

## CENTRAL POLLUTION CONTROL BOARD

(Waste Management Division-Bio-medical Waste)

DELHI – 110 032

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### **Subject: Status on Bio-medical Waste Management Scenario and recommendations for ensuring compliance to the Bio-medical Waste Management Rules, 2016.**

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#### **1. Introduction to the Bio-medical Waste Management Rules, 2016:**

Bio-medical Waste Management Rules, 2016 (BMWM Rules, 2016) came into force with effect from 28.03.2016. These rules are notified by the Ministry of Environment Forest & Climate Change (MoEF & CC) under the Environment (Protection) Act, 1986 in suppression of the Bio-medical Waste (Management & Handling) Rules, 1998 as amended. As per BMWM Rules, 2016, the State Pollution Control Board (SPCB) in the respective State and Pollution Control Committee (PCC) in the respective UT as well as Director General Armed Forces Medical Services (DGAFMS) in respect of the Armed Forces Health Care Establishments (AFHCEs) under the jurisdiction of the Ministry of Defence have been notified as the 'Prescribed Authority' for overall enforcement of the said Rules. As per Rule 13 (1) of the said BMWM Rules, 2016, all SPCBs and PCCs as well as Director General of Armed Forces Medical Services (DGAFMS) are required to submit annual report information for the previous calendar year in a compiled form to the Central Pollution Control Board (CPCB), on or before 31<sup>st</sup> July of every year.

#### **2. Bio-medical Waste Management Scenario:**

The annual report information on bio-medical waste management for the year 2015 has been received from most of the SPCBs/PCCs and DGAFMS except from Haryana Pollution Control Board & Lakshadweep Pollution Control Committee. As per the compiled annual report information for the year 2015, there are 1,88,098 no. of Health Care Facilities (HCFs) having 17,61,316 beds and generating bio-medical waste at about 501 Tonnes per day. 99,945 no. of HCFs have obtained authorization under the BMW Rules. There are 203 no. of CBWTFs in operation ( 32 under construction) and 21,462 no. of HCFs are having captive bio-medical waste treatment and disposal facilities, which are involved in treatment and disposal of 486 out of 501 Tonnes per day bio-medical waste. As reported, 6,074 no. of HCFs/CBWTFs observed to be violating the provisions of the BMW Rules. The detailed bio-medical waste management scenario in the Country (**Annexure-I**) is given below:

➤ No. of healthcare facilities	: 1,88,098
➤ No. of beds	: 17,61,316
➤ No. of Common Bio-medical Waste Treatment Facilities (CBWTFs)	: 203* + 32**
➤ No. of healthcare facilities (HCFs) using CBWTFs	: 1,51,854
➤ No. of HCFs having treatment & disposal facilities	: 21,462

➤ No. of healthcare facilities granted authorization	: 99,945
➤ Total no. of on-site/captive treatment equipment installed (excluding CBWTFs) by the HCFs:	
• No. of incinerators	
i) With Air Pollution Control Device	: 337
(ii) Without Air Pollution Control Device	: 38
• No. of autoclaves	: 3,889
• No. of microwaves	: 143
• No. of Hydroclave	: 07
• No. of Shredders	: 7,662
• No. of deep burial	: 17,474
➤ Total no. of treatment equipment installed by the CBWTFs:	
• No. of incinerators	: 227
• No. of autoclaves	: 233
• No. of microwaves	: 08
• No. of Hydroclave	: 04
• No. of Shredders	: 253
➤ Quantity of bio-medical waste generated in Tonnes/day	: 501
➤ Quantity of bio-medical waste treated in Tonnes/day	: 486
➤ No. of HCFs violated BMW Rules	: 6,074
➤ No. of Show-cause notices/Directions issued to defaulter HCFs	: 5,103

**Note:** (i) \* - CBWTFs in operation (ii) \*\* - CBWTFs under installation  
 (iii) The information in respect of the Lakshadweep State has been included as per the Annual Report submitted for the year 2014.

### 3. Annual Report Information – A Comparison:

<u>Particulars</u>	As per Annual Report Information for the year 2014	As per Annual Report Information for the year 2015
<b>No. of healthcare facilities</b>	1,69,913	1,88,098
<b>No. of beds</b>	17,86,108	17,61,316
<b>No. of Common Bio-medical Waste Treatment Facilities (CBWTFs)</b>	191+33	203+32
<b>No. of healthcare facilities (HCFs) using CBWTFs</b>	1,38,001	1,51,854
<b>No. of HCFs having treatment &amp; disposal facilities</b>	21,491	21,462
<b>No. of healthcare facilities applied for authorization</b>	1,11,690	1,42,916
<b>No. of healthcare facilities granted authorization</b>	1,18,964	99,945

<b>Total no. of on-site/captive treatment equipment installed (excluding CBWTFs) by the HCFs:</b>		
• <b>No. of incinerators</b>		
i) <b>With Air Pollution Control Device</b>	358	337
(ii) <b>Without Air Pollution Control Device</b>	82	38
• <b>No. of autoclaves</b>	2,634	3,889
• <b>No. of microwaves</b>	317	143
• <b>No. of Hydroclave</b>	02	07
• <b>No. of Shredders</b>	2,722	7,662
<b>Total no. of treatment equipment installed by the CBWTFs:</b>		
• <b>No. of incinerators</b>	215	227
• <b>No. of autoclaves</b>	202	233
• <b>No. of microwaves</b>	04	08
• <b>No. of Hydroclave</b>	02	04
• <b>No. of Shredders</b>	218	253
<b>Quantity of bio-medical waste generated in Tonnes/day</b>	495	501
<b>Quantity of bio-medical waste treated in Tonnes/day</b>	462	486
<b>No. of HCFs/CBWTFs violated BMW Rules</b>	5,980	6,074
<b>No. of Show-cause notices/Directions issued to defaulter HCFs/CBWTFs</b>	4,965	5,103

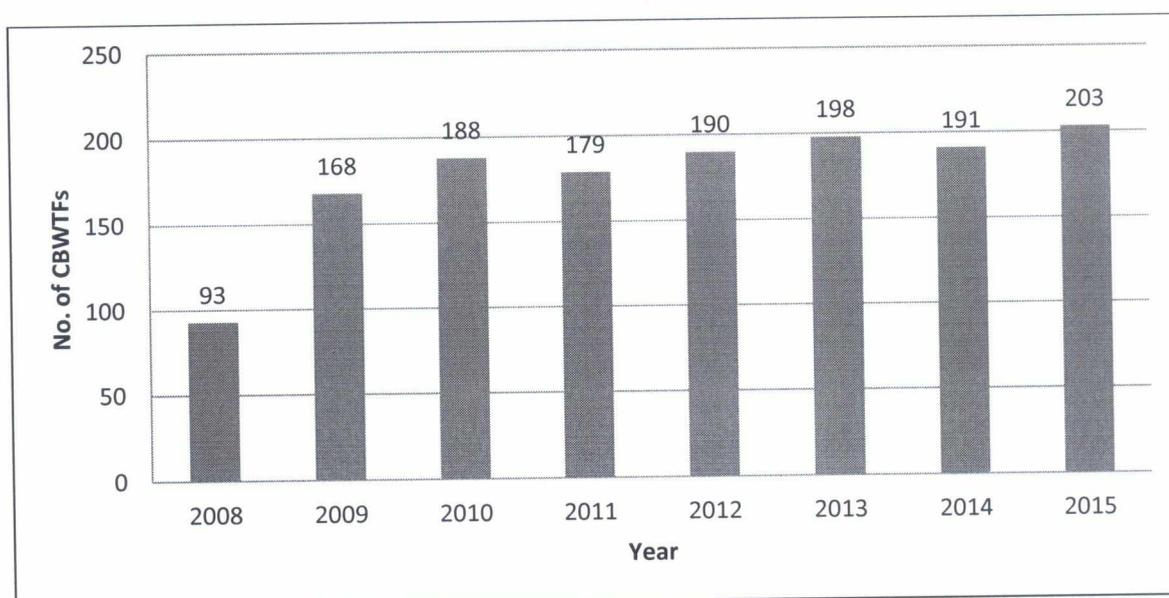
The comparison between the Annual Report Information for the year 2014 and 2015 reveals the following:

- There has been an increase of 18,185 (10.70%) number of Healthcare Facilities (HCFs) in the year 2015 as compared to the no. of HCFs reported for the year 2014.
- Simultaneously, there has been an increase in total bio-medical waste generation from 495 Tonnes per day to 501 Tonnes per day in the year 2015.
- As per the AR-2015, about 97 % of generated bio-medical waste is treated & disposed off.
- To facilitate the treatment and disposal of bio-medical waste generated from the HCFs, there are 203 no. of Common Bio-medical Waste Treatment Facilities (CBWTFs) in operation and 32 no. of CBWTFs under construction.

- During the year 2014 to 2015, no. of captive treatment & disposal facilities operated by the HCFs has been observed to be decreased from 21,491 to 21,462 and similarly, number of captive incinerators without Air Pollution Control Devices operated by the HCFs has been decreased from 82 to 38.
- No. of HCFs/CBWTFs violating the provisions of BMW Rules in 2015 has been increased from 5980 in the year 2014 to 6074 in the year 2015.

#### 4. Common Bio-medical Waste Treatment Facilities:

There has been an increase in number of CBWTFs over the years. Figure indicating year-wise growth in CBWTFs in the Country is shown in **Figure 1**. At present there are 203 no. of CBWTFs in operation and 32 no. of CBWTFs under construction, as reported by SPCBs/PCCs. Though CBWTFs are widely accepted by the HCFs for the treatment & disposal of bio-medical waste, still there are some States/Union Territories which are yet to develop the CBWTFs in their respective States/UTs.



**Figure: 1. Year-wise Status of Common Bio-medical Waste Treatment Facilities**

CPCB has carried out joint inspection of CBWTFs to verify compliance to the provisions of BMW Rules & CPCB guidelines wherein various non-compliances have been observed. Following are the major observations in CBWTFs which are not complied w.r.to the BMW Rules & CPCB guidelines:

1. Some of the CBWTFs are in operation without having valid authorization as required under Bio-medical Waste (Management & Handling) Rules, 1998;
2. Collection of mixed waste from the member HCFs & manual segregation of waste inside the facilities;
3. Separate spacing for storage of treatment equipment, bio-medical waste storage room etc.;

4. Interlocked Programmable Logic Control (PLC) based waste feeding system and recording system with the incinerator;
5. Devices for measuring negative draft in primary chamber, air flow rate in the incinerator chamber and pressure drop across venturi scrubber;
6. Operation of the incinerator in accordance with the provisions as stipulated under BMW Rules;
7. Stack monitoring provision (such as platform, porthole etc.) with the incinerator stack;
8. Flue gas analyser for measurement of CO, O<sub>2</sub> & CO<sub>2</sub> level in the stack gases;
9. Installation of online monitoring system for bio-medical waste incinerators.
10. Recording system for autoclave for operational parameters such as batch number, temperature, pressure, start and end of sterilization of the autoclave as well as validation test to check the efficacy of autoclave;
11. Provision for mechanical feeding system with the autoclave is not installed as required under CPCB guidelines;
12. Provision for disposal of sharp waste in sharp-pit/encapsulation facility and pit for disposal of ash etc.

Respective SPCB/PCC is required to ensure that all the Common Bio-medical Waste Treatment Facilities (CBWTFs) comply with the provisions of Bio-medical Waste (Management & Handling) Rules, 1998 as well as CPCB guidelines.

#### 5. Issues and Recommendations on Bio-medical Waste Management:

S. No.	Particulars	Issues	Recommendations
1	<b>Non-submission of Annual Report within the due date (i.e., by 31<sup>st</sup> March of every year)</b>	The annual report information is not submitted regularly within the due date (by 31 <sup>st</sup> March every year as per earlier BMW Rules, 1998 and 30 <sup>th</sup> of June of every year as per BMW Rules, 2016) by most of the SPCBs/PCCs thereby making it difficult to compile the national status on bio-medical waste management scenario and its submission to MoEF & CC within the due date of 31 <sup>st</sup> August of every year.	SPCBs/PCCs should direct all the HCFs/CBWTFs located in the respective State/UT for submission of Annual Report in light of the format circulated by CPCB, by 30 <sup>th</sup> of June of every year in accordance with BMW Rules.
2	<b>Operation of Healthcare Facilities without Authorization under BMW Rules</b>	As per Annual Report Information for the year 2015, there are 42,971 out of 1,42,916 no. of Healthcare Facilities (HCFs) which are operating without obtaining	All the HCFs irrespective of type of treatment and quantity of bio-medical waste generated and which are in operation without obtaining authorization

		Authorization under BMW Rules. Such HCFs needs to obtain authorization under BMWM Rules.	under BMWM Rules, 2016 should be directed to obtain authorization from the prescribed authority in compliance to the BMWM Rules, 2016. Also, all the HCFs should be directed to take adequate steps and to take a membership from the nearby CBWTF for safe and environmentally sound disposal of bio-medical waste generated by such HCFs.
3	<b>Captive Incinerators in violation of BMW Rules</b>	There are 375 no. of captive incinerators out of which 38 no. of captive incinerator are operating without APCD or may be having single chamber which are in violation of BMWM Rules, in the States like Arunachal Pradesh, Assam, Jharkhand, Jammu & Kashmir, Kerala, Lakshadweep, Nagaland, Puducherry and Sikkim. Such, captive incinerators need to be closed by the respective SPCB/PCC.	All the Captive BMW Incinerators operated by the HCFs, which are either single chamber or not connected with adequate APCD should be directed to upgrade with immediate effect, failing which action should be taken by the respective SPCB/PCC for closure of such captive incinerators.
4	<b>States/UTs which are yet to develop CBWTFs in the respective State/UT</b>	<i>06 States namely Arunachal Pradesh, Goa, Manipur, Mizoram, Nagaland &amp; Sikkim and 02 UTs namely Andaman &amp; Nicobar Islands and Lakshadweep</i> where, are yet to develop CBWTFs in the respective State/UT.	Also, respective SPCB/PCC may request the concerned department in the business allocation of land assignment for providing suitable site for setting up of common biomedical waste treatment and disposal facility in the State Government or Union territory Administration in compliance to the BMWM Rules, 2016.  Action should also be taken by the SPCBs namely Arunachal Pradesh, Goa, Manipur, Mizoram, Nagaland & Sikkim as well as PCCs namely Andaman & Nicobar Islands, Lakshadweep for

			Development of Common Bio-medical Waste Treatment and Disposal Facilities (CBWTFs) under PPP mode in the respective State/UT. Alternately, SPCB/PCC may direct the HCFs to form association and to develop a CBWTF for ensuring treatment and disposal of bio-medical waste as per BMWM Rules.
5	<b>Installation of ETP/STP by the Healthcare Facilities</b>	Many of the HCFs have not installed ETPs/STPs for ensuring proper treatment of liquid waste generated the HCFs in compliance to the discharge norms stipulated under Schedule II of the BMWM Rules, 2016.	All the HCFs be directed to ensure compliance to the liquid waste discharge norms stipulated under Schedule II of the BMWM Rules, 2016 by installing adequate STP/ETP.
6	<b>Bio-medical Waste Handling by the Healthcare Facilities</b>	During the inspection of some of the Healthcare Facilities, it has been observed by CPCB that the HCFs are not properly handling the bio-medical waste which include segregation of bio-medical waste at source, temporary storage and disposal of the waste in accordance with the BMWM Rules.	All the SPCBs and PCCs should ensure that the HCFs have adequate facilities for on-site segregation, intra-mural movement and safe storage of Bio-medical waste, prior to sending the waste to the CBWTFs.
7	<b>Mercury waste disposal</b>	Awareness with regard to the mercury spillage collection, storage of collected mercury spills and final disposal	The HCFs need to take action for switch over to the non-mercury based medical instruments. Also, the HCFs have to take action for proper collection, storage and disposal of mercury bearing waste generated with the CPCB guidelines.

## Annual Report Information on Bio-medical Waste Management for the Year 2015 (as submitted by SPCBs/PCCs and DGAFMS) (updated as on 13.04.2017)

S.No.	Name of the State/UT/D GAFMS (Date of submission of Annual Report)	Total no. of Healthcare Facilities (HCFs)	Total no. of Beds (Approx.)		No. of Common Bio-medical Waste Treatment Facilities (CBWTFs)/ Private agencies		No. of HCFs utilizing CBWTFs/private agencies	No. of HCFs having own Treatment and Disposal facilities	Authorization Status				Total no. of on-site treatment equipment (Excluding CBWTF) installed by HCFs						Total no. of treatment equipment installed at CBWTFs					Total Quantity of BMW generated (kg/day) (Approximately)	Total Quantity of BMW treated (kg/day) (Approximately)	No. of HCFs/CBWTFs violated BMW Rules	Total No. of Show cause notices/Directions issued to defaulter HCFs/CBWTFs
			Operational	Under Construction	No. of HCFs require Authorization under BMW Rules	No. of HCFs does not require Authorization under BMW Rules			No. of HCFs applied for Authorization	No. of HCFs granted Authorization	Incinerator		Autoclave	Microwave	Hydroclave	Shredder	Deep Burial	Incinerator	Autoclave	Microwave	Hydroclave	Shredder					
											With APCD	Without APCD															
(i)	(ii)	(iii)	(iv)	(v)	(vi)	(vii)	(viii)	(ix)	(x)	(xi)	(xii)	(xiii)	(xiv)	(xv)	(xvi)	(xvii)	(xviii)	(xix)	(xx)	(xxi)	(xxii)	(xxiii)	(xxiv)	(xxv)	(xxvi)	(xxvii)	(xxviii)
1	Andaman & Nicobar (06.04.2016)	35	1065	00	00	00	30	01	00	01	01	06	00	07	00	00	43	22	00	00	00	00	00	287.5	287.5	00	00
2	Andhra Pradesh (21.07.2016)	5044	96592	09	02	5044	01	4788	256	4788	4671	01	00	01	00	00	01	00	09	09	00	00	09	8415	8415	312	313
3	Arunachal Pradesh (04.04.2016)	11	623	00	0	00	05	02	INP	10	10	05	02	11	00	00	45	00	00	00	00	00	00	63	63	00	0
4	Assam (05.11.2016)	955	22739	01	01	245	221 <sup>#</sup>	732	223	190	59	28	11	231	03	01	95	148	02	02	00	00	02	6885.25	6869.25	05	05
5	Bihar (31.03.2016)	382	5341	03	01	303	79	INP	INP	382	328	03	00	03	00	00	03	79	03	03	00	00	03	1390.18	1390.18	153	153
6	Chandigarh (21.03.2016)	780	4041	02	00	775	03	97	683	25	28	02	00	00	00	00	03	00	00	01	00	00	01	2134.68	2134.68	10	10
7	Chhattisgarh (19.12.2016)	1981	35025	04	01	925	753	568	220	1423	964	04	00	646	36	-	766	07	02	03	-	-	04	9263.76	9263.76	47	42

S.No.	Name of the State/UT/D GAFMS (Date of submission of Annual Report)	Total no. of Healthcare Facilities (HCFs)	Total no. of Beds (Approx.)		No. of Common Bio-medical Waste Treatment Facilities (CBWTFs)/ Private agencies		No. of HCFs utilizing CBWTFs/private agencies	No. of HCFs having own Treatment and Disposal facilities	Authorization Status				Total no. of on-site treatment equipment (Excluding CBWTF) installed by HCFs						Total no. of treatment equipment installed at CBWTFs					Total Quantity of BMW generated (kg/day) (Approximately)	Total Quantity of BMW treated (kg/day) (Approximately)	No. of HCFs/CBWTFs violated BMW Rules	Total No. of Show cause notices/Directions issued to defaulter HCFs/CBWTFs
			Operational	Under Construction	No. of HCFs require Authorization under BMW Rules	No. of HCFs does not require Authorization under BMW Rules			No. of HCFs applied for Authorization	No. of HCFs granted Authorization	Incinerator		Autoclave	Microwave	Hydroclave	Shredder	Deep Burial	Incinerator	Autoclave	Microwave	Hydroclave	Shredder					
											With APCD	Without APCD															
(i)	(ii)	(iii)	(iv)	(v)	(vi)	(vii)	(viii)	(ix)	(x)	(xi)	(xii)	(xiii)	(xiv)	(xv)	(xvi)	(xvii)	(xviii)	(xix)	(xx)	(xxi)	(xxii)	(xxiii)	(xxiv)	(xxv)	(xxvi)	(xxvii)	(xxviii)
8	Daman & Diu and Dadra & Nagar Haveli (07.05.2015)	208	580	01	00	145	00	INP	INP	75	63	00	00	00	00	00	00	00	01	01	00	00	04	251.64	251.64	00	05
9	Delhi (06.10.2016)	4197	48046	02	00	4197	08	611	1978	611	582	00	00	08	00	00	08	0	04	02	00	00	02	14644.71	14644.71	48	48
10	Goa (20.09.2016)	572	5181	Nil	00	00	541	572	INP	572	541	01	0	286	00	00	01	196	-	-	-	-	-	7922.4	7922.4	05	05
11	Gujarat (30.03.2016)	27022	170000	19	05	25198	00	20711	6311	5300	5139	00	00	08	00	00	613	00	22	21	00	00	26	32700	32700	509	509
12	Haryana (30.03.2017)	3050	45346	11	00	3050	00	2961	INP	3012	2959	00	00	00	00	00	00	00	11	11	Nil	Nil	11	10109	10109	00	02
13	Himachal Pradesh (31.03.2016)	764	12879	02	00	446	318	613	704	151	464	03	00	04	00	00	02	316	04	04	00	00	04	2049.5	2049.5	15	15
14	Jharkhand (12.05.2016)	1045	22900	01	00	455	359	1045	INP	370	407	15	02	93	00	01	307	25	02	02	00	00	02	9222.22	9222.22	11	150
15	J & K (27.01.2016)	1298	13323	04	00	406	141	947	351	385	258	08	01	37	00	-	02	133	04	03	01	--	03	4794.34	3409.34	596	53

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												With APCD	Without APCD														
(i)	(ii)	(iii)	(iv)	(v)	(vi)	(vii)	(viii)	(ix)	(x)	(xi)	(xii)	(xiii)	(xiv)	(xv)	(xvi)	(xvii)	(xviii)	(xix)	(xx)	(xxi)	(xxii)	(xxiii)	(xxiv)	(xxv)	(xxvi)	(xxvii)	(xxviii)
16	Karnataka (28.07.2016)	26724	171610	25	05	17494	9230	26724	-	-	26724	03	00	649	04	03	2642	9230	30	26	00	00	26	51560	51560	1416	1416
17	Kerala (13.01.2017)	7077	119667	01	-	6897	180	INP	INP	2585	2213	39	10	04	-	-	04	INP	05	05	00	00	03	53169.1	53169.1	62	62
18	Lakshadweep (22.09.2015)	20	250	00	00	00	11	11	INP	INP	INP	00	03	11	45	00	00	21	00	00	00	00	00	70	55	00	00
19	Madhya Pradesh (29.07.2016)	3002	77310	15	00	2848	154	3002	00	2688	2645	02	00	191	00	00	595	152	13	16	-	01	20	10714	10654	222	224
20	Maharashtra (25.01.2017)	62833	278867	37	03	51789	5717	45699	17134	INP	28441	08	00	396	02	00	2390	3404	42	43	01	01	43	62470	62204	390	392
21	Manipur (08.08.2016)	587	2692	00	00	26	562	59	528	50	49	04	00	25	00	00	00	568	01	01	01	00	01	372.55	372.55	09	00
22	Meghalaya (30.03.2016)	701	6385	01	00	21	680	185	516	128	128	05	00	00	00	00	01	680	01	00	00	00	00	1157.54	1157.54	00	05
23	Mizoram (31.03.2016)	104	2284	00	00	00	05	104	104	46	41	01	00	04	00	00	00	96	00	Nil	00	00	00	5378.58	5377.65	00	00
24	Nagaland (09.03.2016)	114	2211	00	00	00	113	INP	INP	113	113	INP	05	05	00	00	01	01	00	00	00	00	00	595	510	00	00

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				Operational	Under Construction			No. of HCFs require Authorization under BMW Rules	No. of HCFs does not require Authorization under BMW Rules	No. of HCFs applied for Authorization	No. of HCFs granted Authorization	Incinerator		Autoclave	Microwave	Hydroclave	Shredder	Deep Burial	Incinerator	Autoclave	Microwave	Hydroclave					Shredder
												With APCD	Without APCD														
(i)	(ii)	(iii)	(iv)	(v)	(vi)	(vii)	(viii)	(ix)	(x)	(xi)	(xii)	(xiii)	(xiv)	(xv)	(xvi)	(xvii)	(xviii)	(xix)	(xx)	(xxi)	(xxii)	(xxiii)	(xxiv)	(xxv)	(xxvi)	(xxvii)	(xxviii)
25	Odisha (31.03.2016)	1898	40948	04	00	366	1171	1901	01	818	895	04	00	1163	08	00	41	1167	06	03	04	00	08	12920.9	11832.40	140	166
26	Puducherry (08.04.2016)	140	11590	01	00	115	02	140	01	140	115	01	01	00	01	00	01	00	01	01	00	00	01	12863.6	12863.6	12	13
27	Punjab (21.03.2016)	5863	59055	04	00	5863	00	3763	3100	3763	3132	00	00	00	00	00	00	00	05	07	00	00	09	13148.1	13148.1	554	557
28	Rajasthan (04.08.2016)	5384	94961	10	07	3180	470**	5384	INP	4093	2317	00	00	00	00	00	00	470	12	14	00	00	12	19480.13	18917	374	395
29	Sikkim (18.04.2016)	36	1541	00	00	00	36	36	INP	31	31	07	03	17	05	00	11	00	00	00	00	00	00	423	423	00	01
30	Tamil Nadu (04.11.2016)	4765	138417	11	03	4765	00	3859	INP	3859	3695	00	NIL	00	00	00	00	00	10	12	00	00	15	43880	43880	04	04
31	Telangana (15.10.2016)	3833	95610	10	01	3618	00	3833	INP	INP	3618	00	00	00	00	00	00	00	10	18	-	-	18	8733.4	8606	98	514
32	Tripura (01.03.2016)	1298	4129	01	00	223	00	1298	00	1298	605	01	00	00	00	00	00	418	01	00	00	00	00	1378.5	1176.09	00	00
33	Uttrakhand (02.01.2017)	724	15553	02	00	436	258	724	00	410	286	04	00	07	01	01	03	258	03	02	01	01	03	2597	2597	281	02
34	Uttar Pradesh (07.02.2017)	8366	16489	16	00	7537	28	8366	00	5086	4254	28	00	20	00	01	19	82	16	16	00	01	16	37498	35816	755	36

S.No.	Name of the State/UT/D GAFMS (Date of submission of Annual Report)	Total no. of Healthcare Facilities (HCFs)	Total no. of Beds (Approx.)	No. of Common Bio-medical Waste Treatment Facilities (CBWTFs)/ Private agencies		No. of HCFs utilizing CBWTFs/private agencies	No. of HCFs having own Treatment and Disposal facilities	Authorization Status				Total no. of on-site treatment equipment (Excluding CBWTF) installed by HCFs						Total no. of treatment equipment installed at CBWTFs						Total Quantity of BMW generated (kg/day) (Approximately)	Total Quantity of BMW treated (kg/day) (Approximately)	No. of HCFs/CBWTFs violated BMW Rules	Total No. of Show cause notices/Directions issued to defaulter HCFs/CBWTFs
				Operational	Under Construction			No. of HCFs require Authorization under BMW Rules	No. of HCFs does not require Authorization under BMW Rules	No. of HCFs applied for Authorization	No. of HCFs granted Authorization	Incinerator		Autoclave	Microwave	Hydroclave	Shredder	Deep Burial	Incinerator	Autoclave	Microwave	Hydroclave	Shredder				
												With APCD	Without APCD														
(i)	(ii)	(iii)	(iv)	(v)	(vi)	(vii)	(viii)	(ix)	(x)	(xi)	(xii)	(xiii)	(xiv)	(xv)	(xvi)	(xvii)	(xviii)	(xix)	(xx)	(xxi)	(xxii)	(xxiii)	(xxiv)	(xxv)	(xxvi)	(xxvii)	(xxviii)
35	West Bengal (03.10.2016)	6879	103378	06	03	5460	7	3774	3105	3774	3763	01	-	04	02	-	05	01	07	07	-	-	07	32823	23555.6	46	06
36	DGAFMS (15.06.2015)	406	34688	00	00	27	379	406	-	406	406	153	-	58	36	-	60	INP	-	-	-	-	-	20123	20123	00	00
	Total	188098	1761316	203	32	151854	21462	142916	35215	46583	99945	337	38	3889	143	7	7662	17474	227	233	8	4	253	501489	486730	6074	5103

**Note:**

\*\* .....mainly deep burial ;

# ....106 HCFs are utilizing the treatment services in 04 HCFs;

INP.....Information not provided Annual Report Information in respect of Lakshadweep is as per the information submitted for the year 2014.