

## **Brief Report on Compliance Verification of Common Bio medical Waste Treatment and Disposal Facility operated by M/s. Puducherry Solid waste Management Company Private Limited, Puducherry**



### **A. Background**

Central Pollution Control Board, Zonal Office, Bengaluru has carried out the inspection of Common Bio medical Waste Treatment and Disposal Facility situated at Rajiv Gandhi Land Mark, Thuthipet Village, Villianur Commune, Puducherry on 17.04.2013 and issued direction vide L.No. B-31011 (BMW)/30/93/2014/HWMD/10285 dt Feb 14 2014 to Puducherry Pollution Control Board (PPCC) to ensure the point wise compliance with in 3 months time. PPCC in turn re-inspected the unit and issued direction (copy enclosed in annexure 1) with the additional observations of non compliance to the Common Bio medical Waste Treatment and Disposal Facility to take necessary measures with time bound actions for comply with.

Since there was no update with CPCB on the compliance of progress made by the CBWT facility, the re-inspection and monitoring was planned along with other inspections carried out during July 21-24, 2014. During inspection, unit also submitted their compliance progress made and the copy of the same is enclosed in annexure-1

### **B. Re-Inspection and Monitoring**

Team of officials comprising Dr.V.Pattusamy Sci-D and Sh.Karunagaran, STS of Central Pollution Control Board, Zonal office Bengaluru and Smt.Selvanayaki Junior Scientific

Assistant from Puducherry Pollution Control Committee inspected and verified point wise compliance against the direction issued on 23.07.2014 as mentioned in table below. During inspection, source emission and water samples were collected. Since the team was having other inspections in the zone, being BOD is time bound parameter, the waste water sample is handed over to Puducherry Pollution Control Board for further analysis and source emission samples brought to CPCB laboratory.

**C. Points of Direction by CPCB to PPCC**

<b>Sl.No</b>	<b>Points of Direction by CPCB to PPCC</b>	<b>Action Taken</b>
a)	The unit is operating without having valid consent for both for air & water and for authorization to dispose hazardous waste.	Unit has applied for renewal and paid the fees to PPCC.
b)	The separate storage room provided is not adequate separately for storing the waste received from the health care facilities for storage of untreated biomedical waste and is not as per CPCB guidelines	Floor area extended but shelter not extended.  <b>Not complied</b>
c)	Manual feeding of biomedical waste is in practice in place of conveyer or mechanized feeding device for charging the bio-medical waste in to the incinerator and incinerator is not attaché with PLC system	Still manual feeding is in practice and no PLC provided. <b>Fig.No.1</b> indicates display indicator not working  <b>Not complied</b>
d)	Primary and secondary chambers of the incinerator are not fitted with thermo couples to measure and monitor the temperatures maintained and neither records on operation of incinerator maintained as required under BMW Rules	Thermo couples are provided but digital display not working. It was showing secondary chamber temperature 842 °C. Temperature not maintained as per guidelines. No PLC provided.  <b>Not complied</b>
e)	The refractory lining inside the chambers of primary and secondary are fully damaged and also charging door is not tightly fitted thereby leading to fugitive emission at work zone area	Rectified. But both the burners were not in operation and fuel tank found to be empty.  <b>Not complied</b>
f)	Devices for measuring negative draft in primary chamber and pressure drop across packed bed column of the APCD not attached	Not provided  <b>Not complied</b>
g)	There is a possibility of low scrubbing efficiency of APCD due to re-circulation of untreated waste water in	Unit reported that Scrubber spent water is replenished with 20-30% of fresh water.

	to packed bed column of the APCD	<b>Complied</b>
h)	Monitoring provision provided to the stack attached with the incinerator is not as per the CPCB guidelines ie emissions regulations Part-3	Not as per emissions regulations Part-3. However, source emission monitoring carried out. The Particulate Matter Concentration (with CO <sub>2</sub> Correction) is exceeding and 25 times higher than the limit prescribed.  Condition of plat form reflected in <b>Fig No.2</b> <b>Not complied</b>
i)	Flue gas analyser for the measurement of O <sub>2</sub> , CO <sub>2</sub> , CO level in the stack gases not provided neither records maintained as per CPCB guidelines.	Third party monitoring carried out (copy enclosed in annexure-1I). Online monitoring facility not provided <b>Not complied</b>
j)	Autoclave installed with the facility is not provided with pressure and temperature measuring devices and neither PLC with recording facilities attached with for recording critical operational parameters are required under the BMW Rules.	Temperature and pressure gauge provided but not connected with PLC and no storage/record on operation ( <b>Fig.No.3</b> ) <b>Not complied</b>
k)	Validation Test for assessment of efficiency of auto clave is not carried out and neither records not maintained as required under BMW Rules	Not followed <b>Not complied</b>
l)	The Effluent treatment plant installed in the facility is not operated regularly for treatment of the waste water generated with in the facility	During inspection ETP was in operation. Sample from outlet of ETP collected. The BOD level exceeded and it is <b>5</b> times higher than the limit prescribed <b>Not complied</b>
m)	The waste water generated from untreated biomedical waste storage area and vehicle /containers washing area is not properly routed to ETP for treatment before its use for horticulture purpose	Further improvement is required <b>Complied</b>
n)	The incineration ash & sludge generated from the facility is stored in the in house land fill site without any pretreatment/stabilization and the liner provided to the in house land fill is not as per the CPCB guidelines	Huge quantity of ash and sludge is stored in open space and further dumping/storage is not possible since already pit is formed heap of waste. ( <b>fig.No.4</b> is self indicative) <b>Not Complied</b>

**D. Points of Direction issued by PPCC - On Additional observations**

<b>Sl. NO</b>	<b>Points of directions issued by PPCC</b>	<b>Compliance Status</b>
1	No technical person was available in the facility. There is no Programmable Logic Control (PLC) system	<p>Reported as three persons 1.Mr.K.Velmurugan, is a Diploma in Civil Engineering with 20 years of experience 2. Mr.N.Vasantharajan is B.Sc., Industrial Chemistry and Diploma in Industrial Pollution and Control Management, M.B.A., Computer cum Internet Literacy Programming with 15 years of experience 3. Mr.D.Senthilkumar, is certified Industrial Engineer with 10 years experience are involved in the activity.</p> <p>PLC not provided and Temperature of Primary and Secondary was not maintained during inspection. There is no recording device of these parameters.</p> <p style="text-align: right;"><b>Not Complied</b></p>
2	The surface of the duct of the incinerator is in a rusted condition requiring painting.	<p>The scrubber tank body damaged thereby leakage of scrubbed water expected.</p> <p style="text-align: right;"><b>Not Complied</b></p>
3	The autoclave and shredder were found to be out of service. The autoclaved plastic syringes and I.V.bottles were stored in bags without shredding. Few bags with plastic bottles and syringes were put on the tree bases.	<p>Autoclave and shredder was in operation during inspection</p> <p style="text-align: right;"><b>Complied</b></p>
4	The BMW transporting vehicle was not labeled properly. Only on the top of the vehicle the name of the company was written with light visibility, which is violation as per the Bio-Medical waste (Management & Handling) Rules, 1998. The lable shall be provided in all the sides.	<p>Few vehicles labeled and others not labeled</p> <p style="text-align: right;"><b>Not Complied</b></p>
5	The secured land fill area is almost filled.	<p><b>Fig No.4</b> is self explanatory</p> <p style="text-align: right;"><b>Not Complied</b></p>

#### E. Monitoring Analysis and results:

Source emission monitoring in the stack and waste water sampling from the ETP were collected. Source emission analysis was carried out by Zonal Office, Bengaluru. The analysis results of both stack emission and effluent treatment plant are tabulated in a & b and copy of the analysis results of the laboratory is enclosed in annexure

**Table No.a. Source Emission analysis results**

Sl.No	Stack Identity/Parameters		Standard Limit	Remarks
1.	Stack Connected to	Incinerator	NA	-
2.	Date of Monitoring	23.07.14	NA	-
3.	Stack Temperature	358°K	NA	-
4.	Stack Dia, Mts	0.47	NA	-
5.	Stack Height, mts	30	NA	-
6.	Particulate Matter Concentration, mg/Nm <sup>3</sup> (without CO <sub>2</sub> Correction)	324	150	Exceeding the standard limits
7.	Particulate Matter Concentration, mg/Nm <sup>3</sup> (with CO <sub>2</sub> Correction)	3888	150	<b>25 times exceeding the limit</b>

#### The source emission monitoring reveals that

1. During flue gas monitoring, the Oxygen level 20.1% and CO<sub>2</sub> level BDL measured which indicates that the incineration process is not optimized and not maintained the temperature of both primary and secondary chambers.
2. It is also observed that both the burners were not in working during incineration. The facility is incinerating only the biomedical waste without any fuel. The Fuel tank found to be empty and dried.
3. The Particulate Matter Concentration (with CO<sub>2</sub> Correction) is 25 times higher than the limit prescribed and exceeds.

**Table No.b. Waste water analysis results**

Sl.No	Parameters	Outlet of ETP	Std Limit prescribed in the consent	Remarks
1.	pH at 25°C	7.68	5.5 – 9.0	Exceeding the
2.	TSS mg/L at 105°C	38.0	200.0	

3.	Total Dissolved Solids mg/L	1614.0	2100.0	standard limits
4.	BOD mg/L at 27°C, 37 days	<b>600.0</b>	100.0	
5.	O&G mg/L	6.0	10.0	

**Waste water collected from the out let of ETP results reveals that**

1. Waste Water Analysis reveals that the BOD level is not meeting the limit and it is 5 times higher than the prescribed limit against the consent issued by Puducherry Pollution Control Committee.
2. The other parameters pH, TSS, TDS and oil and grease concentration are within the prescribed standard limit.

**F. Recommendations**

The facility in spite of direction issued by CPCB/PPCC, not much progress is made in many of the non-compliances thereby proposed to issue direction under section 5 of EPA with bank guarantee to comply with following points.

**It Shall be directed to**

1. To provide shelter to the extended area of the floor to properly store biomedical waste received.
2. To provide auto loading conveyer system with PLC control.
3. To provide programmable logic control, Temperature control and recording systems to the primary and secondary chambers.
4. To maintain sufficient quantity of secondary fuel for the burners and to keep the burners in operating condition.
5. To provide devices for measuring negative draft in primary chamber and pressure drop across packed bed column of the APCD.
6. To provide proper platform with adequate supports as per emission regulation part – III.
7. To provide online analyzer as to continuously measure the parameters like CO, CO<sub>2</sub>, O<sub>2</sub> and to maintain the record.
8. To provide adequate controls with Autoclave as to store the operating parameters and events and to take up pore and validation test regularly.
9. To follow proper operation, regulation and maintenance of the incinerator and APCD to meet stack emission as per the consent conditions and guideline of CPCB.
10. To operate ETP properly to meet the BOD level within the prescribed limit.

11. To dispose the ash and sludge stored in open space and to stop further dumping/storage with immediate effect.
12. To identify the alternate location for further storage and to ensure to provide proper linings to the storage area as per the guidelines of CPCB.
13. To provide proper labeling to the vehicles used for transporting biomedical waste.
14. To maintain proper record for the waste received, stored, incinerated, auto claved, shredded and quantity of ash & sludge generated, stored and disposed.

(K.Karunakaran)  
Sr.Tech Supervisor

(Dr.V.Pattusamy)  
Scientist-D

Actions recommended by Zonal Officer:

The inspection team has found that the facility has not made much progress in recent times and many non- compliances are reported. Hence it is suggested to issue the direction under section 5 of EPA with bank guarantee to comply with all points mentioned in the recommendations.

(S. Suresh)

Annexure-A



Fig No.1 Temperature Display not working



Fig No.3 Pressure guage provided with autoclave



Fig. No.2 Platform Condition



By tying rope around the platform, source emission monitoring carried out





Fig.No.4 Heap formation of Ash and sludge stored

Tech/24/Bio-Med/ZOB/2014-15

August 22, 2014

To

The Member Secretary  
Central Pollution Control Board  
Parivesh Bhawan, East Arjun nagar  
Delhi -110032

Kind Attention: Incharge, HWMD,CPCB,Delhi

Sub: Brief Report on Compliance Verification of Common Bio medical Waste Treatment and Disposal Facility operated by M/s. Puducherry Solid waste Management Company Private Limited, Puducherry

Sir,

With reference to above , the Central Pollution Control Board, Bengaluru and the officials from Pondicherry Pollution Control Committee have jointly inspected and verified the status of compliance against direction issued under section 18 of EPA of the Common Biomedical Waste Treatment and Disposal Facility Operated by M/S. Pondicherry Solid Waste Management Company Private Limited at Rajiv Gandhi Land Mark, Thuthipet Village, Villianur Commune, Puducherry on 23.07.2014 and the brief report on the same is enclosed herewith for kind perusal pl.

Yours faithfully

(S. Suresh)  
Zonal Officer

Encl: As above

