

**BEFORE THE NATIONAL GREEN TRIBUNAL
PRINCIPAL BENCH, NEW DELHI**

Original Application No. 72/2020

(With report dated 08.01.2021 and 14.01.2021)

In re: Scientific Disposal of Bio-Medical Waste arising out of
Covid-19
treatment- Compliance of BMW rules-2016,

Date of hearing: 18.01.2021

**CORAM: HON'BLE MR. JUSTICE ADARSH KUMAR GOEL, CHAIRPER
HON'BLE MR. JUSTICE SHEO KUMAR SINGH, JUDICIAL MEMBER
HON'BLE DR. NAGIN NANDA, EXPERT MEMBER**

Respondent: Mr. Raj Kumar, Advocate for CPCB

ORDER

1. The issue for consideration is the remedial action to address the gaps in compliance of the BMW Rules, 2016, as applicable to the disposal of bio-medical waste **arising out of handling of COVID-19** disease.

2. Scientific management of such waste is necessary for protection of environment and public health in view of potential of such infectious waste affecting public health generally and the concerned workers and professionals etc. in particular. The matter was earlier considered vide order dated 23.04.2020 in the light of news item dated 19.04.2020, published in the Indian Express titled '**Biomedical waste facilities, a red flag in coronavirus fight**'. The Tribunal also considered the 'Guidelines for Handling, Treatment and Disposal of Waste Generated during Treatment/ Diagnosis/ Quarantine of COVID-19 Patients'. It was observed:-

*“We had interaction broadly on the **need for revision of the laid down guidelines to address all concerns in the light of best practices and experience from time to time** so that all aspects of scientific disposal of liquid and solid waste management are taken care of not only at institution level but also at individual levels (such as manner of disposal of used PPEs, used bags, gloves, goggles, etc., without the same getting straightaway mixed with other municipal solid waste causing contamination etc.), dealing with situations where adequate facilities (like incinerators) are not available, distinct colour guidelines for the bins etc., reviewing effectiveness of the monitoring mechanism, including securing information by way of electronic manifest system from the handlers of such waste and its online reporting by the State PCBs/PCCs on daily basis by developing necessary software, creating awareness by special awareness programmers, organizing trainings in concerned Local Bodies, Health Departments, etc., providing workers handling COVID-19 waste with adequate protective gear, adequate coordination with media and other concerned regulatory authorities in the States and the Central Government. We have also observed that out of 2.7 lakh HCFs identified, only 1.1 lakh HCFs are authorized under the BMW Management Rules, 2016 so far. The State PCBs/PCCs have to make serious efforts to bridge this gap to mitigate possible risk in terms of unscientific disposal of bio-medical waste and to enforce rule of law.”*

3. The Tribunal referred to pending proceedings in O.A. No. 710/2017, *Shailesh Singh v. Sheela Hospital & Trauma Center, Shahjahanpur & Ors.* to remedy gaps in compliance of Bio- Medical Waste Management Rules, 2016 generally. In the said matter, vide order dated 22.01.2020, the Tribunal observed:-

*“2.**unscientific disposal of bio-medical waste had potential of serious diseases such as Gastrointestinal infection, Respiratory infection, Eye infection, Genital infection, Skin infection, Anthrax, Meningitis, AIDS, Haemorrhagic fevers, Septicaemia, Viral Hepatitis type A, Viral Hepatitis type B and C, etc. Such unscientific disposal also causes environmental pollution leading to unpleasant smell, growth and multiplication of vectors like insects, rodents and worms and may lead to the transmission of diseases like typhoid, cholera, hepatitis and AIDS through injuries from syringes and needles contaminated with various communicable diseases***

3. Reference was also made to the report of the CAG placed on its website in May, 2017 as follows:

“Inadequate facility of bio-medical waste (BMW) treatment. As per the report paragraph 2.1.9.5 there were 8,366 Health Care Establishments (HCEs) out of which 3,362 HCEs were

*operating without authorization. **Total BMW generated in the State was 37,498 kg/day out of which only 35,816 kg/day was treated and disposed of. BMW of 1,682 kg/day was being disposed of untreated due to inadequate treatment facility.** But UPPCB failed to monitor unauthorised operation and untreated disposal of BMW and did not take any action against the defaulters.”*

4. *The matter was again reviewed on 15.07.2019 in the light of the report of the CPCB particularly with reference to inventory of HCFs and biomedical waste generation, operation of healthcare facilities without authorization, **action by the States with no treatment & disposal facilities, implementation of Barcode system, constitution of State Level Advisory Committees, submission of Action Plans by State Governments, key performance indicators**, Environmental Compensation for violation by the healthcare facilities and Environmental Compensation for common biomedical waste treatment facility.*
5. *The recommendations in the report were accepted. All the States/UTs were directed to take further action on that basis. The Tribunal also directed:-*

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8. *The States/UTs may furnish complete inventory of HCFs and BMW generation within two months and where the inventories are incomplete, the same may be completed. We place on record our disapproval of the inaction of States in furnishing the inventory studies as well as for incomplete inventories. **It is regretful to note that 25% of identified HCFs have not even taken authorization from the concerned State PCBs in absence of which, monitoring of waste management is not taking place. The States which have not set up common treatment and disposal facility must do so within two months as per Rules.** The States who have not furnished the information on the barcode system may also furnish such information at the earliest but not beyond two months. The States which have not yet constituted State Level Advisory Committee may also do so within two months. The action plans and their execution must be carried out having regard to the key performance indicators. **The States which have inadequate action plans, not satisfactory action plans, needing further actions must also do the needful within two months realizing their responsibility to the environment and public health which ought to be monitored directly by the Chief Secretaries in terms of order of this Tribunal dated 16.01.2019 in O.A. No. 606/2018 and further orders in the said matter.***

4. *The Tribunal further observed:*

“7. COVID 19 pandemic has emerged in the last few months and has affected number of people across the world. More than one and a

half lac people have died world over and more than 600 in India. The virus spreads mainly by droplets and also by touch of contaminated articles. To prevent spread, lock down has been enforced, restricting people to their homes, so as to avoid social contact. Affected persons are treated in hospitals and those suspected are quarantined in various facilities or at home. Large scale testing has been and is being done. By way of precaution, masks, gloves, PPE etc. are used which are disposed of thereafter. In the process, huge bio-medical waste is generated which itself can be source of disease. While the BMW Rules generally take care of the situation by way elaborate provisions to deal with biomedical waste generated in dealing with infectious diseases such as HIV, HINI etc., present pandemic has presented further challenge inter-alia on account of:

- (i) Existing gaps in compliance of BMW Rules in terms of capacity to scientifically dispose of generated waste and non-compliance of procedural and monitoring aspects;
- (ii) COVID-19 virus has emerged suddenly and is highly infectious, requiring more precautions compared to other infectious diseases.

9. There appears to be need for further revision of the guidelines to cover all aspects covering not merely institutions but also individual households and dealing with situations where scientific disposal facilities like incinerators are not available and any unmindful deep burial without adequate safeguards can adversely affect the ground water and pose danger to health and safety of people.

Disposal of COVID-19 waste in general bins so as to be part of municipal waste or unscientific handling sewage and other liquid waste without safeguards can also be hazardous. There is also need to incorporate best practices in the light of further experience and new thoughts emerging from time to time, apart from continued supervision and monitoring, compiling data in an online format, use of electronic /digital manifest system to track and log COVID-19 waste from all sources, preventing its accidental spillage, analyzing the data for strategic planning and the feedback by creating necessary software, to the extent viable.

There is also need for creating awareness about the precautions and steps to be taken by all handlers and workers as well as citizens, making a model plan, to be adopted locally by the Panchayat, Sub-division, District and State authorities with such further changes as may be necessary in local conditions. Health of all operators has been protected and preventive measures taken. There is need for orientation/training of persons responsible for compliance in Local Bodies and Health department by an online mechanism besides providing them with adequate protective gear. CPCB has to take lead and coordinate with media as well as the concerned Central/State departments.

Let the Chief Secretary of States/UTs by coordinating the activities of State's concerned departments like of Urban Development, Health, Irrigation & Public Health also closely

monitor the scientific storage, transport, handling, management and disposal of COVID-19 waste as its unscientific handling poses a grave threat environment and health of people. At the national level, let a high level task team of Ministry of MoEF&CC, Health UD, Jal Shakti, Defence and CPCB supervise the handling and scientific disposal of COVID-19 waste in accordance with the guidelines.

Let the State Departments of Environment and PCBs/PCCs ensure compliance of Biomedical Waste Management Rules, 2016 and furnish action take report to CPCB and CPCB take further steps and furnish a consolidated report to this Tribunal of the steps taken and the ground status as on 31.5.2020. The report may be furnished by 15.06.2020.

List for further consideration on 22.06.2020.”

5. The matter was last considered on 20.07.2020 as follows:-

“5. Pursuant to above, CPCB has filed its consolidated report on 17.06.2020 mentioning the steps taken and ground status of compliance.

6. The report mentions the meeting held by the Member Secretary, CPCB with the State PCBs/ PCCs, preparation of awareness material such as web circular, posters, videos, pictorial guidelines, user manual, waste tracking app, Covid – 19 related audios-videos and jingles. High Level Task Team was constituted with representatives from Ministries of Environment Forest & Climate Change, Health and Family Welfare, Jal Shakti, Housing and Urban Affairs and Defence. Model plans were prepared by the High Level Task Team for management of Covid – 19. CPCB revised its guidelines on 10.06.2020 covering following aspects:-

“a. Description of general solid waste including indicative list of items for segregation in isolation wards, quarantine centres and homecare;

b. Scope of Training and awareness to waste handlers in hospitals and quarantine centres;

c. Use of COVID-19 biomedical waste tracking App “COVID19BWM” developed by CPCB by waste generators, transporters, CBWTF operators and SPCBs.

d. Guidance on handling of general solid waste from quarantine centres and isolation wards and disposal of solid waste.

e. Options for safe disposal of COVID-19 related biomedical waste, in case capacity of existing capacity of common biomedical waste treatment and disposal facilities (CBWTFs) is exhausted.”

7. The guidelines have been circulated to concerned Central and State Government Departments. Waste tracking system software has been developed for waste generators, Common Biomedical Waste Treatment and Disposal Facility (CBWTF) Operators, State Pollution Control Boards / Pollution Control Committees and Urban Local Bodies. The system will track the generation, collection and disposal of waste. Some States have developed their own apps. 13 State PCBs/PCCs have initiated submission of daily status. Rest of the States are giving reports manually. A consolidated table based on information received with comments about adequacy of facility has been filed. The data has been analysed as follows:

“As per the information given by SPCBs/PCCs, 2,907 hospitals, 20,707 quarantine centres, 1,539 sample collection centres and 264 testing laboratories, are involved in generation of COVID-19 waste. Generation of COVID-19 related biomedical waste in the country is about 101 Metric Tonnes per day (MT/day). State-wise generation of COVID-19 biomedical waste generation and its management”

8. It is further stated:-

“(iii) As per the information received from SPCBs/PCCs, about 101 MT per day of COVID-19 related biomedical waste generated in the country, this quantity is in addition to normal biomedical waste generation of about 609 MT per day. Further, about 195 CBWTFs are providing the services of collection, transportation and disposal of COVID-19 biomedical waste from hospitals, isolation wards, quarantine centres, home quarantines, homecare, sample collection centres and testing laboratories.

(iv) Available capacity for incineration of COVID-19 biomedical waste in the country is about 840 Metric Tons (MT) against the total generation of about 710 MT per day (comprising of 609 MT/day of regular biomedical waste and 101 MT/day of COVID related biomedical waste). It is estimated that about 55% of cumulative incinerator capacity in the country is being utilised. However, there may be capacity limitation in specific areas or cities when the available capacity of CBWTFs in a coverage area of 150 Km may not be adequate due to spike in generation of biomedical waste.

(v) Sudden spike in generation of biomedical waste may create critical situation in States with 70% or more capacity utilization of incinerators, therefore such States may identify stand-by facilities such as common hazardous waste incinerators, industrial captive incinerators and captive disposal facilities at HCFs. Use of deep-burial pits may be considered as a last option. Proper segregation of waste will also increase disposal capacity of incinerators.

(vi) Status of compliance by State/UTs and SPCBSs/PCCs with respect to awareness & training to waste handlers,

preparation of model plans for villages and usage of COVID-19 biomedical waste tracking app.”

9. *The table mentions that certain States have yet to implement guidelines regarding training and awareness programme and have to give information about execution of model plans for villages and subdivisions. The summary of the compliance status is mentioned as follows:-*

“(vii) Improper segregation of waste has been reported from COVID-19 isolation wards, quarantine centres and quarantine homes. As per the provisions under Biomedical Waste Management Rules, 2016, Solid Waste Management Rules, 2016 and CPCB’s COVID-19 guidelines, segregation of wastes is essential for effective management of wastes.

(viii) Mixing of general solid waste with biomedical waste would result in additional load on CBWTF incinerators, which are not designed for domestic solid waste.

(ix) It is also observed that non-segregation of waste also results in incineration of contaminated plastics, which otherwise should have been collected in red bag for sterilization and recycling.

(x) SPCBs/PCCs are required to follow-up with ULBs to ensure regular collection of solid waste and biomedical waste from isolation wards, home quarantine centres and homecare units. SPCBs/PCCs may also issue appropriate instructions to concerned departments in State to ensure compliance to CPCB guidelines.”

10. ***In view of the above, while several significant steps have been taken by CPCB and others, the gaps in compliance as mentioned need to be urgently bridged. Segregation of Covid-19 from general waste is a must, not only to avoid additional load on CBWTF incinerators but also in the interest of avoid further contamination adversely affecting public health. There has to be constant and regular monitoring by the Chief Secretaries, State PCBs/PCCs and Health Departments in the States/ UTs and by the High Level Task Team at Central level with further coordination by CPCB. We may also observe that where waste is not going to CBWTF incinerators, deep burial systems may be properly maintained as per protocols taking all due precautions to prevent harm to the environment.***

11. ***CPCB may take further initiatives which should include conducting of appropriate programme on Doordarshan, All India Radio and other media.***

12. ***Let a further consolidated report be compiled by CPCB based on information collected from all the State PCBs/PCCs as 30.10.2020 and filed by 31.12.2020 by e-mail at [judicial-](#)***

ngt@gov.in preferably in the form of searchable PDF/ OCR Support PDF and not in the form of Image PDF.”

6. We have separately dealt with the general issue of compliance of Bio-Medical Waste (Management & Handling) Rules, 2016 in all the States/UTs and issued directions of general nature today in O.A. No. 710/2017, *Shailesh Singh v. Sheela Hospital & Trauma Centre, Shahjahanpur & Ors. etc.* The scope of the present matter in addition to the general issue of compliance of BMW Rules is Covid related biomedical waste.

7. In pursuance of order dated 20.7.2020, a consolidated report dated 14.01.2021 has been filed by the CPCB as follows:-

*“To ensure compliance to the above-mentioned order from Hon’ble Tribunal, CPCB vide letter 21.08.2020 forwarded said order to every State Pollution Control Boards/Pollution Control Committees and requested SPCBs/PCCs to submit compliance status report as per the format prepared by CPCB. A copy of afore-said CPCB letter dated 21.08.2020 is given at **Annexure III**.*

3. COVID-19 Biomedical Waste Management Scenario:

As per the as per the information received from State Pollution Control Boards/Pollution Control Committees, the inventory of COVID19 waste generating sources, quantity of waste generated and number of facilities engaged in disposal is given below;

<i>No of HCFs having Isolation wards</i>	:	3,095
<i>No of Quarantine Camps/Home Care Facilities</i>	:	2,768
<i>No. of sample collection center</i>	:	704
<i>No. of laboratories</i>	:	576
<i>Quantity of COVID19 BMW generated (Tons/day)</i>	:	146*
<i>Quantity of regular BMW generated (Tons/day)</i>	:	615
<i>Number of CBWTFs engaged</i>	:	198
<i>Treatment capacity of Common incinerators (Tons/day)</i>	:	822
<i>No of States used deep burial pits</i>	:	12

** Average quantity of COVID-19 BMW in December, 2020.*

4. Status of compliance by State Pollution Control Boards/Pollution Control Committees

CPCB vide letter dated 17.09.2020 (given at **Annexure IV**) directed every SPCB/PCC to comply with Hon'ble NGT order dated 20.07.2020 and to ensure scientific disposal of COVID-19 biomedical waste along with following action points;

- (i) Proper segregation of COVID-19 biomedical waste from general waste.
- (ii) Constant and regular monitoring by SPCBs/PCCs.
- (iii) In case there is no CBWTF existing in the State/UT, ensure that deep burial system constructed / operated as per standards given in CPCB guidelines.

Action taken report on COVID-19 biomedical waste management has been received from 32 SPCBs/PCCs, while State Boards of Arunachal Pradesh, Assam and Nagaland have not yet submitted compliance report. State-wise details on action taken on above action points is given at **Annexure V**.

5. Action taken by CPCB

5.1 Revision of Guidelines

The guidelines prepared by Central Pollution Control Board for "Handling, Treatment and Disposal of Waste Generated during Treatment/Diagnosis/ Quarantine of COVID-19 Patients" has been revised 4 times since March 2020, looking at the requirements of COVID-19 Pandemic situation and learnings from national and international knowledge resources. Revision-4 of said guidelines was issued on 17.07.2020, with additional guidance on following aspects;

- (i) Guidance for temporary Healthcare Facilities like railway coaches, COVID care centers etc.
- (ii) Segregation of general waste and medical waste in COVID19 isolation wards.
- (iii) Requirement of separate space for storage of COVID-19 biomedical waste temporarily in Healthcare Facility.
- (iv) Safe disposal of used mask or gloves by general public other than COVID-19 positive patient at households.
- (v) Disposal of PPEs at Commercial Places, Material Recovery Facilities for general waste and Crematorium/graveyards.

A copy of CPCB Guidelines "Handling, Treatment and Disposal of Waste Generated during Treatment/Diagnosis/ Quarantine of COVID-19 Patients" : Revision 4 is given at **Annexure VI**.

5.2 Meeting of High Level Task Team:

Central Pollution Control Board has constituted a High Level Task Team (hereafter will be referred as HLTT) under Chairman, CPCB to review the COVID-19 waste management across the Country. 1st review meeting was held on 26.05.2020 with State Government Departments of Environment, Health and Urban Development, and SPCBs/PCCs to discuss management of COVID-19 waste in respective State / Union Territory. Task team has reviewed the status and emphasised the need

for complying with guidelines issued by CPCB. Action points decided by Task Team were circulated to State Government for ensuring scientific disposal of COVID-19 biomedical waste.

2nd meeting of High Level Task Team was held on 24.09.2020 wherein status of COVID-19 biomedical waste management was discussed with Chairman and Member Secretaries of SPCB and PCCs. Chairman, HLTT has reviewed state-wise implementation status, including following action points:

- Use of CPCB tracking App. for COVID19 waste.
- Facilitate use of alternative incinerators for disposal of biomedical waste, where waste quantities beyond capacity of CBWTFs is generated.
- Compliance to CPCB guidelines.
- Preparation of District level model.
- Monitoring of Illegal Disposal of Biomedical waste

Recommendations of HLTT along with State-wise action areas for improvement were forwarded to SPCBs/PCCs vide email dated 20.10.2020. Copy of the same given at **Annexure VII**.

5.3 Implementation of COVID19BWM Tracking Application:

Within a period of 2 weeks CPCB has developed an online “Tracking App” for collection and disposal of COVID-19 biomedical waste, the App is called ‘COVID19BWM’. The 1st version of the Mobile App has been introduced and a demonstration was given to SPCBs/PCCs on 06/05/2020. Thereafter, a separate web-portal has also been created to monitor data pertaining to Mobile Tracking App, being used by healthcare facilities, waste collectors and CBWTFs. Access to Web-portal is given to SPCBs/PCCs and CBWTFs.

Details on usage of Tracking App, in the Country is given below;

COVID-19 BMW generation (January, 2021) : 95 – 120 MT/Day

(Quantity of generation varied between 95 - 220TPD between June’19 – January’21)

No. of CBWTFs used for disposal of COVID-19 BMW	: 198
No. of CBWTFs using COVID19 BWM App	: 184
No. of generators using COVID19 BWM App	: 8,159

5.4 Action taken by CPCB against defaulting Facilities:

CPCB vide letter dated 30.05.2020 informed every CBWTF operator in States and Union Territories to use the COVID19BWM Tracking App. Show-cause notices under Section 5 of E(P) Act, were issued to 206 CBWTFs for not using the Tracking App, vide letter dated 21.07.2020, asking to explain the reason why Environmental Compensation should not be imposed for failing to comply with CPB guidelines.

Further, based on the reply received from CBWTF operators, CPCB vide letter dated 29.09.2020 Issued directions under section 5 of Environment (Protection) Act, 1986 to 33 non-complying CBWTFs imposing Environmental Compensation of Rs. 3,000/- per day w.e.f. 30.06.2020. At present, 184 out of 198 facilities are using the Tracking App.

As per request of CBWTF Association of India, Chairman, CPCB held a meeting with Association to discuss compliance to afore-said CPCB directions, wherein Chairman has confirmed that action as per law will be taken for violation of provisions under BMW Rules, 2016 and CPCB guidelines.

5.5 COVID19 BMW Generation and Adequacy of Treatment Facilities

- (i) As per the information submitted by SPCBs/PCCs, 198 Common Biomedical Waste Treatment Facilities are providing service for collection, transportation, treatment and disposal of biomedical waste including COVID-19 waste.
- (ii) As per the status reports submitted by SPCBs/PCC [as on December, 2020], the quantity of COVID waste in December month is about 146MT/day, apart from it, about 615 tons/day of regular biomedical waste is also generated. This would require incineration of about 456 MT/day out of 761 MT/day of total generation.
- (iii) CBWTFs in the country have a cumulative incineration capacity of 840 tons/day, which is adequate to dispose incinerable fraction of COVID19 waste in present situation. However, in localised situations of high incidences of COVID19 disease, the nearby capacity of CBWTFs may not be adequate. Such situation prevailed at cities namely Pune, Chennai and Salem, where Maharashtra and Tamil Nadu SPCBs had allowed the nearby common hazardous waste incinerators at TSDFs for disposal of BMW. At present situation some quantity of excess COVID19 BMW is still being sent to common hazardous waste incinerators at Taloja, Mumbai and Gummidipundi, Chennai.

State wise details on COVID waste generation with treatment capacity utilization is given in table below:

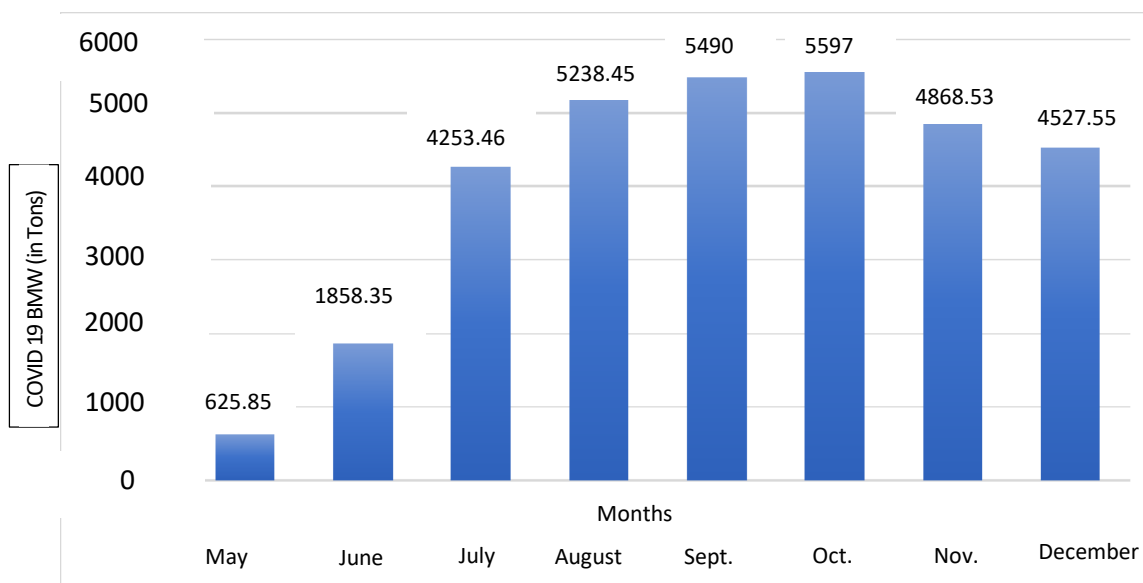
S.No	Name of State	Non-COVID BMW generation (Tons/day)	COVID BMW generated (Tons/day)	Total Quantity of BMW	Number of CBWTFs engaged
1	Andaman and Nicobar Islands	0.67	0.014	0.2	no CBWTF
2	Andhra Pradesh	15.05	10.597	25.7	11

3	Arunachal Pradesh	0.40	0.112	1.0	no CBWTF
4	Assam	8.82	0.755	8.6	1
5	Bihar	34.81	0.752	35.6	4
6	Chandigarh	3.87	2.361	5.6	1
7	Chhattisgarh	3.74	0.31	16.4	2
8	Dadar Nagar Haveli	0.30	0.037	0.3	1
9	Delhi	28.79	10.365	37.2	2
10	Goa	1.49	0.174	2.0	no CBWTF
11	Gujarat	36.42	15.470	50.5	20
12	Haryana	14.81	6.772	21.0	11
13	Himachal Pradesh	3.41	1.556	4.2	2
14	Jammu and Kashmir	5.90	1.133	13.9	2
15	Jharkhand	7.26	0.375	4.9	2
16	Karnataka	77.55	7.033	72.6	25
17	Kerala	42.93	17.499	89.5	1
18	Lakshadweep	0.10	0.01	72.0	no CBWTF
19	Madhya Pradesh	17.85	8.048	23.8	14
20	Maharashtra	62.25	20.3	82.7	29
21	Manipur	0.95	0.299	1.4	1
22	Meghalaya	1.22	0.276	1.7	2
23	Mizoram	0.94	0.104	0.9	no CBWTF
24	Nagaland	0.63	0.074	0.2	no CBWTF
25	Odisha	17.99	4.051	18.7	4
26	Puducherry	5.90	0.552	4.9	3
27	Punjab	16.05	2.806	18.8	5
28	Rajasthan	20.69	3.417	25.7	8
29	Sikkim	0.48	0.079	0.5	no CBWTF
30	Tamil Nadu	58.27	8.104	55.3	9
31	Telangana	20.47	2.220	18.4	11
32	Tripura	1.40	0.015	1.4	1
33	Uttarakhand	3.81	2.460	6.6	2
34	Uttar Pradesh	52.50	8.918	61.4	18
35	West Bengal	41.57	9.002	43.1	6

(iv) The present generation of 615 MT/day of regular biomedical waste may look adequate at national perspective, however, at individual State's level availability of CBWTFs may vary. It is evident from the fact that despite having CBWTFs, States namely Assam, Himachal Pradesh, Jharkhand, Kerala, Madhya Pradesh, Manipur, Meghalaya, Odisha, Puducherry, Rajasthan, Tamil Nadu and Uttarakhand still use deep burial pits for disposal of BMW as the existing CBWTFs fail to cover entire State.

(v) With inclusion of COVID19 waste, States namely Assam, Bihar, Jammu & Kashmir, Kerala, Meghalaya, Odisha, and Uttarakhand do not have adequate incineration capacity with Common Biomedical Waste Treatment Facilities, hence respective State Boards should initiate for setting up of new CBWTFs.

(vi) Real-time generation of COVID19 waste is being tracked through Tracking App. The data from App indicates that, the quantity of waste is peaked during July – October, 2020 and thereafter, there is gradual reduction by December, 2020. Variations in quantity generated is attributed to decrease in number of COVID cases. A graph showing generation trend is given below:



Note: There may also be less number of users during May and June

5.6 Check-list for Monitoring compliance by CBWTFs:

Few incidents of illegal dumping of biomedical waste was reported during COVID Pandemic. In one of the cases, Hon'ble NGT took suo-moto cognizance of illegal disposal of biomedical waste by a CBWTF, in Original Application No. 110 of 2020. In its Order dated 20.07.2020, Hon'ble NGT directed CPCB to prepare separate guidelines to improve monitoring system for Common Biomedical Waste Treatment Facilities.

Accordingly, CPCB has prepared guidelines for monitoring operations as well as compliance of CBWTFs along with checklist for evaluating performance of CBWTFs by SPCBs/PCCs. These guidelines have been circulated to all SPCBs/PCCs with request to ensure close monitoring as per checklist. Copy of said guidelines is given at **Annexure VIII**.

5.7 Awareness Programs

CPCB has prepared awareness material in the form of infographics and shared the same at CPCB website. The content was also shared on CPCB's Social Media accounts. CPCB has also uploaded an awareness video prepared by UNIDO in collaboration with MoEF&CC, as per CPCB's guidelines.

In the month of September Senior Scientist from CPCB has given an interactive talk on Biomedical Waste Management during COVID-19 Pandemic on Vigyan Prasar, Department of Science & Technology. Said Programme was e-telecasted on their website. Another interactive session on "COVID-19 Medical Waste Management" was

also given on Doordarshan on 08th January, 2021 which shall be telecasted during month of January, 2021.

6. Conclusion & Remarks

- **States like Andaman & Nicobar, Arunachal Pradesh, Daman & Diu, Goa, Lakshadweep, Mizoram, Nagaland, Sikkim and Tripura do not have Common Biomedical Waste Treatment Facility to treat and dispose the biomedical waste. Respective State Boards should initiate steps to set up Common Treatment Facilities so as to avoid usage of deep burial pits in long term.**
- **State namely Assam, Bihar, Jammu & Kashmir, Kerala, Meghalaya, Odisha and Uttarakhand should examine the existing treatment capacity with Common Treatment Facilities and may facilitate setting up of more treatment facilities to cater biomedical waste generation including COVID19 waste.**
- **As per the status reports received from SPCBs, guidelines issued by CPCB have been followed in every State/UT and the COVID19 biomedical waste is being treated & disposed of through Common Biomedical Waste Treatment Facilities and other authorized facilities.**
- **Capacity of incinerators operated by Common Facilities across the Country has been adequate during the pandemic situation except in few cities namely Thane, Pune and Chennai. The existing capacity of CBWTFs in such cities needs to be upgraded.**
- **The initial situation in cities like Delhi was improved after effective segregation of solid waste.**
- **Real-time generation of COVID19 waste is being tracked effectively through CPVID19BMW tracking App developed by CPCB. Usage of this App may continue till prevalence of the pandemic situation.**
- **18 out of 198 CBWTFs located in Bihar, Gujarat, Jharkhand, Karnataka, Madhya Pradesh, Maharashtra, Odisha and Uttar Pradesh States/UTs have not yet started using COVID19BWM Application for tracking of COVID-19 biomedical waste. SPCBs/PCCs may ensure compliance by those facilities also.**
- **Localized high incidences of COVID19 disease, may lead to a situation where the capacity of CBWTFs in coverage area may**

become inadequate, and in such cases SPCBs and PCCs are required to act proactively and facilitate sending excess biomedical waste to nearby common hazardous waste incinerators at TSDFs or industrial incinerators.

- ***State Boards namely Andhra Pradesh, Bihar, Chandigarh, Delhi, Gujarat, Karnataka, Kerala, Madhya Pradesh, Punjab, Tamil Nadu, Telangana and Uttar Pradesh confirmed that deep burials are not being used for disposal of COVID-19 biomedical waste.***
- ***All SPCBs/PCCs may continue to monitor COVID19 waste closely till the end of pandemic situation.”***

8. In view of above, further follow up action may be taken by all the States and UTs, which may be further monitored by the CPCB. The Chief Secretaries of all the States/UTs may, while reviewing the COVID situation, also review the status of compliance of the COVID related Bio-medical Waste Management at least once in every month, till the situation so requires.

9. We have perused the affidavit filed on behalf of the MoEF&CC on 13.01.2021 which is in substance based on the report of the CPCB.

10. The Oversight Committee for environmental issues in the State of UP, set up by this Tribunal headed by Justice SVS Rathore, a former Judge of Allahabad High Court at Lucknow, has also filed its report on 08.01.2021 about the compliance status in the State of UP. The recommendations in the report are :-

“VII. RECOMMENDATIONS BY THE OVERSIGHT COMMITTEE

In view of the above, we recommend as follows:

1. *Although the directions have been issued by UPPCB for registration of all waste generators in COVID19 BMW mobile application developed by CPCB to ensure proper collection, transportation, treatment and disposal of BMW/Covid-19 waste. The SPCB may be directed to ensure the registration of all health care facilities/institutions including quarantine*

centers and pathological labs on the above portal and proper training must also be provided to the concerned persons regarding the uploading of COVID-19 waste generated by them.

2. *As far as the implementation of barcoding for colored bags and containers containing BMW is concerned, a pilot scale project has been taken up in Lucknow district. For scaling up of the project to the entire State, the bid has been finalized and the contract has been provided to service provider. The Health Department may be directed to complete the work for implementation of barcoding and tracking of vehicles through GPS within a month positively.*
3. *In compliance with the Biomedical Waste Management Rules, 2016, every biomedical waste management facility must obtain authorization from State Pollution Control Board. At present, there are 25,411 (bedded: 13,670; Non-bedded: 11,741) Health care facilities. Of these, 21,531 (bedded: 11,434; Non-bedded: 10,097) have been authorized by the State Pollution Control Board and notice has been sent to all unauthorized HCFs. The SPCB may be directed to inspect these facilities immediately and issue authorizations provided they are fully compliant. The responsibility for non-compliance should be fixed.*
4. *With regard to the implementation of Biomedical Waste Management Rule, 2016, installation of ETP is mandatory for above 10-bedded hospitals. It was informed that due to some litigation the work of ETP installation has stopped. UP Jal Nigam may be directed to resolve the issue and expedite the process of ETP construction and complete the work within the specified time duration.*
5. *In compliance with BMW Rules 2016, disposal of BMW by deep burial is permitted only in rural or remote areas where there is no access to common bio-medical waste treatment facility. The Health Department/concerned department may be directed to follow the provisions and guidelines issued by CPCB from time to time and standards mentioned in Schedule III of BMW Rules 2016 for such facility.*
6. *In compliance with the Biomedical Waste Management Rules, 2016, no information is being provided by the AYUSH hospitals. Chief Secretary, U.P. may be directed to monitor the progress with Principal Secretary of Medical Education and AYUSH Department. Since Health Department is the nodal department, both Medical Education and AYUSH Department should send their information to Health Department where it can be compiled for further communication.*
7. *The CPCB may be directed to lay down standard for new technologies for treatment and disposal of biomedical waste and prescribe specifications for treatment and disposal of biomedical wastes. Further, the CPCB may also be directed to undertake or support research regarding biomedical waste.*

8. *The SPCB may be directed to grant and renewal, suspension or refusal cancellation or of authorisation under Rule 7, 8 and 10 of BMW Rules, 2016. Further, SPCB may also be directed to regularly monitor the compliance of various provisions and conditions of authorization.*
9. *State PCB may be directed to ensure the implementation of Biomedical Waste Management Rules 2016 and recommendations of the Advisory Committee in all health care facilities.*
10. *As far as liquid waste is concerned, steps should be taken to disinfect the treated liquid waste before its reuse for irrigation or similar other purposes.*
11. *The instances of improper disposal of PPE kits and other such materials highlight the loophole in the management of the BMW waste. It must be ensured that such incidents should not happen. All stakeholders dealing with the collection, transportation and treatment of BMW waste must be made accountable for the slightest negligence in the management of COVID-19 waste.*
12. *All hospital housekeepers, sanitation workers and other staff dealing with handling and management of BMW/COVID-19 waste shall be provided with regular free health checkups and treatment if any required from the respective HCFs where they are working.*
13. *The SOPs for home quarantine have been prepared by UPPCB/UDD, while the local public is unaware about the handling and disposal of the generated COVID waste. The UDD/UPPCB may be directed to issue a service helpline number for public for COVID-19 waste related issues. Further, the UDD may also be directed to ensure door to door collection facility of COVID waste based on Ghaziabad model.*
14. *For non-compliance with BMW Rules, 2016, notices have been issued against 3880 HCFs. Prosecutions has been filed against 04 HCFs and 03 CBWTFs under Section 15 of EPA, 1986, and show cause notices have been issued against 27 HCFs under EPA, 1986. The State PCB may be directed to initiate action under the law against the noncompliant units.*
15. *EC of Rs. 7.60 Cr and Rs. 1.43 Cr have been imposed against 141 HCFs and 08 CBWTFs, respectively. The imposed penalty has yet not been realized. State PCB may be directed to take necessary action and ensure realization of EC as per the prescribed procedure.*
16. *The meetings of the State Advisory Committee and District Advisory Committee should take place regularly to monitor and ensure compliance of the BMW Rules, 2016 in general and COVID-19 guidelines in particular.*
17. *All the HCFs where the collection sheds are under construction shall ensure that no waste should be stored at their premises. They should regularly hand over their waste to the service provider for proper treatment and disposal on day to day basis.*

- 18. The instances of improper disposal of PPE kits, gloves, face masks and face shields used by general public is commonly reported. An important aspect in handling COVID-19 waste is making public aware about the procedure to handle and dispose such wastes. SPCB/UDD may be directed to launch IEC campaigns through visual media, print media, spot hoardings billboards, pamphlets and newspapers to educate people about the management and disposal of such wastes.**
- 19. The process of conversion of COVID waste into clean energy i.e. hydrogen fuel using sunlight by the technique of photo reforming based on Welsh Government model may also be explored in India.**
- 20. The conversion of COVID-19 related biomedical wastes such as PPE kits and face masks into construction bricks as per the approach undertaken by Mr. Binish Desai, The Recycle Man of India. Other industries or waste management startups may also be promoted to convert biomedical/COVID-19 waste into eco-friendly construction material.**
- 21. The approach for conversion of COVID-19 related plastic waste into construction of bituminous road and partial replacement of cement in concrete may also be explored and researched.”**

11. The report is accepted and further action may be taken in terms of the recommendations by the concerned authorities in the State of UP, which may be monitored by the Chief Secretary, UP. Apart from the action to be taken in the State of UP, all the States/UTs may take further follow up action in terms of para 8 above which may be reviewed by the Chief Secretaries of all the States/UTs and also monitored by the CPCB at the national level.

The application stands disposed of accordingly.

A copy of this order be forwarded to the Chief Secretaries of all the States/UTs and the CPCB by e-mail for compliance.

Adarsh Kumar Goel, CP

S.K. Singh, JM

Dr. Nagin Nanda, EM

January 18, 2021
Original Application No. 72/2020
SN