BEFORE THE HON'BLE NATIONAL GREEN TRIBUNAL
SOUTHERN ZONE, CHENNAI

Original Application No. 123 of 2017 (SZ)

IN THE MATTER OF:

Dr. Krithika Gokulnath .....Applicant

Versus

The Registrar,
Anna University and 8 Ors .....Respondent(s)

INDEX

M/S D.LATHA
Enrol No.1369/1996
Mobile: 944438 4617

COUNSEL FOR THE 1st RESPONDENT

BEFORE THE NATIONAL GREEN TRIBUNAL (SOUTHERN ZONE)
CHENNAI
ORIGINAL APPLICATION NO. 123 OF 2017

IN THE MATTER OF:

Dr.KRITHIKA GOKULNATH .....APPLICANT

Vs

THE REGISTRAR,
ANNA UNIVERISITY
AND 8 ORS .....RESPONDENT(S)

COMPLIANCE REPORT FILED BY THE REGISTRAR, ANNA UNIVERISITY AS PER THE DIRECTION OF HONOURABLE NGT (SOUTH ZONE) ORDER DATED NOVEMBER 18, 2020 IN THE MATTER OF O. A. NO. 123 OF 2017, KRITHIKA GOKULNATH VS. REGISTRAR, ANNA UNIVERSITY AND 8 ORS

I, Dr.L.Karunamoorthy S/o. P.Loganathan aged about 59 years, working as Registrar, Anna University Chennai-600 025, do hereby solemnly affirm and sincerely state as follows:

1. I am the Registrar of Anna University, Chennai – 600 025 and I am fully conversant with the facts of the case and hence, competent and authorized to depose. I am filing this compliance report for the Anna University.
2. That the Hon'ble National Green Tribunal (Southern Zone), Chennai in Application No. 123 of 2017 order dated November 18, 2020 directed Anna University to submit compliance report implementing all the deficiencies pointed out by the CPCB and find alternate appropriate disposal methods, rectifying all the defects as per Bio Medial Waste Management Rules, 2016. The compliance report is enclosed as APPENDIX.

REGISTRAR
ANNA UNIVERSITY
CHENNAI-600 025.

DEPONENT

VERIFICATION

It is submitted that the Compliance report of Anna University is prepared based on reports obtained from the Department of Bio-technology, Anna University, Chennai. It is verified that the contents of the report are true and correct. Nothing has been concealed therein.

Signed and verified on this 24th day of December 2020 at Chennai

REGISTRAR
ANNA UNIVERSITY
CHENNAI-600 025.

COUNSEL FOR THE 1st RESPONDENT **DEPONENT**

APPENDIX

BEFORE THE HON'BLE NATIONAL GREEN TRIBUNAL
SOUTHERN ZONE, CHENNAI

Original Application No. 123 of 2017 (SZ)

COMPLIANCE REPORT

In the matter of

Dr. Krithika Gokulnath

Vs

Registrar, Anna University and 8 Ors

Submitted

Before the National Green
Tribunal South Zone,
Chennai

By

The Registrar,
Anna University
Chennai – 600 025
December 29, 2020

COMPLIANCE REPORT FILED BY THE REGISTRAR, ANNA UNIVERISITY AS PER THE DIRECTION OF HONOURABLE NGT (SOUTH ZONE) ORDER DATED NOVEMBER 18, 2020 IN THE MATTER OF O. A. NO. 123 OF 2017, KRITHIKA GOKULNATH VS. REGISTRAR, ANNA UNIVERSITY AND 8 ORS.

1.0 Preamble

The above Original Application O.A.No.123/2017 was filed by the petitioner seeking grant of permanent injunction restraining the respondents from illegally and wrongfully disposing the bio waste used for research activities in the university laboratories. As per the National Green Tribunal (Southern Zone) order dated 07.07.2020, the Hon'ble Justice directed THE CENTRAL POLLUTION CONTROL BOARD (**CPCB**) to inspect all the laboratories and research institutes of Anna University for the safe disposal of hazardous biomedical waste. The CENTRAL POLLUTION CONTROL BOARD (**CPCB**)had conducted the inspection and submitted the report before the Hon'ble National Green Tribunal (Southern Zone) on 18.11.2020. The CPCB report observedcertain inadequacy which has to be implemented for safe disposal of hazardous biomedical waste adhering Bio-Medical Waste Management (BWM) Rules, 2016. On 18/11/2020 the Hon'ble Justice, National Green Tribunal (Southern Zone) has ordered Anna University to comply all the defects notified by CPCB and to submit compliance report detailing the implementation of the changes.

2.0 Anna University Compliance report

As per the directions, the Anna University, Chennai, Tamil Nadu prepared the compliance report after implementing all process and procedures in accordance with Bio-Medical Waste Management (BWM) Rules, 2016 and with the observations made by CPCB. The compliance report of university is detailed in following paragraphs:

I. Faculties and research scholars involved in recombinant DNA research have been strictly instructed to adhere the "BMW rules 2016"

REGISTRAR
ANNA UNIVERSITY
CHENNAI-600 025.

and "Regulations and Guidelines for Recombinant DNA Research and Biocontainment, 2017" for handling, decontamination and disposal of the Biotechnological Research Waste generated from their respective laboratories.

II. The Research Centre (SPIC Bioprocess laboratory) of Department of Biotechnology located in Taramani Campus is largely involved in generating microbiological wastes as a part of biotechnology research. Hence, the authorisation of TNPCB was obtained in the name of SPIC Bioprocess Laboratory and is applicable solely to the Department of Biotechnology, Anna University. Furthermore, as per the CENTRAL POLLUTION CONTROL BOARD (**CPCB**) recommendations, other departments in Anna University generating biomedical wastes, if any, will be identified and necessary authorization will be obtained from TNPCB based on the category of wastes generated.

III. The Department of Biotechnology, Anna University has submitted application on 04/12/2020 for authorization of TNPCB for the Red, Blue and White waste categories. The approval is expected soon.

IV. The authorized third party, M/s. GJ Multiclave Pvt. Ltd., quantifies the research waste at the time of collection and issues a collection slip to raise an invoice for payment by the Anna University. However, as per CPCB suggestions, The Department of Biotechnology, Anna University has installed weighing machine and nominated a dedicated person from university side to record, weigh, collect, and store the research wastes in a safe and designated place.

V. Log book/ records for the segregation, collection, treatment and disposal of Bio-medical Waste (**BMW**) are kept for entry in addition to the collection slip issued by the GJ Multicalve Pvt. Ltd. The records will be made available for the Monitoring Team.

VI. The autoclaves are operated as per the methods mentioned in the schedule II of the BWM Rules 2016 to ensure the complete decontamination, and the time for autoclaving is increased from 15 Minutes to 30 Minutes. Furthermore, it is known that spore test is widely recommended to ensure autoclave efficiency using a spore

REGISTRAR
ANNA UNIVERSITY
CHENNAI-600 025.

forming organism like *Bacillus Stearothermophillus* and it is made mandatory for biomedical wastes generated from hospitals/clinical labs where the waste composition is highly complex and unknown. In contrast, the wastes generated from our research labs are well defined and do not include any pathogenic and/or spore forming bacteria. Nevertheless, The University includes an aliquot of bacteria/microorganism used in the research during autoclave to confirm the efficiency of disinfection using streak assay. Nevertheless, to be in consensus with BMW rules 2016, The University has procured the spore test kit to implement the same in addition to the existing physical, chemical (autoclave tape) and biological indicators of disinfection.

VII. The faculties and research scholars who are involved in recombinant DNA research are aware of the type of waste they generate from time to time and instructed to pre-treat the same using appropriate strategies for safe disposal as recommended by the Institutional Biosafety Committee (IBSC). However, as per CPCB suggestions, a dedicated trained person is nominated for the collection, segregation, treatment and disposal of research waste as per BMW rules 2016.

VIII. Faculties and research scholars involved in recombinant DNA research have been further trained to handle and adhere "BMW rules 2016" and "Regulations and Guidelines for Recombinant DNA Research and Biocontainment, 2017" to handle & manage the Biotechnological research wastes by the Member Secretary of the Institutional Biosafety committee. Further, this training programme will be continued periodically to the research students to create awareness on new rules and Regulations in Biosafety procedures.

IX. A designated Central storage room has been identified within the premises for the storage of biomedical waste till it is disposed by M/s. GJ Multiclave Pvt. Ltd. The Room is under Lock and Key and under the control of Dr. J. Tamilselvan, Assistant Professor, Department of Biotechnology and Dr.S.Ramalingam, Professor, Department of Biotechnology.

REGISTRAR
ANNA UNIVERSITY
CHENNAI-600 025.

X. As per the observation made by CPCB, the Concentrated ethidium bromide solutions (≥1 mg/ml) are considered hazardous. In this regard it is to state that, the DNA gels used by the university usually contains 0.3 µg/ml (~3000 fold diluted) of ethidium bromide which does not pose a hazard. However, The Department of Biotechnology, Anna University has replaced ethidium bromide with an alternate non-mutagenic DNA binding dye SYBR safe, SYBR Green, etc. Furthermore, except cloning, much gene expression related experiments are carried out in liquid phase using Real-time PCR using SYBR Green which in turn minimizes use of agarose gel. With respect to protein gels, the polymerized acrylamide (i.e. polyacrylamide) is used which is non-toxic compared to the toxic monomer acrylamide.

It is humbly submitted that, as per the suggestions and recommendations of the CPCB, all the defects have been rectified and complied. Best practices are adopted by the Anna University research laboratories for safe disposal of chemical, hazardous and radioactive wastes.

The Registrar
Anna University
Guindy,Chennai
Pin- 600025

S

COMPLIANCE REPORT OF ANNA UNIVERSITY IN THE MATTER OF O.A No 123 OF 2017

	Suggestions / Recommendations of CPCB	Compliance report – Anna University	Compliance Status
1]	The universities have to strictly follow the "Regulations and Guidelines for Recombinant DNA Research and Biocontainment, 2017" and Bio Medical Waste Management Rules, 2016 for handling, decontamination and disposal of the Bio Medical Waste generated from the departments.	**Faculties and research scholars involved in recombinant DNA research have been instructed once again to adhere to the "BMW rules 2016" and "Regulations and Guidelines for Recombinant DNA Research and Biocontainment, 2017" for handling, decontamination and disposal of the Biotechnological Research Waste generated from their respective laboratories.**	**Complied**
2]	Anna university has obtained one time authorisation from TNPCB for the M/s SPIC BIOPROCESS LABORATORY, Taramani Campus, Chennai. The university has to identify the departments generating the Bio Medical Waste and authorisation has to be obtained. While obtaining the authorisation, the universities have to identify the category of waste generated from each department and clearly mention in the application.	The research centre (SPIC Bioprocess laboratory) of Department of Biotechnology located in Taramani campus is largely involved in generating microbiological wastes as a part of biotechnology research. Hence, the authorisation of TNPCB was obtained in the name of SPIC Bioprocess Laboratory and is applicable solely to the Department of Biotechnology, Anna University. **Furthermore, as per CPCB recommendations, other departments in Anna University generating biomedical wastes, if any, will be identified and necessary authorization will be obtained from TNPCB based on the category of wastes generated.**	**Complied**
3]	In case of M/s SPIC BIOPROCESS LABORATORY, authorisation is issued only for the yellow category of waste, whereas the red, yellow, blue and white category of waste is disposed to the M/s G. J. Multiclave Pvt. Ltd.,	**The Department of Biotechnology, Anna University has submitted application on 04/12/2020 for authorization of TNPCB for the Red, Blue and White waste categories. The approval is expected on or before 25.12.2020.**	**Complied** **(Awaiting approval)**

S

COMPLIANCE REPORT OF ANNA UNIVERSITY IN THE MATTER OF O.A No 123 OF 2017

	Suggestions / Recommendations of CPCB	Compliance report – Anna University	Compliance Status
1]	The universities have to strictly follow the "Regulations and Guidelines for Recombinant DNA Research and Biocontainment, 2017" and Bio Medical Waste Management Rules, 2016 for handling, decontamination and disposal of the Bio Medical Waste generated from the departments.	**Faculties and research scholars involved in recombinant DNA research have been instructed once again to adhere to the "BMW rules 2016" and "Regulations and Guidelines for Recombinant DNA Research and Biocontainment, 2017" for handling, decontamination and disposal of the Biotechnological Research Waste generated from their respective laboratories.**	**Complied**
2]	Anna university has obtained one time authorisation from TNPCB for the M/s SPIC BIOPROCESS LABORATORY, Taramani Campus, Chennai. The university has to identify the departments generating the Bio Medical Waste and authorisation has to be obtained. While obtaining the authorisation, the universities have to identify the category of waste generated from each department and clearly mention in the application.	The research centre (SPIC Bioprocess laboratory) of Department of Biotechnology located in Taramani campus is largely involved in generating microbiological wastes as a part of biotechnology research. Hence, the authorisation of TNPCB was obtained in the name of SPIC Bioprocess Laboratory and is applicable solely to the Department of Biotechnology, Anna University. **Furthermore, as per CPCB recommendations, other departments in Anna University generating biomedical wastes, if any, will be identified and necessary authorization will be obtained from TNPCB based on the category of wastes generated.**	**Complied**
3]	In case of M/s SPIC BIOPROCESS LABORATORY, authorisation is issued only for the yellow category of waste, whereas the red, yellow, blue and white category of waste is disposed to the M/s G. J. Multiclave Pvt. Ltd.,	**The Department of Biotechnology, Anna University has submitted application on 04/12/2020 for authorization of TNPCB for the Red, Blue and White waste categories. The approval is expected on or before 25.12.2020.**	**Complied** **(Awaiting approval)**

4]	TNPCB may once again review the category of waste generated by Anna university as per the schedule I of the BWM Rules, 2016 and accordingly authorisation may be issued	**We have requested TNPCB on 04/12/2020 for further authorization of red and blue waste categories. The same will be intimated to CPCB once we receive the authorization.**	**Complied** **(Awaiting approval)**
5]	The universities generating the BMW have to install a small weighing machine to quantify the waste generated from each laboratory/departments and recorded. So that the exact quantity of BMW generated, treated & disposed shall be submitted to SPCBs/PCCs in the Annual report.	The authorized third party, M/s. GJ Multiclave Pvt. Ltd., quantify the research waste at the time of collection and issue a collection slip to raise an invoice for payment by the Anna University. However, **as per CPCB suggestions, we have installed a weighing machine and nominated a dedicated person from our part to record, weigh, collect, and store the research wastes in a safe and designated place.**	**Complied**
6]	The universities have to maintain log book/ records for the segregation, collection, treatment and disposal of BMW. The records maintained should be made available for the monitoring team.	Log book/ records for the segregation, collection, treatment and disposal of BMW **are kept for entry in addition to the collection slip issued by the GJ Multicalve Pvt. Ltd.** **The records will be made available for the Monitoring Team.**	**Complied**
7]	Treatment of BMW through autoclave should be followed according to the schedule II of the BWM, Rules 2016. The validation test should be done every week to ensure that the waste is disinfected effectively and as per the methods mentioned in schedule II of the BWM, Rules 2016.	The autoclaves are operated as per the methods mentioned in the schedule II of the BWM Rules 2016 to ensure the complete decontamination the time for autoclaving is increased from 15 Minutes to 30 Minutes. Furthermore, it is known that spore test is widely recommended to ensure autoclave efficiency using a spore forming organism like *Bacillus Stearothermophillus* and it is mandatory for biomedical wastes generated from hospitals/clinical labs where the waste composition is highly complex and unknown. In contrast, the wastes generated from our research labs are well defined and do not include any pathogenic and/or spore forming bacteria. Nevertheless, we include an aliquot of bacteria/microorganism used in our research during autoclave to confirm the efficiency of disinfection using streak assay. **Nevertheless, to be in consensus with BMW rules 2016, we**	**Complied**

		have procured the spore test kit to implement the same in addition to our existing physical, chemical (autoclave tape) and biological indicators of disinfection.	
8]	The universities shall identify one dedicated person responsible for segregation, collection, treatment and disposal of BMW. The concerned person responsible should be trained accordingly to manage & handle the BMW efficiently.	The faculties and research scholars who are involved in recombinant DNA research are aware of the type of waste they generate from time to time and instructed to pre-treat the same using appropriate strategies for safe disposal as recommended by the Institutional Biosafety Committee (IBSC). **However, as per CPCB suggestions, a dedicated trained person is nominated for the collection, segregation, treatment and disposal of research waste as per BMW rules 2016.**	**Complied**
9]	As per the Bio Medical Waste Management Rules, 2016, it is mandatory that all the employees, staff and students need to be trained to handle & manage the BWM.	**Faculties and research scholars involved in recombinant DNA research have been further trained to handle and adhere "BMW rules 2016" and "Regulations and Guidelines for Recombinant DNA Research and Biocontainment, 2017" to handle & manage the Biotechnological research wastes by the Member Secretary of the Institutional Biosafety committee. Further, this training programme will be continued periodically to the research students to create awareness on New rules and Regulations in Biosafety procedures.**	**Complied**
10]	A designated central storage room shall be identified within the premises for storage of bio-medical waste, till the waste is treated and disposed to Common Biomedical Waste Treatment Facility. The room should under the responsibility of a designated person and should be under lock & key.	**A designated Central storage room has been identified within the premises for the storage of biomedical waste till it is disposed by G J Multiclave. The Room is under Lock and Key and under the control of Dr. J. Tamilselvan, Assistant Professor, Department of Biotechnology and Dr.S.Ramalingam, Professor, Department of Biotechnology. (Figure 1 and 2)**	**Complied**

Additional information:

1. As per the observation of CPCB (vi) Concentrated ethidium bromide solutions (≥1 mg/ml) are considered hazardous. However, our DNA gels usually contains 0.3 µg/ml (~3000 fold diluted) of ethidium bromide which does not pose a hazard. However, we have almost replaced ethidium bromide with an alternate non-mutagenic DNA binding dye SYBR safe, SYBR Green, etc. Furthermore, except cloning, many gene expression related experiments are carried out in liquid phase using Real-time PCR using SYBR Green which in turn minimizes use of agarose gel. With respect to protein gels, the polymerized acrylamide (i.e. polyacrylamide) is used which is non-toxic compared to the toxic monomer acrylamide.

Figure: 1

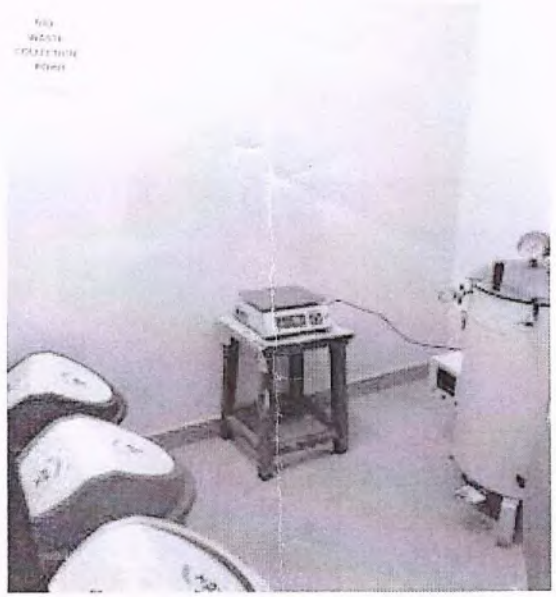

Figure: 2

HEAD
DEPARTMENT OF BIOTECHNOLOGY
ANNA UNIVERSITY,
CHENNAI - 600 025

Dean - A&T