittently or
after treatment. :
23. Capacity of treated effluent sump. Guard
Pond if any.
24. Mode of disposal of treated effluents, with
respective quantity, m³ / day
- (i) into stream / river (name of river) :
- (ii) into creek / estuary
(name of creek/estuary) :

- (iii) into sea :
- (iv) into drain / sewer (owner of sewer) :
- (v) On land for irrigation on owned land / lease land. Specify cropped area. (To be supported by relevant documents) :
- (vi) Quantity of treated effluent reused / recycled, m³ / day
Provide a location map of disposal arrangement indicating the outlet (s) for sampling :
- (vii) Provide a location map of disposal arrangement indicating the outlet (s) for sampling :
25. (a) Quality of untreated / treated effluents (Specify pH and concentration of SS, BOD, COD and specific pollutants relevant to the industry. TDS to be reported for disposal on land or into stream / river). :
- (b) Enclose a copy of the latest report of analysis from the laboratory approved by State Board / Committee / Central Board / Central Government in the Ministry of Environment & Forests. For proposed unit furnish expected characteristics of the untreated / treated effluent. :

Part - C : Air emission aspects

26. Fuel consumption :

	Coal	LSHS	Furnace Oil	Natural gas	Others (Specify)
(a) Fuel consumption (TPD / KLD)					
(b) Calorific value					
(c) Ash content %					
(d) Sulphur content %					
(e) Other (specify)					

27. (A) Details of stack (process & fuel stacks):

	1	2	3	4
(a) Stack number (s)	:			
(b) Attached to	:			
(c) Capacity :	:			
(d) Fuel type	:			
(e) Fuel quantity (TPD / KLD)	:			
(f) Material of construction	:			
(g) Shape (round / rectangular)	:			
(h) Height, m (above ground level)	:			
(i) Diameter / size, in meters	:			
j) Gas quantity, Nm ³ / hr.	:			
(k) Gas temperature, °C	:			
(l) Exit gas velocity, m / sec.	:			
(m) Control equipment preceding the stack	:			

(Attach specifications including residue management systems of each of the control equipment indicating inlet / outlet concentrations of relevant pollutants)

27. (B) Whether any release of odoriferous compounds such as Mercaptans, Phorate etc. are coming out :
28. Do you have adequate facility for collection of samples of emissions in the form of port holes, platform, ladder etc. as per Central Board Publication "Emission Regulations Part-III" December 1985) :
29. Quality of treated flue gas emissions and process emissions.
(Specify concentration of criteria pollutants and industry / process-specific pollutants stack-wise. Enclose a copy of the latest report of analysis from the approved laboratory by State Board / Central Board / Central Government in the Ministry of Environment and Forests. For proposed units furnish the expected characteristics of the emission)

Part - D : Hazardous waste aspects

30. (a) Whether the unit is generating hazardous waste as defined in the Hazardous Waste (Management and handling) Rules, 1989, as amended. :
- (b) If so, the category No. :

31. Authorization required for *
 (i) Collection :
 (ii) Reception :
 (iii) Treatment :
 (iv) Transport :
 (v) Storage :
 (vi) Disposal :
 of the hazardous waste :
32. Quantity of hazardous waste generated
 (kg / day) or (mt / month) :
33. Characteristics of the hazardous waste(s).
 Specify concentration of relevant pollutants.
 Enclose a copy of the latest report
 of analysis from the laboratory approved by
 'State Board/Central Board/ Central Government
 in the Ministry of Environment and Forests).
 For proposed units furnish expected
 characteristics. :
34. Mode of storage (intermediate or final)
 (describe area, location and methodology). :
35. Present treatment of hazardous waste, if any
 (give type and capacity of treatment units) :
36. Quantity of hazardous waste disposed
 (i) Within the factory :
- (ii) Outside the factory
 (Specify location and enclose
 copies of agreement) :
- (iii) Through sale (Enclose documentary
 proof and copies of agreement) :
- (iv) Outside State / Union Territory, if yes
 particulars of (i) & (iii) above :
- (v) Other (specify) :

Part - E : Additional information

37. (a) Do you have any proposals to
 upgrade the present system for
 treatment and disposal of effluent/
 emission and / or hazardous waste :

37. (b) If yes, give the details with time-schedule for the implementation and approximate expenditure to be incurred on it. :
38. Capital and recurring (O & M) expenditure on various aspects of environment protection such as effluent, emission, hazardous waste, solid waste, tree plantation, monitoring, date acquisition etc. (give figures separately for items implemented / to be implemented). :
39. To which of the pollution control equipment, separate meters for recording consumption of electric energy are installed ? :
40. Which of the pollution control items are connected to D.G. set (captive power source) to ensue their running in the event of normal power failure ? :
41. Nature, quantity and method of disposal of non-hazardous solid waste generated separately from the process of manufacture and waste treatment. (Give details of area / capacity available in applicant's land) :
42. Hazardous Chemicals - Give details of chemicals and quantities handled and stored. :
- (i) Is the unit a Major Accident Hazard unit as per MSIHC Rules ?
- (ii) Is the unit an isolated storage as defined under the MSIHC Rules ?
- (iii) Indicate status of compliance of Rules 5, 7, 10, 11, 12, 13 and 18 of the MSIHC Rules.
- (iv) Has approval of site been obtained from the concerned authority ?
- (v) Has the unit prepared an Off-site Emergency Plan ? Is it updated ?
- (vi) Has information on imports of chemicals been provided to the concerned authority ?
- (vii) Does the unit possess a policy under the PLI Act?

43. Brief details of tree plantation / green belt development within applicant's premises (in hectares). :
44. Information of schemes for waste minimisation, resource recovery and recycling - implemented and to be implemented, separately. :
45. (a) The applicant shall indicate whether industry comes under Public Hearing, if so, the relevant documents such as EIA, EMP, Risk Analysis etc. shall be submitted, if so, the relevant documents enclosed shall be indicated accordingly. :
- (b) Any other additional information that the applicant desires to give. :
46. I / We further declare that the information furnished above is correct to the best of my / our knowledge. :
47. I / We hereby submit that in case of any change from what is stated in this application in respect of raw materials, products, process of manufacture and treatment and / or disposal of effluent, emissions, hazardous wastes etc. in quality and quantity; a fresh application for Consent / Authorisation shall be made and until the grant of fresh Consent / Authorisation no change shall be made.
48. I / We undertake to furnish any other information within one month of its being called by the Board / Committee.
49. I / We agree to submit to the Board an application for renewal of consent / authorisation in two months in advance before the date of expiry of the consent / authorisation validity period:
50. I / We enclose herewith a Demand Draft for Rs.
(Rupees.....) drawn in favour of Pollution Control Board / Committee as the fee for consent / authorisation for a period upto

Yours faithfully,

Signature

Name

Designation

Documents enclosed :

ANNEXURE-8

List of Assam Pollution Control Board Regional Offices and Contact Person

A. Head Office (Name of the Officers)

Name	Designation	Phone No.
1. Dr Arup Kumar Misra	Chairman	(0361) 2550258
2. Dr. Shantanu Kumar Dutta	Member Secretary	(0361) 2652774
3. Shri B. K. Das	Chief Env. Engineer.	(0361) 2652774
4. Shri Anirban Das	Addl. Chief. Env. Engineer	(0361) 2652774
5. Shri M. M. Bora	Sr. Env. Engineer	(0361) 2652774
6. Shri G. Bhuyan	Sr. Env. Engineer	(0361) 2652774
7. Mrs. M. Bardalai	Sr. Env. Engineer	(0361) 2652774
8. Md. Zakir Ahmed	Sr. Env. Engineer	(0361) 2652774
9. Shri U. C. Das	Sr. Env. Scientist (I/C Laboratory)	(0361) 2652774

B. Addresses of Regional Offices:

Head Quarter	Name & Designation	Jurisdiction	Email Address
1. Regional Office, Pollution Control Board, Assam Bairagimath, Dibrugarh, PIN-786001.	Shri H. Pegu, Exe. Engineer	Tinsukia, Dibrugarh, Dhemaji	ro_dibrugarh@pcbassam.org rodibrugarh.pcba@gmail.com
2. Regional Laboratory cum Office Pollution Control Board, Assam Melachakar, Sibsagar, PIN: 785640.	Shri J. K. Das, Exe. Engineer	Jorhat, Sib- sagar, Chara- ideo , Sonari, Majuli	ro_sivasagar@pcbassam.org rosivasagar.pcba@gmail.com
3. Regional Office, Pollution Control Board, Assam College Tinali, Near Circiut House, Golaghat, PIN: 785621.	Mrs. Moni Nath, Exe. En- gineer	Golaghat, Karbi Anglong	ro_golaghat@pcbassam.org rogolaghat.pcba@gmail.com
4. Pollution Control Board, Assam By Lane-2, Nabapur, Mazgaon, Tezpur, Sonitpur, Assam-784001	Shri J. K. Saharia Exe. Engineer.	Darrang, Sonitpur, Lakhimpur, Udalguri, Biswanath	ro_tezpur@pcbassam.org rotezpur.pcba@gmail.com

<p>5. Regional Office, Guwahati Pollution Control Board, Assam Bamunimaidam (Near Assam Govt. Press), Guwahati, PIN: 781021.</p>	<p>Sri G. Bhuyan, Sr. Env. Engi- neer</p>	<p>Kamrup (Metro)</p>	<p>ro_guwahati@pcbassam.org roguwahati1.pcba@gmail.com</p>
<p>6. Regional Office, Kamrup Pollution Control Board, Assam Bamunimaidam (Near Assam Govt. Press) Guwahati, PIN: 781021.</p>	<p>Sri M M Bora, Exe Sr. Env. Engineer</p>	<p>Kamrup (Ru- ral), Nalbari & Baksa (BTAD)</p>	<p>ro_guwahati2@pcbas-sam.org roguwahati2.pcba@gmail.com</p>
<p>7. Regional Laboratory cum Office Pollution Control Board, Assam Ratnawali Heights, 1st floor, oppo- site Birjhora H.S school, Bongaiga- on, Pin: 783380</p>	<p>Shri H. K. Sarma, Regional Exe. Engineer</p>	<p>Barpeta, Bongaigaon, Kokrajhar, Goalpara, Dhubri, Chi- rang, South Salmara Mankachar</p>	<p>ro_bongaigaon@pcbas-sam.org ro_bongaigaon@pcbas-sam.org</p>
<p>8. Regional Laboratory cum Office Pollution Control Board, Assam Park Road, Silchar Development Authority Building, Silchar, As- sam. PIN: 788002.</p>	<p>Shri K. Basu- matary, Regional Exe. Engineer</p>	<p>Dima Hasao, Cachar, Karimganj, Hailakandi</p>	<p>ro_silchar@pcbassam.org rosilchar.pcba@gmail.com</p>
<p>9. Regional Office, Pollution Control Board, Assam L. B. Road, Dharampatti, Haibar- Gaon PIN: 782002.</p>	<p>Md. Zakir Ahmed, Sr. Env. Engineer</p>	<p>Naga- on, Morigaon, West Karbi Anglong, Hojai</p>	<p>ro_nagaon@pcbassam.org ronagaon.pcba@gmail.com</p>

ANNEXURE-9

Format for Bio Medical Waste Register/Record

NAME & ADDRESS OF HEALTH CARE FACILITY:

S. No.	Date of Generation	Quantity of BMW Generated (in KG) Colour Coding and Category					Date of collection by Waste Collection Agency	Time (in AM/PM)	Name & Signature of Waste Collector	Name & Signature of HCF Staff
		Yellow (1)	Red (2)	White (3)	Blue (4)	Total				
1										
2										
3										
4										
5										
6										

References:

1. Bio-Medical Waste Management Rules, 2016 vide G.S.R NO 343(E), dated 28th March, 2016
2. Bio-Medical Waste Management Amendment Rules, 2018 vide G.S.R NO. 234(E), dated 16th March, 2018
3. Bio-Medical Waste Management (Amendment) Rules, 2019 vide G.S.R. 129(E) dated 19th February 2019
4. Bio-Medical Waste Management (Second Amendment) Rules, 2019” vide G.S.R NO. 360(E), dated 10th May 2019
5. Guidelines for Management of Healthcare Waste as per Biomedical Waste Management Rules, 2016; Directorate General of Health Services, Ministry of Health & Family Welfare and Central Pollution Control Board Ministry of Environment, Forest & Climate Change

Nayantara Super Market Complex, 4th floor. Six Mile, G.S. Road, Guwahati-22

Email: pmu.ahidms@gmail.com

website: <https://ahidms.assam.gov.in>

Contact Number: 0361-3501033