MANUAL FOR IMPLEMENTATION & TRAINING OF BIOMEDICAL WASTE MANAGEMENT IN HEALTHCARE FACILITIES
This version (V1.2) of the ‘Manual for Implementation & Training of Bio-Medical Waste Management in Health Care Facilities’ has been prepared after incorporating suggestions and comments of senior officers at UPHSSP, the eminent panel of training resource persons, Technical Assistance Provider (TAP) and Environment Management Cell colleagues, apart from observations made during earlier training programs. The Manual has been prepared in the context of Biomedical Waste Management Rules, 2016.
CONTENTS

Section 1  Introduction ........................................... 1
Section 2  The 5 W’s And How of Biomedical Waste Management .... 4
Section 3  Legal & Administrative Framework for
            Biomedical Waste Management ........................ 9
Section 4  Key Roles and Responsibilities in Biomedical Waste Management ................................................................. 12
Section 5  Step-Wise Implementation of Biomedical Waste Management Plan at Healthcare Facility ........................................ 21

LIST OF ANNEXURES

Annexure 1  Healthcare Facility Biomedical Waste Monitoring Form .................... 40
Annexure 2  Biomedical Waste (BMW) Scoring Record ................................. 41
Annexure 3  Biomedical Waste Collection Record ........................................ 42
Annexure 4  Consumables Supply Record ................................................. 43
Annexure 5  Biomedical Waste Storage Shed Cleaning Record ......................... 44
Annexure 6  Health Care Facility Level Training Record ............................... 45
Annexure 7  Biomedical Waste Management Rules, 2016 ............................ 46
Annexure 8  Contact Details of Concerned Officials & Resource Persons .......... 81
List of Abbreviations

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>BMW</td>
<td>Biomedical Waste</td>
</tr>
<tr>
<td>BPHC</td>
<td>Block Primary Health Centre</td>
</tr>
<tr>
<td>CBWTF</td>
<td>Common Biomedical Waste Treatment Facility</td>
</tr>
<tr>
<td>CHC</td>
<td>Community Health Centre</td>
</tr>
<tr>
<td>CMO</td>
<td>Chief Medical Officer</td>
</tr>
<tr>
<td>CMS</td>
<td>Chief Medical Superintendent</td>
</tr>
<tr>
<td>CPCB</td>
<td>Central Pollution Control Board</td>
</tr>
<tr>
<td>DHF</td>
<td>District Hospital Female</td>
</tr>
<tr>
<td>DHM</td>
<td>District Hospital Male</td>
</tr>
<tr>
<td>DMC</td>
<td>District Monitoring Committee</td>
</tr>
<tr>
<td>EP Act</td>
<td>Environment Protection Act</td>
</tr>
<tr>
<td>HCF</td>
<td>Healthcare Facility</td>
</tr>
<tr>
<td>IEC</td>
<td>Information, Education &amp; Communication</td>
</tr>
<tr>
<td>NGT</td>
<td>National Green Tribunal</td>
</tr>
<tr>
<td>NO</td>
<td>Nodal Officer</td>
</tr>
<tr>
<td>OPD</td>
<td>Out Patients Department</td>
</tr>
<tr>
<td>OT</td>
<td>Operation Theatre</td>
</tr>
<tr>
<td>RO</td>
<td>Regional Office</td>
</tr>
<tr>
<td>UPPCB</td>
<td>Uttar Pradesh Pollution Control Board</td>
</tr>
</tbody>
</table>
SECTION 1
INTRODUCTION

This manual has been developed to provide its readers the necessary guidance for initiating steps for effective implementation of biomedical waste management at the healthcare facilities (HCFs), keeping in mind the requirements of applicable environmental regulations. This manual shall be helpful to all officials concerned with the responsibility of training healthcare personnel in BMW Management, implementation of BMW Management Plan at the HCF, and monitoring of training & implementation activities in the context of BMW generated during performing such services at healthcare facilities in the state.

MANUAL DESIGN: This manual is arranged as given below

Section 1 (Introduction): This section identifies the target audience for the Manual, learning outcomes and plan & design of the Manual.

Section 2 (The 5 W’s And How of Biomedical Waste Management): This section explains what is (and isn’t) BMW, where it is generated, why it must be segregated, treated and disposed according to norms, when BMW should be segregated and by whom. It also identifies the different categories of BMW, their segregation, treatment and ultimate disposal methodology.

Section 3 (Legal & Administrative Framework for Biomedical Waste Management): This section covers the main features of the legal provisions governing management and handling of BMW. In particular it clarifies the obligations and penalties applicable on health care facilities.

Section 4 (Key Roles and Responsibilities in Biomedical Waste Management): This section identifies the roles and responsibilities of key stakeholders (regulatory, government bodies and private organisations) at the state, district and facility levels.

Section 5 (Step-Wise Implementation of Biomedical Waste Management Plan at Healthcare Facility): This section covers the step-by-step guide for health care facility-level implementation of biomedical waste management systems. Notably it explains the procedures for obtaining authorisation from UPPCB and contracting services of CBWTFs. It also provides guidelines for constitution of the BMW management committee, development of BMW management plan, training of health care personnel, monitoring, record keeping and BMW Management Information System (BMW MIS).
Manual Outcomes: After reading this manual, it is expected that the reader shall be able to

1. Appreciate the need for BMW management at HCFs, types of wastes and their potential health and environmental impacts on healthcare service providers and communities.
2. Distinguish different categories of BMW, its segregation and treatment options.
3. Acquire an understanding about key legal requirements, administrative framework, and roles and responsibilities for implementing biomedical waste management at the healthcare facility and penalties in case of legal non-compliance.
4. Undertake procedures required for obtaining authorization of HCF (from UPPCB), contract service providers (CBWTFs), and ensure service delivery and procurement of consumables and materials required for BMW handling, transportation and storage.
5. Develop and implement a biomedical waste management plan for different work areas of the HCF.
6. Provide training on BMW to different categories of healthcare personnel and create awareness on the subject.
7. Monitor training and implementation of biomedical waste management at the HCF.
8. Acquire a working knowledge of the BMW MIS.

Steering through the Manual: Where to find What?

1. Authorisation from UPPCB : Section 5.3
2. Biomedical Waste Management Rules, 2016 : Annexure 7; Section 3 (for main features in brief)
3. BMW Category-wise Segregation, Treatment & Disposal : Section 2
4. BMW Collection Record : Annexure 3
5. BMW Management Committee at HCFs : Section 5.1; Section 4
6. BMW Management Information System (BMW MIS) : Section 5.13
7. BMW Management Plan at HCFs : Section 5.4
8. Contact Details of key personnel : Annexure 9
9. Contract with CBWTF : Section 5.2
10. Guidelines for BMW transfer from generation station to BMW storage shed : Section 5.8
11. Guidelines for Display of IEC material/posters : Section 5.7
12. Guidelines for Placement of Bins/Bags etc. for BMW : Section 5.5
13. List of Consumables, materials, equipment for BMW management : Section 5.6; Annexure 4
<table>
<thead>
<tr>
<th></th>
<th>Title</th>
<th>Section</th>
</tr>
</thead>
<tbody>
<tr>
<td>14.</td>
<td>Manual Plan</td>
<td>Section 1</td>
</tr>
<tr>
<td>15.</td>
<td>Monitoring of BMW management at HCFs</td>
<td>Section 5.11; Annexures 1 &amp; 2</td>
</tr>
<tr>
<td>16.</td>
<td>Rewards &amp; Recognition</td>
<td>Section 5.14</td>
</tr>
<tr>
<td>17.</td>
<td>Roles &amp; Responsibilities in BMW management</td>
<td>Section 4</td>
</tr>
<tr>
<td>18.</td>
<td>Storage Shed construction &amp; maintenance</td>
<td>Section 5.9; Annexure 5</td>
</tr>
<tr>
<td>19.</td>
<td>Target Audience of Manual</td>
<td>Section 1</td>
</tr>
<tr>
<td>20.</td>
<td>Training on BMW management at HCFs</td>
<td>Section 5.10; Annexure 6; Annexure 8</td>
</tr>
<tr>
<td>21.</td>
<td>Immunisation, Periodic Health Check-ups and Personal Protective Equipment for Healthcare Personnel</td>
<td>Section 5.15</td>
</tr>
<tr>
<td>22.</td>
<td>What, Where, Why, When &amp; Who of BMW Management</td>
<td>Section 2</td>
</tr>
</tbody>
</table>
SECTION 2
THE 5 W’S AND HOW OF BIOMEDICAL WASTE MANAGEMENT

WHAT
IS BIOMEDICAL WASTE

• According to World Health Organization, Health-care waste includes all waste generated by health-care establishments, research facilities, and laboratories. It also includes waste produced in the course of health care undertaken in the home (dialysis, insulin injections, etc.).
• Between 75 to 90 % of waste generated at healthcare facilities is “general” or non-hazardous waste. It includes waste generated during:
  o administrative activities
  o housekeeping activities
  o kitchen & food related
  o packaging
  o maintenance functions
• Only 10 to 25% of waste generated during delivery of patient care is “hazardous” in nature and carries various health risks. This hazardous or biomedical waste includes:
  o infectious waste cultures
  o sharps
  o pathological waste
  o pharmaceutical
  o Geno toxic
  o chemical and
  o radioactive wastes
  o Approx. 250 gm biomedical waste is generated per bed at the healthcare facilities, which is hazardous and requires further treatment and disposal. Therefore, total quantities of biomedical wastes generated at different facilities in the state healthcare facilities is estimated at:
    o District hospitals (Average 100 beds) - 25 kg /day
    o Community Health Centre (30 beds) - 7.5 kg/day
WHERE
IS BIOMEDICAL WASTE GENERATED

Within healthcare facilities, different work areas generate different types of biomedical wastes. Broadly waste is generated in operation theatres & surgical wards, medical wards, laboratories, pharmaceutical & chemical stores, and dental clinics.

WHY
SHOULD BIOMEDICAL WASTE BE SEGREGATED, TREATED & DISPOSED

Everyone who either generates, handles or disposes the waste or those who come in contact due to accidental exposure in healthcare facility due to poor management controls, is exposed on the risks. The key risk groups include medical doctors, nurses, health-care auxiliaries, hospital maintenance personnel, visitors to health-care establishments, patients in health-care establishments or receiving home care, workers in support services allied to health-care establishments, such as laundries, waste handling, and transportation, and workers in waste disposal facilities (such as landfills or CBWTFs), including scavengers.

<table>
<thead>
<tr>
<th>Risk Group</th>
<th>Nature of Hazard</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health Care Providers (HCPs)</td>
<td>• Infection</td>
</tr>
<tr>
<td>Staff handling BMW in HCF and waste treatment/disposal facility</td>
<td>• Injury</td>
</tr>
<tr>
<td></td>
<td>• Toxicity</td>
</tr>
<tr>
<td>Visitors to Hospitals</td>
<td>• Hospital Acquired Infection (HAI)</td>
</tr>
<tr>
<td>• Patients</td>
<td>• Blood-borne infection</td>
</tr>
<tr>
<td>• Relatives</td>
<td></td>
</tr>
<tr>
<td>• Support Service Providers (laundries, transportation etc.)</td>
<td></td>
</tr>
<tr>
<td>Community</td>
<td>Pollution</td>
</tr>
<tr>
<td>• Residents of areas neighbouring HCFs, waste treatment/disposal facility, garbage dumps</td>
<td>• Air</td>
</tr>
<tr>
<td>• Society at large</td>
<td>• Water</td>
</tr>
<tr>
<td></td>
<td>• Soil</td>
</tr>
</tbody>
</table>
WHEN

SHOULD BIOMEDICAL WASTE BE SEGREGATED

BMW should be segregated at the POINT OF GENERATION.
If this is not done, it can result in:
- Infecting all waste (including general uninfected waste).
- It is very difficult to segregate BMW after it has got mixed.
- Increases risk of injury and infection for persons engaged in waste handling.

WHO

SHOULD SEGREGATE BIOMEDICAL WASTE

Persons generating the waste should segregate it/waste segregation at source

<table>
<thead>
<tr>
<th>Doctors</th>
<th>✓</th>
<th>Nursing Staff</th>
<th>✓</th>
<th>Paramedical Staff</th>
<th>✓</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lab Technicians</td>
<td>✓</td>
<td>Ward Boy</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sanitary Staff</td>
<td>×</td>
<td>Patient</td>
<td>×</td>
<td>Patient’s Relative</td>
<td>×</td>
</tr>
</tbody>
</table>
HOW

SHOULD BIOMEDICAL WASTE BE SEGREGATED, TREATED & DISPOSED

Biomedical waste should be segregated into different categories to enable proper treatment and final disposal in accordance with Bio-Medical Waste Management Rules, 2016. Given below are the different categories of bio-medical waste most likely to be generated in public health care facilities, and their prescribed segregation, treatment and final disposal method. For any other type of bio-medical waste not mentioned in the table below or any further clarification on segregation, treatment and disposal, refer to Schedule 1 of Bio-Medical Waste Management Rules, 2016 given in Annexure 7.

General waste should be collected separately and handed over to the municipal body.

<table>
<thead>
<tr>
<th>Waste Category (Type)</th>
<th>Colour Code</th>
<th>Prescribed Treatment</th>
<th>Final Disposal</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Human Anatomical Waste</strong></td>
<td>Yellow non-chlorinated plastic bag/bin</td>
<td>Incineration</td>
<td>Ash disposal in municipal landfill</td>
</tr>
<tr>
<td>(human tissues, organs, body parts, fetus below viability period (as per Medical Termination of Pregnancy Act 1971, amended from time to time))</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Soiled Waste</strong></td>
<td>Yellow non-chlorinated plastic bag/bin</td>
<td>Incineration</td>
<td>Ash disposal in municipal landfill</td>
</tr>
<tr>
<td>(items contaminated with blood, body fluids like dressings, plaster casts, cotton swabs, discarded linen &amp; mattresses, and bags containing residual or discarded blood and blood components)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Expired or Discarded Medicines</strong></td>
<td>Yellow non-chlorinated plastic bag/bin</td>
<td>Incineration</td>
<td>Ash disposal in municipal landfill</td>
</tr>
<tr>
<td>(Pharmaceutical waste like antibiotics, cytotoxic drugs including all items contaminated with cytotoxic drugs along with glass or plastic ampoules, vials etc.)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Microbiology, Biotechnology and other Clinical Laboratory Waste</strong></td>
<td>Yellow non-chlorinated plastic</td>
<td>Pre-Treatment to sterilise/disinfect on-site as per NACO/WHO Guidelines;</td>
<td>Ash disposal in municipal landfill</td>
</tr>
<tr>
<td>(Blood bags, laboratory cultures, stocks or specimens of micro-organisms, live or dead)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Waste Type</td>
<td>Bag/ Bin Type</td>
<td>Treatment Method</td>
<td>Disposal Method</td>
</tr>
<tr>
<td>----------------------------------</td>
<td>------------------------</td>
<td>-----------------------------------</td>
<td>----------------------------------------------</td>
</tr>
<tr>
<td>attenuated vaccines, human and animal cell cultures used in research, industrial laboratories, production of biological, residual toxins, dishes and devices used for cultures</td>
<td>bag/bin</td>
<td>thereafter incineration</td>
<td>Registered or authorised recyclers</td>
</tr>
<tr>
<td>Contaminated (Recyclable) Waste</td>
<td>Red coloured non- chlorinated bag/bin</td>
<td>Sterilisation followed by shredding</td>
<td>Registered or authorised recyclers</td>
</tr>
<tr>
<td>(disposable items other than sharps like tubing, bottles, intravenous tubes and sets, catheters, urine bags, syringes (without needles and fixed needle syringes), vaccutainers (with their needle cut) and gloves)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Metallic Waste Sharps</td>
<td>White translucent puncture proof containers</td>
<td>Autoclaving followed by shredding</td>
<td>Iron foundries or sanitary landfill or designated concrete waste sharp pit</td>
</tr>
<tr>
<td>(needles, syringes with fixed needles, needles from needle tip cutter or burner, scalpel, blades)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Glass Waste (intact &amp; broken)</td>
<td>Blue Bin/Cardboard box</td>
<td>Disinfection/sterilisation</td>
<td>Recycler</td>
</tr>
<tr>
<td>(Broken/discarded and contaminated glass including medicine vials and ampoules except those contaminated with cytotoxic wastes)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Liquid waste</td>
<td>-</td>
<td>Pre-Treatment with Disinfectant/ Hypochlorite Solution</td>
<td>Discharge in drains or ETP</td>
</tr>
</tbody>
</table>

Note: According to Bio-Medical Waste Management Rules, 2016 laboratory waste, microbiological waste, blood samples and blood bags are to be pre-treated through disinfection or sterilisation on-site in the manner as prescribed by the World Health Organisation (WHO) or National AIDS Control Organisation (NACO) guidelines and then sent to the common bio-medical waste treatment facility for final disposal.
SECTION 3
LEGAL & ADMINISTRATIVE FRAMEWORK FOR BIOMEDICAL WASTE MANAGEMENT

Management of Bio-Medical Waste (BMW) from generation to final disposal is regulated by the Bio-Medical Waste Management Rules 2016 (Annexure 7). These rules regulate the generation, handling, collection, storage, transport, treatment and disposal of BMW.

Main features of these Rules are given below:

1. These rules 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.

2. The Rules define an "occupier" as the 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 and by whatever name they are called. The Occupier is duty-bound under the Rules to take all necessary steps to ensure that bio-medical waste is handled without any adverse effect to human health and the environment and in accordance with these rules.

3. The Rules define the "operator of a common bio-medical waste treatment facility" as a person who owns or controls a Common Bio-medical Waste Treatment Facility (CBMWTF) for the collection, reception, storage, transport, treatment, disposal or any other form of handling of bio-medical waste. The Operator is duty-bound under the Rules to take all necessary steps to ensure that the bio-medical waste collected from the occupier is transported, handled, stored, treated and disposed of, without any adverse effect to the human health and the environment, in accordance with these rules and guidelines issued by the Central Government or, as the case may be, the central pollution control board from time to time.

4. The Rules define the duties of Prescribed Authorities at the central, state, district and sub-district levels in Schedule III of the Rules. The State Pollution Control Board / Pollution Control Committee is the designated prescribed authority for the implementation of the Rules in the States / Union Territories.

5. The Rules describe the procedure for authorisation of healthcare facilities and common bio-
medical waste treatment facilities. Applications for authorisation are to be submitted in Form II and authorisation is granted in Form III. The validity of authorisation has been synchronised with the validity of consents.

6. The administrative framework and procedure for monitoring of BMW has been defined in the Rules. It includes the Ministry of Environment, Forest and Climate Change through Central and State Pollution Control Boards and State Health Secretaries. For this states are required to constitute a Advisory Committee at the state-level and District Monitoring Committees at the district-level.

7. Record keeping and reporting on BMW is mandatory, and is in the form of Annual Report (Form IV), Accident Reports (Form 1), and records related to the generation, collection, reception, storage, transportation, treatment, disposal or any other form of handling of biomedical waste. The records and annual reports of health care facilities and common biomedical waste treatment facilities are to be made available on their website.

8. The Rules mandate that vehicles for collection and transportation of BMW are to be fitted with GPS systems and bag/containers containing BMW are to have bar coding system for waste tracking.

9. Biomedical waste is to be segregated, collected, stored, transported, treated and disposed in accordance with Schedule I of the Rules. Standards for treatment and disposal are to be in accordance with Schedule II.

10. BMW is not to be mixed with other wastes. The Rules mandate that untreated BMW cannot be stored beyond a period of 48 hours without permission of the appropriate authority. Solid waste other than BMW is to be segregated and disposed-off in accordance with concerned solid waste management rules.

11. Non-chlorinated plastic bags are to be used for handling, storage and transportation of biomedical waste.

12. Occupiers and operators of HCFs and CBWTFs are required to ensure that health care workers and others involved in handling of BMW are trained, provided necessary personal protective equipment, immunised and made to undergo periodic health check-ups.

In addition to these rules, Central Pollution Control Board that is entrusted with responsibility of development of technical standards and guidelines has developed many guidelines and standards on Air, water and land pollution. Of these, the “Guidelines for Common Treatment Facilities” and “Guidelines for Incinerators” are directly applicable to biomedical waste management at the healthcare facilities. The guidelines for CBWTF provide detailed information on the various equipment and facilities standards required to be in place at CBWTF sites. The guidelines on Incinerators specify specifications for new incinerators to be installed at CBWTF.
In addition, under the **National Green Tribunal Act, 2010**, a National Green Tribunal (NGT) consisting of judicial members and technical experts in environment has been constituted with powers to effectively expedite environment related legal issues. Management of biomedical wastes in healthcare facilities has been taken with high priorities under such issues.

**Penalties for Non-Compliance of Regulations**

Biomedical waste management and handling rules have been framed under the **Environment (Protection) Act, 1986**. The occupier or an operator of a common bio-medical waste treatment facility shall be liable for all the damages caused to the environment or the public due to improper handling of bio-medical wastes. The occupier or operator of common bio-medical waste treatment facility shall be liable for action under section 5 and section 15 of the Environment Protection Act and Rules, 1986 in case of any violation.

The provisions for non-compliance under the rules are very strict and must be clearly understood by everyone responsible for managing biomedical wastes at the facilities.

Under Environment Protection Act, Clause 15, “whoever fails to comply with or contravenes any of the provisions of this act, or the rules made or the orders or directions issued thereunder shall, in respect of each such failure or contravention be responsible for each such failure or contravention, be punishable with imprisonment for a term which may extend to five years with a fine which may extend to one lakh rupees, or with both, and in case the failure or contravention continues, with additional fine which may extend to five thousands rupees for every day during which such failure or contravention continues after the conviction for the first such failure or contravention.”
SECTION 4
KEY ROLES AND RESPONSIBILITIES IN BIOMEDICAL WASTE MANAGEMENT

Management of biomedical wastes is a complex activity that involves many stakeholders within as well as external to healthcare sector. Apart from healthcare sector, other sectors organizations such as State Pollution Control Board and Municipal Bodies are other major stakeholders in biomedical waste management.

1. STATE LEVEL BODIES

1.1 Advisory Committee

The Advisory Committee is to be constituted at the state-level under the chairmanship of the respective health secretary to oversee the implementation of the rules in the respective state and to advice any improvements. The Advisory Committee shall include representatives from the Departments of Health, Environment, Urban Development, Animal Husbandry and Veterinary Sciences of that State Government or Union territory Administration, State Pollution Control Board or Pollution Control Committee, urban local bodies or local bodies or Municipal Corporation, representatives from Indian Medical Association, common bio-medical waste treatment facility and non-governmental organisation. The Ministry of Health may co-opt representatives from the other Governmental and non-governmental organisations having expertise in the field of bio-medical waste management.

The Advisory Committee shall meet at least once in six months and review all matters related to implementation of the provisions of the BMW Management Rules in the State.

1.2 UP Pollution Control Board (UPPCB)

State pollution Control Board is entrusted with monitoring and ensuring compliance to environmental regulations that includes Biomedical Waste Management Rules, 2016. The board has regional offices operating in different cities in the state. The key activities of importance to healthcare facilities under these rules include:

- Grant and renewal, suspension or refusal cancellation or of authorisation to facilities under the Rules
- Grant of authorization to Common Biomedical Waste Treatment Facilities
- Action against health care facilities or common bio-medical waste treatment facilities for violation of these rules
- Monitoring of compliance of CBWTF and Healthcare Facilities to BMW Rules and issue of notices and orders and penalties etc. for non-conformance as per Environment Protection Act, 1986.
- Organizing training programmes to staff of health care facilities and common bio-
medical waste treatment facilities and State Pollution Control Boards or Pollution Control Committees Staff on segregation, collection, storage, transportation, treatment and disposal of bio-medical wastes.

- Inventorisation of Occupiers and data on bio-medical waste generation, treatment & disposal.
- Compilation of data and submission of the same in annual report to Central Pollution Control Board within the stipulated time period.
- Publish the list of Registered or Authorised (or give consent) Recyclers.
- Undertake and support third party audits of the common bio-medical waste treatment facilities in their State.

1.3 Directorate- Medical & Health

Directorate- Medical and Health is the apex organization for administration of state healthcare delivery system. Recently, under The World Bank funded U.P. Health System Strengthening Project, an Environment Management Cell is being established. The roles and responsibilities of the cell include following:

- To ensure implementation of the rule in all health care facilities.
- Constitute Committees under the District Magistrate or Additional District Magistrate to oversee the bio-medical waste management in the Districts.
- Advise State Pollution Control Committees on implementation of these Rules.
- Implementation of recommendations of the Advisory Committee in all the health care facilities.
- To provide oversight on services which are outsourced to private service providers, including waste treatment and disposal companies. This will be undertaken in coordination with regulatory authorities and municipalities.
- To develop and implement an Information, Education and Communication (IEC) Plan to disseminate information and educational material so as to create awareness on sanitation and hygiene and good environmental practices among healthcare staff and workers, patients and the general community,
- To coordinate capacity building on environmental management practices and develop, implement and monitor training activities among healthcare staff and workers through development and implementation of a Training Plan.
- To serve as focal point for information on Environment Management in Healthcare sector by collection and compilation of information on Environmental Management experiences, best practices, technology innovations and emerging issues.
2. DISTRICT LEVEL BODIES

2.1 District Monitoring Committee (DMC)

The DMC has been constituted in each district to ensure compliance with Biomedical Waste Management Rules, 2016. It is chaired by the concerned District Magistrate (DM). The Rules provide that the DMC shall comprise of Chief Medical Officer (CMO), representatives from State Pollution Control Board or Pollution Control Committee, Public Health Engineering Department, local bodies or municipal corporation, Indian Medical Association, common biomedical waste treatment facility and registered non-governmental organisations working in the field of bio-medical waste management and the Committee may co-opt other members and experts, if necessary. The Chief Medical Officer (CMO) shall be the Member Secretary of this Committee.

The DMC is required to meet every quarter to monitor the compliance of the provisions of these rules in the health care facilities generating bio-medical waste and in the common bio-medical waste treatment and disposal facilities, where the bio-medical waste is treated and disposed of. Its report shall be submitted once in six months to the State Advisory Committee, and a copy forwarded to State Pollution Control for taking further necessary action.

2.2 Municipal Bodies

Municipal bodies in different cities are responsible for safe transportation and disposal of general i.e. municipal waste as per Municipal Waste Rules, 2000. The municipal waste consists of non-hazardous wastes such as commercial wastes, garbage and household wastes. This also includes general waste such as paper, wrappers, plastic covers, vegetable etc. generated at hospitals and healthcare facilities by patients, visitors and employees. Municipal bodies also have a role in identification and provision of suitable land for establishment of Common Waste Treatment Facilities in their area of jurisdiction.

2.3 Chief Medical Officer

Chief Medical Officer of the district is responsible for the primary healthcare delivery system in the entire district. In relation to biomedical waste management, CMO has following specific roles and responsibilities:

- To enter into contract agreement with the successful bidder for provision of Common Treatment facility operating in the district.
- To provide financial resources to the district health facilities for payment of CBWTF services from allocated funds for the district.
- As Member Secretary of District Monitoring Committee (DMC).
• To monitor operational performance of CBWTF in association with State Pollution Control Board officials from Regional Offices of SPCB before award of contract and subsequently, by periodic inspections of CBWTF.
• To monitor biomedical waste management in District Healthcare facilities by periodic reporting as well as by site inspections of the facilities by officials deputed from CMO office.

3. FACILITY LEVEL BODIES

3.1 Healthcare Facility (HCF)

Role of Head of HCF: The Rules have designated the head of the HCF as “Occupier”. His role and responsibilities have been identified as:

• Assigning responsibility of Nodal officer in charge of biomedical waste management
• Formation of Biomedical waste management committee and team
• Allocation of resources- financial, personnel and equipment etc. for management of wastes.
• Ensuring monitoring of the activities
• Take all necessary steps to ensure that bio-medical waste is handled without any adverse effect to human health and the environment and in accordance with these rules
• Make a provision within the premises for a safe, ventilated and secured location for storage of segregated biomedical waste in colored bags or containers in the manner as specified in Schedule I, to ensure that there shall be no secondary handling, pilferage of recyclables or inadvertent scattering or spillage by animals and the bio-medical waste from such place or premises shall be directly transported in the manner as prescribed in these rules to the common bio-medical waste treatment facility or for the appropriate treatment and disposal, as the case may be, in the manner as prescribed in Schedule I
• 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) or National AIDs Control Organisation (NACO) guidelines and then sent to the common bio-medical waste treatment facility for final disposal
• Phase out use of chlorinated plastic bags, gloves and blood bags within two years from the date of notification of these rules
• 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
• Not to give treated bio-medical waste with municipal solid waste
• Provide training to all its health care workers and others, involved in handling of bio-medical waste at the time of induction and thereafter at least once every year and the details of training programmes conducted, number of personnel trained and number of personnel not undergone any training shall be provided in the Annual Report

• Immunise all its health care workers and others, involved in handling of bio-medical waste for protection against diseases including Hepatitis B and Tetanus that are likely to be transmitted by handling of 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

• Establish a Bar-Code System for bags or containers containing bio-medical waste to be sent out of the premises or place for any purpose within one year from the date of the notification of these rules

• 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

• Ensure treatment and disposal of liquid waste in accordance with the Water (Prevention and Control of Pollution) Act, 1974 (6 of 1974)

• Ensure occupational safety of all its health care workers and others involved in handling of bio-medical waste by providing appropriate and adequate personal protective equipments

• Conduct health check up at the time of induction and at least once in a year for all its health care workers and others involved in handling of bio-medical waste and maintain the records for the same

• Maintain and update on day to day basis the bio-medical waste management register and display the monthly record on its website according to the bio-medical waste generated in terms of category and colour coding as specified in Schedule I

• Report major accidents including accidents caused by fire hazards, blasts during handling of bio-medical 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

• Make available the annual report on its web-site and all the health care facilities shall make own website within two years from the date of notification of these rules

• Inform the prescribed authority immediately in case the operator of a facility does not collect the bio-medical waste within the intended time or as per the agreed time

• Establish a system to review and monitor the activities related to bio-medical waste management, either through an existing committee or by forming a new committee and the Committee shall meet once in every six months and the record of the minutes of the meetings of this committee shall be submitted along with the annual report to
the prescribed authority and the healthcare establishments having less than thirty beds shall designate a qualified person to review and monitor the activities relating to biomedical waste management within that establishment and submit the annual report

- Maintain all record for operation of incineration, hydro or autoclaving etc., for a period of five years
- Existing incinerators to achieve the standards for treatment and disposal of bio-medical waste as specified in Schedule II for retention time in secondary chamber and Dioxin and Furans within two years from the date of this notification.

**Role of Biomedical Waste Management Committee/Nodal Officer**

- Developing a facility level BMW Management Plan
- Ensuring training of key staff associated with biomedical waste management.
- Ensure availability of waste management materials such as bags, bins, trolleys, personal protective equipment, chemical disinfectants, cleaning equipment etc.
- Ensure recording of quantity and types of different categories of waste generated for transportation and disposal.
- Ensure proper transportation of wastes to temporary storage area and from facility to common treatment facility on specified durations as per regulations.
- Ensure implementation of incident and mitigation control procedures for needle injuries, waste spills, etc. associated with waste handling.
- Ensure immunisation of all health care personnel in the health care facility.

**Role of Departmental Heads**
Departmental heads are responsible for the segregation, storage and disposal of wastes generated in their departments.

**Role and Responsibilities of Medical Officers**
The medical officers are responsible for protecting their own patients from other infected patients and from hospital staff who might be infected and notifying cases of hospital acquired infections to authorities.
They have a special role in ensuring good waste segregation practices.

**Role of Nursing in-Charge of Ward**
- Ensuring good waste segregation practices.
- Maintaining hygiene and good nursing practices in the ward
- Monitoring septic techniques such as hand washing and isolation practices
- Reporting any case of infection development immediately to the concerned physician
- Limiting patient’s exposure to infections from visitors, hospital staff, other patients or equipment used for diagnosis
Role of Housekeeping Department
The housekeeping services are responsible for regular cleaning of all surfaces to maintain a high standard of hygiene at the facility. The department with Biomedical Waste Management Committee must develop practices, usage of specific containers, frequency of cleaning and wastes transfer and storage for disposal.

The staff is responsible for:
- Internal collection of waste containers, replacement of used bags with new bags and containers and their transport to central storage facility of the site on daily basis
- Coordinate with stores and supply department to ensure availability of appropriate quantities of bags and containers, personal protective clothing and waste collection and transportation trolleys at all times
- Prevent unsupervised dumping of waste containers on the hospital grounds.
- Ensure regular transport of general wastes to area dedicated for their storage in the facility.
- Ensure regular transportation of general wastes from the facility to municipal disposal sites by municipal vehicles.

Role of Central Sterilization Services
The department is responsible to clean, decontaminate, test, prepare for use, sterilize and store aseptically all sterile equipment.

Role of food service department
The department must ensure appropriate handling, storage and disposal of food wastes.

Role of laundry service
The department must ensure appropriate flow of linen and separation of ‘clean’ and ‘dirty’ areas.

3.2 Common Biomedical Waste Treatment facilities (CBWTF)
Common Biomedical Waste Treatment facilities (CBWTF) are facilities established to collect, treat and dispose biomedical waste from healthcare facilities. The facilities operate incinerator, autoclave and shredders etc. to treat different types of biomedical wastes. These provide safe and economical options for treatment and disposal of wastes. Approximately twenty such facilities are currently registered with UP Pollution Control Board in the state of Utter Pradesh. Each facility is required to provide services for an area of 150 km around the facility as per CPCB guidelines.

Their specific roles and responsibilities include:
- Take all necessary steps to ensure that the bio-medical waste collected from the occupier is transported, handled, stored, treated and disposed of, without any adverse effect to the...
human health and the environment, in accordance with these rules and guidelines issued by the Central Government or, as the case may be, the central pollution control board from time to time

- Ensure timely collection of bio-medical waste from the occupier as prescribed under these rules
- Establish bar coding and global positioning system for handling of bio-medical waste within one year
- Inform the prescribed authority immediately regarding the occupiers which are not handing over the segregated bio-medical waste in accordance with these rules
- Provide training for all its workers involved in handling of bio-medical waste at the time of induction and at least once a year thereafter
- Assist the occupier in training conducted by them for bio-medical waste management
- Undertake appropriate medical examination at the time of induction and at least once in a year and immunise all its workers involved in handling of bio-medical waste for protection against diseases, including Hepatitis B and Tetanus, that are likely to be transmitted while handling bio-medical waste and maintain the records for the same
- Ensure occupational safety of all its workers involved in handling of bio-medical waste by providing appropriate and adequate personal protective equipment
- Report major accidents including accidents caused by fire hazards, blasts during handling of bio-medical 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
- Maintain a log book for each of its treatment equipment according to weight of batch; categories of waste treated; time, date and duration of treatment cycle and total hours of operation
- Allow occupier , who are giving waste for treatment to the operator, to see whether the treatment is carried out as per the rules
- Shall display details of authorisation, treatment, annual report etc on its web-site
- After ensuring treatment by autoclaving or microwaving followed by mutilation or shredding, whichever is applicable, the recyclables from the treated bio-medical wastes such as plastics and glass, shall be given to recyclers having valid consent or authorisation or registration from the respective State Pollution Control Board or Pollution Control Committee
- Supply non-chlorinated plastic coloured bags to the occupier on chargeable basis, if required
- Common bio-medical waste treatment facility shall ensure collection of biomedical waste on holidays also
• Maintain all record for operation of incineration, hydro or autoclaving for a period of five years; and
• Upgrade existing incinerators to achieve the standards for retention time in secondary chamber and Dioxin and Furans within two years from the date of this notification.
SECTION 5
STEP-WISE IMPLEMENTATION OF BIOMEDICAL WASTE MANAGEMENT PLAN AT HEALTHCARE FACILITY (HCF)

5.1 Constitution of the Biomedical Waste Management Committee and appointment of Nodal Officer

*The facility in-charge shall be responsible for constitution of a BMWM Committee and for designation of a Nodal Officer.*

For district-level HCFs, the BMWM Committee should comprise the following:
- Senior staff, preferably senior medical officer (designated as Nodal Officer)
- Matron/sister-in-charge
- Laboratory in-charge
- Pharmacist
- Representative of CBWTF providing services to the HCF

For block-level HCFs, the facility in-charge, i.e. Medical Superintendent (MS) or Medical Officer-in-charge (MOIC) should be designated as nodal officer for biomedical waste management.

5.2 Contract with CBWTF for collection, transportation, Treatment & Disposal of BMW

*The facility in-charge shall be responsible for ensuring that a contract is signed with a CBWTF for collection, transportation, treatment & disposal of BMW from its HCF. The Nodal Officer assists in this.*

- In case a contract has been signed with a CBWTF, a copy of rate contract should be obtained from Chief Medical Officer (CMO).
- In case a contract has not been signed, a contract should be signed with a CBWTF at the earliest.
- Should obtain the list of consumables to be provided by the CBWTF.
- Should keep a record of BMW collected by CBWTF in a register. A format for the same is enclosed as Annexure 3.
- Should intervene if not satisfied with CBWTF services.
5.3 Authorization from UPPCB

The facility in-charge shall be responsible for ensuring that authorization for generation of BMW is obtained from UPPCB. The Nodal Officer assist in this.

Authorization under BMW (management & Handling) Rules, 1998 should be obtained. For this the following steps shall be followed:

- Submission of Form 2 (enclosed on page 72)
- Submission of Fees as per following table

<table>
<thead>
<tr>
<th>No. of Beds</th>
<th>Fee Amount (Rs.)</th>
<th>DD in favour of</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>For fresh</td>
<td>For renewal</td>
</tr>
<tr>
<td></td>
<td>application</td>
<td>application</td>
</tr>
<tr>
<td>Upto 49</td>
<td>500</td>
<td>500</td>
</tr>
<tr>
<td>50-199</td>
<td>1000</td>
<td>1000</td>
</tr>
<tr>
<td>200-499</td>
<td>5000</td>
<td>3500</td>
</tr>
<tr>
<td>500 and above</td>
<td>7000</td>
<td>4500</td>
</tr>
</tbody>
</table>

- A copy of agreement with the CBWTF for collection, transportation, treatment & disposal of BMW.
- A record of BMW (details) collected in the last two months from the HCF by the concerned CBWTF. For this, a copy of log book/register used for maintaining record of BMW handed over to CBWTF may be submitted.

For bed strength upto 200, authorization is granted by the concerned Regional Office (RO) of UPPCB. For bed strength exceeding 200, the RO office recommends the case to UPPCB Head Office (Lucknow) from where the authorization is granted.

5.4 Facility Level BMW Management Plan

The facility in-charge and NO shall be responsible for ensuring that a BMW Management Plan is developed.

The following steps may be followed for developing the plan:

- Identification of points of BMW generation, i.e. wards, OTs, labour room, labs, OPD etc.
• Identify and designate one responsible person for each point of generation. The person may be head of department/doctor/matron etc.
• Identify location at each point of BMW generation for placement of BMW collection bins and display (IEC) material/posters.
• Identify monthly requirements of waste bags, bins, needle cutters, trolleys etc. and ensure their availability.
• Monitor supply of consumables (waste bags, bins, needle cutters, trolleys etc.) as per Consumables Supply Record (Enclosed as Annexure 4)
• Ensure availability of display (IEC) material/posters.
• Develop a schedule for Bag Replacement and BMW transfer to storage shed.
• Identify location of BMW Interim Storage Shed and ensure its construction and maintenance as per guidelines.
• Develop and implement a facility level Training Plan
• Develop and implement a facility level BMW Monitoring Plan
• Develop a calendar for meetings of BMW Management Committee.
• Identify ways for incentivizing/rewarding good work

5.5 General guidelines for the common sites of Placement of Bins & Containers at HCFs

<table>
<thead>
<tr>
<th>BPHC</th>
<th>No</th>
<th>CHC</th>
<th>No</th>
<th>DHM/DHF</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>OPD</td>
<td>1</td>
<td>OPD</td>
<td>1</td>
<td>OPD</td>
<td>2</td>
</tr>
<tr>
<td>Medicine</td>
<td>1</td>
<td>Medicine distribution</td>
<td>1</td>
<td>Medicine distribution</td>
<td>1</td>
</tr>
<tr>
<td>distribution</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Immunization</td>
<td>1</td>
<td>Immunization center</td>
<td>1</td>
<td>Immunization center</td>
<td>1</td>
</tr>
<tr>
<td>center</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dressing room</td>
<td>1</td>
<td>Dressing room</td>
<td>1</td>
<td>Dressing room</td>
<td>1</td>
</tr>
<tr>
<td>Pathology</td>
<td>1</td>
<td>Pathology</td>
<td>1</td>
<td>Injection Room</td>
<td>1</td>
</tr>
<tr>
<td>Eye</td>
<td>1</td>
<td>Eye</td>
<td>1</td>
<td>Eye</td>
<td>1</td>
</tr>
<tr>
<td>OT + Delivery</td>
<td>1</td>
<td>OT + Delivery Room</td>
<td>2</td>
<td>OT + Delivery Room</td>
<td>3</td>
</tr>
<tr>
<td>Room</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>In-Patients</td>
<td>1</td>
<td>In-Patients( 1Set for every10 beds)</td>
<td>3</td>
<td>In-Patients( 1Set for every10 beds)</td>
<td>10-25</td>
</tr>
<tr>
<td>Pathology</td>
<td>1</td>
<td>Pathology</td>
<td></td>
<td>Pathology</td>
<td>2</td>
</tr>
<tr>
<td>Radiology</td>
<td>1</td>
<td>Radiology</td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>TB/Malaria/Other Prog.</td>
<td>2</td>
<td>TB/Malaria/Other Prog.</td>
<td>10-25</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pathology</td>
<td>2</td>
<td></td>
<td></td>
<td>Pathology</td>
<td>2</td>
</tr>
<tr>
<td>8 sets/ BPHC</td>
<td>10</td>
<td>8 sets + as per No of beds 10-30sets</td>
<td>15</td>
<td>15 sets + as per No of beds 10-30sets</td>
<td></td>
</tr>
</tbody>
</table>

10 sets + as per No of beds 10-30sets
For Sharps Management: Needle cutters / destroyers along with Polycarbonate Containers for storage of sharps must always be available at following minimum locations:

- OPD Injection room
- Immunization room
- Nursing station in each ward
- Operation theatre
- Pathology- sample collection room
- Labor room
- Blood Bank

5.6 List of Consumables/Materials/Equipment:

The following list consumables/material/equipment may serve as a general guideline for their procurement:

<table>
<thead>
<tr>
<th>S N</th>
<th>NAME OF ITEM</th>
<th>SPECIFICATION S</th>
<th>QUANTITY FOR EACH BPHC</th>
<th>QUANTITY FOR EACH CHC (30 BEDDED)</th>
<th>QUANTITY FOR EACH DHM/DHF</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>A SET OF RED, YELLOW &amp; BLUE COLOR BINS OF 25 LT</td>
<td>BUCKET (FOOT PRESS BIN) SIZE 1.25 FT FOR SPECIFICATION S, SEE SECTION B</td>
<td>8 SETS YRLY</td>
<td>13 SETS YRLY</td>
<td>10 SETS + AS PER NO OF BEDS (1 SET FOR 10 BEDS PER YEAR)</td>
</tr>
<tr>
<td>2</td>
<td>A SET OF RED, YELLOW &amp; BLUE COLOR BINS OF 40 LT</td>
<td>BUCKET SIZE: 2.25 FT FOR SPECIFICATION, SEE SECTION B</td>
<td>NIL</td>
<td>NIL</td>
<td>5 SETS PER YEAR</td>
</tr>
<tr>
<td>3</td>
<td>A SET OF RED &amp; YELLOW COLOR BAGS OF 25 LT</td>
<td>FOR SPECIFICATION , SEE SECTION A</td>
<td>24 SETS PER DAY</td>
<td>39 SETS PER DAY</td>
<td>30 SETS + AS PER NO OF BEDS (3 SET FOR 10 BEDS) PER DAY</td>
</tr>
<tr>
<td>4</td>
<td>A SET OF RED &amp; YELLOW COLOR BAGS OF 40 LT</td>
<td>FOR SPECIFICATION , SEE SECTION A</td>
<td>NIL</td>
<td>NIL</td>
<td>15 SETS PER DAY</td>
</tr>
<tr>
<td>5</td>
<td>POLYCARBONATE</td>
<td>FOR</td>
<td>15 PER</td>
<td>21 PER</td>
<td>30 SETS + AS PER NO OF BEDS (3 FOR 10 BEDS) PER DAY</td>
</tr>
<tr>
<td>TE JARS</td>
<td>SPECIFICATION, SEE SECTION D</td>
<td>DAY</td>
<td>DAY</td>
<td>BED</td>
<td></td>
</tr>
<tr>
<td>---------</td>
<td>-------------------------------</td>
<td>-----</td>
<td>-----</td>
<td>-----</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>WHITE PUNCTURE PROOF CONTAINERS</td>
<td>FOR SPECIFICATION, SEE SECTION C</td>
<td>1 YRLY</td>
<td>2 YRLY</td>
<td>10 YRLY</td>
</tr>
<tr>
<td>7</td>
<td>NEEDLE CUTTERS</td>
<td>FOR SPECIFICATION, SEE SECTION E</td>
<td>5 SETS YRLY</td>
<td>7 SETS YRLY</td>
<td>10 SETS + AS PER NO OF BEDS (1 FOR 10 BEDS) PER YEAR</td>
</tr>
<tr>
<td>8</td>
<td>MANUAL HUB CUTTER</td>
<td>FOR SPECIFICATION, SEE SECTION F</td>
<td>1 YRLY</td>
<td>2 YRLY</td>
<td>10 YRLY</td>
</tr>
<tr>
<td>9</td>
<td>TROLLEYS</td>
<td>FOR SPECIFICATION, SEE SECTION G</td>
<td>1 YRLY</td>
<td>3 YRLY</td>
<td>10 YRLY</td>
</tr>
<tr>
<td>10</td>
<td>WHEEL BARROWS</td>
<td>FOR SPECIFICATION, SEE SECTION H</td>
<td>1 YRLY</td>
<td>2 YRLY</td>
<td>5 YRLY</td>
</tr>
<tr>
<td>11</td>
<td>GUM BOOT</td>
<td>AS PER IS CODE 7329</td>
<td>1 PAIR YRLY PER SWEEPER</td>
<td>1 PAIR YRLY PER SWEEPER</td>
<td>1 PAIR YRLY PER SWEEPER</td>
</tr>
<tr>
<td>12</td>
<td>FACE MASK</td>
<td>AS PER IS CODE 14166</td>
<td>2 PAIRS DAILY PER SWEEPER</td>
<td>2 PAIRS DAILY PER SWEEPER</td>
<td>2 PAIRS DAILY PER SWEEPER</td>
</tr>
<tr>
<td>13</td>
<td>GLOVES</td>
<td>AS PER IS CODE 4148</td>
<td>1 PAIR DAILY PER SWEEPER</td>
<td>1 PAIR DAILY PER SWEEPER</td>
<td>1 PAIR DAILY PER SWEEPER</td>
</tr>
<tr>
<td>14</td>
<td>APRON</td>
<td>AS PER IS CODE 4501</td>
<td>1 DAILY PER SWEEPER</td>
<td>1 DAILY PER SWEEPER</td>
<td>1 DAILY PER SWEEPER</td>
</tr>
<tr>
<td>15</td>
<td>GOGGLES</td>
<td>AS PER IS CODE 14352</td>
<td>1 YRLY PER SWEEPER</td>
<td>1 YRLY PER SWEEPER</td>
<td>1 YRLY PER SWEEPER</td>
</tr>
<tr>
<td>16</td>
<td>HELMET NON METAL</td>
<td>AS PER IS CODE 2300</td>
<td>1 YRLY PER SWEEPER</td>
<td>1 YRLY PER SWEEPER</td>
<td>1 YRLY PER SWEEPER</td>
</tr>
<tr>
<td>17</td>
<td>WEIGHING MACHINE</td>
<td>1 YRLY</td>
<td>2 YRLY</td>
<td>2 YRLY</td>
<td></td>
</tr>
<tr>
<td>18</td>
<td>CHEMICAL</td>
<td>200 ML</td>
<td>500 ML</td>
<td>1000 ML DAILY</td>
<td></td>
</tr>
</tbody>
</table>
5.7 Display of Posters/IEC material

The Nodal Officer shall be responsible for ensuring display of posters/IEC material at key locations in the HCF as part of implementation of BMW management plan. He may be assisted by other members of the BMW Management Committee for the same.

- Ensure that posters indicating BMW segregation are displayed above the BMW collection bins
- Ensure that posters indicating hand washing best-practices are displayed above wash-basins
- Ensure that name, designation, photo and contact number of designated responsible person for each BMW generation station is prominently displayed at that station.
- Ensure that posters are replaced in case of damage or defacement

5.8 Plan for Bag Replacement & BMW Transfer to Collection Shed

The Nodal Officer shall be responsible for ensuring timely and proper transfer of BMW from each generation station at the HCF as part of implementation of BMW management plan. He may be assisted by other members of the BMW Management Committee for the same.

- Ensure that BMW bins are emptied out periodically, as per requirement
- Bag replacement methodology:
  - Bag should be changed after it is full to 2/3rd capacity: this may entail change of bags more than once a day at some stations
  - The sanitation worker should be wearing necessary protective gear while emptying the bin and transporting the bag
  - Bag should be tied at the top while it is still in the bin
  - Bag should then be transferred from the bin into the BMW trolley
Contents of blue bin (glass sharps) and white puncture proof container (metallic sharps) should be transferred carefully into big bins of same colour carried in the trolley.

- A fresh bag should be placed in the bin ensuring that its edges are folded outwards at the rim of the bin.
- The sanitation worker should only load the trolley till the rim. He/she may return to collect other bags after transferring the load in the BMW interim storage shed.
- The sanitation worker should wheel the trolley along a designated route and avoid diverging from the route. The route should be identified keeping in mind its width so that the trolley may be wheeled without hitting walls or patients/passers-by.
- Red bags should be placed inside the red collections enclosure, the yellow bags in the yellow collection enclosure, and blue and white bins should be placed in the blue collection enclosure.
- Bag containing discarded/expired medicines should be collected periodically from the pharmacy/store, and placed in the blue collection enclosure.

5.9 BMW Interim Collection Shed

The facility in-charge and NO shall be responsible for ensuring that the BMW Interim Collection Shed is constructed and maintained in accordance with guidelines.

The following guidelines may be followed for construction and maintenance of the BMW interim storage shed:

- The shed shall have separate enclosure for each bag colour, i.e. three enclosures one each for yellow, red and blue bags.
- The door of each enclosure shall be painted the colour of the bag and should have a prominently displayed biohazard sign.
- The shed shall be covered.
- The shed shall be located near the gate of the facility so that it may be easily accessible by the BMW collection vehicle of the CBWTF.
- The shed shall have sufficient open, un-encroached space in front of it to allow for parking and free movement of CBWTF vehicle and staff.
- The shed should have a water supply in its vicinity that may be used for washing of the floor and walls of the shed.
- A record of cleaning the shed shall be maintained. Format for the same is enclosed as Annexure 5.
• The floor and walls of the shed shall be lined with tiles to enable easy cleaning, have proper sloping and have a drain through which wash water/drained liquids may be drained into the HCF ETP.

• The door of each enclosure shall be kept locked at all times. It shall be opened only to allow for storage of BMW bags, for handing over waste to CBWTF, for cleaning and inspection. Keys of locks shall be kept with a member of the BMW Committee.

5.10 Facility Level Training Plan

The Nodal Officer shall be responsible for training of healthcare personnel for BMW segregation. He may be assisted by other members of the BMW Management Committee for the same.

Continuous training and awareness programs are must for ensuring success of waste management activities. The key groups of personnel at facilities in need of continuous awareness and training include medical officers, nurses, technicians and waste handlers.

The following considerations may be incorporated in the training plan:

• Training shall cover an overview of **WHY**, **WHERE**, **WHAT**, **WHO**, **WHEN** and **HOW** of BMW (given at the start of the manual).

• Identify batch size and composition: training may be conducted ward-wise and each batch may cover doctors, nursing staff, ward boys etc. of that ward in one batch.

• Identify time for imparting training: it may be conducted after hospital hours.

• Training duration may be decided by the trainers. It is suggested that duration of training session be 2 hours. However, it should be ensured that it is sufficient for sensitization, imparting required information and testing trainees.

• Flip Chart: flip charts or any audio-visual tool shall be used for imparting training.

• Demonstration during training: the trainer is advised to use demonstration techniques to impart training, for which a set of colored bins, real waste samples and other material may be used.

• Training shall be repeated every six months.

• Trainer may use a method of rewards to reward trainees who answer questions correctly.

• A record of trainings on BMW conducted by the BMW Management Committee shall be maintained (Annexure 6)

Training flip chart material available with the nodal officer covers the following:

• What is and isn’t Biomedical waste

• When, where and who should segregate biomedical waste
• Biomedical waste segregation (Yellow bin, Red bin, Blue bin, Translucent Puncture proof container)
• Sharps management
• Needle stick injury prevention and management
• Liquid spill management
• Personnel protective equipment
• WHO recommended hand washing steps

Note: The copy of flipchart material is enclosed as annexure 8.

5.11 Facility level BMW Monitoring Plan

The facility in-charge and NO shall be responsible for ensuring that the BMW Implementation Plan is monitored periodically. They shall be assisted by other members of the BMW Management Committee and departmental heads in the same.

In order to ensure successful implementation of biomedical waste management plan at HCF level, regular (daily/weekly/monthly) monitoring is highly essential. Monitoring shall done:

• **Daily** during daily rounds by facility in-charge, NO, members of BMW Management Committee and designated responsible persons/departmental heads of BMW generation stations.
  
  Key points for daily monitoring:
  
  - Availability of biomedical waste collection and transportation materials
  - Availability and use of needle cutters at different work stations.
  - Segregation of waste into appropriate bags and bins.
  - Availability and use of personal protective gears by waste handlers.
  - Regular transport of biomedical wastes from generation stations interim BMW storage shed
  - Regular collection of BMW by CBWTF.
  - Regular cleaning of walls, surfaces and equipment etc. by housekeeping staff.

• **Monthly** with the help of the Healthcare Facility BMW Monitoring Form (enclosed in Annexure 1)

• **Monthly** during monthly meeting of BMW Management Committee
  
  Key discussion points for monthly meetings:
- Maintenance of records/log books/registers
- Feedback from healthcare persons
- Redressal of complaints
- Availability of bags/bins/equipment etc.
- Regular collection of BMW by CBWTF (The BMW Collection Record format is enclosed as Annexure 3).
- Reporting of incidents of needle stick injuries and mercury spills and their follow up.
- Regular cleaning of walls, surfaces and equipment etc. by housekeeping staff.

**Six-monthly** during training sessions
- Feedback from healthcare persons
- Redressal of complaints
- Availability of bags/bins/equipment etc.
- Reporting of incidents of needle stick injuries and mercury spills and their follow up.

**Six-monthly** during meeting with designated responsible persons/departmental heads of BMW generation stations
- Feedback from healthcare persons
- Redressal of complaints
- Availability of bags/bins/equipment etc.
- Reporting of incidents of needle stick injuries and mercury spills and their follow up.
- Regular cleaning of walls, surfaces and equipment etc. by housekeeping staff.

### 5.12 Record Keeping

*It shall be the responsibility of the nodal officer to ensure that required records are maintained.*

The following records shall be maintained:

- Biomedical waste collection records (Annexure 3)
- Consumables supply records (Annexure 4)
- Biomedical waste storage shed cleaning record (Annexure 5)
- Health Care Facility Biomedical Waste(BMW) Monitoring Form (Annexure 1)
- Biomedical waste (BMW) scoring records (Annexure 2)
- Healthcare Facility Level Training Record (Annexure 6)
- Reporting of Major Accidents and Remedial Action Taken (Form 1 of BMW Management Rules, 2016 enclosed as Annexure 7)
Submit an Annual Report (Form IV of BMW Management Rules, 2016 enclosed as Annexure 7) to the UPPCB and publish the same on its website. The report is to include training status of healthcare personnel, major accidents and remedial action taken, minutes of BMW Committee meetings.

5.13 **Bio-Medical Waste Management Information System (BMWMIS)**

*It shall be the responsibility of the nodal officer to ensure that required records are entered in the BMW MIS.*

The objective of the system is to capture the disposal of Bio-medical waste by Health Care Facility (HCF). This includes capturing data related to handing over of the waste to Common Bio-medical Waste Treatment Facility (CBWTF).

A system has been developed for capturing data related to bio-medical waste handling. The system captures following data:

- one-time data on HCF (or whenever any change in the Bio-medical Waste Management Committee or arrangement with Common Treatment Facility changes),
- consumables supplied by CBWTF and
- regular Bio-medical waste collection
- record of BMW Committee meetings
- training conducted
- Scoring of BMW handling in different Waste Generating Stations.

**System**

The system is web based. Operationalization requires a computer, UPS, printer and an internet connection.

**User of the System**

The system shall be handled under the supervision of the Nodal Officer of the Bio-medical Waste Management Committee. The data entry shall be made by the Computer Operators posted in the hospital or related staff.

**User ID**

To use the system, you need to collect a User ID and password from U.P. Health System Strengthening System.

**How to start?**

To invoke the system, you should be connected to the internet. Go to [www.uphssp.org](http://www.uphssp.org) and click on the Bio-Medical Waste Management Information System link. You will arrive on the webpage shown below. The various displays visible on the page are also explained. The system will prompt you to enter your login, password and Captcha Code. Captcha Code is set of alphabets given below.
the ‘Enter Below Captcha Code’. In case if any of these values submitted by you are incorrect, the system will permit you to login to the system.

Change password
To change password, click on the ‘Change Password’ given on the Menu. The password has to be of 12 characters with atleast one uppercase character, one digit and a special character (*, &, #, $, etc.). It is suggested that you change password when you login for the first time:

One-time Information
Prior to entering daily transaction data, you have to enter the Hospital profile, Occupier details, Nodal Officer details, details of Bio-Medical Waste Management Committee and Contract details with CBWTF. This data is required to be entered only one time. It needs to be updated only in case of any change in the above information.
a) Hospital profile

Select ‘Hospital Profile’ option from Menu.

Once you enter all details, press ‘Update Hospital Profile’ button.
Select options as shown in the above picture and enter/update details.

Authorised Person

Similarly, you can enter details of ‘Nodal Officer’.
b) CBWTF Contract

To edit/delete an existing member, click on Edit / Delete button provided next to the name of the member.
To add a new member, click on the ‘Add Next Member Profile’.

You can also edit or view Committee Member details from this option.

e) Committee Meeting Details
You can add details of meetings of BMW Committee by clicking on the ‘Add Committee Meeting’ sub-option of ‘Committee’.

Names of existing Committee members which attended the meeting can be selected from the check box against each name. Details of other participants in the meeting can also be given. Minutes of the meeting can be uploaded. Minutes of the meeting should be in pdf file format.

Regular transactions
1. Waste collected by the CBWTF:
   You have to enter the following data as and when the CBWTF lifts wastes from the hospital:
   a) Date of collection, Person handing over Bio-medical Waste, Vehicle registration no. which collected the waste
   b) Yellow colour bags – No. of bags and total weight of yellow colour bags
   c) Red colour bags – No. of bags and total weight of red colour bags
   d) Blue colour bins – No. of bins and total weight of blue colour bins
   e) White colour bins – No. of bins and total weight of white colour bins
To view the BMW Collection report, click on ‘BMW Collection’ option followed by ‘View Data’. You can select the report between two dates. On the top, name of CBWTF is displayed.

2. Consummables supplied by the CBWTF
   Click on the ‘Consummables’ option followed by ‘Add Consummable’ from the Menu.
You have to enter the date of supply, person receiving the supply and quantity received.

To view list of consummables supplied, click on ‘Consummables’ followed by ‘View Consummable’. The system will prompt you enter the period during which supplies are to be reported. There is an option to enter either one item or all items.

   To capture the score of Bio-medical Waste Generation stations, you have to click on the ‘BMW Score Card’. The system permits to enter the total score of each BMW generating station.

4. Training details
   Details of training programs conducted for BMW handling are captured through this option.
List of participants from the BMW Committee members can be selected from the ‘List’. Number of participants from each category can be captured. The list of participants can also be uploaded in pdf file format.

**Downloads**

Important documents associated the Bio-Medical Waste Management can be downloaded from this option.

**Problem reporting**

In case of difficulty in using the software, you can contact associated officers/consultants as per list provided in the ‘Contact Us’ option of the Menu.

A system has been developed for capturing data related to bio-medical waste handling. The system captures following data:

- one-time data on HCF (or whenever any change in the Bio-medical Waste Management Committee or arrangement with Common Treatment Facility changes),
- consumables supplied by CBWTF and
- Regular waste collection.
5.14 **Reward for Good Work**

It has been repeatedly found that outcomes are better where there is a system that acknowledges good work by way of public recognition or rewards. Hence it is suggested that this be built into the BMW management plan in each HCF.

Good performers (individuals and departments as a whole) can be identified during the periodic monitoring activities like filling of Monitoring Form (Annexure 1), during rounds and trainings and from feedback.

Recognition can be done through display of names and photos of good performers on bulletin boards, and award of green badges to good performers, which can be worn on apron/uniform.

5.15 **Immunisation, Periodic Health Check-ups and Personal Protective Equipment for Healthcare Personnel**

The following activities shall be ensured for the safety of healthcare personnel that are exposed to BMW:

- Immunisation of 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;

- Health check-ups at the time of induction and at least once in a year for all its health care workers and others involved in handling of bio-medical waste and maintain the records for the same;

- Ensure occupational safety of all its health care workers and others involved in handling of bio-medical waste by providing appropriate and adequate personal protective equipments (PPE).
## ANNEXURE 1

### Health Care Facility Biomedical Waste (BMW) Monitoring Form

(This format should be filled for each BMW generation station/ward separately)

Name of the District:
Name of the HCF:
Name BMW Generation Station/Ward/Lab/OT:
Inspection Month: Date:
Time:
Name of Monitoring Officer: Designation:

**Scoring Process:** Response to the questions can be either yes, partial or no. Score of yes is to be taken as 2, of partial to be taken as 1, no to be taken as 0. No response is to be given in cells coloured black.

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Question</th>
<th>Response (code 2 for Yes, 1 for partial &amp; 0 for No)</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Are color coded bins &amp; bags placed as per BMW management plan</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Do BMW bins have the right color bags as per the guidelines (i.e. red bin has red bag etc.)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>On opening the BMW bins, did you find only properly segregated waste in it</td>
<td>[ ]</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Are color bags replaced on regular basis</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Are BMW bins being filled in a proper way, i.e. no over-flowing was observed</td>
<td>[ ]</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Does sweeper follow proper procedure in removing and changing BMW bags</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Are the BMW bins and wall behind them clean</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Are posters on BMW segregation displayed above BMW bins and hand washing displayed above washbasins</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Is disinfectant solution available in the ward</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Is the needle cutter in the ward functional</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Do Nurses/Lab technicians use the needle cutter on a regular basis</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>Was staff able to answer the questions related to BMW segregation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>Have patients been told to discard general waste in black color bins bags</td>
<td></td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>Does the head of department monitor BMW segregation during rounds</td>
<td></td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>Does staffs use the personal protective equipment during duty (like mask, gloves, cap etc.)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**TOTAL SCORE** (MAX 30)

Any Other Comments:
ANNEXURE 2

Biomedical Waste (BMW) Scoring Record

<table>
<thead>
<tr>
<th>BMW Generation Station/Ward/Lab/OT</th>
<th>Score</th>
<th>Monitoring Officer</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
**ANNEXURE 3**

**BIOMEDICAL WASTE COLLECTION RECORD**

(To be filled by NO/Staff/Nurse in-charge)

Name of the District:

Bio Medical Waste Management

Name of the HCF:

Register for Daily Collection of Bio-Medical Waste at the source

Name of the NO/Staff/Nurse in-charge:

Number of beds:

<table>
<thead>
<tr>
<th>Date &amp; Time of Collection</th>
<th>Segregated Bio Medical Waste</th>
<th>Total No. of colour bags used for the day</th>
<th>Total Bio Medical Waste Collected in Kgs.</th>
<th>Signature of the NO/Staff/Nurse in-charge</th>
<th>Signature of the Sweeper</th>
<th>Signature of the CTF Vehicle driver</th>
<th>CBWTF Vehicle No.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Red Bags</td>
<td>Yellow Bags</td>
<td>Blue Bin</td>
<td>White Bin</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(a)</td>
<td>(b)</td>
<td>(c)</td>
<td>(d)</td>
<td>(e)</td>
<td>(f)</td>
<td>(g)</td>
<td>(b+d)</td>
</tr>
</tbody>
</table>

Remark (if any):
## ANNEXURE 4

### CONSUMABLES SUPPLY RECORD

<table>
<thead>
<tr>
<th>S.NO.</th>
<th>NAME OF ITEM</th>
<th>UNIT</th>
<th>QUANTITY RECEIVED</th>
<th>QUANTITY RECEIVED</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>A SET OF RED, YELLOW &amp; BLUE COLOR BINS OF 25 LT</td>
<td>NOS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>A SET OF RED, YELLOW &amp; BLUE COLOR BINS OF 40 LT</td>
<td>NOS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>A SET OF RED &amp; YELLOW COLOR BAGS OF 25 LT</td>
<td>NOS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>A SET OF RED &amp; YELLOW COLOR BAGS OF 40 LT</td>
<td>NOS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>POLYCARBONATE JARS</td>
<td>NOS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>WHITE PUNCTURE PROOF CONTAINERS</td>
<td>NOS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>NEEDLE CUTTERS</td>
<td>NOS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>MANUAL HUB CUTTER</td>
<td>NOS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>TROLLEYS</td>
<td>NOS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>WHEEL BARROWS</td>
<td>NOS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>GUM BOOT</td>
<td>NOS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>FACE MASK</td>
<td>NOS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>GLOVES</td>
<td>NOS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>APRON</td>
<td>NOS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>GOGGLES</td>
<td>NOS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>HELMET NON METAL</td>
<td>NOS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>17</td>
<td>WEIGHTING MACHINE</td>
<td>NOS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>18</td>
<td>CHEMICAL DISINFECTANTS</td>
<td>ML</td>
<td></td>
<td></td>
</tr>
<tr>
<td>19</td>
<td>DAILY WASTE COLLECTION REGISTERS</td>
<td>NOS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>20</td>
<td>CONSUMABLES REGISTER</td>
<td>NOS</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
**ANNEXURE 5**

**BIOMEDICAL WASTE STORAGE SHED CLEANING RECORD**

<table>
<thead>
<tr>
<th>Date of Cleaning</th>
<th>Name of Cleaner</th>
<th>Date of Inspection</th>
<th>Person Inspecting the Shed</th>
<th>Designation &amp; Department</th>
<th>Remark</th>
<th>Signature</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## ANNEXURE 6

### HEALTH CARE FACILITY LEVEL TRAINING RECORD

<table>
<thead>
<tr>
<th>Date</th>
<th>Name of Trainer</th>
<th>Duration of Training (hours)</th>
<th>Training Venue</th>
<th>Persons Trained</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
ANNEXURE 7

THE BIO-MEDICAL WASTE MANAGEMENT RULES, 2016

[Published in the Gazette of India, Extraordinary, Part II, Section 3, Sub-section (i)]

GOVERNMENT OF INDIA
MINISTRY OF ENVIRONMENT, FOREST AND CLIMATE CHANGE

NOTIFICATION

New Delhi, the 28th March, 2016

G.S.R. 343(E).-Whereas the Bio-Medical Waste (Management and Handling) Rules, 1998 was published vide notification number S.O. 630 (E) dated the 20th July, 1998, by the Government of India in the erstwhile Ministry of Environment and Forests, provided a regulatory frame work for management of bio-medical waste generated in the country;

And whereas, to implement these rules more effectively and to improve the collection, segregation, processing, treatment and disposal of these bio-medical wastes in an environmentally sound management thereby, reducing the bio-medical waste generation and its impact on the environment, the Central Government reviewed the existing rules;

And whereas, in exercise of the powers conferred by sections 6, 8 and 25 of the Environment (Protection) Act, 1986 (29 of 1986), the Central Government published the draft rules in the Gazette vide number G.S.R. 450 (E), dated the 3rd June, 2015 inviting objections or suggestions from the public within sixty days from the date on which copies of the Gazette containing the said notification were made available to the public;

And whereas, the copies of the Gazette containing the said draft rules were made available to the public on the 3rd June, 2015;

And whereas, the objections or comments received within the specified period from the public in respect of the said draft rules have been duly considered by the Central Government;

Now, therefore, in exercise of the powers conferred by section 6, 8 and 25 of the Environment (Protection) Act, 1986 (29 of 1986), and in supersession of the Bio-Medical Waste (Management and Handling) Rules, 1998, except as respects things done or omitted to be done before such suppression, the Central Government hereby makes the following rules, namely:-

1. Short title and commencement.- (1) these rules may be called the Bio-Medical Waste Management Rules, 2016.

(2) They shall come into force on the date of their publication in the Official Gazette. 2.
Application.-

(1) These rules shall apply to all persons who generate, collect, receive, store, transport, treat, dispose, or handle biomedical 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.

(2) These rules shall not apply to,-

(a) radioactive wastes as covered under the provisions of the Atomic Energy Act, 1962 (33 of 1962) and the rules made there under;

(b) hazardous chemicals covered under the Manufacture, Storage and Import of Hazardous Chemicals Rules, 1989 made under the Act;

(c) solid wastes covered under the Municipal Solid Waste (Management and Handling) Rules, 2000 made under the Act;

(d) the lead acid batteries covered under the Batteries (Management and Handling) Rules, 2001 made under the Act;

(e) hazardous wastes covered under the Hazardous Wastes (Management, Handling and Transboundary Movement) Rules, 2008 made under the Act;

(f) waste covered under the e-Waste (Management and Handling) Rules, 2011 made under the Act; and

(g) hazardous microorganisms, genetically engineered microorganisms and cells covered under the Manufacture, Use, Import, Export and Storage of Hazardous Microorganisms, Genetically Engineered Microorganisms or Cells Rules, 1989 made under the Act.

3. Definitions.- In these rules, unless the context otherwise requires,-

(a) "Act" means the Environment (Protection) Act, 1986 (29 of 1986);

(b) "animal house" means a place where animals are reared or kept for the purpose of experiments or testing;

(c) "authorisation" means permission granted by the prescribed authority for the generation, collection, reception, storage, transportation, treatment, processing, disposal or any other form of handling of biomedical waste in accordance with these rules and guidelines issued by the Central Government or Central Pollution Control Board as the case may be;

(d) "authorised person" means an occupier or operator authorised by the prescribed authority to generate,
collect, receive, store, transport, treat, process, dispose or handle bio-medical waste in accordance with these rules and the guidelines issued by the Central Government or the Central Pollution Control Board, as the case may be;

(e) "biological" means any preparation made from organisms or micro-organisms or product of metabolism and biochemical reactions intended for use in the diagnosis, immunisation or the treatment of human beings or animals or in research activities pertaining thereto;

(f) "bio-medical waste" means any waste, which is generated during the diagnosis, treatment or immunisation of human beings or animals or research activities pertaining thereto or in the production or testing of biological or in health camps, including the categories mentioned in Schedule I appended to these rules;

(g) "bio-medical waste treatment and disposal facility" means any facility wherein treatment, disposal of bio-medical waste or processes incidental to such treatment and disposal is carried out, and includes common bio-medical waste treatment facilities;

(h) “Form” means the Form appended to these rules;

(i) “handling” in relation to bio-medical waste includes the generation, sorting, segregation, collection, use, storage, packaging, loading, transportation, unloading, processing, treatment, destruction, conversion, or offering for sale, transfer, disposal of such waste;

(j) “health care facility” means a place where diagnosis, treatment or immunisation of human beings or animals is provided irrespective of type and size of health treatment system, and research activity pertaining thereto;

(k) “major accident” means accident occurring while handling of bio-medical waste having potential to affect large masses of public and includes toppling of the truck carrying bio-medical waste, accidental release of bio-medical waste in any water body but exclude accidents like needle prick injuries, mercury spills;

(l) “management” includes all steps required to ensure that bio-medical waste is managed in such a manner as to protect health and environment against any adverse effects due to handling of such waste;

(m) “occupier” means 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 and by whatever name they are called;

(n) "operator of a common bio-medical waste treatment facility” means a person who owns or controls a Common Bio-medical Waste Treatment Facility (CBMWTF) for the collection, reception, storage, transport, treatment, disposal or any other form of handling of bio-medical waste;

(o) “prescribed authority” means the State Pollution Control Board in respect of a State and Pollution Control Committees in respect of an Union territory;
(p) "Schedule" means the Schedule appended to these rules.

4. **Duties of the Occupier.**- It shall be the duty of every occupier to-

(a) take all necessary steps to ensure that bio-medical waste is handled without any adverse effect to human health and the environment and in accordance with these rules;

(b) make a provision within the premises for a safe, ventilated and secured location for storage of segregated biomedical waste in colored bags or containers in the manner as specified in Schedule I, to ensure that there shall be no secondary handling, pilferage of recyclables or inadvertent scattering or spillage by animals and the bio-medical waste from such place or premises shall be directly transported in the manner as prescribed in these rules to the common bio-medical waste treatment facility or for the appropriate treatment and disposal, as the case may be, in the manner as prescribed in Schedule I;

(c) 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) or National AIDS Control Organisation (NACO) guidelines and then sent to the common bio-medical waste treatment facility for final disposal;

(d) phase out use of chlorinated plastic bags, gloves and blood bags within two years from the date of notification of these rules;

(e) 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;

(f) not to give treated bio-medical waste with municipal solid waste;

(g) provide training to all its health care workers and others, involved in handling of bio medical waste at the time of induction and thereafter at least once every year and the details of training programmes conducted, number of personnel trained and number of personnel not undergone any training shall be provided in the Annual Report;

(h) immunise all its health care workers and others, involved in handling of bio-medical waste for protection against diseases including Hepatitis B and Tetanus that are likely to be transmitted by handling of 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;

(i) establish a Bar-Code System for bags or containers containing bio-medical waste to be sent out of the premises or place for any purpose within one year from the date of the notification of these rules;

(j) 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;
(k) ensure treatment and disposal of liquid waste in accordance with the Water (Prevention and Control of Pollution) Act, 1974 (6 of 1974);

(l) ensure occupational safety of all its health care workers and others involved in handling of bio-medical waste by providing appropriate and adequate personal protective equipments;

(m) conduct health check up at the time of induction and at least once in a year for all its health care workers and others involved in handling of bio-medical waste and maintain the records for the same;

(n) maintain and update on day to day basis the bio-medical waste management register and display the monthly record on its website according to the bio-medical waste generated in terms of category and colour coding as specified in Schedule I;

(o) report major accidents including accidents caused by fire hazards, blasts during handling of bio-medical 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;

(p) make available the annual report on its web-site and all the health care facilities shall make own website within two years from the date of notification of these rules;

(q) inform the prescribed authority immediately in case the operator of a facility does not collect the bio-medical waste within the intended time or as per the agreed time;

(r) establish a system to review and monitor the activities related to bio-medical waste management, either through an existing committee or by forming a new committee and the Committee shall meet once in every six months and the record of the minutes of the meetings of this committee shall be submitted along with the annual report to the prescribed authority and the healthcare establishments having less than thirty beds shall designate a qualified person to review and monitor the activities relating to bio-medical waste management within that establishment and submit the annual report;

(s) maintain all record for operation of incineration, hydro or autoclaving etc., for a period of five years;

(t) existing incinerators to achieve the standards for treatment and disposal of bio-medical waste as specified in Schedule II for retention time in secondary chamber and Dioxin and Furans within two years from the date of this notification.

5. **Duties of the operator of a common bio-medical waste treatment and disposal facility.** - It shall be the duty of every operator to -

(a) take all necessary steps to ensure that the bio-medical waste collected from the occupier is transported, handled, stored, treated and disposed of, without any adverse effect to the human health and the environment, in accordance with these rules and guidelines issued by the Central Government or, as the case may be, the central pollution control board from time to time;

(b) ensure timely collection of bio-medical waste from the occupier as prescribed under these rules;
(c) establish bar coding and global positioning system for handling of bio-medical waste within one year;

(d) inform the prescribed authority immediately regarding the occupiers which are not handing over the segregated bio-medical waste in accordance with these rules;

(e) provide training for all its workers involved in handling of bio-medical waste at the time of induction and at least once a year thereafter;

(f) assist the occupier in training conducted by them for bio-medical waste management;

(g) undertake appropriate medical examination at the time of induction and at least once in a year and immunise all its workers involved in handling of bio-medical waste for protection against diseases, including Hepatitis B and Tetanus, that are likely to be transmitted while handling bio-medical waste and maintain the records for the same;

(h) ensure occupational safety of all its workers involved in handling of bio-medical waste by providing appropriate and adequate personal protective equipment;

(i) report major accidents including accidents caused by fire hazards, blasts during handling of bio-medical 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;

(j) maintain a log book for each of its treatment equipment according to weight of batch; categories of waste treated; time, date and duration of treatment cycle and total hours of operation;

(k) allow occupier, who are giving waste for treatment to the operator, to see whether the treatment is carried out as per the rules;

(l) shall display details of authorisation, treatment, annual report etc on its web-site;

(m) after ensuring treatment by autoclaving or microwaving followed by mutilation or shredding, whichever is applicable, the recyclables from the treated bio-medical wastes such as plastics and glass, shall be given to recyclers having valid consent or authorisation or registration from the respective State Pollution Control Board or Pollution Control Committee;

(n) supply non-chlorinated plastic coloured bags to the occupier on chargeable basis, if required;

(o) common bio-medical waste treatment facility shall ensure collection of biomedical waste on holidays also;

(p) maintain all record for operation of incineration, hydro or autoclaving for a period of five years; and

(q) upgrade existing incinicators to achieve the standards for retention time in secondary chamber and Dioxin and Furans within two years from the date of this notification.

6. **Duties of authorities.**-The Authority specified in column (2) of Schedule-III shall perform the duties
as specified in column (3) thereof in accordance with the provisions of these rules.

7. Treatment and disposal.- (1) Bio-medical waste shall be treated and disposed of in accordance with Schedule I, and in compliance with the standards provided in Schedule-II by the health care facilities and common bio-medical waste treatment facility.

(2) Occupier shall hand over segregated waste as per the Schedule-I to common bio-medical waste treatment facility for treatment, processing and final disposal:

Provided that the lab and highly infectious bio-medical waste generated shall be pre-treated by equipment like autoclave or microwave.

(3) 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 kilometer.

(4) In cases where service of the common bio-medical waste treatment facility is not available, the Occupiers shall set up requisite biomedical waste treatment equipment like incinerator, autoclave or microwave, shredder prior to commencement of its operation, as per the authorisation given by the prescribed authority.

(5) Any person including an occupier or operator of a common bio medical waste treatment facility, intending to use new technologies for treatment of bio medical waste other than those listed in Schedule I shall request the Central Government for laying down the standards or operating parameters.

(6) On receipt of a request referred to in sub-rule (5), the Central Government may determine the standards and operating parameters for new technology which may be published in Gazette by the Central Government.

(7) Every operator of common bio-medical waste treatment facility shall set up requisite biomedical waste treatment equipments like incinerator, autoclave or microwave, shredder and effluent treatment plant as a part of treatment, prior to commencement of its operation.

(8) Every occupier shall phase out use of non-chlorinated plastic bags within two years from the date of publication of these rules and after two years from such publication of these rules, the chlorinated plastic bags shall not be used for storing and transporting of bio-medical waste and the occupier or operator of a common bio-medical waste treatment facility shall not dispose of such plastics by incineration and the bags used for storing and transporting biomedical waste shall be in compliance with the Bureau of Indian Standards. Till the Standards are published, the carry bags shall be as per the Plastic Waste Management Rules, 2011.

(9) After ensuring treatment by autoclaving or microwaving followed by mutilation or shredding, whichever is applicable, the recyclables from the treated bio-medical wastes such as plastics and glass shall be given to such recyclers having valid authorisation or registration from the respective prescribed authority.
(10) The Occupier or Operator of a common bio-medical waste treatment facility shall maintain a record of recyclable wastes referred to in sub-rule (9) which are auctioned or sold and the same shall be submitted to the prescribed authority as part of its annual report. The record shall be open for inspection by the prescribed authorities.

(11) The handling and disposal of all the mercury waste and lead waste shall be in accordance with the respective rules and regulations.

8. Segregation, packaging, transportation and storage.- (1) No untreated bio-medical waste shall be mixed with other wastes.

(2) The bio-medical waste shall be segregated into containers or bags at the point of generation in accordance with Schedule I prior to its storage, transportation, treatment and disposal.

(3) The containers or bags referred to in sub-rule (2) shall be labeled as specified in Schedule IV.

(4) Bar code and global positioning system shall be added by the Occupier and common bio-medical waste treatment facility in one year time.

(5) The operator of common bio-medical waste treatment facility shall transport the bio-medical waste from the premises of an occupier to any off-site bio-medical waste treatment facility only in the vehicles having label as provided in part ‘A’ of the Schedule IV along with necessary information as specified in part ‘B’ of the Schedule IV.

(6) The vehicles used for transportation of bio-medical waste shall comply with the conditions if any stipulated by the State Pollution Control Board or Pollution Control Committee in addition to the requirement contained in the Motor Vehicles Act, 1988 (59 of 1988), if any or the rules made thereunder for transportation of such infectious waste.

(7) Untreated human anatomical waste, animal anatomical waste, soiled waste and, biotechnology waste shall not be stored beyond a period of forty-eight hours:

Provided that in case for any reason it becomes necessary to store such waste beyond such a period, the occupier shall take appropriate measures to ensure that the waste does not adversely affect human health and the environment and inform the prescribed authority along with the reasons for doing so.

(8) Microbiology waste and all other clinical laboratory waste shall be pre-treated by sterilisation to Log 6 or disinfection to Log 4, as per the World Health Organisation guidelines before packing and sending to the common bio-medical waste treatment facility.

9. Prescribed authority.- (1) The prescribed authority for implementation of the provisions of these rules shall be the State Pollution Control Boards in respect of States and Pollution Control Committees in respect
of Union territories.

(2) The prescribed authority for enforcement of the provisions of these rules in respect of all health care establishments including hospitals, nursing homes, clinics, dispensaries, veterinary institutions, animal houses, pathological laboratories and blood banks of the Armed Forces under the Ministry of Defence shall be the Director General, Armed Forces Medical Services, who shall function under the supervision and control of the Ministry of Defence.

(3) The prescribed authorities shall comply with the responsibilities as stipulated in Schedule III of these rules.

10. **Procedure for authorisation.**-Every occupier or operator handling bio-medical waste, irrespective of the quantity shall make an application in Form II to the prescribed authority i.e. State Pollution Control Board and Pollution Control Committee, as the case may be, for grant of authorisation and the prescribed authority shall grant the provisional authorisation in Form III and the validity of such authorisation for bedded health care facility and operator of a common facility shall be synchronised with the validity of the consents.

(1) The authorisation shall be one time for non-bedded occupiers and the authorisation in such cases shall be deemed to have been granted, if not objected by the prescribed authority within a period of ninety days from the date of receipt of duly completed application along with such necessary documents.

(2) In case of refusal of renewal, cancellation or suspension of the authorisation by the prescribed authority, the reasons shall be recorded in writing:

Provided that the prescribed authority shall give an opportunity of being heard to the applicant before such refusal of the authorisation.

(3) Every application for authorisation shall be disposed of by the prescribed authority within a period of ninety days from the date of receipt of duly completed application along with such necessary documents, failing which it shall be deemed that the authorisation is granted under these rules.

(4) In case of any change in the bio-medical waste generation, handling, treatment and disposal for which authorisation was earlier granted, the occupier or operator shall intimate to the prescribed authority about the change or variation in the activity and shall submit a fresh application in Form II for modification of the conditions of authorisation.

11. **Advisory Committee.**-(1) Every State Government or Union territory Administration shall constitute an Advisory Committee for the respective State or Union territory under the chairmanship of the respective health secretary to oversee the implementation of the rules in the respective state and to advice any improvements and the Advisory Committee shall include representatives from the Departments of Health, Environment, Urban Development, Animal Husbandry and Veterinary Sciences of that State Government or Union territory Administration, State Pollution Control Board or Pollution Control Committee, urban local bodies or local bodies or Municipal Corporation, representatives from Indian Medical Association, common bio-medical waste treatment facility and non-governmental organisation.
(2) Notwithstanding anything contained in sub-rule (1), the Ministry of Defence shall constitute the Advisory Committee (Defence) under the chairmanship of Director General of Health Services of Armed Forces consisting of representatives from the Ministry of Defence, Ministry of Environment, Forest and Climate Change, Central Pollution Control Board, Ministry of Health and Family Welfare, Armed Forces Medical College or Command Hospital.

(3) The Advisory Committee constituted under sub-rule (1) and (2) shall meet at least once in six months and review all matters related to implementation of the provisions of these rules in the State and Armed Forces Health Care Facilities, as the case may be.

(4) The Ministry of Health and Defence may co-opt representatives from the other Governmental and non-governmental organisations having expertise in the field of bio-medical waste management.

12. **Monitoring of implementation of the rules in health care facilities.**

   (1) The Ministry of Environment, Forest and Climate Change shall review the implementation of the rules in the country once in a year through the State Health Secretaries and Chairmen or Member Secretary of State Pollution Control Boards and Central Pollution Control Board and the Ministry may also invite experts in the field of bio-medical waste management, if required.

   (2) The Central Pollution Control Board shall monitor the implementation of these rules in respect of all the Armed Forces health care establishments under the Ministry of Defence.

   (3) The Central Pollution Control Board along with one or more representatives of the Advisory Committee constituted under sub-rule (2) of rule 11, may inspect any Armed Forces health care establishments after prior intimation to the Director General Armed Forces Medical Services.

   (4) Every State Government or Union territory Administration shall constitute District Level Monitoring Committee in the districts under the chairmanship of District Collector or District Magistrate or Deputy Commissioner or Additional District Magistrate to monitor the compliance of the provisions of these rules in the health care facilities generating bio-medical waste and in the common bio-medical waste treatment and disposal facilities, where the bio-medical waste is treated and disposed of.

   (5) The District Level Monitoring Committee constituted under sub-rule (4) shall submit its report once in six months to the State Advisory Committee and a copy thereof shall also be forwarded to State Pollution Control Board or Pollution Control Committee concerned for taking further necessary action.

   (6) The District Level Monitoring Committee shall comprise of District Medical Officer or District Health Officer, representatives from State Pollution Control Board or Pollution Control Committee, Public Health Engineering Department, local bodies or municipal corporation, Indian Medical Association, common bio-medical waste treatment facility and registered non-governmental organisations working in the field of bio-medical waste management and the Committee may co-opt other members and experts, if necessary and the District Medical Officer shall be the Member Secretary of this
13. **Annual report.**-(1) Every occupier or operator of common bio-medical waste treatment facility shall submit an annual report to the prescribed authority in Form-IV, on or before the 30\textsuperscript{th} June of every year.

(2) The prescribed authority shall compile, review and analyse the information received and send this information to the Central Pollution Control Board on or before the 31\textsuperscript{st} July of every year.

(3) The Central Pollution Control Board shall compile, review and analyse the information received and send this information, along with its comments or suggestions or observations to the Ministry of Environment, Forest and Climate Change on or before 31\textsuperscript{st} August every year.

(4) The Annual Reports shall also be available online on the websites of Occupiers, State Pollution Control Boards and Central Pollution Control Board.

14. **Maintenance of records.**- (1) Every authorised person shall maintain records related to the generation, collection, reception, storage, transportation, treatment, disposal or any other form of handling of bio-medical waste, 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 as the case may be.

(2) 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.

15. **Accident reporting.**- (1) 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.

(2) Information regarding all other accidents and remedial steps taken shall be provided in the annual report in accordance with rule 13 by the occupier.

16. **Appeal.**-(1) Any person aggrieved by an order made by the prescribed authority under these rules may, within a period of thirty days from the date on which the order is communicated to him, prefer an appeal in Form V to the Secretary (Environment) of the State Government or Union territory administration.

(2) Any person aggrieved by an order of the Director General Armed Forces Medical Services under these rules may, within thirty days from the date on which the order is communicated to him, prefer an appeal in Form V to the Secretary, Ministry of Environment, Forest and Climate Change.

(3) The authority referred to in sub-para (1) and (2) as the case may be, may entertain the appeal after the
expiry of the said period of thirty days, if it is satisfied that the appellant was prevented by sufficient cause from filing the appeal in time.

(4) The appeal shall be disposed of within a period of ninety days from the date of its filing.

17. Site for common bio-medical waste treatment and disposal facility.- (1) Without prejudice to rule 5 of these rules, the department in the business allocation of land assignment shall be responsible for providing a suitable site for setting up of common biomedical waste treatment and disposal facility in the State Government or Union territory Administration.

(2) The selection of site for setting up of such facility shall be made in consultation with the prescribed authority, other stakeholders and in accordance with guidelines published by the Ministry of Environment, Forest and Climate Change or Central Pollution Control Board.

18. Liability of the occupier, operator of a facility.- (1) The occupier or an operator of a common bio-medical waste treatment facility shall be liable for all the damages caused to the environment or the public due to improper handling of bio-medical wastes.

(2) The occupier or operator of common bio-medical waste treatment facility shall be liable for action under section 5 and section 15 of the Act, in case of any violation.

SCHEDULE I
[See rules 3 (e), 4(b), 7(1), 7(2), 7(5), 7(6) and 8(2)]
Part-1

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

<table>
<thead>
<tr>
<th>Category</th>
<th>Type of Waste</th>
<th>Type of Bag or Container to be used</th>
<th>Treatment and Disposal options</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yellow</td>
<td>(a) Human Anatomical Waste: Human tissues, organs, body parts and fetus below the viability period (as per the Medical Termination of Pregnancy Act 1971, amended from time to time).</td>
<td>Yellow coloured non-chlorinated plastic bags</td>
<td>Incineration or Plasma Pyrolysis or deep burial*</td>
</tr>
<tr>
<td></td>
<td>(b) Animal Anatomical Waste: Experimental animal carcasses, body parts,</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
| (c) Soiled Waste: | Incineration or Plasma Pyrolysis or deep burial
In absence of above facilities, autoclaving or micro-waving / hydroclaving following by shredding or mutilation or combination of sterilization and shredding. Treated waste to be sent for energy recovery. |
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Items contaminated with blood, body fluids like dressings, plaster casts, cotton swabs and bags containing residual or discarded blood and blood components.</td>
<td></td>
</tr>
<tr>
<td>(d) Expired or Discarded Medicines:</td>
<td>Expired cytotoxic drugs and items contaminated with cytotoxic drugs to be returned back to the manufacturer or supplier for incineration at temperature &gt; 1200°C or to common bio-medical waste treatment facility or hazardous waste treatment, storage and disposal facility for incineration at &gt;1200 °C Or Encapsulation or Plasma Pyrolysis at &gt; 1200°C. All other discarded medicines shall be either sent back to manufacturer or disposed by incineration.</td>
</tr>
<tr>
<td>Pharmaceutical waste like antibiotics, cytotoxic drugs including all items contaminated with cytotoxic drugs along with glass or plastic ampoules, vials etc.</td>
<td>Yellow coloured non-chlorinated plastic bags or containers</td>
</tr>
<tr>
<td>(e) Chemical Waste:</td>
<td>Disposed of by incineration or Plasma Pyrolysis or Encapsulation in hazardous waste treatment, storage and disposal facility.</td>
</tr>
<tr>
<td>Chemicals used in production of biological and used or discarded disinfectants.</td>
<td>Yellow coloured containers or non-chlorinated plastic bags</td>
</tr>
<tr>
<td>(f) Chemical Liquid Waste:</td>
<td>After resource recovery, the chemical liquid waste shall be pre-treated before mixing with the other waste water. The combined discharge shall conform to the discharge norms given in Schedule-III.</td>
</tr>
<tr>
<td>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</td>
<td>Separate collection system leading to effluent treatment system</td>
</tr>
<tr>
<td>activities etc.</td>
<td>Non-chlorinated yellow plastic bags or suitable packing material</td>
</tr>
<tr>
<td>(g) Discarded linen, mattresses, beddings contaminated with blood or body fluid.</td>
<td></td>
</tr>
<tr>
<td>(h) 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.</td>
<td>Autoclave safe plastic bags or containers</td>
</tr>
</tbody>
</table>

Red Contaminated Waste (Recyclable) 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. Red coloured non-chlorinated plastic bags or containers Autoclaving or micro-waving / hydroclaving followed by shredding or mutilation or combination of sterilization and shredding. Treated waste to be sent to registered or authorized recyclers or for energy recovery or plastics to diesel or fuel oil or for road making, whichever is possible. Plastic waste should not be sent to landfill sites.

White (Translucent) Waste Sharps including Metals: Needles, syringes with fixed needles, needles from needle tip cutter or burner, scalpels, blades, or any other contaminated sharp object that may cause puncture and cuts. This includes both used, 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.
<table>
<thead>
<tr>
<th>Discarded and Contaminated Metal Sharps</th>
<th>Control Boards or Pollution Control Committees) or sanitary landfill or designated concrete waste shar pit.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Blue</strong></td>
<td><strong>(a) Glassware:</strong> Broken or discarded and contaminated glass including medicine vials and ampoules except those contaminated with cytotoxic wastes.</td>
</tr>
<tr>
<td></td>
<td>Cardboard boxes with blue colored marking</td>
</tr>
<tr>
<td></td>
<td>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.</td>
</tr>
<tr>
<td></td>
<td><strong>(b) Metallic Body Implants</strong></td>
</tr>
<tr>
<td></td>
<td>Cardboard boxes with blue colored marking</td>
</tr>
</tbody>
</table>

*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.*

**Part -2**

1. All plastic bags shall be as per BIS standards as and when published, till then the prevailing Plastic Waste Management Rules shall be applicable.

2. Chemical treatment using at least 10% Sodium Hypochlorite having 30% residual chlorine for twenty minutes or any other equivalent chemical reagent that should demonstrate Log$_{10}$4 reduction efficiency for microorganisms as given in Schedule-III.

3. Mutilation or shredding must be to an extent to prevent unauthorized reuse.

4. There will be no chemical pretreatment before incineration, except for microbiological, lab and highly infectious waste.

5. Incineration ash (ash from incineration of any bio-medical waste) shall be disposed through hazardous waste treatment, storage and disposal facility, if toxic or hazardous constituents are present beyond the prescribed limits as given in the Hazardous Waste (Management, Handling and Transboundary Movement) Rules, 2008 or as revised from time to time.

6. Dead Fetus below the viability period (as per the Medical Termination of Pregnancy Act 1971, amended from time to time) can be considered as human anatomical waste. Such waste should be handed over to the operator of common bio-medical waste treatment and disposal facility in yellow bag with a copy of the official Medical Termination of Pregnancy certificate from the Obstetrician or the Medical Superintendent of hospital or healthcare establishment.
(7) 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 pyrolys is at temperature >1200°C.

(8) 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.

(9) 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.

(10) 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.

(11) 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.

(12) 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.

SCHEDULE II
[See rule 4(t), 7(1) and 7(6)]

STANDARDS FOR TREATMENT AND DISPOSAL OF BIO-MEDICAL WASTES

1. STANDARDS FOR INCINERATION.-

All incinerators shall meet the following operating and emission standards-

A. Operating Standards

1). Combustion efficiency (CE) shall be at least 99.00%.

2). The Combustion efficiency is computed as follows:
\[
\text{C.E.} = \frac{\% \text{CO}_2}{\% \text{CO}_2 + \% \text{CO}} \times 100
\]

3). The temperature of the primary chamber shall be a minimum of \(800^\circ\text{C}\) and the secondary chamber shall be minimum of \(1050^\circ\text{C} + 50^\circ\text{C}\).

4). The secondary chamber gas residence time shall be at least two seconds.

B. Emission Standards

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Parameter</th>
<th>Limiting concentration in mg Nm(^3) unless stated</th>
<th>Sampling Duration in minutes, unless stated</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Particulate matter</td>
<td>50</td>
<td>30 or 1NM(^3) of sample volume, whichever is more</td>
</tr>
<tr>
<td>2.</td>
<td>Nitrogen Oxides NO and NO(_2) expressed asNO(_2)</td>
<td>400</td>
<td>30 for online sampling or grab sample</td>
</tr>
<tr>
<td>3.</td>
<td>HCl</td>
<td>50</td>
<td>30 or 1NM(^3) of sample volume, whichever is more</td>
</tr>
<tr>
<td>4.</td>
<td>Total Dioxins and Furans</td>
<td>0.1ngTEQ/Nm(^3) (at 11% O(_2))</td>
<td>8 hours or 5NM(^3) of sample volume, whichever is more</td>
</tr>
<tr>
<td>5.</td>
<td>Hg and its compounds</td>
<td>0.05</td>
<td>2 hours or 1NM(^3) of sample volume, whichever is more</td>
</tr>
</tbody>
</table>

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

Note:
(a) The existing incinerators shall comply with the above within a period of two years from the date of the notification.

(b) The existing incinerators shall comply with the standards for Dioxins and Furans of 0.1ngTEQ/Nm\(^3\), as given below within two years from the date of commencement of these rules.

(c) All upcoming common bio-medical waste treatment facilities having incineration facility or captive incinerator shall comply with standards for Dioxins and Furans.

(d) The existing secondary combustion chambers of the incinerator and the pollution control devices shall be suitably retrofitted, if necessary, to achieve the emission limits.
(e) Wastes to be incinerated shall not be chemically treated with any chlorinated disinfectants.

(f) Ash from incineration of biomedical waste shall be disposed of at common hazardous waste treatment and disposal facility. However, it may be disposed of in municipal landfill, if the toxic metals in incineration ash are within the regulatory quantities as defined under the Hazardous Waste (Management and Handling and Transboundary Movement) Rules, 2008 as amended from time to time.

(g) Only low Sulphur fuel like Light Diesel Oil or Low Sulphur Heavy Stock or Diesel, Compressed Natural Gas, Liquefied Natural Gas or Liquefied Petroleum Gas shall be used as fuel in the incinerator.

(h) The occupier or operator of a common bio-medical waste treatment facility shall monitor the stack gaseous emissions (under optimum capacity of the incinerator) once in three months through a laboratory approved under the Environment (Protection) Act, 1986 and record of such analysis results shall be maintained and submitted to the prescribed authority. In case of dioxins and furans, monitoring should be done once in a year.

(i) The occupier or operator of the common bio-medical waste treatment facility shall install continuous emission monitoring system for the parameters as stipulated by State Pollution Control Board or Pollution Control Committees in authorisation and transmit the data real time to the servers at State Pollution Control Board or Pollution Control Committees and Central Pollution Control Board.

(j) All monitored values shall be corrected to 11% Oxygen on dry basis.

(k) Incinerators (combustion chambers) shall be operated with such temperature, retention time and turbulence, as to achieve Total Organic Carbon content in the slag and bottom ashes less than 3% or their loss on ignition shall be less than 5% of the dry weight.

(l) The occupier or operator of a common bio-medical waste incinerator shall use combustion gas analyzer to measure CO$_2$, CO and O$_2$.

2. Operating and Emission Standards for Disposal by Plasma Pyrolysis or Gasification:

A. Operating Standards:

All the operators of the Plasma Pyrolysis or Gasification shall meet the following operating and emission standards:

1) Combustion Efficiency (CE) shall be at least 99.99%.

2) The Combustion Efficiency is computed as follows.

\[
\text{C.E} = \frac{\text{\% CO}_2}{\text{\% CO}_2 + \text{\% CO}} \times 100
\]

\[
\text{\% CO}_2 \quad \text{\% CO}
\]

\[
\text{\% CO}_2 + \text{\% CO}
\]
3) The temperature of the combustion chamber after plasma gasification shall be 1050 ± 50 °C with gas residence time of at least 2 (two) second, with minimum 3 % Oxygen in the stack gas.

4) 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 Environment (Protection) Act, 1986 and in accordance with the CPCB Guidelines of Emission Regulation Part-III.

B. Air Emission Standards and Air Pollution Control Measures

(i) Emission standards for incinerator, notified at Sl No.1 above in this Schedule, and revised from time to time, shall be applicable for the Plasma Pyrolysis or Gasification also.

(ii) 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.

(iii) Wastes to be treated using Plasma Pyrolysis or Gasification shall not be chemically treated with any chlorinated disinfectants and chlorinated plastics shall not be treated in the system.

C. Disposal of Ash Vitrified Material: 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.

3. STANDARDS FOR AUTOCLAVING OF BIO-MEDICAL WASTE.-

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

(1) When operating a gravity flow autoclave, medical waste shall be subjected to:

(i) a temperature of not less than 121° C and pressure of 15 pounds per square inch (psi) for an autoclave residence time of not less than 60 minutes; or

(ii) 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

(iii) 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.

(2) When operating a vacuum autoclave, medical waste shall be subjected to a minimum of three pre-vacuum pulse to purge the autoclave of all air. The air removed during the pre-vacuum, cycle should be decontaminated by means of HEPA and activated carbon filtration, steam treatment, or any other method to prevent release of pathogen. The waste shall be subjected to the following:
(i) a temperature of not less than 121°C and pressure of 15 psi per an autoclave residence time of not less than 45 minutes; or

(ii) 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;

(3) Medical waste shall not be considered as properly treated unless the time, temperature and pressure indicators indicate that the required time, temperature and pressure were reached during the autoclave process. If for any reasons, time temperature or pressure indicator indicates that the required temperature, pressure or residence time was not reached, the entire load of medical waste must be autoclaved again until the proper temperature, pressure and residence time were achieved.

(4) **Recording of operational parameters:** Each autoclave shall have graphic or computer recording devices which will automatically and continuously monitor and record dates, time of day, load identification number and operating parameters throughout the entire length of the autoclave cycle.

(5) **Validation test for autoclave:** The validation test shall use four biological indicator strips, one shall be used as a control and left at room temperature, and three shall be placed in the approximate center of three containers with the waste. Personal protective equipment (gloves, face mask and coveralls) shall be used when opening containers for the purpose of placing the biological indicators. At least one of the containers with a biological indicator should be placed in the most difficult location for steam to penetrate, generally the bottom center of the waste pile. The occupier or operator shall conduct this test three consecutive times to define the minimum operating conditions. The temperature, pressure and residence time at which all biological indicator vials or strips for three consecutive tests show complete inactivation of the spores shall define the minimum operating conditions for the autoclave. After determining the minimum temperature, pressure and residence time, the occupier or operator of a common biomedical waste treatment facility shall conduct this test once in three months and records in this regard shall be maintained.

(6) **Routine Test:** A chemical indicator strip or tape that changes colour when a certain temperature is reached can be used to verify that a specific temperature has been achieved. It may be necessary to use more than one strip over the waste package at different locations to ensure that the inner content of the package has been adequately autoclaved. The occupier or operator of a common bio medical waste treatment facility shall conduct this test during autoclaving of each batch and records in this regard shall be maintained.

(7) **Spore testing:** The autoclave should completely and consistently kill the approved biological indicator at the maximum design capacity of each autoclave unit. Biological indicator for autoclave shall be Geobacillusstearothermophilus spores using vials or spore Strips; with at least 1X10^6 spores. Under no circumstances will an autoclave have minimum operating parameters less than a residence time of 30 minutes, a temperature less than 121°C or a pressure less than 15 psi. The occupier or operator of a common bio medical waste treatment and disposal facility shall conduct this test at least once in every week and records in this regard shall be maintained.

4. **STANDARDS OF MICROWAVING.-**
(1) Microwave treatment shall not be used for cytotoxic, hazardous or radioactive wastes, contaminated animal carcasses, body parts and large metal items.

(2) The microwave system shall comply with the efficacy test or routine tests and a performance guarantee may be provided by the supplier before operation of the limit.

(3) 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 atrophaeusspores using vials or spore strips with at least 1 x 10^4 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.

5. 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.

6. 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.

7. 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.

(i) **Validation test for Sharps sterilization unit**

Waste sharps sterilization unit should completely and consistently kill the biological indicator GeobacillusStearothermophilus or Bacillus Atropheauspoers using vials with at least $log_{10} 6$ spores per ml. The test shall be carried out once in three months

(ii) **Routine test**

A chemical indicator strip or tape that changes colour when a certain temperature is reached can be used to verify that a specific temperature has been achieved. It may be necessary to use more than one strip over the waste to ensure that the inner content of the sharps has been adequately disinfected. This test shall be performed once in week and records in this regard shall be maintained.

8. **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:

<table>
<thead>
<tr>
<th>PARAMETERS</th>
<th>PERMISSIBLE LIMITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>pH</td>
<td>6.5-9.0</td>
</tr>
<tr>
<td>Suspended solids</td>
<td>100 mg/l</td>
</tr>
<tr>
<td>Oil and grease</td>
<td>10 mg/l</td>
</tr>
<tr>
<td>BOD</td>
<td>30 mg/l</td>
</tr>
<tr>
<td>COD</td>
<td>250 mg/l</td>
</tr>
<tr>
<td>Bio-assay test</td>
<td>90% survival of fish after 96 hours in 100% effluent.</td>
</tr>
</tbody>
</table>

(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.

**Schedule III [See rule 6 and 9(3)]**

**List of Prescribed Authorities and the Corresponding Duties**

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Authority</th>
<th>Corresponding Duties</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1)</td>
<td>(2)</td>
<td>(3)</td>
</tr>
<tr>
<td>1</td>
<td>Ministry of Environment. Forest and Climate Change, Government of India</td>
<td>(i) Making Policies concerning bio-medical waste management in the Country including notification of Rules and amendments to the Rules as and when</td>
</tr>
<tr>
<td>2</td>
<td>Central or State Ministry of Health and Family Welfare, Central Ministry for Animal Husbandry and Veterinary or State Department of Animal Husbandry and Veterinary.</td>
<td></td>
</tr>
<tr>
<td>---</td>
<td>---</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Ministry of Defence</td>
<td></td>
</tr>
</tbody>
</table>

(i) Grant of license to health care facilities or nursing homes or veterinary establishments with a condition to obtain authorization from the prescribed authority for bio-medical waste management.

(ii) Monitoring, Refusal or Cancellation of license for health care facilities or nursing homes or veterinary establishments for violations of conditions of authorization or provisions under these Rules.

(iii) Publication of list of registered health care facilities with regard to bio-medical waste generation, treatment and disposal.

(iv) Undertake or support operational research and assessment with reference to risks to environment and health due to bio-medical waste and previously unknown disposables and wastes from new types of equipment.

(v) Coordinate with State Pollution Control Boards for organizing training programmes to staff of health care facilities and municipal workers on bio-medical waste.

(vi) Constitution of Expert Committees at National or State level for overall review and promotion of clean or new technologies for bio-medical waste management.

(vii) Organizing or Sponsoring of trainings for the regulatory authorities and health care facilities on bio-medical waste management related activities.

(viii) Sponsoring of mass awareness campaigns in electronic media.
| 4 | Central Pollution Control Board | (i) Prepare Guidelines on bio-medical waste Management and submit to the Ministry of Environment, Forest and Climate Change.  
(ii) Co-ordination of activities of State Pollution Control Boards or Pollution Control Committees on bio-medical waste.  
(iii) Conduct training courses for authorities dealing with management of bio-medical waste.  
(iv) Lay down standards for new technologies for treatment and disposal of bio-medical waste (Rule 7) and prescribe specifications for treatment and disposal of bio-medical wastes (Rule 7).  
(v) Lay down Criteria for establishing common bio-medical waste treatment facilities in the Country.  
(vi) Random inspection or monitoring of health care facilities and common bio-medical waste treatment facilities.  
(vii) Review and analysis of data submitted by the State Pollution Control Boards on bio-medical waste and submission of compiled information in the form of annual report along with its observations to Ministry of Environment, Forest and Climate Change.  
(viii) Inspection and monitoring of health care facilities operated by the Director General, Armed Forces Medical Services (Rule 9).  
(ix) Undertake or support research or operational research regarding bio-medical waste. |
|---|---|---|
| (ii) | Conduct training courses for authorities dealing with management of bio-medical wastes in Armed Forces health care facilities or treatment facilities in association with State Pollution Control Boards or Pollution Control Committees or Central Pollution Control Board or Ministry of Environment, Forest and Climate Change.  
(iii) | Publication of inventory of occupiers and bio-medical waste generation from Armed Forces health care facilities or occupiers.  
(iv) | Constitution of Advisory Committee for implementation of the rules.  
(v) | Review of management of bio-medical waste generation in the Armed Forces health care facilities through its Advisory Committee (Rule 11).  
(vi) | Submission of annual report to Central Pollution Control Board within the stipulated time period (Rule 13). |

| 5 | State Government of Health or Union Territory Government or Administration | (i) To ensure implementation of the rule in all health care facilities or occupiers.  
(ii) | Allocation of adequate funds to Government health care facilities for bio-medical waste management.  
(iii) | Procurement and allocation of treatment equipments and make provision for consumables for bio-medical |
| 6. | State Pollution Control Boards or Pollution Control Committees | waste management in Government health care facilities.  
(i) Constitute State or District Level Advisory Committees under the District Magistrate or Additional District Magistrate to oversee the biomedical waste management in the Districts.  
(v) Advise State Pollution Control Boards or Pollution Control Committees on implementation of these Rules.  
(vi) Implementation of recommendations of the Advisory Committee in all the health care facilities. |
| 7 | Municipalities or Corporations, Urban Local Bodies and Gram Panchayats | Inventorisation of Occupiers and data on bio-medical waste generation, treatment & disposal.  
(ii) Compilation of data and submission of the same in annual report to Central Pollution Control Board within the stipulated time period.  
(iii) Grant and renewal, suspension or refusal cancellation or of authorization under these rules (Rule 7, 8 and 10).  
(iv) Monitoring of compliance of various provisions and conditions of authorization.  
(v) Action against health care facilities or common bio-medical waste treatment facilities for violation of these rules (Rule 18).  
(vi) Organizing training programmes to staff of health care facilities and common bio-medical waste treatment facilities and State Pollution Control Boards or Pollution Control Committees Staff on Segregation, collection, storage, transportation, treatment and disposal of bio-medical wastes.  
(vii) Undertake or support research or operational research regarding bio-medical waste management.  
(viii) Any other function under these rules assigned by Ministry of Environment, Forest and Climate Change or Central Pollution Control Board from time to time.  
(ix) Implementation of recommendations of the Advisory Committee.  
(x) Publish the list of Registered or Authorised (or give consent) Recyclers.  
(xi) Undertake and support third party audits of the common bio-medical waste treatment facilities in their State. |
| 6. | State Pollution Control Boards or Pollution Control Committees | Inventorisation of Occupiers and data on bio-medical waste generation, treatment & disposal.  
(ii) Compilation of data and submission of the same in annual report to Central Pollution Control Board within the stipulated time period.  
(iii) Grant and renewal, suspension or refusal cancellation or of authorization under these rules (Rule 7, 8 and 10).  
(iv) Monitoring of compliance of various provisions and conditions of authorization.  
(v) Action against health care facilities or common bio-medical waste treatment facilities for violation of these rules (Rule 18).  
(vi) Organizing training programmes to staff of health care facilities and common bio-medical waste treatment facilities and State Pollution Control Boards or Pollution Control Committees Staff on Segregation, collection, storage, transportation, treatment and disposal of bio-medical wastes.  
(vii) Undertake or support research or operational research regarding bio-medical waste management.  
(viii) Any other function under these rules assigned by Ministry of Environment, Forest and Climate Change or Central Pollution Control Board from time to time.  
(ix) Implementation of recommendations of the Advisory Committee.  
(x) Publish the list of Registered or Authorised (or give consent) Recyclers.  
(xi) Undertake and support third party audits of the common bio-medical waste treatment facilities in their State. |
| 7 | Municipalities or Corporations, Urban Local Bodies and Gram Panchayats | Provide or allocate suitable land for development of common bio-medical waste treatment facilities in their respective jurisdictions as per the guidelines of Central Pollution Control Board.  
(ii) Collect other solid waste (other than the bio-medical waste) from the health care facilities as per the Municipal Solid Waste (Management and handling) Rules, 2000 or as amended time to time.  
(iii) Any other function stipulated under these Rules. |
SCHEDULE IV [See rule 8(3) and (5)] Part A

LABEL FOR BIO-MEDICAL WASTE CONTAINERS or BAGS

Part B

LABEL FOR TRANSPORTING BIO-MEDICAL WASTE BAGS OR CONTAINERS

Day .......... Month ..........
Year ..........
Date of generation ...............

Waste category Number .......
Waste quantity............
Sender’s Name and Address Receiver’s Name and Address:
Phone Number ........ Phone Number ..........
Fax Number ............. Fax Number .............
Contact Person ........ Contact Person ........

In case of emergency please contact :
Name and Address:
Phone No.

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

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 you facility has an Emergency Control policy? If yes give details:

Date : …………………… Signature ……………………
Place: …………………… Designation …………………..

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:
(iv) Tele No., Fax No.:

(v) Email:

(vi) Website Address:

2. Activity for which authorisation is sought:

<table>
<thead>
<tr>
<th>Activity</th>
<th>Please tick</th>
</tr>
</thead>
<tbody>
<tr>
<td>Generation, segregation</td>
<td></td>
</tr>
<tr>
<td>Collection, Storage</td>
<td></td>
</tr>
<tr>
<td>packaging</td>
<td></td>
</tr>
<tr>
<td>Reception</td>
<td></td>
</tr>
<tr>
<td>Transportation</td>
<td></td>
</tr>
<tr>
<td>Treatment or processing or conversion</td>
<td></td>
</tr>
<tr>
<td>Recycling</td>
<td></td>
</tr>
<tr>
<td>Disposal or destruction</td>
<td></td>
</tr>
<tr>
<td>use</td>
<td></td>
</tr>
<tr>
<td>offering for sale, transfer</td>
<td></td>
</tr>
<tr>
<td>Any other form of handling</td>
<td></td>
</tr>
</tbody>
</table>

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 CBMWT: ______

(iv) No of beds covered by CBMWT: ______

(v) Installed treatment and disposal capacity of CBMWT:_______ Kg per day

(vi) Quantity of biomedical waste treated or disposed by CBMWT:______ Kg/ day

(vii) Area or distance covered by CBMWT:____________

(pl. attach map a map with GPS locations of CBMWT and area of coverage)

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

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

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)

<table>
<thead>
<tr>
<th>No of units</th>
<th>Capacity of each unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Incinerators:</td>
<td></td>
</tr>
<tr>
<td>Plasma Pyrolysis:</td>
<td></td>
</tr>
<tr>
<td>Autoclaves:</td>
<td></td>
</tr>
<tr>
<td>Microwave:</td>
<td></td>
</tr>
<tr>
<td>Hydroclave:</td>
<td></td>
</tr>
<tr>
<td>Shredder:</td>
<td></td>
</tr>
</tbody>
</table>
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

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;

<table>
<thead>
<tr>
<th>Activity</th>
<th>Please tick</th>
</tr>
</thead>
<tbody>
<tr>
<td>Generation, segregation</td>
<td></td>
</tr>
<tr>
<td>Collection, Storage</td>
<td></td>
</tr>
<tr>
<td>packaging</td>
<td></td>
</tr>
<tr>
<td>Reception</td>
<td></td>
</tr>
<tr>
<td>Transportation</td>
<td></td>
</tr>
</tbody>
</table>
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:

<table>
<thead>
<tr>
<th>Type of Waste Category</th>
<th>Quantity permitted for Handling</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yellow</td>
<td></td>
</tr>
<tr>
<td>Red</td>
<td></td>
</tr>
<tr>
<td>White (Translucent)</td>
<td></td>
</tr>
<tr>
<td>Blue</td>
<td></td>
</tr>
</tbody>
</table>

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.

Form - IV (See rule 13)
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 (CBMWTF)]

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Particulars</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Particulars of the Occupier</td>
</tr>
<tr>
<td>(a)</td>
<td>Name of the authorized person (occupier or operator of facility)</td>
</tr>
<tr>
<td>(ii)</td>
<td>Name of HCF or CBMWTF</td>
</tr>
<tr>
<td>(iii)</td>
<td>Address for Correspondence</td>
</tr>
<tr>
<td>(iv)</td>
<td>Address of Facility</td>
</tr>
<tr>
<td>(v)</td>
<td>Tel. No./ Fax. No.</td>
</tr>
<tr>
<td>(vi)</td>
<td>E-mail ID</td>
</tr>
<tr>
<td>(vii)</td>
<td>URL of Website</td>
</tr>
<tr>
<td>(viii)</td>
<td>GPS coordinates of HCF or CBMWTF</td>
</tr>
<tr>
<td>(ix)</td>
<td>Ownership of HCF or CBMWTF: (State Government or Private or Semi Govt. or any other)</td>
</tr>
<tr>
<td>(x)</td>
<td>Status of Authorisation under the Bio-medical Waste (Management and Handling) Rules: Authorisation No.: ----------------- valid up to ------ ------------------- ---------</td>
</tr>
<tr>
<td>(xi)</td>
<td>Status of Consents under Water Act and Air Act: Valid up to:</td>
</tr>
<tr>
<td>2.</td>
<td>Type of Health Care Facility</td>
</tr>
<tr>
<td>(i)</td>
<td>Bedded Hospital: No. of Beds ……………………………</td>
</tr>
<tr>
<td>(ii)</td>
<td>Non-bedded hospital (Clinic or Blood Bank or Clinical Laboratory or Research Institute or Veterinary Hospital or any other)</td>
</tr>
<tr>
<td>(iii)</td>
<td>License number and its date of expiry</td>
</tr>
<tr>
<td>3.</td>
<td>Details of CBMWTF</td>
</tr>
<tr>
<td>(i)</td>
<td>Number healthcare facilities covered by CBMWTF</td>
</tr>
<tr>
<td>(ii)</td>
<td>No. of beds covered by CBMWTF</td>
</tr>
<tr>
<td>(iii)</td>
<td>Installed treatment and disposal capacity of CBMWTF: ______________ Kg per day</td>
</tr>
<tr>
<td>(iv)</td>
<td>Quantity of biomedical waste treated or disposed by CBMWTF: ______________ Kg per day</td>
</tr>
<tr>
<td>4.</td>
<td>Quantity of waste generated or disposed in Kg per annum (on monthly, average basis)</td>
</tr>
<tr>
<td></td>
<td>Yellow Category: Red Category: White: Blue Category: General Solid Waste:</td>
</tr>
<tr>
<td>5.</td>
<td>Details of the Storage, treatment, transportation, processing and Disposal Facility</td>
</tr>
<tr>
<td>(i)</td>
<td>Details of the on-site storage facility: Size: Capacity:</td>
</tr>
<tr>
<td>(ii) Disposal facilities</td>
<td>Provision of on-site storage: (cold storage or any other provision)</td>
</tr>
<tr>
<td>-------------------------</td>
<td>---------------------------------------------------------------</td>
</tr>
<tr>
<td></td>
<td>Type of treatment equipment</td>
</tr>
<tr>
<td></td>
<td>Incinerators</td>
</tr>
<tr>
<td></td>
<td>Plasma</td>
</tr>
<tr>
<td></td>
<td>Pyrolysis</td>
</tr>
<tr>
<td></td>
<td>Autoclaves</td>
</tr>
<tr>
<td></td>
<td>Microwave</td>
</tr>
<tr>
<td></td>
<td>Hydroclave</td>
</tr>
<tr>
<td></td>
<td>Shredder</td>
</tr>
<tr>
<td></td>
<td>Needle tip cutter or destroyer</td>
</tr>
<tr>
<td></td>
<td>Sharps encapsulation or concrete pit</td>
</tr>
<tr>
<td></td>
<td>Deep burial pits</td>
</tr>
<tr>
<td></td>
<td>Chemical disinfection</td>
</tr>
<tr>
<td></td>
<td>Any other treatment equipment</td>
</tr>
<tr>
<td>(iii) Quantity of recyclable wastes sold to authorized recyclers after treatment in Kg per annum</td>
<td>: Red Category (like plastic, glass etc.)</td>
</tr>
<tr>
<td>(iv) No of vehicles used for collection and transportation of biomedical waste</td>
<td>:</td>
</tr>
<tr>
<td>(v) Details of incineration ash and ETP sludge generated and disposed during the treatment of wastes in Kg per annum</td>
<td>: Incineration Ash ETP Sludge</td>
</tr>
<tr>
<td>(vi) Name of the Common Bio-Medical Waste Treatment Facility Operator through which wastes are disposed of</td>
<td>:</td>
</tr>
<tr>
<td>(vii) List of member HCF not handed over bio-medical waste.</td>
<td></td>
</tr>
</tbody>
</table>

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
<table>
<thead>
<tr>
<th>(i) Number of trainings conducted on BMW Management.</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>(ii) number of personnel trained</td>
<td></td>
</tr>
<tr>
<td>(iii) number of personnel trained at the time of induction</td>
<td></td>
</tr>
<tr>
<td>(iv) number of personnel not undergone any training so far</td>
<td></td>
</tr>
<tr>
<td>(v) whether standard manual for training is available?</td>
<td></td>
</tr>
</tbody>
</table>

8. Details of the accident occurred during the year

<table>
<thead>
<tr>
<th>(i) Number of Accidents occurred</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>(ii) Number of the persons affected</td>
<td></td>
</tr>
<tr>
<td>(iii) Remedial Action taken (Please attach details if any)</td>
<td></td>
</tr>
<tr>
<td>(iv) Any Fatality occurred, details.</td>
<td></td>
</tr>
</tbody>
</table>

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
FORM –V

(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…………………..

[F. No. 3-1/2000-HSMD]

(Bishwanath Sinha)
Joint secretary to the Government of India

*****
# ANNEXURE 8

## CONTACT DETAILS OF CONCERNED OFFICIALS AND RESOURCE PERSONS

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Name</th>
<th>Designation</th>
<th>Phone No.</th>
<th>Email</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Dr. Badri Vishal</td>
<td>Director, Medical Care</td>
<td>9415461731</td>
<td><a href="mailto:directormedicalcare@gmail.com">directormedicalcare@gmail.com</a></td>
</tr>
<tr>
<td>2</td>
<td>Dr. Sudha Rastogi</td>
<td>Additional Director Medical Care</td>
<td>9927087700</td>
<td><a href="mailto:directormedicalcare@gmail.com">directormedicalcare@gmail.com</a></td>
</tr>
<tr>
<td>3</td>
<td>Dr. Harsh Sharma</td>
<td>Additional Project Director</td>
<td>9415151422</td>
<td><a href="mailto:apd.uphssp@gmail.com">apd.uphssp@gmail.com</a></td>
</tr>
<tr>
<td>4</td>
<td>Dr. Dheeraj Tiwari</td>
<td>AD EM, UPHSSP</td>
<td>7839018018 9839223880</td>
<td><a href="mailto:ademuphssp@gmail.com">ademuphssp@gmail.com</a></td>
</tr>
<tr>
<td>5</td>
<td>Ms. Saloni Goel</td>
<td>EM Expert, TAP</td>
<td>9415406999</td>
<td><a href="mailto:saloni.goel@ecorys.com">saloni.goel@ecorys.com</a></td>
</tr>
<tr>
<td>6</td>
<td>Dr. Saurabh Gupta</td>
<td>EM Consultant DGM&amp;H</td>
<td>9455000113</td>
<td><a href="mailto:sguptalko@gmail.com">sguptalko@gmail.com</a></td>
</tr>
<tr>
<td>7</td>
<td>Dr. Ram Sewak</td>
<td>EM Consultant DGM&amp;H</td>
<td>9415609601</td>
<td><a href="mailto:dr.rsewak@gmail.com">dr.rsewak@gmail.com</a></td>
</tr>
<tr>
<td>8</td>
<td>Mr. Mahesh K. Dubey</td>
<td>EM Expert, TAP</td>
<td>8858066675</td>
<td><a href="mailto:maheshdubey2010@gmail.com">maheshdubey2010@gmail.com</a></td>
</tr>
<tr>
<td>9</td>
<td>Mr. Sunil Gupta</td>
<td>HMIS &amp; IT Expert, TAP</td>
<td>9695214287</td>
<td><a href="mailto:sunil.gupta@ecorys.com">sunil.gupta@ecorys.com</a></td>
</tr>
<tr>
<td>10</td>
<td>Apoorva Singh</td>
<td>Programmer, UPHSSP</td>
<td>9935280902</td>
<td><a href="mailto:aks.apoorva@gmail.com">aks.apoorva@gmail.com</a></td>
</tr>
<tr>
<td>11</td>
<td>Khushbu Srivastava</td>
<td>Consultant Training &amp; Website, DGM&amp;H</td>
<td>8052141111</td>
<td><a href="mailto:khushbusrivastava06@gmail.com">khushbusrivastava06@gmail.com</a></td>
</tr>
</tbody>
</table>

**BMW MIS (Management Information System) Team**

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Name</th>
<th>Designation</th>
<th>Phone No.</th>
<th>Email</th>
</tr>
</thead>
<tbody>
<tr>
<td>9</td>
<td>Mr. Sunil Gupta</td>
<td>HMIS &amp; IT Expert, TAP</td>
<td>9695214287</td>
<td><a href="mailto:sunil.gupta@ecorys.com">sunil.gupta@ecorys.com</a></td>
</tr>
<tr>
<td>10</td>
<td>Apoorva Singh</td>
<td>Programmer, UPHSSP</td>
<td>9935280902</td>
<td><a href="mailto:aks.apoorva@gmail.com">aks.apoorva@gmail.com</a></td>
</tr>
<tr>
<td>11</td>
<td>Khushbu Srivastava</td>
<td>Consultant Training &amp; Website, DGM&amp;H</td>
<td>8052141111</td>
<td><a href="mailto:khushbusrivastava06@gmail.com">khushbusrivastava06@gmail.com</a></td>
</tr>
</tbody>
</table>
Notes