



**Report of the
Comptroller and Auditor General of India
for the year ended March 2020
Waste Management in Indian Railways**



लोकहितार्थं सत्यनिष्ठा
Dedicated to Truth in Public Interest

Union Government (Railways)
Performance Audit
No.16 of 2022

**Report of the
Comptroller and Auditor General
of India**

For the year ended March 2020

Waste Management in Indian Railways

Laid in Lok Sabha/Rajya Sabha on _____

**Union Government (Railways)
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Table of Contents

Particulars	Paragraph	Pages
List of Abbreviations		
Preface		
Executive summary		i to iii
Chapter-1: Introduction		
Organizational Structure	1.1	2
Audit Objectives	1.2	2
Audit criteria	1.3	3
Audit Scope and Methodology	1.4	3
Sample Selection	1.5	3
Response of the Ministry	1.6	4
Acknowledgement	1.7	4
Chapter-2: Waste management at Railway Stations, Catering Units and Coaching Depots		
Establishment of EnHM wing	2.1	5
Budget allocation and expenditure	2.1.1	6
Constitution of Accountable entities	2.2	7
Assessment of quantity of waste generated and its proper management	2.3	8
Regulatory requirements compliance at stations	2.4	9
Action Plan involving verifiable indicators at 37 identified major stations as per NGT's order	2.5	10
Action Plan involving verifiable indicators at other than 37 station (balance of 720 selected station)	2.6	12
Progress on actionable points under Swachh Bharat Mission	2.7	12
Efforts made for execution of railway works through CSR initiative	2.8	14
Collection and segregation of waste generated by catering units and from trains covered under OBHS	2.9	15
Assessment and collection/segregation of Plastic wastes at stations	2.10	16
Segregation, Collection and separate accumulation of Municipal Solid Waste	2.11	18
Transportation and disposal of solid waste	2.11.1	19
Facilities for Management of solid waste	2.11.2	20
Conclusion	2.12	20
Recommendation	2.13	22

Particulars	Paragraph	Pages
Chapter-3: Management of waste generated at Railway workshops, Maintenance Sheds, Coaching Depots and Production Units		
Consent to Establish (CTE) or Consent for Operation (CFO) under the Water Act, 1974	3.1	23
Authorisation from SPCBs for handling of Hazardous and other waste	3.2	24
Delay in Authorisation from SPCBs for handling of effluents and hazardous waste	3.3	24
Submission of Environmental Statements	3.4	25
Maintenance of records for storage and disposal of hazardous waste.	3.5	25
Storage of hazardous waste beyond the permissible period	3.6	26
Integrated Management System (IMS)/ Green Rating Certification	3.7	27
Conclusion	3.8	28
Recommendation	3.9	28
Chapter-4: Management of waste water generated at railway stations, coaching depots, workshops and production units		
Provision / Planning , commissioning and functioning of effluent/sewage treatment plant (ETPs/STPs)	4.1	29
Analysis of effluents /sludge discharged from ETPs/STPs provided in stations, coaching depots, workshops, sheds and Production Units	4.2	30
Provision of water recycling plants (WRPs)	4.3	31
Provision of Automatic Coach Washing Plants (ACWPs) at coaching depots and car sheds	4.4	32
Progress of works related to management of waste sanctioned from the funds created for Environment Related Works (ERWs)	4.5	32
Conclusion	4.6	33
Recommendation	4.7	34
Chapter-5: Management of bio-medical waste generated at Railway Hospitals		
Authorization for handling of bio-medical waste	5.1	35
Delay/discontinuity in renewal of authorization for handling of bio-medical waste	5.2	36
Creation of infrastructure at hospitals for handling of bio-medical waste	5.3	36
Pre-treatment of bio-medical waste before its storage	5.4	37
Segregation and pre-treatment of liquid chemical waste	5.5	38

Particulars	Paragraph	Pages
Proper storage facility for bio-medical waste (BMW)	5.6	38
Compliance of norms prescribed under the BMW Rules for disposal of bio-medical waste	5.7	39
Disposal of bio-medical waste at hospital level	5.8	40
Non- submission of Annual Reports as required under the BMW Rules	5.9	41
Health check-up, immunization and training of healthcare workers handling bio-medical waste	5.10	41
Existence of monitoring mechanism for managing bio-medical waste	5.11	42
Conclusion	5.12	43
Recommendation	5.13	44
Chapter-6: Management of E-Waste		
Absence of consolidated instructions and training for handling of E-Waste	6.1	45
Submission of stipulated Form 3 to SPCB	6.2	45
Storage of the E-Waste beyond permissible limit	6.3	46
Conclusion	6.4	46
Recommendation	6.5	47
Annexures - 1.1 to 6.2		49 - 110

Abbreviations used in the Report

ACWP	Automatic Coach Washing Plant
ADRM	Additional Divisional Railway Manager
AEC act	The Atomic Energy Act, 1962
AGM	Additional General Manager
ATN	Action Taken Note
Batteries Rules	The Batteries (Management and Handling) Rules, 2001
BLW	Banaras Locomotive Works
BMW Rules	The Bio-Medical Waste Management Rules, 2016
BOO	Build, Own & Operate
C&W	Carriage and Wagon
CAGR	Compound Annual Growth Rate
CCTV	Closed Circuit Television
CDO	Coaching Depot Office
CE	Civil Engineering
CEEW	Council on Energy, Environment and Water
CEnHM	Chief Environment and Housekeeping Manager
CFO	Consent for Operation
CHWTSDF	Common Hazardous Waste Treatment Supply and Disposal
CME	Chief Mechanical Engineer
CPCB	Central Pollution Control Board
CRB	Chairman Railway Board
CSR	Corporate Social Responsibility
CTE	Consent to Establish
DEMU	Diesel-Electric Multiple Unit
DEnHM	Divisional Environment and Housekeeping Manager
DG sets	Diesel Generator Sets
DLS	Diesel Loco Shed
DLW	Diesel Locomotive Works
DMW	Diesel Loco Modernization Works
DRM	Divisional Railway Manager
EBR(IF)	Extra-budgetary Resources (Institutional Funding)
ED	Executive Director
EDP	Electronic Data Processing
ELS	Electric Loco Shed
EMS	Environment management System
EMU	Electric Multiple Unit

EnHM	Environment and Housekeeping Management
EP Act	The Environment (Protection) Act, 1986
EP Rules	The Environment (Protection) Rules, 1986
ERW	Environment Related Works
ETP	Effluents Treatment Plant
E-Waste	Electronic Waste
EWM	E- Waste Management
EWM Rules	The E-Waste Management Rules, 2016
FOBs	Foot over Bridges
GM	General Manager
GPS	Global Positioning System
GSD	General Scrap Depot
HWM	Hazardous Waste Management
HWM Rules	The Hazardous and Other Wastes (Management & Transboundary Movement) Rules, 2016
ICF	Integral Coach Factory
IMS	Integrated Management System
IR	Indian Railways
IRCTC	Indian Railway Catering and Tourism Corporation
ISO	International Organization for Standardization
IT	Information Technology
JPO	Joint Procedural Orders
Kg.	Kilogram
KLD	Kiloliters per day
LB	Local Body
MCF	Modern Coach Factory
ME	Mechanical Engineering
MEMU	Mainline Electric Multiple Unit
MoEF&CC	Ministry of Environment, Forest and Climate Change
MOP	Measures of Performance
MoU	Memorandum of Understanding
MRF	Material Recovery Facility
MSW	Municipal Solid Waste
MSW Rules	The Municipal Solid Waste Rules, 2000
MT	Metric Tonne
NACO	National AIDS Control Organisation
NAIR	National Academy of Indian Railways
NGT	National Green Tribunal

OA	Original Application
OBHS	On-Board Housekeeping Services
OHSAS	Occupational Health & Safety Assesment Service
PAC	Public Accounts Committee
PBCM	Plastic Bottle Crushing Machine
PCC	Pollution Control Committee
PCME	Principal Chief Mechanical Engineer
PED	Principal Executive Director
PRS	Passenger Reservation System
PSU	Public Sector Undertaking
PU	Production Unit
RB	Railway Board
RCF	Rail Coach Factory
UTES	Rail India Technical and Economic Service
RWH	Rain Water Harvesting
RWP	Rail Wheel Plant
S&T	Signal and Telecommunication
SPCB	State Pollution Control Board
Sr.DME	Senior Divisional Mechanical Engineer
STP	Sewage Treatment Plant
SWM	Solid waste Management
SWM Rules	The Solid Wastes Management Rules, 2016
TPD	Tonnes per day
TREM	Transport Emergency
TSDF	Treatment, Storage and Disposal Facility
T.V.	Television
ULB	Urban Local Body
UTS	Unreserved Ticketing System
Water Act	The Water (Prevention and Control of Pollution) Act, 1974
WBPCB	West Bengal Pollution Control Board
WHO	World Health Organisation
WRP	Water Recycling Plant
XEnHM	Executive Environment and Housekeeping Manager
ZR	Zonal Railway

Abbreviations used for Zonal Railways in the Report

CR	Central Railway
ER	Eastern Railway
ECR	East Central Railway
ECoR	East Coast Railway
NR	Northern Railway
NCR	North Central Railway
NER	North Eastern Railway
NFR	Northeast Frontier Railway
NWR	North Western Railway
SR	Southern Railway
SCR	South Central Railway
SER	South Eastern Railway
SECR	South East Central Railway
SWR	South Western Railway
WCR	West Central Railway
WR	Western Railway
RPU	Railway Production Unit

Preface

This Report has been prepared for submission to the President of India under Article 151 of Constitution of India.

The Report covering the period 2015-16 to 2019-20 contains the results of Performance Audit on 'Waste management in Indian Railways'.

The instances mentioned in this Report are those which came to notice in the course of test audit for the period April 2015 to March 2020 as well as those which came to notice in earlier years, but could not be reported in the previous Audit Reports.

The audit has been conducted in conformity with the Auditing Standards issued by the Comptroller and Auditor General of India.

EXECUTIVE SUMMARY

Waste management is a process involving collection, transport, treatment and disposal of waste materials. The main sources of waste in Indian Railways are:

- **Waste from core activities** - Passenger and freight movement, packaging, plastic and paper waste, food waste, human excreta and
- **Waste from non-core activities** - Institutional waste in liquid and solid form arising out of repair and maintenance activities (in workshops and sheds).

This report presents the results of the audit of “Waste Management in Indian Railways” and covers aspects in managing waste at stations, coaching depots, maintenance & Production units and bio-medical waste generated in hospitals. Besides, system of managing E-Waste has also been covered in this report. The Report also covers adherence to the directives of National Green Tribunal (NGT) in their various orders.

Major Audit findings include the following:-

- No separate authority with clear role and responsibility was assigned the waste management task as also there was no demarcated fund allocation for waste management exclusively.

(Para 1.2 - Page 2 and Para 2.1.1 - Page 6)

- Environment & Housekeeping Management (EnHM) wings were not formed in 11 divisions in CR, ER, NR and NEFR despite issue of directives by Railway Board in August 2015. In 59 stations out of 109 selected for audit, Directives of NGT for obtaining Consent to Establish (CTEs) from related State Pollution Control Boards (SPCBs) were not complied with (As of 31 July 2021).

(Para 2.1 - Page 5 and Para 2.4 - Page 9)

- Directives of the NGT for implementation of 24 Verifiable Indicators for proper monitoring of waste management at five *per cent* (36) of 720 major stations were not fully complied. In 65 other stations, lack of seriousness in implementation of verifiable indicators was observed.

(Para 2.5 - Page 10 and Para 2.6 - Page 12)

- Segregated waste collected from the Pantry cars and trains with On Board Housekeeping Services (OBHS) was not unloaded in secured bags at 49 stations out of 109 selected for audit. In 42 of these 49 stations, waste collected from the Pantry cars or OBHS trains was not dumped in separate assigned dustbins.

(Para 2.9 - page 15)

- Assessment of quantity of plastic waste generated was not done at 71 stations and 26 coaching depots out of 109 stations and 30 coaching depots selected for audit. Non-installation of Plastic Bottle Crushing Machines (PBCMs) as planned and absence of provision of ‘*plastic only Bin*’ in 90 stations and 25 coaching depots indicated lack of efforts on important environmental issue.

(Para 2.10 - Page 16)

- The basic condition of segregating bio-degradable and non bio-gradable waste was not ensured. Facilities for management of solid waste such as wet waste processing, material recovery facility, provision of composting plant, waste segregation and recycling centres were not provided at 70 *per cent* of the stations and 90 *per cent* of coaching yards selected for audit.

(Para 2.11.2 - Page 20)

- Lack of seriousness was observed in obtaining SPCB's authorisation in respect of 40 units out of 131 selected (including 30 coaching depots). Further, non-compliance of the rules prescribed for storage and labelling of hazardous waste in 102 units (out of 131 selected) remained a potential threat for the environment and people engaged in these units.

(Para 3.5 - Page 25)

- Audit examined the efficacy of steps taken for management of waste water and reduction in usage of water through Automatic Coach Washing Plants (ACWPs) and water recycling plants (WRPs) at selected 102 major stations, 30 coaching depots and 101 workshop/shed/Production units. Effluent Treatment Plants/ Sewage Treatment Plants (ETP/STPs), though planned for commissioning in 19 major coaching depots and 40 workshops, were not commissioned as of March 2020. WRPs were not provided at 86 stations. Installation of ACWPs at 43 locations out of 63 sanctioned did not commence at all as of March 2020.

(Para 4.1 - Page 29, Para 4.3 - Page 31 and Para 4.4 - Page 32)

- Provision of secured room with reference to Bio-Medical waste Rules for storage of bio-medical waste was not made in 46 hospitals out of 72 selected for audit. Further, in the absence of requisite equipment for treating bio-medical waste, 15 hospitals managed waste disposal departmentally endangering safety of public health. Review and monitoring committee did not exist in 52 hospitals to oversee the monitoring mechanism of bio-medical waste management.

(Para 5.3 - Page 36 and Para 5.11 - Page 42)

- Record in respect of generation of category wise E-Waste as prescribed in E-Waste management Rules was not maintained in 46 EDP centers and 32 PRS units/scrap depots out of 86 units (EDP/PRS/UTS/GSD) selected for audit.

(Para 6.2 - Page 45)

Summary of Recommendations

- IR needs to proactively ensure formation of EnHM wings at zonal and division level and constitution of accountable entities as directed by NGT to strengthen the waste management mechanism. IR also needs to define clear cut role and responsibilities and fund allocation exclusively for waste management activities. Besides this, IR needs to put in place an effective monitoring mechanism for managing plastic as well as solid waste in an environment friendly manner.*

- ii. IR needs to ensure provision of required infrastructure and initiate measures to sensitise the work force engaged in maintenance and Production Units for effective compliance of the Hazardous Waste Management Rules thereby avoiding danger to health and environment as well.*
- iii. IR needs to develop a robust monitoring mechanism to oversee the expeditious completion of the works such as provision of ETPs/STPs, water recycling plant, automatic coach washing plant meant for water conservation under Water Policy of IR.*
- iv. IR needs to ensure effective compliance with Bio-Medical Waste Management Rules for handling, collection, pre-treatment, segregation, storage and disposal of biomedical waste and strengthen monitoring mechanism.*
- v. IR needs to initiate measures for creating awareness on the issue of handling E-Waste besides devising monitoring mechanism for ensuring effective compliance with E-Waste Management Rules.*

Introduction

Indian Railways (IR) is a vast network that generates huge quantities of waste from diverse sources such as passengers, vendors, catering units, hawkers, Railway Hospitals, Workshops, Sheds, Production units, etc. The main sources of waste are the waste from core activities i.e. passenger and freight movements, packaging, plastic and paper waste, food waste & human excreta¹ and the waste from non-core activities i.e. institutional waste arising out of repair and maintenance activities (in workshops and sheds). In addition, Bio-medical waste generated by hospitals, E-Waste consisting of end life products comprising of electrical and electronic goods are the other categories of waste that require handling and disposal by the IR.

Considering the magnitude² and type of waste generated, a large number of contracts for cleaning, collection, segregation (including Plastic waste) and disposal of waste are awarded by Railway Administration. Following the Government of India's cleanliness and sanitation drive under 'Swachh Bharat Abhiyan', Railway Board had launched 'Swachh Rail, Swachh Bharat Abhiyan'. The National Green Tribunal (NGT), in their various orders³, had also directed Railway Administration for adherence to Acts and Rules framed for Environment Protection. In this backdrop, the efficacy and effectiveness of IR's efforts for the management of waste has been reviewed in audit.

Review on the aspect of management of waste in Indian Railways was previously done and commented upon in the Audit Reports⁴. The Public Accounts Committee (PAC) had also deliberated upon and given their recommendations on three of these Audit

¹ *The aspect of human excreta (organic waste) at stations, tracks and in trains has been covered in the Audit Report Number 36 of 2017 on 'Induction of bio-toilets in Passenger Coaches in Indian Railways'*

² *No centralized data on quantum of waste generated (solid or waste water) is maintained by Indian Railways. This was highlighted in the 3rd Report of the Public Accounts Committee (PAC) in 2014. This was also pointed out in the Report on 'Cleanliness in Indian Railways' brought out by National Academy of Indian Railways (NAIR) in 2015. However, as per analysis done in June, 2016 by an independent agency viz Council on Energy, Environment and Water (CEEW) approximately 670 tonnes per day (TPD) of solid waste is generated at major railway stations over Indian Railways. Similarly, this analysis also states that about 22.11 million litres of water per day each is consumed on Western Railway's Mumbai suburban section alone.*

³ *NGT's Orders dated 18.03.2015, 01.10.2018, 22.01.2019, 26.03.2019, 04.12.2019 & 18.08.2020 in O.A. Number 141 of 2014*

⁴ *Performance Audit on 'Cleanliness and Sanitation in Indian Railways' (Report Number 06/2007); Performance Audit on 'Environment Management in Indian Railways; Coverage on Stations, Trains & Tracks' (Report Number 21/2012); Covering Workshops, Shed & Production Units' (Report Number 23/2014); Performance Audit on 'Hospital Management in Indian Railways' was issued in 2014 (Report Number 28/2014) and another Report on 'Induction of bio-toilets in Passenger Coaches in Indian Railways' was issued in 2017 (Report Number 36 of 2017).*

Reports from time to time, more particularly as appearing in the PAC's Report Number 83 of 2008-09, 21 of 2009-10, 3 of 2014-15 & 38 of 2015-16.

1.1 Organizational Structure

The Ministry of Railways set up (April 2015) Environment and Housekeeping Management (EnHM) Directorate in Railway Board to deal with the issues related to Environment as well as Housekeeping Management of Indian Railways. The environment related works included works like water conservation, Sewage and effluent treatment plants, solid waste management infrastructure, water efficient fixtures and measures for mitigation of Air and Water pollution during construction and maintenance etc.

EnHM wing in Railway Board (RB) functioning under the control of Member, Traction & Rolling Stock is headed by Principal Executive Director (PED)/EnHM who in turn is assisted by Executive Director (ED)/EnHM/ME & ED/EnHM/CE. EnHM wings are also established in Zonal Railway level under the control of General Manager (GM) and the same is headed by Principal Chief Mechanical Engineer (PCME) and at Divisional Railway level under the control of Divisional Railway Manager (DRM) & Divisional Environment and Housekeeping Manager (DEnHM), under the control of Sr.DME of the Division. In respect of Production Units, Workshops and Hospitals, their units heads are responsible for handling the waste management related activities.

An organisational chart depicting the hierarchy at Railway Board, Zonal and Divisional level is given in *Annexure-1.1*.

1.2 Audit Objectives

This Performance Audit was conducted with an aim to assess whether the waste generated at different activity centres was properly assessed, managed and disposed off as per applicable Laws and Rules⁵. The Audit Objective *inter-alia* covered the following: -

1. Assessment, management and disposal of waste generated at railway stations, catering units and coaching depots.
2. Assessment, management and disposal of waste generated at railway workshops, maintenance sheds and production units.
3. Management of waste water through effluent/sewage treatment, water recycling and automatic coach washing.
4. Assessment, management and disposal of waste generated at railway hospitals (Bio-Medical Waste).
5. Assessment, management and disposal of E-Waste generated in railway establishments.

⁵ *Applicable Laws and Rules including various orders of the National Green Tribunal (NGT).*

1.3 Audit criteria

The Performance Audit was conducted with reference to the provisions prescribed under various Acts, Rules and Orders/Circulars/Notifications (**Annexure 1.2**), policies related to environment protection, air & water pollution, hazardous waste, bio medical and the E-Waste management. Further, important instructions issued by Central Pollution Control Board (CPCB), State Pollution Control Boards (SPCBs) and the Railway Board were also taken into consideration for this Audit.

1.4 Audit Scope and Methodology

The scope of the Performance Audit includes an assessment of the adequacy and efficacy of the policies and systems, procedures, processes & activities related to management of waste. This included entire cycle commencing from prevention/maintenance, reuse/recycle up to recovery /treatment and disposal during the period of last five years i.e. 2015-16 to 2019-20. Further, the aspects related to the compliance with directives of National Green Tribunal (NGT), vide its order dated 18.08.2020 was assessed for the period up to 31 March 2021; specifically, on the aspect of CTEs (Consent to Establish) & CFOs (Consent for Operation) which was further updated up to 31 July 2021.

The audit methodology included review of records available in Railway Board, Zonal/Divisional headquarters, production units and field offices including coaching depots, workshops, loco sheds, MEMU/DEMU/Car sheds, hospitals, Electronic Data Processing (EDP) and Passenger Reservation System (PRS) Centres etc. Besides this, joint inspections with Railway authorities were conducted and structured questionnaires were used to collect the required information on the aspect of waste management.

1.5 Sample selection

The sample selected amongst various activity centres is shown in Table 1.1 below. The basis of sample selection is detailed in **Annexure 1.3**.

Table 1.1 - Details of the sample selected for performance audit (Details in Annexure 1.4 to 1.7)

S. No.	Activity Centre	Units (in numbers)
1	A1 category stations	45
1(a)	A & B category stations	59
1(b)	C category stations (RPU & Metro Rail)	5
2	Major coaching Depots	30
3	Mechanical Workshops	23
4	Signalling & Telecommunication workshop	08
5	Civil Engineering workshop	10

6	Diesel/electric loco Sheds	33
7	EMU/MEMU/DEMU/Car Sheds	19
8	Production Units	08
9	Central Hospitals & Super speciality Hospitals	23
10	Divisional Hospitals/Sub-divisional/ Workshop Hospitals	49
11	EDP/PRS/UTS/GSDs	86

1.6 Response of the Ministry

Provisional Report was issued to the Ministry of Railways on 16 November 2021; reply received (May 2022) has been incorporated in the report as appropriate. Exit Conference was held with the representatives of Ministry of Railways on 17 December 2021.

1.7 Acknowledgement

Audit acknowledges the cooperation extended by various directorates concerned in Ministry of Railways as well as in Zonal Railways in conducting the Performance Audit.

Waste management at Railway Stations, Catering Units and Coaching Depots

Audit objective 1

Whether the assessment, management and disposal of waste generated at Railway stations, Catering units and Coaching depots was done as per applicable laws and rules

Effective management of huge quantum of waste/garbage generated at stations requires continuous action by Railways authorities for assessment, segregation, collection, storage and disposal of the same. Rules framed under statute (Solid Waste Management Rules, 2016, Plastic Waste Management Rules, 2016, Environment (Protection) Act, 1986, Water Act, 1974), instructions issued by SPCBs/CPCB and National Green Tribunal, recommendations of Public Accounts Committee (PAC) as well as the instructions of Railway Board are required to be complied with in this regard. The results of effectiveness and efficiency of Railways in the waste management process at stations, catering units and coaching depots as assessed in Audit is brought out in succeeding paragraphs.

2.1 Establishment of EnHM wing

The Public Accounts Committee (PAC)- Fourteenth Lok Sabha, in its 83rd Report recommended (February, 2009) that the Ministry of Railways should strengthen the coordination efforts and put in place an institutionalised mechanism at the Apex level as also for framing a robust policy on Waste Management. Accordingly, Environment and Housekeeping Management (EnHM) Directorate was setup in Railway Board vide office order No. 28/2015 dated 7 April 2015. Subsequently, Railway Board directed all Zonal Railways (August 2015) to establish EnHM wings in the Zonal offices as well as in Divisions.

Railway Board's circular (August 2015) specifying the scope and formation of EnHM wing at Zonal /Divisional level called for co-ordination and monitoring of all environment related issues. The instructions issued also covered integration of housekeeping functions of major railway stations, coaching trains and coaching depots by the EnHM wings under the control of GM & CME in Zonal Railways and DRM and Sr. DME in the divisions.

EnHM wing was required to manage the Budget for Housekeeping of the stations and coaching trains which included cleanliness and sanitation of stations, coaches and railway colonies⁶. No clear demarcation of the waste management activities (in budget proposals) was, however, mentioned in the instructions issued by the Ministry of Railways.

⁶ *Railway colonies not covered in this Performance Audit*

Audit randomly selected 109 stations across all the 17 Zones (*Annexure-1.4*) to assess the implementation of Railway Board's orders in respect of functioning of EnHM wings at Zonal/Divisional level. Audit observed the following:-

- i. Railways have taken positive steps in establishing EnHM wings in all the zones and in 43 out of 54 Divisions test checked by audit.
- ii. In 11 divisions,⁷ EnHM wings were not established during the review period.
- iii. Instructions were not issued for regular monitoring of aspects related to management of waste in 13 divisions⁸, which included eleven divisions where the wing had not been formed and two other divisions in NCR where though the wing was formed but no instructions related to monitoring management of waste were found on record.
- iv. There is no single body/agency in Indian Railways taking ownership of waste management related issues. EnHM wings were formed to undertake monitoring and coordination function for all environment related issues, while planning, sanction and execution of environment related works was left to be dealt by the concerned department such as Commercial and Engineering.

Ministry of Railways stated (May 2022) that duties related to EnHM wing have been allotted to Mechanical Department where EnHM wing has not been set up. Reply is not acceptable as same level of dedication is unlikely from Mechanical directorate since co-ordination and monitoring of all environment related issues was the sole objective of setting up EnHM wing.

2.1.1 Budget allocation and expenditure

EnHM wing is required to manage the Budget for Housekeeping of the stations and coaching trains. Railways is maintaining expenditure incurred on cleanliness related issue, which includes station, coach sanitation⁹ and sanitation in railway colony. Budget allocation and expenditure incurred there from is shown in the Table 2.1 below:-

Table 2.1 - Details of Budget allocation and Expenditure

(₹ in crore)

Year	Budget Allocation	Actual Expenditure	Per cent utilization
2016-17	1751	1640	94
2017-18	2026	1874	92
2018-19	2281	2156	95
2019-20	2796	2721	97
2020-21	2081	1987	95

Note:- Includes Coach sanitation, Station sanitation and Sanitation of Railway colonies. Sanitation of colonies not covered in this Report.

⁷ CR- Pune & Solapur, ER- Sealdah & Malda; NFR- Lumding, Rangiya & Katihar & NR- Ambala, Delhi, Lucknow & Moradabad

⁸ CR-Pune& Solapur, ER- Sealdah & Malda; NCR- Prayagraj & Agra, NFR- Lumding, Rangiya & Katihar, NR-Delhi, Lucknow, Moradabad & Ambala

⁹ Coach sanitation included onboard housekeeping, clean train stations, mechanical coach cleaning, pest and rodent control and any other activity of coach

However, planning, sanction and execution of environment related works¹⁰ were left to be dealt by concerned departments (Commercial and Engineering). Provision of funds for environment related works (ERWs) was made as an itemized one or on lump sum basis (equal to one *per cent* of the cost of work). Certain items related to waste management like provision of ETPs/STPs, WRPs, ACWPs, waste to compost, waste to energy plants *etc.* were included in the specified list of ERWs. These works are to be managed by EnHM wing of the Zone/Division/PUs. Progress on these works and utilisation of funds vis a vis provision has been given in detail in **para 4.5**.

It is observed that the environment and housekeeping covered a vast area with management of waste a part of it. EnHM wings at different levels as mentioned in Para 1.2 were formed to oversee cleanliness, sanitation apart from waste management. No separate authority with clear role and responsibility was assigned the waste management task as also there was no demarcated fund allocation for waste management exclusively. Further, although more than 90 *per cent* of the budget allocation stands utilised during the period 2016-17 to 2020-21, progress on managing different kinds of waste is not encouraging as brought out in succeeding chapters.

2.2 Constitution of Accountable entities

The National Green Tribunal (NGT), Principal Bench, New Delhi, in their order dated 1 October 2018 (OA No. 141/2014) directed the Ministry of Railways to identify three accountable entities. The order specified that the entity should consist of at least three identified persons at each level (at zonal railway level, at divisional level as well as at every important railway station) to monitor and implement various issues related to solid waste disposal, littering of solid and plastic wastes *etc.* In compliance with these orders, Ministry of Railways directed¹¹ (5 December 2018) all Zonal Railways to constitute three accountable entities at each level¹².

Audit reviewed the implementation of NGT orders on these aspects in case of 109 selected stations and found that requisite accountable entities were not established to monitor the waste management related issues. Further, Accountable entities though constituted, were not represented by requisite number of members and meetings/joint inspection were not conducted at all by the accountable entities. The position is indicated in Table 2.1 A below:-

¹⁰ *Environment related works such as water conservation, Sewage and effluent treatment plants, solid waste management infrastructure, water efficient fixtures and measures for mitigation of Air and Water pollution during construction and maintenance etc*

¹¹ *letter No. 2018/EnHM/01/02 dated 5.12.2018*

¹² (i) *At Station level- Station Director/ Station Manager, one Supervisor each from Commercial and Engineering Department.*
(ii) *At Division level -ADRM, One officer each from Commercial and Engineering Department.*
(iii) *At Zonal Railway level -AGM, One officer each from Commercial, Engineering and Security Department*

Table 2.1 A - Status on constituting accountable entities

Particulars	Zonal Railway level	Divisional level	Station level
Accountable entities not established	ER and SWR	17	42
Accountable entities with lesser representations than required	ECR, NER and NWR	Seven divisions ¹³	13 stations ¹⁴
Meetings not conducted by Accountable entities (as detailed in Annexure 2.1)	Seven zones	23	71

Non-compliance with the important orders of NGT adversely affected the monitoring of the key issues related to waste management as brought out in the subsequent paragraphs.

2.3 Assessment of quantity of waste generated and its proper management

The Public Accounts Committee- (Fourteenth Lok Sabha) in its 83rd Report, had recommended that the Indian Railways must lay down a mechanism whereby the quantum of garbage generated at stations can be assessed realistically so that adequate collection, segregation, and disposal facilities along with necessary infrastructure could be put in place by the Authorities. Ministry of Railways, in its Action Taken Note stated (30 October 2009) that the quantification of garbage is done before tendering for fixing the appropriate agency for garbage disposal work. Position emerging out of the test checked data was found to be contrary to Ministry's claim as indicated in the Table 2.2 below.

Table 2.2 - Assessment of quantum of waste generation and its segregation

Particulars	Stations	Coaching Depots
Assessment not done at all	37	18
Assessment done only in some years	18	1
Segregation as bio-degradable/non bio-degradable not done	60	22
Segregation as bio-degradable/non bio-degradable done in some of the years	17	1

Source:-Information captured from records in Zonal Railways (Annexure 2.2)

Audit observed that assessment of quantum of waste generation was either not carried out at all during the period of review or was done sporadically during the review period. Further, segregation of garbage as bio-degradable & non-biodegradable was either not

¹³ ECR-Sonepur, NER-Lucknow; NWR- Ajmer, Jodhpur, Jaipur & Bikaner WCR-Jabalpur;

¹⁴ ECR- Hajipur, Sonepur & Muzaffarpur; NWR- Ajmer, Bikaner, Lalgarh, Jaipur, Gandhinagar Jaipur, Jodhpur & Rai Ka Bagh, SECR- Raipur & Gondia, SR-Melmaruvattur.

carried out or was carried out in some of the years during the review period. Condition for segregation of waste was also not incorporated in the contract in respect of 109 stations test checked.

Ministry of Railways also emphasized that the rag picking contracts along with the garbage disposal contract should also be available at all A1, A, B & C category stations and that those contracts should always be current and their timely renewal be ensured. Review of records of all selected 109 stations and 30 coaching depots revealed that in 23 stations, the cleaning contracts including the rag picking contracts lacked continuity (**Annexure-2.2**). The period of discontinuation varied widely as shown below:-

- One to three months in nine stations,
- More than three to nine months in 10 stations
- More than 9 to 20 months in 4 stations

MoR stated (May 2022) that quantity of garbage is recorded properly and is mentioned in cubic feet dimension as disposal is done by trolleys of specific volumes in cubic feet. Ministry further added that the contractor quantity of waste is also assessed by contractor before transporting waste to municipality/local body for disposal. The reply is generic and not specific to audit comment as no such arrangements were found on record while auditing units mentioned in Table 2.2.

2.4 Regulatory requirements compliance at stations

The National Green Tribunal (NGT), New Delhi directed (26 March 2019) Ministry of Railways to prepare & implement an Action Plan with 24 identified verifiable indicators¹⁵ (**mentioned in Annexure 2.3**) for proper monitoring of waste management at 36 stations (5 per cent of 720 major stations) and periodical review of progress made in its implementation. This Plan was subsequently to be replicated in phases for all other major stations.

Railway Board, in compliance with NGT's order, directed (17 April 2019) all Zonal Railways to submit Action Taken Report by 25th of every month (commencing from April, 2019) on implementation of the Action Plan at 37 identified stations¹⁶ and also on preparation of Action Plan for balance (out of 720) major stations. This was again reiterated, with exhaustive list of verifiable indicators; vide Railway Board's letter dated 13 May 2019.

NGT further directed (04 December 2019) Central Pollution Control Board (CPCB) to evaluate the performance of major Railway stations both in terms of implementation of Action Plans and compliance to the provisions of the Water Act, Air Act and Environmental Protection Act and Rules framed thereunder. CPCB, also directed

¹⁵ Verifiable indicators included water and energy audit, ISO certification, provision of dustbin, rag picking contracts, provision of poster, installation of ETP/STP/WRPs, provision of Waste Composting Plant, Material Recovery Facilities, use of CCTV cameras for monitoring cleanliness, co-ordination with Urban Local Bodies in order to prevent unauthorized dumping of waste

¹⁶ 36 stations selected as per directions of NGT and 01 additional station identified by Railway Authorities i.e. Shri Mata Vaishno Devi Katra

(2 June 2020) that all the Zones should take steps to reduce the waste water generation as also to identify quality of sewage and non-sewage waste water separately and plan waste water recycling plants accordingly.

The NGT also directed for obtaining requisite authorisations in respect of remaining major Railway stations (out of total 720) within three months from 18 August 2020. Subsequently, Railway Board, vide their letter dated 1 September 2020 directed zonal railways to ensure compliance with the NGT's orders within the specified time limit.

Audit reviewed the records of the selected 109 stations to assess the compliance with the NGT's order by the Ministry. Following points emerged from the review:-

- i. Some of stations selected were functioning without CTE/CFOs in violation to the NGT's orders indicating the lack of monitoring at appropriate levels.
- ii. As of 31 July 2021, 59 stations¹⁷ had not even applied to the concerned SPCBs for obtaining CTEs.
- iii. In respect of 11 stations¹⁸, though CTE was applied for but the same was awaited from respective SPCB as of 31 July 2021¹⁹.
- iv. CFO was not obtained in respect of 46²⁰ stations till 31 July 2021 and
- v. In respect of 34 stations, CFO was obtained directly on the advice of SPCB without having applied for CTE.

Delays in obtaining CTE was mainly attributed to specified equipment not provided or attending to the various requirements of SPCBs and rejection of applications by SPCBs on technical grounds. *(Annexure-2.4)*

MoR stated (May 2022) that 577 stations out of 720 have obtained CFO in compliance to NGT's order. Reply is not specific to Audit comment. Details of the stations where compliance of NGT's order is pending have, however, not been given in the reply.

2.5 Action Plan involving verifiable indicators at 37 identified major stations as per NGT's order

Records regarding implementation of the Action Plan with 24 identified verifiable indicators at 37 identified stations were reviewed in all the Zones across IR and implementation in respect of most of the verifiable indicators, such as water and energy audit, ISO certification, provision of dustbin, rag-picking contracts, provision of poster etc was found satisfactory. However, implementation of the significant indicators, such as installation of ETP/STP/WTPs, provision of Waste Composting Plant, Material Recovery Facilities, use of CCTV cameras for monitoring cleanliness, co-ordination with Urban Local Bodies was not complete as brought out in Table 2.3 below:-

¹⁷ Since applied in August 2021 for 3 station i.e. Metro Rail Kolkata-Rabindra Sadan, Esplanade, Dum Dum

¹⁸ Since obtained in September 2021 at 01 station i.e. WCR-Sawai Madhopur

¹⁹ This was required to have been completed as per the cited NGT order by 31 March 2021 and this position in audit was verified and updated as of 31 July 2021.

²⁰ Since obtained in August 2021 at 02 stations i.e. SER-Shalimar and Kharagpur

Table 2.3 –Compliance with NGT orders for implementing 24 verifiable indicators

S. No.	Activity	Status of implementation/compliance (as of 31 st March 2020)
1	ETP/STP/WRPs	Not planned in five stations ²¹ . In other five stations ²² though planned but the same were not yet installed
2	Waste Compost Plant and Material Recovery Facilities	Not provided at 14 stations ²³ and at 16 stations ²⁴ respectively
3	Usage of CCTV cameras for monitoring cleanliness activity.	Primarily used for security purpose as well for monitoring cleanliness.
4	ISO certification, Water Audit and Energy Audit	Completed in all the 37 identified stations
5	Encroachment of railway land, illegal dumping in railway premises and boundary wall to prevent unauthorized dumping on railway land	<ul style="list-style-type: none"> • Encroachment found on five²⁵ stations. • Illegal dumping on railway premises was noticed in four stations²⁶. • Boundary wall not constructed at seven stations²⁷.
6	Periodical Reports	Compliance not done in respect of submission of periodical reports at five stations ²⁸ .

Implementation of Action Plan was satisfactory in respect of some stations like Pune (CR), Sealdah (ER), Rajendra Nagar Terminal (ECR), Visakhapatnam (ECoR), New Delhi (NR), Katihar (NFR), Jaipur & Jodhpur (NWR), Secunderabad, Kacheguda & Vijaywada (SCR), Ranchi & Digha (SER), Bilaspur (SECR), Hubballi & Mysuru (SWR), Jabalpur & Bhopal (WCR) and Vadodara (WR), where 20 or more out of 24 verifiable indicators were implemented. However, it was observed that implementation of the 24 Verifiable Indicators were not entirely accomplished even in respect of a single station out of the 37 stations as of 31st March 2020.

MoR in reply stated (May 2022) that works for setting up of ETps/STPs/WRPs which require huge infrastructure inputs have been sanctioned for the year 2022-23. MoR further added that composting plant not required at stations with lesser quantum of wet waste.

²¹ ECR-Dhanbad, NER- Lucknow Jn. & Manduadih, SR- MGR Chennai Central & Thiruvananthapuram Central

²² ECoR- Vizianagaram, ER- Howrah, NCR- Jhansi, WR- Mumbai Central & Vadodara,

²³ CR- Nasik Road, NR- Varanasi & Shri Mata Vaishno Devi Katra, NCR-Jhansi, Prayagraj & Agra Cant, NWR- Ajmer, SR- Thiruvananthapuram Central MGR Chennai Central, Tiruchchirappalli Jn., SCR- Secunderabad & Vijaywada, SECR – Bilaspur WCR- Jabalpur

²⁴ CR- Nasik Road, ECR- Dhanbad ER- Howrah & Sealdah, NCR- Jhansi, Agra Cant & Prayagraj, NEFR- Guwahati & Katihar, NER-Manduadih, NWR- Ajmer, SECR- Bilaspur & Raipur, SER- Digha, SWR- Hubballi, WCR- Jabalpur

²⁵ ER-Sealdah, SECR-Raipur, SWR-Hubballi, WCR-Jabalpur & Bhopal

²⁶ ECoR-Vizianagaram, NCR-Agra cant., SER-Ranchi, SECR-Raipur

²⁷ ER-Howrah, NR- Delhi, Firozpur, NCR-Agra cantt, NWR-Ajmer, SECR-Raipur, WCR-Bhopal

²⁸ ER- Howrah & Sealdah, NCR- Jhansi, Prayagraj & Agra Cant

Reply of the MoR is not specific to the stations included in the audit observation above. Further, the fact that implementation of 24 Verifiable Indicators was not entirely accomplished even in respect of a single station out of 37 stations has not been contested by MoR.

2.6 Action Plan involving verifiable indicators at other than 37 stations (balance of 720 stations)

Status of implementation of the action plan in respect of the 24 identified verifiable indicators in the remaining major stations (balance out of 720 major station) was assessed in 65 stations (*Annexure 2.5*) selected across all the zones over IR which revealed the following:-

- i. ETPs/STPs/WRP were not installed in 41 stations,
- ii. Waste Composting Plants and Material Recovery Facilities were not provided in 43 and 46 stations respectively.
- iii. CCTV cameras were not used for monitoring cleanliness activities at 28 stations.
- iv. Non co-ordination with Urban Local Bodies /Local Bodies (ULB/LBs) in 28 stations and no toilets in the circulating area in 30 stations.
- v. Water Audit not conducted at seven stations²⁹ and Energy Audit not conducted at 11 stations³⁰.
- vi. Periodical Reports were submitted by all the stations except by 10 stations³¹.

This indicates Railway Administration was not serious enough in implementation of the much-emphasized 24 verifiable indicators. NGT's orders were, thus, violated.

MoR in their reply stated (May 2022) to have complied the implementation of 24 verifiable indicators. Reply is not acceptable as audit comment was regarding stations not complying with the specific requirement. Reply of the Ministry is silent on this aspect.

2.7 Progress on actionable points under Swachh Bharat Mission (SBM)

As a part of 'Swachh Bharat' mission, Railway Board formulated actionable Points for improvement of cleanliness in station premises and issued directives in July 2016 and September 2016. Zonal Railways were asked to circulate these points to all major A1 and A category stations so that the corrective/ preventive actions wherever needed are taken and systems are set up for monitoring to improve the cleanliness standards. These Actionable Points contained, *inter-alia*,

²⁹ CR- Wadi, ECoR- Cuttack, NER - Kathgodam, Haldwani, Bareilly City, NWR- Gandhi Nagar Jaipur, WR- Bharuch

³⁰ CR- Wadi, ECoR- Cuttack, NER- Kathgodam, Haldwani& Bareilly City, NEFR- New Bongaigaon & New Jalpaigudi, WR- Bandra Terminus, Metro Rail - Dum Dum, Esplanade & Rabindra Sadan

³¹ NR- Barabanki, Panipat, Rae Bareilly& Rohtak, NCR- Prayagraj Chheoki, WCR- Katni & Pipariya, Metro Rail- Dum Dum, Esplanade & Rabindra Sadan

- (i) Picking up of garbage from the point of arising itself using ergonomic garbage collector like dustpan with handle and putting inside the garbage bin thereby avoiding sweeping down the solid waste to drains.
- (ii) Monitoring of cleaning staff through CCTVs and earmarking the specific beats for cleaning staff.
- (iii) Cleaning staff earmarked to maintain the identified beats free of garbage .
- (iv) Provision of different coloured dustbins with black polythene bag for non-biodegradable waste (dry waste) and green coloured for biodegradable waste (wet waste) within 10 meters in all the areas of passenger movement.
- (v) Provision of dustbins and proper garbage disposal arrangement in vehicle parking area.
- (vi) Foot over-bridges (FOBs) covered with wire mesh throughout the length to prevent falling of objects and garbage on to the track and sides

Progress on these important actionable points was examined in audit at the 109 selected stations and 30 coaching depots. The deficiencies noticed are indicated in Table 2.4 below.

Table 2.4 - Status of implementation on the actionable points on SBM

S. No.	Actionable point	Status of implementations
1	Provision of dustbins	(i) Different coloured signage dustbins with polythene liner bags inside were not provided in 12 stations and 15 coaching depots for collection of wet and dry waste. However, in case of 97 stations (89 per cent) different coloured dustbins were provided. (ii) At 27 stations, dustbins provided were not placed within 10 meters from any location in all the area of passenger movement. (iii) Covered dustbins were not provided in waiting room and toilets at 17 stations. (iv) Provision of dustbins not found in vehicle parking area at 38 stations.
2	Monitoring of cleaning staff	(i) In 42 stations, the CCTVs camera at the platforms of stations were not used for monitoring availability of cleaning staff at their areas of work. (ii) Beats were not earmarked for the cleaning staff at 16 stations.
3	Inclusion of cleanliness aspect in the cleaning contracts	(i) Cleaning contracts in respect of 53 stations and 18 coaching depots did not have specific clause for segregation of waste. <div style="text-align: right;">  <p>Non-segregated waste at RBL station at Lucknow Division in NR</p> </div>

		(ii) At seven stations garbage was not picked up from the point of arising.
		 <p style="text-align: center;">Dustbins overflowing with waste at MAS</p>
4	Covering FOBs with wired mesh	FOBs at 28 stations were not covered with wired mesh to prevent falling of garbage on overhead wires and track.

In continuous efforts towards monitoring the progress of stations on “Swachh Rail, Swachh Bharat” campaign, the Ministry of Railways engaged (2019) Quality Council of India for the survey for ranking of 720 stations. Result of progress on the aspects like “No littering in sight”, “Dustbin in sight and “Twin Dustbin in sight” is indicated in Table below.

Table 2.4 A - Excerpts of the result of e-survey conducted by QCI for implementation of Action Plan for cleanliness at stations

(Figures in per cent)

Particulars	No littering in sight	Dustbin in sight	Twin bins in sight
Parking area	73.98	64.6	73.77
Main Entry	85.97	84.72	62.30
Ticket counter	92.22	78.75	67.02
Waiting area	94.03	84.18	61.17
FOB & Stairs	93.56	63.01	76.40
Open sitting area	90.93	87.76	72.68
Vendor area	91.68	96.13	65.60

It may be seen that despite clear directives given by Railway Board in 2016 for implementation of actionable points for cleanliness of station premises, many stations (out of 720) have not yet completed the implementation of action plan.

2.8 Efforts made for execution of railway works through CSR initiative

For supplementing the Railway’s efforts in keeping the railway stations clean, Railway Board, instructed³² (February 2016) Zonal Railways to encourage the Corporates and PSUs for sponsoring the works at stations especially falling in their business/influence area to execute identified railway works under corporate social responsibility (CSR). These works included provision of dustbins, waste transport trollies, cleaning machines, Sewage/effluent treatment plants, waste to compost, waste to energy plants

³² letter No. 2015/EnHM/06/06 dated 03.02.2016

etc. at stations. These provisions under CSR initiative were with an objective to promote participation of corporation and PSUs for execution of environmental sustainability works, cleanliness works, sanitization of stations and provision of certain passenger amenities.

EnHM wings of the Zonal Railway/ Division were to co-ordinate such sponsoring of CSR activity and an appropriate database of the facilities created through CSR initiative were to be maintained by the Railway Administration.

The measures under CSR initiative met very limited success. Facilities provided for waste management at stations through CSR initiatives were reviewed across all Zonal Railways and the outcome is brought out in Table 2.5 below: -

Table 2.5 - Response under CSR initiative

S. No.	Work/Item provided	Numbers	Division	Zone	Cost involved (₹ in crore)
1	Dustbins	1906	CSMT, Delhi, Agra, Mumbai Central, Vadodara & Waltair	CR, NR, NCR, WR, ECOR	0.86
2	Waste to compost plant	10	Sealdah, Bikaner, Secunderabad, Mumbai Central, & Waltair	ER, NWR, SCR, WR, ECOR	0.75
3	Trolleys	10	Bilaspur	SECR	0.05
4	Waste to Energy Plant	1	Jaipur	NWR	0.91

2.9 Collection and segregation of waste generated by catering units and from trains covered under OBHS

Procedure order for handling waste arising out of pantry cars and static catering units at stations and its disposal circulated vide RB's Commercial Circular No 55 of 2016 stipulated provision in the license agreement with catering contractor for collection of waste in two colored bins³³. Guidelines circulated vide RB's Commercial Circular No. 14 of 1999 and Commercial Circular no. 45 of 2011 contained instruction to have local Joint Procedure Orders (JPOs) in order to implement the procedure for collection of pantry Car waste at platforms. For on board cleaning and hygiene attention in running trains, Railways had adopted the On Board Housekeeping Services (OBHS) Scheme under which cleaning and disinfection of the coaches and toilets was to be ensured by engaging outsourced agencies. Guidelines circulated by Railway Board (17 February 2016), provided for ensuring collection of garbage/litter from the coaches in secured polybags/eco-friendly bags by the contractor.

³³ *Green for biodegradable waste/wet waste and black for non-biodegradable waste/dry waste in catering units*

Review conducted in the 109 selected stations across all zonal railways revealed the following: -

- i. Provision of collection of waste in two colored bins as stipulated in the license agreement with catering contractor were not incorporated in 39 stations leading to consequential non-segregated collection of waste.
- ii. In respect of 58 stations contractors did not ensure collection of polybags containing garbage from OBHS trains.
- iii. Joint inspection conducted by Audit revealed that the segregated waste collected from the Pantry cars and OBHS trains was not unloaded in secured bags in 49 stations. In 42 of these 49 stations, waste collected from the Pantry cars or OBHS train was not dumped in the separate assigned dustbins.
- iv. JPOs were not issued in respect of 70 stations for implementing the procedure for collection of waste from pantry cars.

Non-compliance of the laid down procedures for collection and disposal of waste of catering units at stations and that from OBHS trains had adverse impact on cleanliness at these stations.

2.10 Assessment and collection/segregation of Plastic wastes at stations

Railway generates vast quantities of different types of waste- both solid and plastic waste. Public Account Committee (PAC) in its 83rd report (2008-09) stated that, the Ministry of Railways must not lose sight of environmental concern while making use of plastics and ensure adherence to applicable rules. Central Pollution Control Board (CPCB) sponsored a study through RITES regarding plastic waste generated at three railway stations (New Delhi, Old Delhi and Hazrat Nizamuddin station). The report (December 2009) indicated that about 6758 Kg. of plastic waste was being generated by these stations per day and there was no system in place to segregate degradable and non-biodegradable wastes generated at these stations. In terms of the Plastic Waste Management Rules, 2016, Indian Railways was identified as 'waste generator'³⁴.

Railway Board issued following directives³⁵ (October 2016) to Zonal Railways:-

- Minimize usage of plastic,
- Set up waste management system including collection, segregation and disposal of plastic waste in an appropriate manner.
- Ensure provision for disposal of such waste in an environment friendly manner in all cleaning contracts.

³⁴ *Rule 3 (x)]. These Rules further emphasise that waste generator shall (a) take steps to minimize generation of plastic waste and segregate plastic waste at source in accordance with the Solid Waste Management Rules, 2000 or as amended from time to time and (b) not litter the plastic waste and ensure segregated storage of waste at source and handover segregated waste to urban local body or gram panchayat or agencies appointed by them or registered waste pickers', registered recyclers or waste collection agencies.*

³⁵ *letter number 2016/Environ/01/01 dated 17.10.2016*

For better management of plastic waste, it is imperative upon railway authority to assess and take steps for separate collection and segregation of plastic waste at stations.

Audit conducted at 109 stations and 30 coaching depots revealed that assessment of quantity of plastic waste generated at 71 stations and in 26 coaching depots was not done by Indian Railways. (**Annexure 2.6**).

Railway Board directed³⁶ (August 2019) all Zonal Railways to enforce detailed measures on Plastic Waste Management with effect from 02 October 2019 which mainly included the following:-

- i) Strictly enforce ban on single use plastic material.
- ii) Encourage all railway vendors to avoid use of plastic carry bags.
- iii) Encourage staff to reduce, reuse and refuse plastic products and to use inexpensive reusable bags to reduce plastic footprint.
- iv) IRCTC to implement return of plastic drinking water bottles as part of Extended Producer Responsibility.
- v) Provision of Plastic Bottle Crushing Machines (PBCMs).

Compliance to these Plastic Waste Management Rules 2016 as also the instructions of Railway Board were examined in Audit and based on the record provided it was observed that following measures were implemented to some extent: -

- Planning and installation of Plastic Bottle Crushing Machines
- Provision of ‘*plastic only bins*’

Progress on the above measures is indicated below -

- i. Installation of PBCMs was planned at all the 37 major stations (included in 109 stations selected for Audit) in compliance to NGT orders. This was also one of the important verifiable indicators out of the 24 indicators (referred to in Para 2.5) initially applicable for 37 identified major stations. At 14 stations, the PBCM installed were less than what was planned. (**Annexure 2.6**) Out of the 109 stations selected for Audit, PBCMs were not even planned in 11³⁷ stations and in 14 stations³⁸ though these were planned but not even a single PBCM was installed as on 31 March 2020.



³⁶ letter No. 2019/EnHM/11/01 dated 19.08.2019

³⁷ CR-Igatpuri, NR-Barabanki, Rohtak; NCR-Prayagraj Chheoki; NER-Gorakhpur, Chhapra, Haldwani; NFR- Hojai, New Jalpaiguri; NWR- Rai Ka bagh; SR- Melmaruvattur.

³⁸ NR- Panipat, Rajpura junction, Jalandhar Cantt; NCR – Agra Fort; NWR- Bikaner, Lalgarh; SR – Ottappallam; SWR – Yelahanka, Pandavpura,; WCR – Hoshangabad, Pipariya, Katni; WR – Valsad, Bilimora Jn

- ii. PBCMs installed at 15 stations³⁹ were not found functioning during the Joint inspection conducted with the Railway Officials. These included two stations (Hubballi & Digha) out of the 37 major NGT identified stations.
- iii. As regards provision of '*Plastic Only Bins*' as a measure of segregation of plastic waste, review in Audit revealed that in 90 stations and 25 coaching depots (*Annexure 2.6*) no such facility existed.
- iv. On the issue of steps taken to minimize the generation of plastic waste and segregation of the same at source, Audit observed that relevant clause was not incorporated in cleaning contracts in respect of 84 stations and 26 coaching depots.
- v. Record related to end usages of the plastic waste generated from PBCMs that were operational was not made available to Audit.

MoR stated that 639 PBCMs have been installed at 441 out of 720 major stations. As regards provision of '*plastic only bins*' MoR has assured better management of plastic waste.

Reply of the Ministry is not acceptable as it is generic in nature and status of planning/installation of PBCMs on the stations commented has not been brought out in reply.

2.11 Segregation, Collection and separate accumulation of Municipal Solid Waste

The Government of India has notified the Solid Waste Management (SWM) Rules, 2000 / 2016. As per Rule 4 (1), Railways are required to:-

- Segregate and store the waste generated in three separate streams namely biodegradable, non-biodegradable and domestic hazardous wastes in suitable bins;
- Handover segregated wastes to authorised waste pickers or waste collectors as per the direction or notification by the local authorities from time to time.

The National Green Tribunal (NGT), in their order dated 18 March 2015 had directed that all Railway Platforms should be kept clean and free of any Municipal Solid Waste (MSW). MSW from platforms should be collected and disposed of in accordance with Solid Waste Management (SWM) Rules 2000 to the designated MSW disposal site only and to no other place. Railway Board, thus directed⁴⁰ (April 2015) Zonal Railways to comply with the above directions of the NGT and ensure maintaining necessary records for the same.

Solid Waste Management (SWM) Rules, 2016 also specifies that no waste generator shall throw, burn or bury the solid waste generated by him, on streets, open public

³⁹ CR-Panvel, Wadi, NR-Moradabad NWR- Jaipur, SCR- Secunderabad, Kacheguda, SECR-Bilaspur, Raigarh, SER- Digha, SR- MGR Chennai Central, SWR- KSR Bengaluru, Krishnarajanpuram, Hubballi, WCR- Sawai Madhopur, WR- Bandra Terminus

⁴⁰ letter No. 2015/Environ/01/03 dated 30.04.2015

spaces outside his premises or in the drain or water bodies. In compliance with these rules, Railway Board, vide letter dated 05 September 2016, instructed zonal Railways to get the collected waste at station segregated at source in differently colour coded dustbins and further handling of these wastes should be done separately. Railway Board also directed Zonal Railways (vide letter dated 09 December 2016) to enter into Memorandum of Understanding (MoU) with Local bodies for disposal of solid wastes from stations and also to maintain records regarding the same.

Compliance with the rules prescribed in the SWM rules, 2016 and instruction of Railway Board (September 2016) *ibid* was assessed at all selected 109 stations and 30 coaching depots and following was observed: -

- i. Necessary records in support of handling Municipal Solid Waste (MSW) were not maintained at 41 stations and three coaching depots. In the absence of such records, compliance of the NGT's order could not be ascertained.
- ii. Collected waste was not segregated at source in differently colour coded dustbins at 16 stations and 21 coaching depots.
- iii. No storage sites/vats⁴¹ were identified for collection of segregated waste before final disposal at 22 stations and 10 coaching depots.
- iv. Accumulation of biodegradable and non-biodegradable waste was not done separately at 47 stations and 17 coaching depots.

The Indian Railways is traditionally dependent on the municipal waste management system to evacuate its waste. Further, in the absence of storage sites/vats for storing the segregated waste before final disposal by the municipal authorities, improper disposal of waste by burning, dumping into adjacent canals, low lying areas, and near the track, causing environmental pollution can not be ruled out.

MoR stated (May 2022) that solid waste is being collected as dry and wet waste in separate bins. MoR added that Twin bins have been provided at all major stations. Reply of the Ministry is not tenable as it did not address specific Audit observations.

2.11.1 Transportation and disposal of solid waste

Audit reviewed the status of compliance of Railway Board's instructions consequent to NGT's order (as mentioned in para 2.11) regarding disposal of collected solid waste and following points emerged: -

- i. Solid waste was not disposed of at final disposal site at 14 stations and seven coaching depots;
- ii. Segregated waste was not transported in covered condition at 15 stations and five coaching depots;
- iii. Railway Administration did not enter in to ocalL rbanMoU with U stations and 28 coaching 97 at Local bodies for disposal of solid waste/odiesB depots.

⁴¹ *Vat refers to container for putting garbage*

- iv. No record was kept for storage and disposal of waste as per NGT/RB directives at 65 stations and 22 coaching depots.
- v. Td waste picker or to he system of handing over segregated waste to authorise at 50 was not in place as envisaged in the extant instructions waste collector coaching depots 3and 1 stations.

(Annexure 2.7).

MoR in their reply stated (May 2022) that cleaning contracts have been awarded at all the major 720 stations and solid waste is handed over to respective municipal bodies for disposal. Reply is, however, silent on the issues related to storage and transportation of solid waste commented in the report.

2.11.2 Facilities for Management of solid waste

Action plan at 37 identified major railway stations, subsequently to be implemented in balance of 720 stations as issued by Railway Board (April 2019) in context of NGT directives (March 2019) contained issues related to storage and disposal of waste like provisioning of Composting plant, Material recovery facility and segregated waste transportation.

The status of implementation of the above policy decisions in compliance to NGT's order dated 26.03.2019 was reviewed (*Annexure 2.8*) in all the 109 selected railway stations and 30 coaching depots. Following observations are made:-

- i. No provision made for wet waste processing facility at 77 stations and 29 coaching depots.
- ii. Material recovery facility not provided at 87 stations and 27 coaching depots.
- iii. Composting plant not provided at 77 stations and 28 coaching depots.
- iv. Waste recycling centres not set up at 102 stations and 29 coaching depots.

Further, eight stations⁴² were identified⁴³ for setting up solid waste management plants. RITES was engaged for bid process and project management for these plants. Review of implementation of setting up of solid waste management plant at the identified eight stations revealed that at 7 stations (except at Patna station) the solid waste management plant was not set up.

2.12 Conclusion

Huge quantum of waste generated at the stations and at the coaching depots warranted continuous actions for assessment, segregation, storage and its disposal. There were statutory rules and series of orders issued by NGT directing IR to take action on matter related to waste management, which were required to be complied with.

The important recommendations of the PAC for setting up EnHM directorate at the zonal and at the divisional level were partially complied with. Accountable entities at

⁴² *Chhatrapati Shivaji Maharaj Terminus, Patna, Sealdah, Howrah, Prayagraj, Varanasi, Secunderabad and MGR Chennai Central.*

⁴³ *Environmental Sustainability Annual Report 2016-17of the Indian Railways*

the railway stations, divisions and at the zonal level were not constituted in 38.60 per cent of the stations test checked. Assessment of quantum of garbage generated in the categories biodegradable and non-biodegradable was not done at many stations despite recommendations of PAC in this regard. Despite directions of the NGT, a large number of stations had not even applied for CTEs/CFOs.

The progress on implementation of action plan with 24 verifiable indicators at 37 major stations as directed by NGT was not satisfactory. ETPs/STPs/WRPs, waste to composting plant etc remained to be provided till March 2020. Requisite clauses were not incorporated in the cleaning contracts with agencies for proper segregation and disposal of waste. Efforts to execute cleanliness and waste management works through CSR met with little success. Important directions of Railway Board to formulate Joint Procedure Orders for collection of pantry car garbage were not complied with at many stations. Installation of PBCMs at stations evoked slow response as installation of PBCMs (March 2020) was far short of that planned.

Segregation of accumulated solid waste in biodegradable waste and non-biodegradable category in compliance to Solid Waste Management Rules was not done at many stations. Further, records for storage and disposal of such waste were not maintained and in large number of stations. MOUs with ULB/LBs for disposal of waste were not ensured. Progress towards construction of the required infrastructure for management of solid waste such as waste composting plants, waste segregation and recycling plant was poor in respect of the stations test checked. The instructions issued by Ministry of Railways for managing environment and housekeeping works did not have clear demarcation of role and responsibility of managing waste generated at various activity centres. Besides, fund allocation exclusively for waste management was not earmarked.

Summary of Audit findings

- PAC recommendations for setting up EnHM directorate at the zonal and at the divisional level were partially complied with.
- Role and responsibilities with specific reference to Waste Management activities were not clearly defined. Further, demarcation of the funds exclusively for waste management activities was also not done. Absence of Accountable entities at various levels despite directives of NGT has adversely affected the monitoring of the key issues related to waste management.
- Progress on implementation of verifiable indicator in terms of NGT's order was not encouraging.
- PBCM not installed at stations as planned and even where installed, the same were not functioning.
- Requisite clauses not incorporated in the cleaning contracts with agencies for proper segregation and disposal of waste. Further, Railways lacked infrastructure for management of solid waste.

2.13 Recommendation

IR needs to proactively ensure formation of EnHM wings at zonal and division level and constitution of accountable entities as directed by NGT to strengthen the waste management mechanism. IR also needs to define clear cut role and responsibilities and fund allocation exclusively for waste management activities. Besides this, IR needs to put in place an effective monitoring mechanism for managing plastic as well as solid waste in an environment friendly manner.

Management of waste generated at Railway workshops, Maintenance Sheds Coaching Depots and Production Units

Audit objective 2:

Whether the assessment, management and disposal of waste generated at Railway workshops, maintenance sheds and production units was done as per applicable laws and rules

Indian Railways has established a network of workshops and maintenance sheds for locomotive/coaches/ wagons besides various Production units. During maintenance/ repair/ production activities, these units generate huge quantum of solid waste and waste water contaminated with cleaning agents, oil, lubricants, grease, heavy metals and hazardous solids. Waste water and hazardous waste generated is an area of utmost concern from environmental perspective which calls for proper assessment, treatment, storage and disposal as per Acts/Rules framed by Centre/State Pollution Control Boards. Deficiencies noticed in management of waste in these activity centres (selected 101⁴⁴ Workshops, Sheds and Production Units and 30 Coaching depots⁴⁵) are covered in this chapter.

3.1 Consent to Establish (CTE) or Consent for Operation (CFO) under the Water Act, 1974

Sections 24, 25 and 26 of the Water (Prevention and Control of Pollution) Act, 1974 (as amended in 1978 and 1988) provided that no person shall except with the previous consent of the State Pollution Control Board (SPCB), establish or operate any industrial plant which is likely to discharge sewage or trade effluent into a stream or well or sewer or on land. If any plant was in operation before the enactment of the Water Act, it was required to obtain CTE /CFO within a period of three months. The National Green Tribunal (NGT) in its directives⁴⁶ issued in August 2020 held the same view.

Compliance to statutory provisions was examined in selected units and it was observed that CTEs/CFOs were not obtained as of March 2020 in 40 units⁴⁷ (Details indicated in *Annexur-3.1*). No specific reasons were available on record for non-obtaining of CTE/CFO by these units. Despite specific stipulation under Water Act, inadequate compliance in these 40 units is indicative of ineffective monitoring on the important issue of environmental concerns.

⁴⁴ 22 Mechanical workshops, 09 S&T Workshops, 10 Engineering workshops, 18 Diesel Loco sheds, 15 Electric Loco sheds, 19 MEMU/DEMU/EMU car sheds & 8 Production unit

⁴⁵ Across 17 Zones including RPU & Metro Railway, Kolkata.

⁴⁶ OA number 141/2014 (Saloni Singh Vs Union of India) issued in August 2020.

⁴⁷ 02 Mechanical workshops, 05 S&T Workshops, 06 Engineering workshops, 02 Diesel Loco sheds, 08 Electric Loco sheds & 17 MEMU/DEMU/EMU car sheds

3.2 Authorisation from SPCBs for handling of Hazardous and other waste

Hazardous waste is defined as any waste which by reason of any of its physical, chemical, reactive, toxic, flammable, explosive or corrosive characteristics causes danger or is likely to cause danger to health or environment, whether alone or when in contact with other wastes or substances.

Rule 6 (1) of Hazardous and other Wastes (Management, and Transboundary Movement) Rules, 2016, provides that every occupier of facility engaged in generation and handling of hazardous waste is required to obtain authorization from the State Pollution Control Board (SPCB). Such occupiers, which includes Railway workshops, sheds and production units, are required to segregate the hazardous waste generated from other wastes and store properly before its disposal as per the procedures laid down by the SPCBs/CPCB.

Examination of the related records in the units selected revealed that 50 units⁴⁸ (*Annexure- 3.1*) had not obtained CTE/CFO under the Hazardous Waste Management Rules from the concerned SPCBs. Thus, the stipulations under these rules regarding identification, segregation, storage and disposal of hazardous waste by these units were not complied with. The resultant impact on health of workers of these units in particular and neighbouring community in general could not be ruled out in the absence of monitoring.

3.3 Delay in Authorisation from SPCBs for handling of effluents and hazardous waste

Rule 6(1) of the Hazardous and other Wastes (Management and Trans-boundary Movement) Rules, 2016 provides that application for renewal of authorisation under these Rules may be made three months before the expiry of previous authorisation.

Examination of the related records in the units selected for review in Audit revealed that 21 units⁴⁹ (*Annexure 3.2*) did not comply with the said Rules/conditions. In respect of renewal of CFO under the Hazardous Waste Management Rules as well as under the Water Act, delays in applying for renewal of authorization was noticed as indicated in Table 3.1 below:-

Table 3.1 - Status on seeking authorization from SPCB

S. No.	Range of delays in seeking renewal for authorization from SPCB	Number of units under HWM Rule	Number of units under Water Act
1	1 to 06 months	1	3
2	06 to 18 months	1	8
3	18 to 30 months	2	5
4	beyond 30 months	6	6

⁴⁸ 06 Mechanical workshops, 05 S&T Workshops, 06 Engineering workshops, 07 Diesel Loco sheds, 08 Electric Loco sheds & 18 MEMU/DEMU/EMU car sheds

⁴⁹ 06 Mechanical workshops, 01 S&T Workshops, 01 Engineering workshops, 05 Diesel Loco sheds, 04 Electric Loco sheds & 04 PUs

Reasons for such delays in obtaining renewals were not furnished by the Railway Authorities.

3.4 Submission of Environmental Statements

In terms of Rule 14 of Environment (Protection) Rules 1986, every organisation carrying on an industrial operation or process is required to submit an Environmental Statement annually to the concerned SPCB as indicated in Table 3.2 below: -

Table 3.2 - Environmental statements required to be furnished annually to SPCB

Form	Extant Provision/Rule	Disclosure to be made about	Scheduled date of filing
Form 4	Hazardous Waste Management Rules, 2016	Quantity of waste generated category wise, quantity dispatched to disposal facility or recyclers or others, quantity utilized in-house and quantity in storage at the end of the year.	30 th June
Form V	Water (Prevention and Control of Pollution) Act 1974 or Air (Prevention and Control of Pollution) Act 1981 or both	Water and raw material consumption, pollutants discharged in the environment and quantum of solid wastes and hazardous wastes generated by the units.	30 th September

Audit examined the position of submission of the said two Annual Environmental Statements and observed the following:

- i. Form-V under the EP Rules was not submitted to the concerned SPCBs by 83 units⁵⁰. Of these, consent under the Water Act was not obtained in 40 units (*Annexure 3.1*).
- ii. Form- 4 was not submitted under the Hazardous Waste Management Rules in 84 units⁵¹. Of these, 50 units (*Annexure 3.1*) did not obtain authorisation under the Hazardous Waste Management.

3.5 Maintenance of records for storage and disposal of hazardous waste

As the hazardous waste generated in any facility causes danger or is likely to cause danger to health or environment, the Hazardous Waste Management (HWM) Rules

⁵⁰ 14 Mechanical workshops, 09 S&T Workshops, 10 Engineering workshops, 13 Diesel Loco sheds, 13 Electric Loco sheds, 19 MEMU/DEMU/EMU car sheds & 05 Production Units

⁵¹ 16 Mechanical workshops, 09 S&T Workshops, 10 Engineering workshops, 12 Diesel Loco sheds, 13 Electric Loco sheds, 19 MEMU/DEMU/EMU car sheds & 05 Production Units

provide various stipulations for proper segregation, storage, labelling and disposal of such waste. Some of the important provisions are indicated in Table 3.4 below:-

Table 3.4 - Gist of rules/provisions required to be followed under Hazardous Waste Management (HWM) Rules

Rule	Gist of rule/provision	Form prescribed
17	Proper storage of such waste in containers and it's labelling	Form-8
	Up keep of records of sale, transfer, storage, recycling, utilization etc .of such waste	Form-3
18 (2)	Issuing Transport Emergency (TREM) Card for every sale/issue of hazardous waste	Form-9
19 (1)	Manifest System to track hazardous waste from the time it leaves generator until it reaches the treatment / disposal site	Form 10

Audit examined the extent to which the prescribed rules for proper storage and disposal of hazardous waste were followed in selected 131 units (including 30 coaching depots) and following points emerged: -

- i. Proper storage and labelling of hazardous waste not done in 102 units,
- ii. Records for storage, utilization, not kept in 110 units,
- iii. Transport Emergency (TREM) Card not issued for every sale/transfer of hazardous waste in 117 units,
- iv. The manifest system prescribed for tracking of hazardous waste till its disposal, not followed for each issue/sale of hazardous waste in 101 units.

(Annexure 3.3).

Non-adherence to the prescribed rules as brought out above makes the whole system of monitoring mechanism grossly ineffective posing threat to the environment as well worker/staff engaged in these units. It also highlights a need for sensitization for ensuring compliance to the rules prescribed for handling hazardous waste.

3.6 Storage of hazardous waste beyond the permissible period

Rule 8 (1) of Hazardous and other Wastes (Management, and Trans-boundary Movement) Rules, 2016 (HWM Rules), prescribes that the occupiers of facilities may store the hazardous and other wastes for a period not exceeding ninety (90) days. State Pollution Control Boards (SPCBs) may extend the said period of 90 days to 180 days in some specified cases. Review of related records in the units selected revealed the following: -

- i. Storage period of hazardous waste⁵² was in excess of the prescribed period of ninety days in 36 units .The actual storage period of hazardous waste ranged from 3 to 6 months in 6 units, more than 6 to 12 months in 12 units, more than 12 to 24 months in six units and 24 months & beyond in 12 units .

⁵² like waste oil, oil sludge, ETP sludge, paint sludge, used filters, cotton waste mixed with grease/ lubricants etc.

- ii. In some of the units⁵³ the storage period was found as long as 8 to 9 years or even more. Records did not indicate as to the permission from SPCB for storage of such waste was sought beyond the permissible limit.

As timely disposal of hazardous waste is must for its proper management and also for preventing the danger likely to be caused by it to persons or environment, the action of Railway units storing such waste for a long period makes the prescribed statutory provisions ineffective. With such prolonged storage, there remained potential threat causing adverse impact to the environment.



Hazardous waste lying in open space at Electric Loco Shed/Gonda of NER

3.7 Integrated Management System (IMS)/ Green Rating Certification

In terms of Railway Board's directives⁵⁴ (June 2015), Zonal Railways are required to put in place a system for Management of quality of environment through Integrated Management System (IMS) addressing the ISO 9001 for Quality, ISO 14001 for Environment Management System (EMS) and ISO 18001 for Occupational Health & Safety (OHSAS). Zonal Railways were asked to take immediate necessary action to obtain IMS certification for all the PUs/ Workshops as also for loco sheds and major coaching depots including EMU/DEMU car sheds. Later in February 2017, Zonal Railways were instructed⁵⁵ to undertake Green Rating Certification of Railway Establishments covering the assessment of parameters on energy conservation measures, use of renewables, water recycling/rain water harvesting, waste management (solid & liquids) and its disposal.

Review of records of selected Railway workshops, sheds, Production units and coaching depots (131 units) revealed that certification under Integrated Management System (IMS) or Green Rating was obtained in respect of 88 units only (67 per cent).

Thus, the system for Quality Management of environmental issues was not fully established even after five years of issue of instructions in this regard. Further, based on the study got done by Ministry of Railways through Quality Council of India (QCI) in 2019 it was also observed that ISO certification and Green rating was obtained by only 10 and two per cent of the stations, respectively.

⁵³ Signal workshop/Howrah, BLW/Varanasi, Loco carriage and wagon workshop/ Dahod

⁵⁴ letter No. 2015/E&HM/03/02 dated 11.06.2015,

⁵⁵ letter No. 2015/EnHM/12/02 dated 01.02.2017

3.8 Conclusion

Maintenance, repair and production activities in the railway units generate heavy quantum of solid waste and the waste water causing serious concern to the environment. Water Act and procedure framed by CPCB/SPCBs specified various provisions to address this aspect. Test check in audit revealed that a large number of such units were operating without obtaining CTE/CFOs despite clear directives of NGT.

Prescribed regulations related to hazardous waste management were not complied with. Besides, there have been cases of delays obtaining authorization from SPCBs for handling hazardous waste and effluents.

System/procedure prescribed for storage, transportation and disposal of hazardous waste were not followed in its true spirit. There were cases of hazardous waste found to be stored beyond the permissible limit.

Summary of Audit findings

- Indian Railways failed to ensure compliance on the basic requirement of obtaining requisite approvals (CTE/CFO) from the designated authority.
- Due to slow progress on planning and installation of ETPs/STPs, the system of managing waste viz., effluents, pollutants and hazardous wastes discharged in the environment by various maintenance and production units was deficient with reference to the provisions contained in Water Act and Hazardous waste management Rules.
- Railway units failed to furnish the requisite environmental statements disclosing the nature and quantum of waste generated thereby rendering the monitoring mechanism weak.

3.9 Recommendation

IR needs to ensure provision of required infrastructure and initiate measures to sensitise the work force engaged in maintenance and Production Units for effective compliance of the Hazardous Waste Management Rules thereby avoiding danger to health and environment as well.

Management of waste water generated at railway stations, coaching depots, workshops and production units

Audit objective 3

Whether management of waste water generated through effluent/sewage treatment, water recycling and reduction in generation through automatic coach washing has been ensured.

Indian Railway has created vast infrastructure of stations, coaching depots, workshops, maintenance sheds and production units (PUs) for managing the volume of passenger and freight traffic. The activities related to operation of traffic at stations and maintenance of rolling stock not only requires extensive use of water, but also generates huge quantity of waste water.

For better management of fresh as well as waste water, Railways aims to follow the policy of 'Reduce', 'Reuse' and 'Recycle'. This aspect is prominently placed in the Indian railways Water Policy, 2017 that *inter alia* lays emphasis on judicious use of water as it is becoming a scarce commodity by each passing day.

For reduction in water usage, as also for managing the waste water, provision of Effluent/Sewage Treatments Plant (ETPs/STPs), Water Recycling Plants (WRPs) and Automatic Coach Washing Plants (ACWPs) is to be made by Railway Administration as per Water Policy, 2017. Central Pollution Control Board (CPCB) also directed (2 June 2020) that all the Zones should take steps to manage waste water as also to identify quality of sewage and non-sewage waste water separately and plan waste water recycling plants accordingly.

The efficacy and efficiency of the efforts made by IR for managing waste water at stations, coaching depots, workshops, maintenance sheds and production units were assessed and the deficiencies noticed are discussed in the succeeding paragraphs.

4.1 Provision/Planning, Commissioning and functioning of effluent/sewage treatment plants (ETPs/STPs)

As prescribed in Section 24 of the Water (Prevention and control of Pollution) Act, 1974, no person shall knowingly cause or permit flow of any poisonous, noxious or polluting matter into any stream, well, sewer and land without treating it. The activities in workshops, sheds and production units generate effluent such as waste oil, chemicals, sludge, waste grease etc.

As per the special condition attached to Consent for Operation (CFO) under the Water Act, provision of effluent treatment plants (ETPs) is necessary for treatment of effluents before discharging into sewer/waste bodies. Similarly, for treatment of effluents generated at railway stations and coaching depots, Railway Board, instructed⁵⁶ Zonal

⁵⁶ letter no. 99/LMB/9/25 dated 22-12-1999

Railways to formulate proposals, wherever considered economically desirable for setting up ETPs considering the economic, social and environment consideration. The National Green Tribunal (NGT), in its order dated 18 March 2015 asked railway authorities to ensure that effluents generated at stations and coaching depots/ yards does not get seeped into the ground water and such effluents should be channelized to ETPs/STPs located near all major stations. In compliance with these orders, Railway Board instructed⁵⁷ (30 April 2015) the Zonal Railways to prepare a time bound action plan for setting up ETPs/STPs near the major stations.

Audit examined the efficacy of steps taken for provision of ETP/STP at selected 102 major stations, 30 coaching depots and 101 workshop/shed/Production units and observed the following shortcomings: -

- i. ETP/STP though planned but were not commissioned in 40 workshops/sheds and 19 coaching depots.
- ii. ETPs/STPs commissioned on 87 stations were not functioning as of March 2020.

From the position given above, it can be inferred that statutory requirement of treatment of waste water before its discharge could not be effectively fulfilled as installation of the ETPs/STPs fell short of that planned and many of the installed ETPs/STPs remaining non-functional. Records made available did not indicate fund shortage preventing the installation of ETPs/STPs (part of environment related works). Para 4.5 has a mention of funds for environment related works remaining unutilised due to slow progress on such works. The environment concerns of contamination of ground water/water bodies as well as reduction in use of fresh water consequently remained unaddressed. However, it was observed that ETPs/STPs were provided in all Production Units test checked and the same were found in working condition.

4.2 Analysis of the effluents/sludge discharged from ETP/STPs provided at stations, coaching depots, workshops, sheds and production units

In compliance with the provisions of the Water Act, 1974, the effluent discharged from railway stations, coaching depots, workshops, sheds and production units were to be treated in ETPs/STPs before its discharge to municipal sewage lines or to low lying areas/land. As per the special conditions attached to consent for operation (CFO) under the Water Act, the effluent should conform to the prescribed standards; hence should be analysed before and after treatment in ETP/STP. The sludge from the ETP/STPs should be dried in sludge drying beds and testing of such dried sludge should be done to decide its disposal



ETP sludge lying undischarged at Loco & Carriage and Wagon Workshop- Dahod at Ratlam Division in WR

⁵⁷ letter No. 2015/Environ/01/03 dated 30.04.2015

method. Such analysis/testing is prescribed to address the environmental concerns related to handling/disposal of such effluents and sludge.

Examination of the efficacy of the process of handling/disposal of effluents/sludge in ETPs/STPs provided at railway stations, coaching depots, workshops, sheds and production units revealed the following:-

- i. Analysis of liquid waste discharge from such units was not done before treatment in 40 units.
- ii. Treated effluents from such ETP/STPs was not analysed in 14 units.
- iii. Adequate sludge drying beds were not available with the ETPs/STPs provided in the case of **12** units.
- iv. In **53** units, the sludge generated from ETP/STPs was not tested to find out its disposal method.

Thus, the sludge generated out of ETPs/STPs was disposed without mandatory testing as per the norms prescribed.

4.3 Provision of water recycling plants (WRPs)

Water recycling refers to reclaiming waste water from industrial, residential, municipal sources, by treating and purifying the waste water for reuse. Based on the extent of the treatment, the reclaimed water can be used for inferior services like coach washing, platform aprons cleaning, gardening, etc. Railway Board instructed⁵⁸ (July 2008 and August 2008) Zonal Railways to provide WRPs in such stations and sheds where water is scarce and the demand for water is heavy. Provision of WRPs at one A1 category station in each zone was emphasized⁵⁹ (March 2015) by Railway Board. Railway Board specifically stated (December 2015) that the provision of WRPs will be extended to all major stations.

Audit examined the status of the provision of WRPs in 102 selected major stations. Despite passage of more than 10 years since RB's instructions, provision of WRPs in the 86 major stations out of 102 test checked was not complete as of March, 2020. Thus, such an important aspect of minimising the usage of fresh water, thereby boosting the efforts for water conservation, did not get required attention of railway authorities.

Survey done by Quality Council of India (QCI) on the request of Ministry of Railways also revealed (2019) that out of 720 stations covered in their study, only 25 per cent of the stations had the provision of water conservation measures and provision for water reclamation/waste water use was available on nine per cent of the stations covered in QCI's study. This is indicative of poor response on the aspect of water conservation despite instructions issued (2008) by Railway Board in this regard.

⁵⁸ Letter No. 2006/LMB/09/01 dated 19.07.2006 and 04.08.2008

⁵⁹ Letter No. 2015/LM (PA)/08/08WRP dated 04.03.2015

4.4 Provision of Automatic Coach Washing Plants (ACWP) at coaching depots and car sheds.

Automatic Coach Washing Plant (ACWP) is a multistage exterior cleaning system for coaches/trains using pressurized soap solutions and water jets with rotating nylon and cotton consignment brushes to clean complete exterior of the coaches in a rake while placed on the pit-line of the coaching depots. Use of ACWPs helps in minimization of fresh water consumption as well as effective management of waste water thereby resulting in conservation of water. Railway Board directed⁶⁰ (October 2017) Zonal Railways to provide ACWPs on priority basis at all major coaching depots and car sheds. The aspect of provision of ACWP was also emphasized upon in the Indian Railway Water Policy, 2017. Provision of 63 ACWPs was sanctioned between 2017-2020 in coaching depots/Car Sheds. However, progress of work was very slow as indicated below: -

- i. Work for providing ACWP was completed in nine cases only as of March 2020.
- ii. In 43 cases, work on providing ACWP did not commence at all.
- iii. In eight cases, the work is still in progress.
- iv. In three cases of WR, the records to confirm the progress of work were not available.

Thus, it is clear from the progress of the work that required effort lacked seriousness on such a priority work meant for conservation of water resources. The resultant benefits to minimize the fresh water consumption and recycling of waste water could not be achieved.

4.5 Progress of works related to management of waste sanctioned from the funds created for Environment Related Works (ERWs)

Keeping in view its commitment towards cleaner environment as also the need to comply with various statutory obligations towards mitigation of environmental impact, Railway Board, decided⁶¹ to include environment related works (ERW) as an integral part of Works Estimates for all Plan Heads excepts PH-17 (Computerization). Provision for ERWs was made as an itemized one or on lump sum basis (equal to one *per cent* of the cost of work). The works chargeable to EBR (IF) were to be excluded for the purpose of lump sum provisioning towards ERW. These identified works are to be coordinated/ managed by EnHM wing of the Zone/Division/PUs and such works should generally be completed within two years. Certain items related to waste management like provision of ETPs/STPs, WRPs, ACWPs, waste to compost, waste to energy plants *etc.* were included in the specified list of ERWs. As the progress on

⁶⁰ letter No. 2001/M1/141/1 Vol-I dated 20.04.2010 and 27.10.2017

⁶¹ letter No. 2016/EnHM/13/02 dated 13.05.2016

ERWs was slow on Zonal Railways, Railway Board instructed⁶² (March 2020) all Zonal Railways to make more serious efforts and ensure expeditious completion of works.

Review of position on utilisation of funds accumulated under ERW revealed that funds remained unutilised to the extent of 53 *per cent* during the period under review as indicated in Table 4.1.

Table 4.1 - Statement showing the funds accumulated under ERW remaining un-utilised

(₹ in crore)

Year	Funds accumulated for ERW during the year	Fund utilized during the year	Funds remaining un-utilized at the end of the year	Funds un-utilised (in per cent)
2015-16	0.48	0.00	0.48	100.00
2016-17	24.90	2.96	21.94	88.11
2017-18	83.74	30.21	53.53	63.92
2018-19	208.53	108.67	99.86	47.89
2019-20	285.17	137.86	147.31	51.66
Total	602.82	279.7	323.12	53.60

Funds created for environment related works remained un-utilised due to poor progress in completion of environment related works as indicated in Table 4.2 below:-

Table 4.2 - Progress of works under ERW Funds (Annexure 4.1)

Particulars	Works sanctioned (Numbers)	Location	Sanctioned cost (₹ in crore)	Works completed (Numbers) (March 2020)
Provision of ETP/STP	87	11 zones	83.17	26 (30 <i>per cent</i>)
Provision of WRP	54	13 zones	66.62	Nine (16 <i>per cent</i>)
Provision for Waste to Compost	93	14 zones	20.59	30 (32 <i>per cent</i>)
Waste to Energy Plant	5	04 zones	4.91	Two (40 <i>per cent</i>)

It is, thus clear that the very purpose of creating ERW fund for expeditious execution of environment related works was defeated due to lack of monitoring on the part of railway authorities. Consequently, the benefit envisaged from these environment-related works remained unachieved. This had adverse consequence on waste water management at these locations.

4.6 Conclusion

Railways use water at stations as also for units such as workshops, sheds etc. Provision of ETPs/STPs/WRPs/ACWPs was envisaged in pursuance to the water policy. NGT had also directed that effluents generated at stations/coaching depots/yards should be diverted to ETP/STPs and not allowed to seep in ground water.

⁶² letter No.2016/EnHM/13/02 dated 12.03.2020

Study in Audit revealed that ETPs/STPs were not commissioned as planned despite availability of funds for environment related works. Further, many of the ETPs/STPs commissioned were not operational. Shortcomings in process of handling and disposal of effluents and sludge were noticed in some of the ETPs/STPs. Water recycling plants were not found to have been installed defeating the objective of minimization of usage of fresh water. Progress on the installation of ACWPs at the coaching depots/car sheds was very slow. Resultantly, the objective to minimize water consumption remained unachieved.

Objective of creating ERW Fund, an initiative to commit to clean environment by way of providing ETPs/STPs/WRPs, compost plant and solid waste management plant largely remained un-fulfilled as funds created remained unutilized due to slow/nil progress of environment related works.

Summary of Audit findings

- Statutory requirement of treatment of waste water before its discharge could not be effectively fulfilled due to ETP/STPs remaining non-functional besides, environment concerns of contamination of ground water/water bodies remaining unaddressed.
- Slow progress in providing water recycling plant and automatic coach washing plant adversely affected the aspect of better management of fresh as well as waste water as prominently placed in the Indian Railways Water Policy, 2017.

4.7 Recommendation

IR needs to develop a robust monitoring mechanism to oversee the expeditious completion of the works such as provision of water recycling plants, automatic coach washing plant meant for water conservation under Water Policy of IR.

Management of bio-medical waste generated at Railway Hospitals

Audit objective 4

Whether the assessment, management and disposal of waste generated at railway hospitals (Bio-Medical Waste) was done as per applicable Laws and Rules.

The Railway Medical Department has the objective of keeping employees fit and healthy for efficient railway operations by establishing various railway hospitals right from the zonal level to dispensaries at remote field levels. These units produce huge quantum of bio-medical waste. Bio-medical waste implies waste generated during the diagnosis, treatment or immunisation of human beings or research activities pertaining thereto.

Ministry of Environment, Forest and Climate Change issued the Bio-Medical Waste (Management and Handling) Rules (BMW Rules) in 1998, 2016 and 2018 in exercise of the powers conferred under the Environment (Protection) Act, 1986 which provides a regulatory frame work for management of bio-medical waste generated in the country. This included collection, segregation, treatment and disposal of bio-medical wastes in an environment friendly manner thereby reducing the bio- medical waste generation and its impact on the environment. Efficacy and efficiency of the process of collection, segregation and disposal of bio-medical waste was examined in audit in respect of 72 selected railway hospitals. Deficiencies noticed are covered in the succeeding paragraphs.

5.1 Authorization for handling of bio-medical waste

Rule 10 of the BMW Rules stipulated that every occupier⁶³ shall obtain authorisation from SPCB for handling of bio-medical waste. The occupier is required to fill the details like quantity of waste generated, method of treatment and disposal, mode of transportation of bio-medical waste and details of waste treatment equipment available *etc.* in Form-II prescribed under the Rules. Every occupier is mandatorily required to take all necessary steps to ensure that bio-medical waste is handled in accordance with BMW Rules and without any adverse effect to human health and the environment.

It was observed that the required authorisation was not obtained from the concerned SPCBs in the case of 26 hospitals (*Annexure- 5.1*). This was attributed to: -

- Non-conversant with the prescribed rules and procedures (NFR),
- Non-receipt of instructions from higher authorities (ER),
- Non-filing of application to SPCB (ECR, SR),
- Non-pursuance of application filed with SPCB *etc.* (ECR, SECR, Metro Rail).

⁶³ *In the context any Railway healthcare facility including dispensary at lowest field level*

Thus, such an important (authorisation from SPCB for handling bio-medical waste) matter of environmental concern for proper management of bio-medical waste remained unaddressed.

MoR in their reply admitted (May 2022) that authorization is yet to be obtained for the hospitals pointed out in the Report, though the process for seeking authorisation under Bio-Medical Waste Rules was stated to be initiated for many hospitals.

5.2 Delay/discontinuity in renewal of authorization for handling of bio-medical waste

Rule 10 read with Form-II of the BMW Rules provides for obtaining fresh authorisation from SPCB before the expiry of previous one by each hospital handling bio-medical waste. For any changes in the activities of the hospital such as increase in the number of beds, change in the handling process of bio-medical waste, a fresh authorisation was mandatory.

The aspect of delay/discontinuity in renewal of authorisation was examined in Audit and it was observed that the authorisation was not got renewed in time in case of 24 railway hospitals (*Annexure- 5.2*). The delay/discontinuity ranged between one to six months in two cases, beyond six to 18 months in three cases, beyond 18 to 30 months in three cases and even extended beyond 30 months in 16 cases. Delays/discontinuity in authorisation was attributed to: -

- Delay in filing application (ER, NEFR, WR, RPU);
- Non-pursuance of application filed with SPCB (WR), absence of instructions from higher authorities (ER); non-payment of additional fee (SCR).
- Renewal refused by SPCB for want of installation of ETP/STP (NR, NWR, SCR, WCR);
- Required documents/ information not submitted to SPCB (WCR) and non-collection and not disinfecting the effluents before disposal into ETP (SR).

It is evident that lack of efficient monitoring regarding renewal of authorisation had resulted in such delays/ discontinuance in authorisation.

MoR in their reply stated (May 2022) that approval for authorisation is under process in many cases and in some cases, response from the concerned SPCBs is also delayed.

5.3 Creation of infrastructure in hospitals for handling of bio-medical waste

Rule 4 of the BMW Rules prescribed for taking all necessary steps to ensure that bio-medical waste is handled without any adverse effects to human health and the environment. These rules also prescribed that a facility for a safe, ventilated and secured location for storage of such waste in coloured bags in containers should be provided within the hospital premises. The bio-medical waste from such locations shall

be directly transported to the common bio-medical waste treatment facility⁶⁴ for appropriate treatment and disposal. Rule 4(k) prescribed that hospital authorities should ensure treatment and disposal of liquid waste in accordance with the Water (Prevention and Control of Pollution) Act, 1974, which, *inter-alia*, included provision of effluent treatment plant (ETP)/ sewage treatment plant (STP).

Examination of the related records pertaining to the infrastructure created for handling Bio-Medical waste revealed the following: -

- i. Provision of secured room for storage of bio-medical waste did not exist in 46 hospitals (*Annexure- 5.3*) in 14 zones,
- ii. Provision of ETP/STP was not made for treatment of liquid waste in 54 hospitals (*Annexure- 5.3*),
- iii. No specific reasons for such non-creation of infrastructure could be ascertained.

This clearly indicated the poor level of efficacy in monitoring such important environmental aspects. The resultant ill effects on the health of hospital employees as well as on the patients visiting the hospitals coming in contact of such bio-medical wastes could not be ruled out.

MoR in reply is stated (May 2022) to have provided secured room for storage of Bio-Medical Waste and ETP/STP for treatment of liquid chemical waste but no evidence/document in support of their claim was given.

5.4 Pre-treatment of bio-medical waste before its storage

Rule 4, Schedule-I and Form-II of the BMW Rules prescribed for pre-treatment of bio-medical waste before its storage. Such waste includes laboratory waste, microbiological waste, blood samples, blood bags and other clinical laboratory waste. Schedule-I of the Rules also prescribed the method of treatment for each type of the waste corresponding with the manner as prescribed by the World Health Organisation (WHO) or National AIDS Control Organisation (NACO) guidelines. These types of waste, after pre-treatment, were to be packed and sent to the common bio-medical waste treatment facility for final disposal.

Audit evaluated the status of pre-treatment of different bio-medical waste in the selected railway hospitals and observed the following: -

- i. Pre-treatment of laboratory waste was not carried out in 13 hospitals in five zones.
- ii. Required pre-treatment of micro-biological waste was not done in 13 hospitals in six zones.
- iii. Pre-treatment of blood samples was not carried out in the case of 15 hospitals in seven zones. Similarly, specified pre-treatment of blood bags were not done in 18 hospitals in eight zones.

⁶⁴ Any authorized treatment facility by SPCB within a distance of 75 Kilometres.

- iv. Required pre-treatment of other clinical laboratory waste was not carried out in 14 hospitals in seven zones.

(Annexure 5.4).

Thus, the stipulations contained in the BMW Rules for pre-treatment of bio-medical waste were not effectively complied with. The resultant adverse impact of non-compliance of the prescribed procedure on the health of the hospital staff, patients and visitors exposed to such waste cannot be ruled out.

MoR in its reply (May 2022) stated that Railway hospitals are ensuring pre-treatment of Bio-medical waste before storage. Reply is not acceptable as MoR did not furnish any document supporting the veracity of their claim.

5.5 Segregation and pre-treatment of liquid chemical waste

As prescribed in Rule 4 and Schedule-I & III of the BMW Rules, the liquid chemical waste should be segregated at source and its pre-treatment has to be carried out in accordance with the Water Act prior to its mixing with other waste water so that the combined discharge should conform to the prescribed norms. Scrutiny of related record on compliance to this provision revealed the following: -

1. Segregation of liquid chemical waste, as specified in the Rules, was not carried out in 22 hospitals in nine zones.
2. Treatment of liquid waste was not done as prescribed in the Water Act in 29 hospitals in 12 zones (*Annexure-5.5*).

Thus, the statutory provisions for safeguard of health of hospital staff, patients and visitors in particular and public in general were not effectively complied with due to lack of monitoring on the part of hospital authorities.

MoR in its reply (May 2022) stated that Railway hospitals are ensuring segregation and pre-treatment of liquid chemical waste. MoR further added that provision of ETP/STP is being/will be planned.

5.6 Proper storage facility for bio-medical waste (BMW)

As prescribed in Rule 8 of the BMW Rules, the storage of collected bio-medical waste in any hospital should be done in such a way that it is not mixed with any other waste and there should not be any scattering or spillage by animals. Rules also provide that untreated bio-medical waste should not be stored beyond a period of 48 hours. In case it becomes necessary to store such waste beyond the specified period, the prescribed authority (SPCB) be intimated about this along with reasons for doing so. Rule also provide that the containers/ bags in which segregated bio-medical waste is stored, should be labelled as specified in schedule-IV to the BMW Rules. Audit examined the level of compliance of the statutory provisions for proper storage of bio-medical waste and observed the following shortcomings. (Details indicated in *Annexure 5.6*).

1. Places for stacking BMW were not fenced to avoid any contact with humans or scattering/spillage by animals in nine hospitals in six zones.

2. Bio-medical waste was stored for more than the prescribed 48 hours in the case of seven hospitals in three zones. No records were made available to indicate if SPCBs was intimated for storage of bio-medical waste beyond the permissible limit.
3. Further, it was also observed that in six hospitals in five zones, the containers/bags used for storing bio-medical waste were not properly labelled as required under the Rules.



Biomedical waste lying in open at Railway Hospital (old), Perambur at Chennai Central Division in SR

These important regulations/ stipulations of safe storage of bio-medical waste were meant to ensure that the bio-medical waste is handled and stored properly thereby avoiding human contact. Contrary to the stipulations in BMW Rules, safe storage of bio-medical waste avoiding impact on the health of patients, visitors and other public coming in contact with such waste was not adequately ensured. The lack of effective

monitoring by hospital authorities resulted in safety issue remaining unaddressed.

MoR in its reply (May 2022) brought out that Railway hospitals are ensuring proper storage and labelling of Bio-medical waste. Reply is not acceptable as no evidence/documents in support of the claim was furnished with reply.

5.7 Compliance of norms prescribed under the BMW Rules for transportation of bio-medical waste

BMW Rules (Rule 8) prescribe various norms for proper disposal of bio-medical waste. As per Schedule-IV of the BMW Rules, vehicle transporting bio-medical waste should be labelled with the bio-hazardous symbol⁶⁵. The containers or bags containing segregated bio-medical waste should be bar coded before sending out of the hospital premises for disposal. Similarly, the vehicles transporting such waste should be connected with global positioning system (GPS). Rules also provide for ensuring timely collection and transportation of the waste to the disposal site. BMW Rules also provided that hospital authorities should be allowed to inspect the treatment and disposal carried out by of the operator of common bio-medical waste treatment facility.

The efficacy of compliance with the above stated rules in the selected 72 railway hospitals was examined by audit and following position emerged: -

- i. Vehicles used for transportation of bio-medical waste were not labelled as prescribed under Rules in six hospitals in four zones.
- ii. Bar coding of containers or bags containing bio-medical waste was not done in 41 hospitals in 14 zones. Further, the vehicles transporting bio-medical waste

⁶⁵ Guidelines issued by CPCB in December 2016.

in 35 hospitals in 13 zones were not connected with global positioning system (GPS).

- iii. In seven hospitals in four zones, the hospital authorities did not ensure timely collection and transportation of bio-medical waste.
- iv. Hospital authorities were not allowed to inspect the treatment and disposal by the operators of the common bio-medical waste treatment facility in the case of 15 hospitals in six zones

(Annexure-5.7)

Non-adherence to the norms for proper collection, transportation and disposal of bio-medical waste is indicative of lack of effective monitoring by hospital authorities. Further, as a result of deficient system of transportation of bio-medical waste such as vehicle not connected with GPS and absence of bar coding of waste, the risk of disposal of bio-medical waste with other municipal solid waste cannot be ruled out.

MoR in reply (May 2022) admitting deficiency pointed out by audit stated that Railway Hospitals will ensure the norms for labelling, bar-coding, Global positioning system (GPS) provision and timely collection of bio-medical waste.

5.8 Disposal of bio-medical waste at hospital level

Rule 4, 5 and 7 of the BMW Rules prescribe that every occupier (Railway hospital) shall collect segregated bio-medical waste in coloured bags/containers and send it to the common bio-medical waste treatment facility for treatment and final disposal. Rules also prescribe that no occupier shall establish on-site treatment and disposal facility, if a service of common bio-medical waste treatment facility is available at a distance of 75 kilometres. If such service is not available, the occupier shall set up in-house treatment facility like incinerator, autoclave or microwave and shredders as per authorization obtained (from SPCB) for treatment and disposal.

The process of disposal of bio-medical waste in railway hospitals was assessed by audit and it was found that: -

- i. In the case of nine hospitals in six zones, though the facility of common treatment operator was available within 75 kilometres, the management of bio-medical waste was done by these hospitals departmentally, even though in-house treatment equipment (like incinerators, autoclaves or microwave and shredders) were not in existence in these hospitals.
- ii. No such operator was available within 75 kilometres in 15 hospitals in nine zones. These hospitals managed the required treatment/disposal departmentally though the required in-house equipment (incinerator) for treatment and disposal of bio-medical waste was not available with them.

In the absence of common bio-medical waste treatment facility (CBWTF) disposal of such bio-medical waste, some of the hospitals resorted to managing bio-medical waste departmentally endangering the safety of public health and likely impact on

environment. This also reflected ineffective monitoring of such a vital aspect by hospital authorities.

MoR in reply (May 2022) admitting deficiency pointed out by audit stated that Railway Hospitals are now ensuring disposal of bio-medical waste at CBWTF through outsourced agency. Reply is, however, silent on the aspect of Railway hospitals resorting to treatment of bio-medical waste departmentally without ensuring the required facility in this regard.

5.9 Non-submission of Annual Reports as required under the BMW Rules

Rule 13 of the BMW Rules prescribes that every occupier of healthcare facility (railway hospital) shall submit an annual report, in Form-IV prescribed under the Rules, on or before 30th June of every year to the prescribed authority (SPCB). This report contained various information which *inter-alia* includes status of statutory authorisation/consent, GPS co-ordinates of hospitals, quantity of waste generated category wise, details of on-site storage and treatment facilities, liquid waste generation and treatment methods, etc. These reports were subsequently compiled, reviewed and analysed by SPCB, thereafter by CPCB and finally reviewed by the Ministry of Environment, Forest and Climate Change.

Status of the submission of the statutory annual reports was reviewed in audit in respect of 72 railway hospitals during the period 2015-16 to 2019-20 and following was observed: -

- i. Only 11 hospitals in eight zones had submitted the report for all the five years.
- ii. Nine other hospitals in seven zones submitted reports for intermittent periods.
- iii. The balance 52 hospitals in 16 zones did not submit annual report in any of the five years (Details are indicated in *Annexure-5.8*).

Thus, the objective of monitoring mechanism established for management of bio-medical waste was not fulfilled due to lack of compliance to BMW Rules by railway hospital authorities.

MoR in reply (May 2022) admitting deficiency pointed out by audit stated that Railway Hospitals will ensure submission of Annual Report under the bio-medical waste Rules.

5.10 Health check-up, immunization and training of healthcare workers handling bio-medical waste

As per Rule 4 of the BMW Rules, it is the duty of every occupier of health care facility (railway hospital) to conduct health check up of staff involved in handling of bio-medical waste at the time of induction and at least once in a year and maintain record for the same. This rule also prescribed immunisation of health workers against diseases that are likely to be transmitted by handling of the bio-medical waste. Rule also provided for proper training to such healthcare workers at time of induction and

thereafter at least once every year and details of such training should be provided in the Annual report.

Compliance to the said rule by hospital selected for audit revealed the following: -

- i. Prescribed health check-up of staff involved in handling of bio-medical waste was not conducted during the review period (2015-16 to 2019-20) in 13 railway hospitals in nine zones. Records for conducting such health check-up were not maintained, in seven hospitals in five zones.
- ii. Healthcare workers were not immunized during the review period in 14 hospitals in eight zones. Further, in 23 hospitals in 11 zones where immunization was done, no records for the same were maintained.
- iii. Training programmes for healthcare workers were not conducted in 15 hospitals in nine zones. In 12 hospitals in six zones though the training programmes were conducted, no record for the same was maintained.
- iv. Clause for engaging only skilled staff handling of bio-medical waste (in case of outsourcing) was not incorporated in the contracts in 46 hospitals in 14 zones. Health check-up of such outsourced staff was not done during the period of 2015-16 to 2019-20 in 14 hospitals in seven zones and immunization of such outsourced staff, as prescribed, was not done in 15 hospitals in eight zones.

It is evident from this position that hospital authorities were not serious in monitoring and ensuring occupational health safety of their workers engaged in handling of bio-medical waste.

MoR in reply (May 2022) stated that many of the Railway hospitals mentioned in audit comment have started ensuring health check-up, immunization & training of health care workers handling bio-medical waste.

5.11 Existence of monitoring mechanism for managing bio-medical waste

Rule 4 of the BMW Rules provides that every occupier of healthcare facility (railway hospital) should establish a system to review and monitor the activities related to bio-medical waste management, either through an existing committee or by forming a new committee. Such committee shall meet once in every six months and the record of the minutes of the meetings shall be submitted along with the annual report to the SPCB.

The effectiveness of the prescribed review and monitoring mechanism was assessed by audit in respect of selected railway hospitals and following was observed: -

- i. Review and monitoring committee was not established in 52 hospitals.
- ii. Six monthly meetings were held only in 11 out of 20 hospitals where such committee was established. (Details indicated in *Annexure 5.9*)

Thus, it is evident that the statutory provisions, for proper monitoring of the process of handling bio-medical waste was not effectively complied with. Resultant adverse

implication on the quality of segregation, collection, treatment, storage and disposal of bio-medical waste can not be ruled out.

MoR in reply (May 2022) admitting deficiency pointed out by audit stated that Railway Hospitals have initiated to establish a system to review and monitor the bio-medical waste management.

5.12 Conclusion

Railways have one of the largest medical care facilities across the country that generates large bio medical waste every day. Several deficiencies were noticed in the processes related to collection, segregation, transportation, storage and disposal of bio medical waste.

Requisite authorizations from the SPCBs in compliance to the BMW Rules were not obtained and there were delays/ discontinuance in obtaining mandatory renewal of authorization.

Requisite infrastructure for handling bio medical waste did not exist and there was deficiency in the process of collection of bio medical waste in hospitals test checked in audit. Segregation and pre-treatment of the liquid chemical waste generated was not carried out in compliance to the BMW Rules. Bio medical waste was found to have been stored beyond the prescribed limit of 48 hours.

Audit found significant shortcomings⁶⁶ in transportation of bio medical waste. Importantly to ensure requisite monitoring and over sight of the BMW Rules, committees, which were required to be formed, were not in existence in some of the facilities and prescribed annual reports were not submitted to SPCBs in any of the years during 2015 to 2020.

Mandatory health checkup, immunizations and training to the health care workers including out sourcing staff engaged was inadequate.

Summary of Audit findings

- Railway Hospitals were functioning without requisite authorizations from the SPCBs and delays/ discontinuities in obtaining mandatory renewal of authorization was observed in some other hospitals, which was in violation of BMW Rules.
- Railway Hospitals failed to comply with requisite provisions in BMW Rules for treatment of the bio-medical /liquid chemical waste generated as also for storage and transportation of such waste.
- Committees required to be formed to ensure requisite monitoring under BMW Rules did not exist.

⁶⁶ Mandatory labeling, bar coding and provisioning of GPS facilities in vehicles used for transportation

5.13 Recommendation

IR needs to ensure effective compliance with Bio-Medical Waste Management Rules for handling, collection, pre-treatment, segregation, storage and disposal of biomedical waste and strengthen monitoring mechanism.

Management of E-Waste

Audit objective 5

Whether assessment, management and disposal of E-Waste generated in railway establishments as per applicable rules

Indian Railways is one of the major producer of E-Waste on account of computerization of the related IT infrastructure at passenger reservation centers, EDP centers, unreserved ticketing systems, offices as also extensive IT infrastructure used for signaling and telecom services. These discarded items including computers/laptops, e-monitors, T.V. sets, electronic equipment; servers etc. are defined as electronic waste or E-Waste. It is therefore imperative that the E-Waste is properly identified, segregated, stored and disposed of in a manner, which is not hazardous to human health and is in harmony with the environment.

Central Government had notified E-Waste (Management) Rules, 2016 that superseded the E-Waste (Management and Handling) Rules, 2011. These rules aim to enable the recovery and/or reuse of useful materials from E-Waste, thereby reducing the hazardous wastes that destined for disposal and to ensure environmentally sound management of all types of waste of electrical and electronic equipment.

Scrutiny of the records in selected 86 units (EDP/PRS/UTS/GSD) revealed deficiencies such as storage of E-Waste beyond permissible limits, non-submission of prescribed information to SPCB and these are covered in succeeding paragraphs.

6.1 Absence of consolidated instructions and training for handling of E-Waste

The rules regarding E-Waste were issued in October 2016. E-Waste Rules has, however, distinct procedure for handling and storage of E-Waste. Audit observed that procedure of condemnation as prescribed for the other office items such as furniture etc. were followed in respect of E-Waste. Further, no specific training module was devised/ implemented for impressing upon awareness for effective storage and disposal of E-Waste in any of the Zones. Hence, the mechanism for storage and disposal of E-Waste was weak and inadequate.

6.2 Submission of stipulated Form 3 to SPCB

SPCB had prescribed recording quantity of E-Waste generated per year in metric ton (MT) and the required information to be furnished to SPCB in Form 2. Based on Form 2 records, a consolidated data comprising of quantity of E-Waste generated, recycled and sold during the year to the dismantler was required to be sent to the SPCB in the prescribed form 3. The status of compliance with SPCB's directives and findings are indicated in Table 6.1.

Table 6.1: Status of compliance of SPCB's directives

Particulars	Status of compliance of SPCB's directives		
	EDP Centres	PRS/UTS Centres	Scrap Depots (GSD)
Information in respect of generation of category wise E-Waste not recorded in the prescribed Form 2 specified in the E-Waste rules	46 (53)	16 (16)	16 (17)
Consolidated data on quantity of E-Waste generated, recycled and sold during the year to the dismantler and details sent to SPCB in the prescribed Form 3.	Since the details were not recorded in Form 2, the information for Form 3 hence could not be assessed.		

Figures in bracket represent total units checked.

The information in prescribed Form 2 & 3 was meant for monitoring the quantum of E-Waste generated and disposed. In absence of the requisite information that was required to be recorded in Form 2 and Form 3, neither the actual quantum of E-Waste generated was assessed nor the same was monitored. (*Annexure 6.1 and 6.2*)

6.3 Storage of the E-Waste beyond permissible limit

The E-Waste rules prescribed a period of 180 days for its storage. Approval of SPCB was required for storage beyond 180 days (up to maximum of 365 days). Scrutiny of records⁶⁷ revealed huge quantities of E-Waste awaiting disposal for periods beyond 180 days as indicated below:-

1. In 12 Zones E-Waste was stored beyond permissible 180 days and records made available did not indicate if SPCB's approval was sought for storage beyond the prescribed period of 180 days.
2. The quantity of E-Waste stored beyond 180 days without seeking permission ranged between 0.034 MT to 30.5 MT during the period from 2015 to 2020.

6.4 Conclusion

IR lacked mechanism for dealing with the E-Waste in compliance to the Rules. Training programmes for creating awareness for handling of E-Waste were not conducted. Important aspect pertaining to maintenance of records, submission of stipulated forms to the SPCBs as also seeking approval of SPCB for storing E-Waste beyond 180 days were not taken care of.

⁶⁷ condemnation reports, sale and auction registers kept at the scrap depots and the divisional stores

Summary of Audit findings

Railway Board did not initiate measures to conduct training programmes to sensitize the officials for handling E-Waste in conformity with E-Waste Management Rules.

6.5 Recommendation

IR needs to initiate measures for creating awareness on the issue of handling E-Waste besides devising monitoring mechanism for ensuring effective compliance with E-Waste Management Rules.

New Delhi
Dated: 29 June 2022


(SUNIL DĀDHE)
Deputy Comptroller and Auditor General

Countersigned

New Delhi
Dated: 01 July 2022

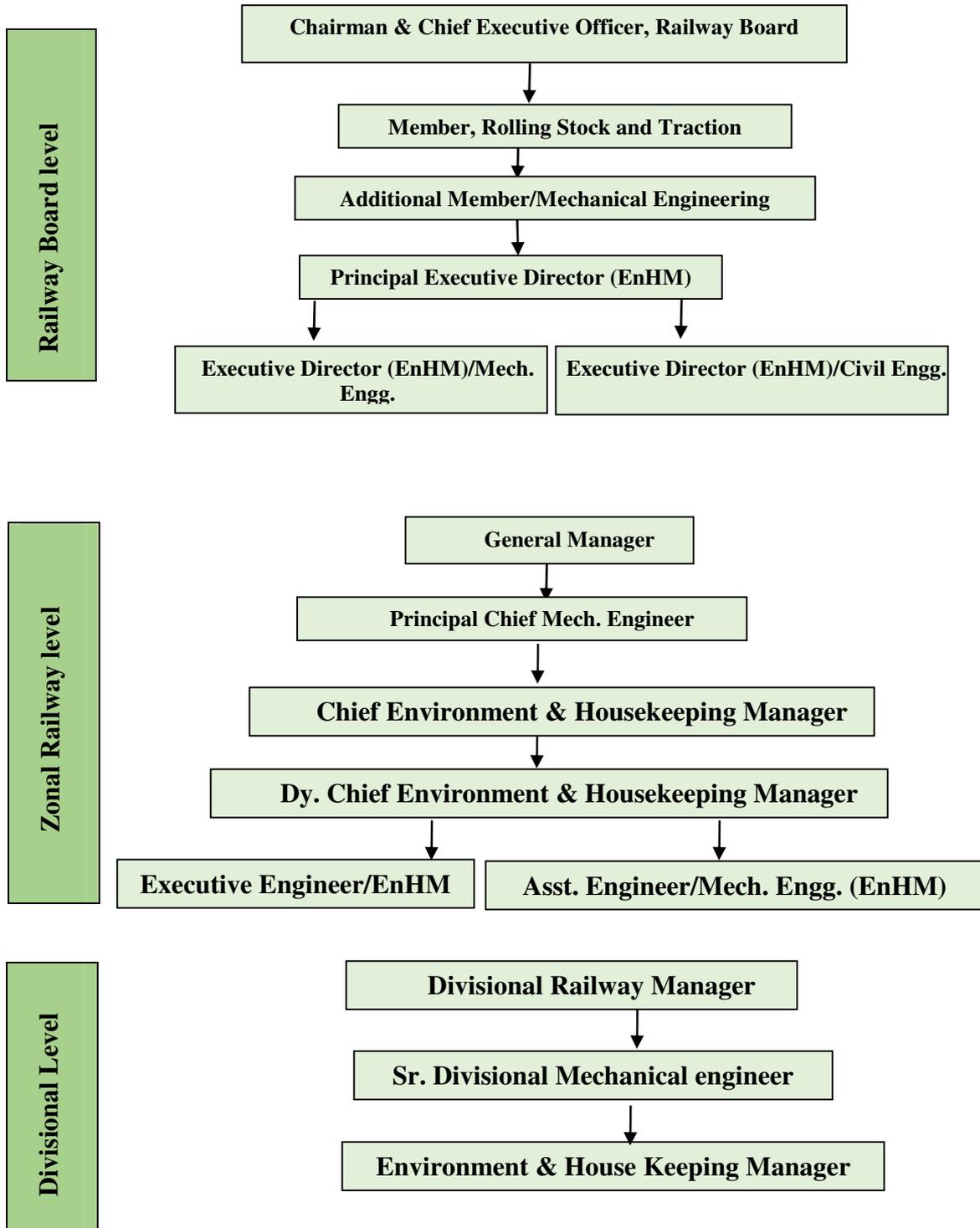

(GIRISH CHANDRA MURMU)
Comptroller and Auditor General of India

Annexures

Annexure-1.1

(Referred in Para 1.1)

Organisational Hierarchy



Annexure-1.2

(Para 1.3)

Instructions issued by Railway Board on matters related to Waste Management

S. No.	Railway Board's Letter Number & Date	Subject
1	2015/O&M/6/1 dated 07.04.2015	Formation of Environment & Housekeeping Management Directorate
2	2015/EnHM/06/02 dated 28.08.2015,	Policy on Scope and Formation of Environment & Housekeeping Management (EnHM) wings in Zonal Rlys.
3	2018/EnHM/01/02 dated 05.12.2018	Minutes of meeting held through V.C. on 27.11.2018 regarding judgement of NGT on 01.10.2018 in OA Number141/2014
4	06/TG-IV/10/Sanitation Policy dated 04.01.2007	Guidelines for sanitation/cleanliness of railway stations
5	2018/EnHM (CE)/01/02 dated 17.04.2019	Implementation of directions of Hon'ble NGT order dated 26.03.2019 in OA Number141/2014
6	2018/EnHM/01/02 dated 13.05.2019	Implementation of directions of Hon'ble NGT
7	2015/Environ/01/03 dated 30.04.2015	Case on Environment pollution before NGT at New Delhi in the matter of Saloni Singh Vs UoI & Ors.
8	2015/EnHM/08/01 (Pt.1) dated 28.07.2016	"Swachh Rail, Swachh Bharat Mission"- Actionable Points for improvement of cleanliness in station premises
9	2016/EnHM/06/10 dated 05.09.2016	Provision of separate dustbins for biodegradable (wet) and non-biodegradable (dry) waste at major railway stations
10	2015/EnHM/06/06 dated 03.02.2016	Guidelines for execution of identified railway works through Corporate Social Responsibility (CSR) of Corporates and PSUs
11	97/TG-III/613/1 Pt. dated 02.06.1999	Disposal of Garbage
12	2009/TG-III/600/25 dated 13.09.2011	Disposal of Waste (Catering Waste Management System)
13	2011/TG-III/600/45 dated 02.11.2016	Provision of separate dustbins for biodegradable (wet) and non-biodegradable (dry) waste at major railway stations
14	2006/M I/165/9 dated 17.02.2016	Revised guidelines for On Board Housekeeping Services (OBHS) Scheme
15	2015/Environ/01/01 dated 17.10.2016	Plastic Waste Management Rules, 2016 IR identified have been as a 'Waste generator'
16	2016/EnHM/06/16 dated 09.12.2016	Minutes of Meeting held at Railway Board on 25.11.2016 for review of performance on Housekeeping of Stations and Trains.
17	2019/EnHM/11/01 dated 19.08.2019	Plastic Waste Management
18	2019/EnHM/11/01 dated 12.09.2019	Plastic Waste Management
19	2018/TG-IV/18/Misc./2/PBCM dated 27.09.2019	Plastic Bottle Crushing Machines (PBCMs)

S. No.	Railway Board's Letter Number & Date	Subject
20	2015/E&HM/03/02 dated 11.06.2015	Environmental accreditation
21	2015/EnHM/12/02 dated 01.02.2017	Policy initiative for seeking Green Ratings of IR Establishments.
22	99/LMB/9/25 dated 22.12.1999	Water Recycling Plant
23	2006/LMB/09/01 dated 19.07.2006 & 04.08.2006	Water Recycling Plant (WRP)
24	2015/LM(PA)/08/08/WRP dated 04.03.2015	Setting up of Water Recycling Plant at Major Consumption Centres
25	2001/M I/141/1 Vol. I dated 20.04.2010	Automatic "drive-through" coach washing plants on B.O.O. Model
26	2001/M I/141/1 Vol. I dated 27.10.2017	Provision of Automatic Coach Washing Plant with recycling facility
27	2016/EnHM/13/02 dated 13.05.2016	Provision for Environment related works in the Estimates for Works
28	2016/EnHM/13/02 dated 12.03.2020	Monitoring of execution of Environment related works (ERW) on Zonal Railways

Act, Rules and Regulations/Orders concerning subject (Para 1.3)

- Section 6, 8 and 25 of the Environment Protection Act 1986; Rule 14 of the Environment Protection Rules 1986;
- The Water Prevention and Control of Pollution Act, 1974;
- The Solid Wastes Management Rules, 2016 ;
- Plastic Waste Management Rules, 2016 ;
- The Hazardous and other Wastes Management and Transboundary Movement Rules, 2016;
- The Batteries Management and Handling Rules, 2001;
- The Bio-Medical Waste Management Rules, 2016;
- The E-Waste Management Rules, 2016 ;
- The National Green Tribunal (NGT) Orders dated 18.03.2015, 01.10.2018, 22.01.2019, 26.03.2019, 04.12.2019 & 18.08.2020 in O.A .Number141 of 2014 ;
- Directions/recommendations issued by Public Accounts Committee (PAC) from time to time specific to the Report Number 83 of 2008-09, 21 of 2009-10, 3 of 2014-15 & 38 of 2015-16.

Annexure-1.3

Basis of selection of sample for Audit study

(Para 1.5 -Sample selection)

S.No.	Description	Basis for selection
1	Stations Category A1	Total selection to be 3 in each Zonal Railway (except SER & SECR, where only 2 A1 category stations are available). In case of SECR, the 2 A1 category stations were selected and in case of SER, one number A1 category station i.e. Kharagpur was selected.
1(a)	Stations -- Category A & B	10 % of total units in these categories, subject to Minimum 2 and Maximum 4 to be selected randomly
2	Major Coaching Depots	i) 50% of units in the category if less than 3, units to be selected randomly = 1
3	Workshop (Mechanical)	ii) 50% of units in the category if between 3 and 5, units to be selected randomly= 2
4	Workshop (S&T)	iii) 50% of units in the category if above 6, units to be selected randomly = 3
5	Workshop (Engineering)	(In each PU, 25 % of manufacturing shops subject to minimum 5 shops to be selected randomly)
6	Sheds	
7	EMU/MEMU/D EMU/Car Sheds	
8	Productions Units (PUs)	
9	Central Hospitals/ Super speciality Hospitals/ Production Units Hospitals	One hospital in each category
10	Divisional Hospitals Sub-divisional Hospitals	For each category i) One, where Number of hospitals is less than 04, to be selected randomly ii) Two, where Number of hospitals is equal to or more than 04, to be selected randomly
11	Workshop Hospitals	One hospital in each Zone, if available
12	Locations for E-Waste	Macro study- EDP centres of Zonal Headquarters/PUs& 02 Divisions to be selected randomly. Micro study-01 Divisional Scrap Depot out of any of the Divisions selected for Macro study and 01 station from the list of 37 identified stations in the Railway Board's Action Plan.

Annexure-1.4

(Para 1.5 – Sample selection)

Sample selection – Stations and Coaching Depots

Zonal Railway	A1 Category sstations	A & B category stations	C- category stations	Major coaching yards
CR	Chhatrapati Shivaji Maharaj Terminus (CSMT)	Panvel		Lokmanya Tilak Terminus
	Pune	Bhusawal		
		Wadi		
	Nasik Road	Igatpuri		
ER	Howrah	Bandel		Tikiapara
	Sealdah	Bardhaman		
	Bhagalpur			
ECR	Dhanbad jn.	Sonepur		Rajendra Nagar Terminal
		Hajipur		Danapur
	Muzaffarpur	Danapur		
	Patna	Rajendra Nagar Terminus		
ECoR	Vishakhapatnam	Vizianagaram		Bhubaneswar
	Bhubaneswar	Cuttack		Puri
	Puri			
NR	New Delhi	Jalandhar Cantonment		Amritsar
	Shri Mata Vaishno Devi Katra	Rae Bareli		Varanasi
	Varanasi	Barabanki		Hazrat Nizamuddin
		Rajpura Jn.		Delhi S Rohilla
		Rohtak Jn.		
		Panipat		
		Moradabad		
NCR	Prayagraj	Agra Fort		Prayagraj
	Jhansi	Prayagraj Chheoki		
	Agra			
NER	Lucknow	Manduadih		Gorakhpur
	Gorakhpur	Kathgodam		Lucknow
	Chhapra	Bareilly City		Kathgodam
		Haldwani		
NFR	Guwahati	New Coochbehar		Dibrugarh
		Dimapur		
	Katihar	Hojai		
	New Jalpaiguri	New Bongaigaon		
SER	Kharagpur	Ranchi		Santragachi
		Digha		Hatia
		Shalimar		
NWR	Ajmer	Bikaner		Jodhpur
		Lalgarh		Bikaner
	Jaipur	Gandhinagar Jaipur		
	Jodhpur	Rai-Ka-Bagh		

Zonal Railway	A1 Category sstations	A & B category stations	C- category stations	Major coaching yards
SWR	Mysore	Hubballi		Bengaluru
	Bangaluru	Krishnarajapuram		
	Yashwantpur	Yelahanka		
		Pandavapura		
SR	PuratchiThalaivar Dr M.G.R Central Railway station	Tiruchchirappalli Jn.		Basin Bridge
	Coimbatore Jn.	Palakkad Jn.		Mangalore
	Thiruvananthapuram Central	Ottapalam		Thiruvananthapuram
		Melmaruvathur		
SCR	Secunderabad	Nellore		Secunderabad
	Kacheguda	Bhimavaram		Vijayawada
	Vijayawada	Khammam		
		Ramagundam		
SECR	Bilaspur	Raigarh		Bilaspur
	Raipur	Durg		
		Gondia		
WCR	Jabalpur	Sawai Madhopur		Jabalpur
	Bhopal	Katni		
	Kota	Pipariya		
		Hoshangabad		
WR	Mumbai Central	Valsad		Bandra Terminus
	Vadodara	Bharuch		Ahmedabad
	Bandra Terminus	Billimora		Indore
		Dahod		
RPU & Metro Rly			Dum Dum	
			Esplanade	
			Rabindra Sadan	
			Kalighat	
			Mahanayak Uttam Kumar	
Total	45	59	5	30

Annexure-1.5

(Para 1.5- Sample selection - Workshop, Sheds and Production Units)

Zonal Railway	Workshops			Sheds selected			Production Units selected
	Mechanical workshops	S&T Workshop	Engg. Workshop	Diesel Loco Shed	Electric loco shed	EMU/DMU Car Shed	
CR	Matunga	Byculla	Manmad	Kalyan	Ajni	Kurla	
	Bhusawal						
ER	Liluah	Howrah	Mughalsarai	Howrah	Howrah	Bandel	
						Howrah	
ECR	Samastipur			Samastipur	Gomoh	Sonpur	Rail Wheel Pant, BELA
ECoR	Mancheswar			Waltair	Angul	Khurda Road	
NR	Kalka	Ghaziabad	Jalandhar Cantonment	Ludhiana	Lucknow	Jalandhar City	
	Lucknow			Tuglakabad	Khanalam pura	Carshed/Ghaziabad	Modern Coach Factory, Raebareli
							Rail Coach Factory, Kapurthala
							DMW/Patiala
NCR	Jhansi		CPOH/SFG/Prayagraj	Jhansi (JHS)	Kanpur		
NER	Gorakhpur		Bridge Workshop, Gorakhpur	Izzatnagar	Gonda	Aunrihar	
	Gorakhpur						
NFR	New Bongaigaon		Bongaigaon	Siliguri		Siliguri	
			Sini Workshop	Kharagpur	Santragachi	Tikiapara	
	Kharagpur	Kharagpur					
NWR	Ajmer	Ajmer		Bhagat ki Kothi		Merta Road	
	Jodhpur						
SWR	Hubballi			Krishnarajapuram		Bangalore Cantonment	Rail Wheel Factory, Yelahanka
SR	Perambur	Podanur	Arakkonam	Erode	Arakkonam	Tambaram	Integral Coach Factory, Perambur
				Kazipet			
SCR	Lallaguda	Mettuguda	Lallaguda	Vijayawada	Kazipet	Moula Ali	
	Guntupalli				Vijayawada		
SECR	Raipur			Raipur	Bhilai	Bhilai	
WCR	Bhopal			New katni Jn.	New Katni Jn.		

Zonal Railway	Workshops			Sheds selected			Production Units selected
	Mechanical workshops	S&T Workshop	Engg. Workshop	Diesel Loco Shed	Electric loco shed	EMU/DMU Car Shed	
WR	Lower Parel	Sabarmati	Sabarmati	Vatva	Vadodara	Mumbai Central	
	Dahod					Dahod	
RPU & Metro Rly Kolkata	Noapara					Noapara	Banaras Locomotive Works
						Kabi Subhas	Chittaranjan Locomotive Works
Total	23	8	10	18	15	19	8

Annexure-1.6 (Para 1.5)

Sample selection - Central and Divisional Hospitals

Zonal Railway	Hospitals selected			
	Central Hospital	Divisional Hospital	Sub-Divisional Hospital	Workshop Hospital
CR	Dr. B.R. Ambedkar Hospital, Byculla, Mumbai	Kalyan	Igatpuri	
		Nagpur	Kuruduwadi	
ER	B. R. Singh Railway Hospital, Kolkata	Howrah.	Andal.	Liluah
		Danapur	Gaya	
ECR	Central Super Specialty Hospital, Patna	Sonpur		
ECoR	Central Hospital, Bhubaneswar	Waltair		
NR	Super Specialty Hospital, Lucknow	Moradabad	Anand Vihar Terminal	Jagdhari
	Central Hospital, E&PI, New Delhi	Ambala Cant	Amritsar	
	Production Unit Hospital, MCF, Raebareli			
NCR	Central Hospital, Prayagraj	Agra	Kanpur	
NER	LNM hospital, Gorakhpur	Varanasi	Gonda	Gorakhpur
NFR	Central Hospital, Maligaon	Dibrugarh Town	New Jalpaiguri	
		Katihar	Rangiya	
SER	Central Hospital, Garden reach	Kharagpur	Bhilai	
		Adra	Tatanagar	
NWR	Central Hospital, Jaipur	Bikaner	Bandikui	
			Abu Road	
SWR	Central Hospital, Hubballi	Mysuru		
	Railway Hospital, Yelahanka			
SR	Railway Hospital Perambur	Golden rock	Villupuram	
	Railway Hospital ICF, Peerambur	Arakonam	Podanur	
SCR	Central Hospital/Lallaguda)	Vijayawada	Rayanapadu	
		Nanded	Purna	
SECR	Central Hospital (Bilaspur)	Raipur		
WCR	Central Hospital, Jabalpur	Kota	New Katni Jn.	
			Gangapur City	
WR	Jagjivan Ram Hospital, Mumbai Central	Ratlam	Valsad	Dahod
		Rajkot		
RPU & Metro Rly	Tapan Sinha Memorial Hospital, Tollygunge			
	Central Hospital, BLW, Varanasi			
	Kasturba Gandhi Hospital, CLW/ Chittaranjan			
Total	23	24	21	4

Anexure-1.7 (Para 1.5)

Statement showing selection of EDP Centres and scrap Depots

Zonal Railway	Zonal EDP centre	Divisional EDP Centre	Divisional Scrap Depots	Station (PRS/UTS)
CR	EDP centre HQ	Mumbai, Pune	Mumbai Divn-SMM(G) Curry Road Depot, Mumbai	Pune
ER	Zonal HQ, Howrah	Howrah, Sealdah	Belur Scrap Yard	Howrah
ECR	Zonal HQ, Hajipur	Danapur Sonpur	Scrap depot, Sonpur at Garhara	Rajendra Nagar Terminal
ECoR	Bhubaneswar	Sambalpur Khurda Road	Scrap Depot, Mancheswar	Vishakhapatnam
NR	HQ (Store section) New Delhi	Moradabad	GSD/Shakurbasti (store Section)	New Delhi
	DMW/Patiala	Lucknow		
NCR	EDP Centre/HQ/Prayagraj	Jhansi	Jhansi	Agra Cantt.
		Agra		
NER	EDP centre, Gorakhpur	Lucknow	Gorakhpur	Manduadih
NFR	IT Centre/HQ/ Maligaon	Lumding	Pandu	Katihar
		Alipurduar		
NWR	EDP centre- Jaipur (HQ)	Bikaner, Jaipur	Bikaner	Ajmer
RPU & Metro RI.y	EDP Centre/ Metro, Kolkata, BLW-Banaras, CLW-Chittaranjan		Scrap depot, Noapara	--
SR	EDP centre, Chennai	Chennai	GSD, Perambur	Chennai Central
	EDP centre, ICF	Palakkad		
SCR	HQrs	Secundrabad	Lallaguda	Secunderabad
		Vijaywada		
SER	Zonal Hqrs/ Garden Reach	Ranchi	Kharagpur	Ranchi
		Kharagpur		
SECR	Bilaspur	Raipur	GSD- Raipur	Bilaspur
		Nagpur		
SWR	EDP Centre/Hubballi	Hubballi	Hubballi	Mysuru
	EDP Centre/RWF	Mysuru		
WR	Churchgate, Mumbai	Mumbai Central	Mahalaxmi	Mumbai Central
		Ahmedabad		
WCR	Jabalpur	Jabalpur	Divn. Scrap Depot Jabalpur	Jabalpur
		Kota		
Total	22	31	17	16

Annexure-2.1 (Para 2.2)

Statement showing the details of Zone, Division and Station in which Accountable Entity was not established at various levels and Meetings/Joint Inspections not found to have been conducted.

Sl. No.	Name of Zone	Accountable entities have not been established at each level			Meeting/Joint Inspections not conducted in the year 2019-20		
		Zone	Division	Station	Zone	Division	Station
1	2	3	4	5	6	7	8
1	CR	-	(01) Solapur	(04) Igatpuri, Panvel, Pune, Wadi,	-	(02) Pune, Solapur	(04) Igatpuri, Panvel, Pune, Wadi,
2	ER	01	(03) Howrah, Sealdah, Malda	(05) Howrah, Bardhaman, Bandel Sealdah Bhagalpur	01	(03) Howrah, Sealdah, Malda	(05) Howrah, Bardhaman Bandel, Sealdah, Bhagalpur
3	ECOR	-	-	-	-	-	(01) Puri
4	NR	-	(03) Moradabad, Delhi & Ambala	(05) New Delhi, Panipat, Rohtak, Rajpura Jn. & Moradabad	01	(04) Moradabad, Delhi, Ferozpur & Ambala	(10) Varanasi, Raibareli, Barabanki, Moradabad, New Delhi, Panipat, Rohtak, Shri Mata Vaishno Devi Katra, Jalandhar Cant & Rajpura Jn.
5	NCR	-	-	-	01	(03) Prayagraj, Agra, Jhansi	(05) Jhansi, Prayagraj, Prayagraj Chheoki, Agra Cantt., Agra Fort
6	NER	-	-	(07) Gorakhpur, Lucknow, Chhapra, Manduadih, Kathgodam, Haldwani Bareilly City	-	-	(07) Gorakhpur, Lucknow, Chhapra, Manduadih, Kathgodam, Haldwani Bareilly City
7	NEFR	-	(03) Lumding, Rangiya & Katihar	(06) Dimapur, Hojai, Guwahati, New Bongaigaon , New Jalpaiguri & Katihar	01	(03) Lumding, Rangiya & Katihar	(07) Dimapur, Hojai, Guwahati, New Coochbehar, New Bongaigaon , New Jalpaiguri & Katihar

Sl. No.	Name of Zone	Accountable entities have not been established at each level			Meeting/Joint Inspections not conducted in the year 2019-20		
		Zone	Division	Station	Zone	Division	Station
1	2	3	4	5	6	7	8
8	NWR	-	-	-	-	-	(03) Gandhi Nagar Jaipur, Jodhpur, Rai Ka Bagh
9	SR	-	-	-	-	-	(02) Tiruchchirappalli Jn. & Melmaruvattur,
10	SER	-	-	-	-	-	(02) Ranchi & Shalimar
11	SECR	-	(02) Bilaspur, Raipur	(04) Bilaspur, Raigarh, Durg, Gondia	-	(02) Bilaspur Raipur	(05) Bilaspur, Raigarh, Raipur, Durg, Gondia
12	SWR	01	(02) Bengaluru, Hubballi	(04) Hubballi, Yesvantpur, Krishnarajapuram, Yelahanka	01	(02) Bengaluru, Hubballi	(04) Yesvantpur, Krishnarajapuram, Yelahanka Hubballi
13	WR	-	(03) Mumbai Central, Vadodara, Ratlam	(07) Mumbai Central, Bandra Terminus Vadodara, Bharuch, Valsad, Bilimora Jn, Dahod	01	(03) Mumbai Central, Vadodara, Ratlam	(07) Mumbai Central, Bandra Terminus Vadodara, Bharuch, Valsad, Bilimora Jn, Dahod
14	WCR	-	-	-	-	(01) Jabalpur	(04) Hoshangabad, Jabalpur, Katni & Pipariya
15	Metro/ Kolkata	-	-	-	01	-	(05) Dum Dum, Esplanade, Rabindra Sadan, Kalighat, Mahanayak Uttam Kumar
	Total	02 zones	17 divisions	42 stations	07 zones	23 divisions	71 Stations

Source: Records of selected stations and respective Divisions/Zones

Annexure-2.2
(Referred in Para 2.3)

Statement showing the details of stations and Coaching Depot in which quantity of waste was not assessed and non-segregation of generated waste as Biodegradable & Non-biodegradable

Sl. No.	Name of Zone	Assessment of quantity of waste generated not done at all (Stations/Coaching depot))	Assessment done in some of the years	Segregation of Bio-degradable & non-biodegradable waste not done	Segregation of Bio-degradable done in some of the years	Cleaning /Rag picking contract are discontinued
1	2	3	4	5	6	7
1	CR	(04) Chhatrapati Shivaji Maharaj Terminus, Igatpuri, Panvel, Wadi, (01) (Coaching Depot/ Lokmanya Tilak Terminus)	-	(05) Chhatrapati Shivaji Maharaj Terminus, Igatpuri, Pune, Panvel & Wadi, (01) (Coaching Depot/ Lokmanya Tilak Terminus)	-	(03) Igatpuri (07 month) Nasik Road (03 months) Bhusaval (12 month)
2	ER	(01) Bardhaman,	-	(05) Howrah, Bardhaman, Bandel, Sealdah, Bhagalpur (01) (Coaching Depot/Tikiapara	-	(02) Bardhaman (6 month), Bhagalpur (2 month)
3	ECR	-	(02) Sonpur (19-20), Muzaffarpur (19-20)	-	(05) Sonpur (19-20), Muzaffarpur (2019-20), Hajipur (2017-20), Patna (2018-20) & Rajendranagar Terminal (2018-20)	(01) Sonpur (3 month)
4	ECOR	-	-	(05) Vishakhapatnam, Vizianagram, Bhubaneswar, Cuttack & Puri (02) (Coaching Depot/ Puri & Bhubaneswar)	-	(01) Puri (2 month)

Sl. No.	Name of Zone	Assessment of quantity of waste generated not done at all (Stations/Coaching depot))	Assessment done in some of the years	Segregation of Bio-degradable & non-biodegradable waste not done	Segregation of Bio-degradable done in some of the years	Cleaning /Rag-picking contract are discontinued
1	2	3	4	5	6	7
5	NR	(07) New Delhi, Raibareli, Barabanki, Panipat, Rohtak, Shri Mata Vaishno Devi Katra, Jalandhar Cantt) (03) (Coaching Depot/Hazrat Nizamuddin, Delhi Sarai Rohilla & Amritsar)	(02) Rajpura (19-20), Varanasi (19-20)	(08) New Delhi, Raibareli, Barabanki, Varanasi, Panipat, Rohtak, Shri Mata Vaishno Devi Katra, Jalandhar Cantt (03) (Coaching Depot/Hazrat Nizamuddin, Delhi Sarai Rohilla & Amritsar)	(01) Rajpura (19-20)	(06) (Rae Bareli Jn (4 month) Barabanki (8 month) Panipat (2 month), Rohtak (4 month), Rajpura (5 month), Jalandhar Cantt (2 month)
6	NCR	(04) Jhansi, Prayagraj Chheoki, Agra Cantt., Agra Fort (01) (Coaching Depot//Prayagraj)	-	(04) , Jhansi, Prayagraj Chheoki, Agra Cantt., Agra Fort (01) (Coaching Depot//Prayagraj)	(01) Prayagraj (done in 2019-20 only)	(01) Prayagraj Chheoki (15 month.)
7	NER	(01) Bareilly City (03) (Coaching Depot//Gorakhpur, Aishbagh & Kathgodam)	-	(01) Manduadih, (03) (Coaching Depot//Gorakhpur, Aishbagh & Kathgodam)	-	(02) Haldwani (6 month) & Bareilly City stn. (2 month)
8	NEFR	(05) Dimapur, Hojai, New Coochbehar, New Jalpaiguri & Katihar (01) (Coaching Depot/ Dibrugarh)	(02) Guwahati (2018-19 & 2019-20) only) New Bogaigaon (2018-19 & 2019-20)	(05) Dimapur, Hojai, New Coochbehar, New Jalpaiguri & Katihar (01) (Coaching Depot/ Dibrugarh)	(02) Guwahati (2018-19 & 2019-20) only) New Bogaigaon (2018-19 & 2019-20)	(01) Guwahati (4 month)

Sl. No.	Name of Zone	Assessment of quantity of waste generated not done at all (Stations/Coaching depot))	Assessment done in some of the years	Segregation of Bio-degradable & non-biodegradable waste not done	Segregation of Bio-degradable done in some of the years	Cleaning /Rag picking contract are discontinued
1	2	3	4	5	6	7
9	NWR	(03) Bikaner, Lalgarh, Rai Ka Bagh (01) Coaching Depot/ Bikaner	(03) Jaipur (19-20) Ajmer (19-20), Gandhi Nagar Jaipur (19-20)	(03) Bikaner, Lalgarh & Rai Ka Bagh, (02) (Coaching Depot//Bikaner & Jodhpur)	(04) Ajmer (19-20), Jaipur (2019-20) Gandhi Nagar Jaipur Jodhpur (19-20)	(02) Jodhpur (1 month) Gandhi Nagar Jaipur (1 month)
10	SR	-	-	-	(01) Coaching Depot//Thiru vananthapur am (2019-20)	(01) Coimbatore (4 month),
11	SCR	(02) (Coaching Depot/ Vijaywada & Secunderabad)	-	(01) Bhimavaram (01) (Coaching Depot/ Vijaywada)	-	(02) Nellore (9 month) Bhimavaram (20 month)
12	SER	(02) Kharagpur, Shalimar (01) (Coaching Depot/Santragachi)	(01) Digha (done in 19-20 only) (01) (Coaching Depot/ Hatia (2017 to 2020)	(02) Kharagpur & Shalimar (01) (Coaching Depot/Santagachi)	(01) Digha (done in 19-20 only)	-
13	SECR	(01) Gondia (01) (Coaching Depot/Bilaspur)	(01) Durg (15-16 & 18-19 only)	(03) Raigarh, Gondia, Durg (01) (Coaching Depot/Bilaspur)	(01) Raipur (19-20 only)	-
14	SWR	(04) Yelahanka, Mysuru, Pandavpura & Hubbali (01) (Coaching Depot/ KSR Bengaluru)	-	(07) KSR Bengaluru, Yesvantpur, Krishnarajapuram, Yelahanka, Pandavpura, Mysuru, Hubballi (01) (Coaching Depot/ KSR Bengaluru)	-	-

Sl. No.	Name of Zone	Assessment of quantity of waste generated not done at all (Stations/Coaching depot))	Assessment done in some of the years	Segregation of Bio-degradable & non-biodegradable waste not done	Segregation of Bio-degradable done in some of the years	Cleaning /Rag picking contract are discontinued
1	2	3	4	5	6	7
15	WR	(03) Mumbai Central Valsad & Dahod, (03) (Coaching Depot/ Bandra Terminus, Ahmedabad & Indore)	(04) Bandra Terminus (19-20), Bilimora jn (19-20), Vadodara (18-20 only) & Bharuch (17-20)	(05) Valsad, Dahod, Mumbai Central, Vadodara & Bilimora Jn (03) (Coaching Depot/ Bandra Terminus, Ahmedabad & Indore)	(02) Bharuch (19-20) Bandra Terminus (19-20)	-
16	WCR	(02) Bhopal, Hoshangabad,	(02) Kota (19-20) Sawaimad hopur (19-20)	(06) Jabalpur, Katni, Bhopal, Hoshangabad, Kota & Sawaimadhopur (01) (Coaching Depot/Jabalpur)	-	(01) Hoshangabad (20 month)
17	RPU & Metro Rly.	-	(01) Dum Dum (19-20)	-	-	-
Total		37 stations/ 18 coaching depots	18 stations/ 01 coaching depots	60 stations/ 22 coaching depots	17 stations/ 01 coaching depots	23 stations

Source: Records of selected stations/coaching depots of respective Divisions/Zones

Annexure-2.3**(Para 2.4 - Verifiable indicators)**

Achievement of ISO 14001 (Progress)	Pairs of Dustbins required and provided for segregated collection of solid waste (Pairs)	Rag picking contract status (for approaches to station) (Yes/No)
Water Audit (Progress)	Transportation of segregated waste (Yes/No)	Authorities nominated to penalize the persons involved in littering on platforms, circulating area and in trains (Nos.)
Energy Audit (Progress)	No. of plastic bottle crushing machines planned and provided	No. of Encroachment along the Track which are creating nuisance
Website/Webpage of the Railway station to receive public grievances and suggestions	Teams formed to prevent open defecation on Track (Nos.)	No. of location requiring boundary wall to prevent unauthorised dumping on Railway land (Nos.)
Scope of Recycling of water / effluent/ sewerage (in KLD)	Composting Plant at Railway station (Nos. & capacity)	Nos. of toilets installed to prevent open defecation on Railway tracks. (Nos.)
Effluent/ Water/ Sewerage Recycling Plant Planned (with TDC & capacity in KLD)	Material Recovery Facility (Area in Sqm)	Nos. of toilets provided in circulating area. (Nos.)
Status of cleaning contract (Yes/No)	Coordination with ULB to prevent unauthorised dumping, open defecation & encroachments (Nos of meetings held)	No. of locations for posters on public awareness campaigns (Nos.)
Nos. of garbage bins installed to prevent unauthorised dumping (Nos.)	CCTV cameras for monitoring for cleanliness (Nos.)	Locations of illegal dumping on Railway premises (Nos.)

Annexure-2.4

(Referred in Para 2.4)

Statement showing the details of Stations where CTE/CFO was neither applied nor obtained as of 31st July 2021

Sl. No.	Zonal Railway	CTE not applied	CTE applied but not obtained	CFO Not obtained	CFO obtained without obtaining CTE
1	2	3	4	5	6
1	CR	-	(01) Chhatrapati Shivaji Maharaj Terminus	(01) Panvel	(01) Chhatrapati Shivaji Maharaj Terminus*
2	ER	(05) Howrah Bardhaman Bandel, Sealdah & Bhagalpur	-	(01) Bhagalpur	(04) Howrah Bardhaman Bandel & Sealdah
3	ECR	-	-	(03) Patna, Rajendra Nagar & Danapur	-
4	ECOR	-	(03) Bhubaneswar, Puri & Cuttack	(03) Bhubaneswar, Puri & Cuttack	-
5	NR	(08) Varanasi, Raibareli, Barabanki, Moradabad, Panipat, Rohtak, Shri Mata Vaishno Devi Katra & Jalandhar Cant.	-	(06) New Delhi, Panipat, Rohtak, Shri Mata Vaishno Devi Katra, Jalandhar Cant. & Rajpura	(04) Varanasi, Raibareli, Barabanki & Moradabad -
6	NCR	(05) Jhansi, Prayagraj, Prayagraj Chheoki, Agra Cantt. & Agra Fort	-	(02) Agra Cantt., & Agra Fort	(03) Jhansi, Prayagraj & Prayagraj Chheoki
7	NER	(06) Gorakhpur, Lucknow, Manduadih, Kathgodam, Haldwani & Bareilly City	-	-	(06) Gorakhpur, Lucknow, Manduadih, Kathgodam Haldwani & Bareilly City -
8	NEFR	(07) Dimapur, Hojai, Guwahati, New Bongaigaon, New Coochbehar, New Jalpaiguri & Katihar	-	(07) Dimapur, Hojai, Guwahati, New Bongaigaon, New Coochbehar, New Jalpaiguri & Katihar	-
9	NWR	(06) Ajmer, Bikaner, Lalgah, Jaipur, Gandhi Nagar Jaipur, Jodhpur,	-	(01) Ajmer	(05) Bikaner, Lalgah, Jaipur, Gandhi Nagar Jaipur & Jodhpur -

Sl. No.	Zonal Railway	CTE not applied	CTE applied but not obtained	CFO Not obtained	CFO obtained without obtaining CTE
1	2	3	4	5	6
10	SR	(06) MGR Chennai Central, Coimbatore Jn, Thiruvananthapuram Central, Tiruchchirapalli Jn, Palakkad Jn & Ottappalam	-	(01) Tiruchchirapalli	(05) MGR Chennai Central, Coimbatore Jn, Thiruvananthapuram Central, Palakkad Jn & Ottappalam
11	SER	(04) Kharagpur, Shalimar, Ranchi & Digha	-	(02) Kharagpur, Shalimar,	(02) Ranchi & Digha
12	SECR	(02) Durg, Gondia	-	(02) Durg, Gondia	-
13	SWR	(05) KSR Bengaluru, Yesvantpur, Krishnarajapuram, Yelahanka & Mysuru,	(01) Hubballi	(03) KSR Bengaluru, Yesvantpur & Hubballi	(03) Krishnarajapuram, Yelahanka & Mysuru
14	WR	(02) Valsad, Bilimora Jn,	(04) Mumbai Central, Bharuch, Bandra Terminus & Dahod	(05) Mumbai Central, Bharuch, Valsad, Bilimora Jn , Dahod	(01) Bandra Terminus*
15	WCR	-	(02) Kota & Sawaimadhopur	(06) Jabalpur, Katni, Pipariya, Hoshangabad, Kota & Sawaimadhopur	-
16	RPU & Metro Rly.	(03) Dum Dum, Esplanade, Rabindra Sadan	-	(03) Dum Dum, Esplanade, Rabindra Sadan	-
Total		59 stations	11 stations	46 stations	34 stations

**Though CTE was applied, straightway CFO was given.*

Source- Records of selected Stations (including Mechanical laundry, if any), Coaching Depots & respective Divisions/Zones

Annexure-2.5

(Referred in Para 2.6)

Statement showing the position of achievement against verifiable indicators.

Sl. No.	Name of Zone	Total Selected Major Stations Other than 37 identified station.	ETP/STP/WRP not provided	Waste Compost Plant not installed	Material Recovery Facility not provided	CCTV not used for cleanliness	Non co-ordination with ULB	Toilets not provided in circulating area
1	2	3	4	5	6	7	8	9
1	CR	(04) Chhatrapati Shivaji Maharaj Terminus, Panvel, Wadi, & Bhusawal	(01) Panvel	(02) Panvel & Wadi	(03) Panvel & Wadi & Bhusawal	(01) Wadi	(03) Panvel Wadi & Bhusawal	(01) Wadi
2	ER	(03) Bardhaman Bandel Bhagalpur	(02) Bardhaman & Bandel	(03) Bandel, Bardhman & Bhagalpur	(03) Bandel, Bardhman & Bhagalpur	(01) Bardhaman	(03) Bandel, Bardhman & Bhagalpur	-
3	ECR	(05) Hajipur, Sonpur, Muzaffarpur, Patna & Danapur	(03) Hajipur, Patna & Danapur	(03) Sonpur, Hajipur & Danapur	(03) Hajipur, Sonpur & Muzaffarpur	-	(02) Sonpu & Muazaffarpur	-
4	ECOR	(03) Bhubaneswar, Puri & Cuttack	(03) Bhubaneswar, Puri & Cuttack	-	(03) Bhubaneswar, Puri & Cuttack	-	-	(01) Cuttack
5	NR	(07) Raibareli, Barabanki, Moradabad, Panipat, Rohtak, Jalandhar Cant & Rajpura Jn.	(07) Raibareli, Barabanki, Moradabad, Panipat, Rohtak, Jalandhar Cant & Rajpura Jn.	(07) Raibareli, Moradabad, Panipat, Rohtak, Jalandhar Cant, Rajpura Jn. & Barabanki	(07) Raibareli, Moradabad, Panipat, Rohtak, Jalandhar Cant, Rajpura Jn & Barabanki.	(06) Raibareli, Moradabad, Panipat, Rohtak, Jalandhar Cant & Rajpura Jn.	(06) Raibareli, Moradabad, Panipat, Rohtak, Jalandhar Cant & Barabanki	(03) Rae Bareli Jn, Moradabad, Jalandhar Cant
6	NCR	(02) Prayagraj Chheoki, Agra Fort	(02) Prayagraj Chheoki, Agra Fort	(02) Prayagraj Chheoki, Agra Fort	(02) Prayagraj Chheoki, Agra Fort			
7	NER	(05) Gorakhpur, Chhapra, Kathgodam Haldwani Bareilly City	(05) Gorakhpur, Chhapra, Kathgodam Haldwani Bareilly City	(02) Haldwani Bareilly City	(03) Haldwani Bareilly City Kathgodam	(04) Gorakhpur, Chhapra Haldwani Bareilly City	(05) Gorakhpur, Chhapra Haldwani Bareilly City & Kathgodam	(04) Chhapra Haldwani Bareilly City & Kathgodam

Sl. No.	Name of Zone	Total Selected Major Stations Other than 37 identified station.	ETP/STP/WRP not provided	Waste Compost Plant not installed	Material Recovery Facility not provided	CCTV not used for cleanliness	Non co-ordination with ULB	Toilets not provided in circulating area
1	2	3	4	5	6	7	8	9
8	NEFR	(04) Dimapur, New Bongaigaon, New Coochbehar & New Jalpaiguri	(04) Dimapur, New Bongaigaon, New Coochbehar & New Jalpaiguri	(02) Dimapur & New Bongaigaon	(04) Dimapur, New Bongaigaon, New Coochbehar & New Jalpaiguri	(02) New Jalpaiguri & New Bongaigaon	(04) Dimapur, New Bongaigaon, New Coochbehar & New Jalpaiguri	(03) Dimapur, New Bongaigaon, & New Jalpaiguri
9	NWR	(03) , Bikaner, Lalgarh & Gandhi Nagar Jaipur	(02) Lalgarh, , Gandhi Nagar Jaipur	(03) Lalgarh, Bikaner & Gandhi Nagar Jaipur	(03) Bikaner, Gandhi Nagar Jaipur & Lalgarh	(01) Lalgarh	-	(03) Gandhi Nagar Jaipur, Bikaner & Lalgarh
10	SR	(03) Coimbatore Jn Palakkad Jn, Ottappalam	(03) Coimbatore Jn Palakkad Jn, Ottappalam	(03) Coimbatore Jn Palakkad Jn, Ottappalam	(02) Coimbatore Jn, Ottappalam	(03) Coimbatore Jn, Palakkad Jn, Ottappalam	(03) Coimbatore Jn, Palakkad Jn, Ottappalam	(02) Palakkad Jn, Ottappalam
11	SCR	(04) Khammam, Ramagundam Nellore, Bhimavaram	(02) Nellore, Bhimavaram	(04) Khammam, Ramagundam, Nellore, Bhimavaram	-	(02) Bhimavar am, Ramagun dam	-	(04) Khammam, Ramagunda m, Nellore, Bhimavaram
12	SER	(02) Kharagpur & Shalimar	(02) Kharagpur & Shalimar	(02) Kharagpur & Shalimar	(02) Kharagpur & Shalimar	(01) Shalimar	-	(01) Shalimar
13	SECR	(03) Raigarh, Durg & Gondia	-	(02) Raigarh & Durg	(03) Raigarh, Gondia & Durg	-	-	(02) Raigarh, Gondia
14	SWR	(04) KSR Bengaluru, Yesvantpur, Krishnarajapura m, Yelahanka,	(02) Krishnaraj apuram, Yelhanka	(01) KSR Bengaluru	(02) Krishnaraja puram, Yelhanka	-	-	-
15	WR	(05) Bandra Terminus Bharuch, Valsad, Bilimora Jn, Dahod	(02) Bharuch & Dahod	(02) Bilimora Jn., Dahod,	(01) Bandra Terminus	(01) Bilimora Jn.	--	(04) Bandra Terminus Valsad, Bilimora Jn, Dahod
16	WCR	(05) Katni, Pipariya, Hoshangabad Sawaimadhopur , Kota	(01) Pipariya	(05) Katni, Pipariya, Hoshangab ad, Sawai madhopur Kota	(05) Katni, Pipariya, Hosangaba d, Sawai madhopur Kota	(04) Katni, Pipariya Hoshanga bad, Sawaima dhopur	-	-

Annexure – Waste Management in Indian Railways

Sl. No.	Name of Zone	Total Selected Major Stations Other than 37 identified station.	ETP/STP/WRP not provided	Waste Compost Plant not installed	Material Recovery Facility not provided	CCTV not used for cleanliness	Non co-ordination with ULB	Toilets not provided in circulating area
1	2	3	4	5	6	7	8	9
17	Metro/ Kolkata	(03) Dum Dum, Esplanade, Rabindra Sadan,	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
	Total	65 stations	41 stations	43 stations	46 stations	28 stations	28 stations	30 stations

Source- Records of selected stations and respective Divisional/Zonal offices

Annexure-2.6

(Referred in Para 2.10)

Statement showing the details of stations & Coaching depots on which Plastic Bottle Crushing Machine not planned, installed, non-provision of 'Plastic Only Bins and assessment and segregation of Plastic Waste had not been done.

(Station shown in col. No. 3 & 4 in Italics shows PBCM installed less than what was planned)

Sl. No.	Name of Zone	PBCM Planned/ installed at the 37 identified Stations as per NGT guidelines		Stations and Coaching depot on which 'Plastic Only Bins' not provided	Assessments not made of quantity of plastic waste generated at station/Coaching depot.	Provision for collection and segregation of plastic waste specifically not made in the cleaning contracts.
		PBCM planned for installation	Number of PBCM installed			
1	2	3	4	5	6	7
1	CR	<i>Pune-09</i>	<i>Pune-02</i>	(07) Chhatrapati Shivaji Maharaj Terminus, Igatpuri, Panvel, Pune, Nasik Road, Wadi & Bhusawal	(05) Chhatrapati Shivaji Maharaj Terminus, Igatpuri, Panvel, Nasik Road & Bhusawal (01) (Coaching Depot/ Lokmanya Tilak Terminus)	(04) Chhatrapati Shivaji Maharaj Terminus, Igatpuri, Panvel, & Pune (01) (Coaching Depot/ Lokmanya Tilak Terminus)
		Nasik Road-01	Nasik Road-01			
2	ER	Howrah-0	Howrah-03	(05) Howrah, Bardhaman Bandel Sealdah Bhagalpur (01) (Coaching Depot/ Tikiapara)	(04) Bardhaman Bandel Sealdah Bhagalpur (01) (Coaching Depot/ Tikiapara)	(05) Howrah, Bardhaman Bandel Sealdah Bhagalpur (01) (Coaching Depot/ Tikiapara)
		Sealdah-0	Sealdah-04			
3	ECR	Dhanbad jn.-01	Dhanbad jn.-01	(06) Hajipur, Sonpur, Muzaffarpur, Rajendra Nagar Terminus, Danapur, Patna	-	(06) Hajipur, Sonpur, Muzaffarpur, Rajendra Nagar Terminus, Danapur & Patna (02) (Coaching Depot/ Danapur & Rajendranagar Coaching Complex)
		Rajendra nagar Terminal -01	Rajendra nagar Terminal -01			
4	ECOR	Vishakhapatnam-06	Vishakhapatnam-06	(03) Bhubaneswar, Cuttack, Vishakhapatnam	(05) Bhubaneswar, Cuttack, Vishakhapatnam, Vizianagaram, Puri (02) (Coaching Depot/ Puri and Bhubaneswar)	(05) Bhubaneswar, Cuttack, Vishakhapatnam, Vizianagaram, Puri (02) (Coaching Depot/ Puri and Bhubaneswar)
		Vizianagaram-01	Vizianagaram-01			
				(02) (Coaching Depot/ Puri and Bhubaneswar)	(02) (Coaching Depot/ Puri and Bhubaneswar)	

Sl. No.	Name of Zone	PBCM Planned/ installed at the 37 identified Stations as per NGT guidelines		Stations and Coaching depot on which 'Plastic Only Bins' not provided	Assessments not made of quantity of plastic waste generated at station/Coaching depot.	Provision for collection and segregation of plastic waste specifically not made in the cleaning contracts.
		PBCM planned for installation	Number of PBCM installed			
1	2	3	4	5	6	7
5	NR	Varanasi-04	Varanasi-04	(06) Raibareli, Barabanki, Moradabad, New Delhi, Panipat, & Rajpura Jn. (04) (Coaching Depot/ Delhi Sarai Rohilla, Hazarat Nizamuddin, Varanasi & Amritsar)	(07) Varanasi Raibareli, Barabanki, Rohtak, New Delhi, Panipat, & Rajpura Jn. (04) (Coaching Depot/ Delhi Sarai Rohilla, Hazarat Nizamuddin, Varanasi & Amritsar)	(10) Varanasi, Raibareli, Barabanki, Moradabad, New Delhi, Panipat, Rohtak, Shri Mata Vaishno Devi Katra, Jalandhar Cantt, Rajpura Jn. (04) (Coaching Depot/ Delhi Sarai Rohilla, Hazarat Nizamuddin, Varanasi & Amritsar)
		New Delhi-06	New Delhi-04			
		Katra (SVDK)-05	Katra (SVDK)-02			
6	NCR	Prayagraj-02	Prayagraj-02	(05) Jhansi, Prayagraj, Prayagraj Chheoki, Agra Cantt., Agra Fort (01) (Coaching Depot/ Prayagraj)	(05) Jhansi, Prayagraj, , Prayagraj, Chheoki, Agra Cantt., Agra Fort (01) (Coaching Depot/ Prayagraj)	(05) Jhansi, Prayagraj, Prayagraj, Chheoki, Agra Cantt., Agra Fort (01) (Coaching Depot/ Prayagraj)
		Jhansi-03	Jhansi-02			
		Agra Cantt.t.-06	Agra Cantt.t.-03			
7	NER	Lucknow Jn.-02	Lucknow Jn.-02	(06) Gorakhpur, Chhapra, Haldwani Manduadih, Kathgodam & Breilly city (03) (Coaching Depot/ Gorakhpur, Kathgodam & Aisbagh)	-	(03) Manduadih, Haldwani Kathgodam (03) (Coaching Depot/ Gorakhpur, Kathgodam & Aisbagh)
		Manduadih-02	Manduadih-01			
8	NEFR	Guwahati - 01	Guwahati - 01	(07) Dimapur, Hojai, Guwahati, New Bogaigaon, New Cooch Bihar, Katihar & New Jalpaiguri	(07) Dimapur, Hojai, Guwahati, New Bogaigaon, New Cooch Bihar, Katihar & New Jalpaiguri (01) (Coaching Depot/ Dibrugarh)	(05) Hojai, Guwahati, New Cooch Bihar, Katihar & New Jalpaiguri (01) (Coaching Depot/ Dibrugarh)
		Katihar-01	Katihar-01			
9	NWR	Ajmer-01	Ajmer-01	(07)	(05)	(07)
		Jaipur-07	Jaipur-02			

Sl. No.	Name of Zone	PBCM Planned/ installed at the 37 identified Stations as per NGT guidelines		Stations and Coaching depot on which 'Plastic Only Bins' not provided	Assessments not made of quantity of plastic waste generated at station/Coaching depot.	Provision for collection and segregation of plastic waste specifically not made in the cleaning contracts.
		PBCM planned for installation	Number of PBCM installed			
1	2	3	4	5	6	7
		Jodhpur-0	Jodhpur-01	Ajmer, Bikaner, Lalgah, Jaipur, Gandhi Nagar Jaipur, Jodhpur, Rai Ka Bagh (02) (Coaching Depot/ Bikaner & Jodhpur)	Ajmer, Bikaner, Lalgah, Jodhpur, Rai Ka Bagh (02) (Coaching Depot/ Bikaner & Jodhpur)	Ajmer, Bikaner, Lalgah, Jaipur, Gandhi Nagar Jaipur, Jodhpur, Rai Ka Bagh (02) (Coaching Depot/ Bikaner & Jodhpur)
10	SR	MGR Chennai Central-04	MGR Chennai Central-02	(07) MGR Chennai Central, Coimbatore Jn., Thiruvananthapuram central, Tiruchchirappalli Jn, Palakkad Jn Melmaruvattur, Ottappalam (03) (Coaching Depot/ Basin Bridge, Mangalore & Thiruvananthapuram)	(03) MGR Chennai Central Tiruchchirappalli Jn, Melmaruvattur, (02) (Coaching Depot/ Basin Bridge, Mangalore)	(07) MGR Chennai Central, Coimbatore Jn Thiruvananthapuram Central Tiruchchirappalli Jn, Palakkad Jn Melmaruvattur, Ottappalam (03) (Coaching Depot/ Basin Bridge, Mangalore & Thiruvananthapuram)
		Tiruvananthapuram Central-02	Tiruvananthapuram Central-03			
		Tiruchchirappalli-02	Tiruchchirappalli-01			
11	SCR	Secunderabad-11	Secunderabad-11	(04) Khammam, Ramagundam, Bhimavaram & Secunderabad (02) (Coaching Depot/ Secunderabad & Vijaywada)	(02) Bhimavaram & Secunderabad (02) (Coaching Depot/ Secunderabad & Vijaywada)	-
		Vijaywada-04	Vijaywada-04			
		Kacheguda-04	Kacheguda-04			
12	SER	Ranchi-03	Ranchi-02	(04) Kharagapur, Shalimar, Digha, Ranchi (02) (Coaching Depot/ Hatia & Santragachi)	(01) Shalimar, (01) (Coaching Depot/ Santragachi)	(02) Shalimar, Digha (01) (Coaching Depot/ Santragachi)
		Digha-02	Digha-02			
13	SECR	Bilaspur-03	Bilaspur-03	(03) Bilaspur, Raigarh, Gondia (01) (Coaching Depot/ Bilaspur)	(03) Durg, Raigarh, Gondia (01) (Coaching Depot/ Bilaspur)	(02) Raipur, Raigarh, (01) (Coaching Depot/ Bilaspur)
		Raipur-02	Raipur-01			

Sl. No.	Name of Zone	PBCM Planned/ installed at the 37 identified Stations as per NGT guidelines		Stations and Coaching depot on which 'Plastic Only Bins' not provided	Assessments not made of quantity of plastic waste generated at station/Coaching depot.	Provision for collection and segregation of plastic waste specifically not made in the cleaning contracts.
		PBCM planned for installation	Number of PBCM installed			
1	2	3	4	5	6	7
14	SWR	Mysuru-01	Mysuru-04	(07) KSR Bengaluru, Yesvantpur, Krishnarajapuram, Yelahanka, Pandavpura Mysuru, Hubballi (01) (Coaching Depot/ KSR Bengaluru)	(07) KSR Bengaluru, Yesvantpur, Krishnarajapuram Yelahanka, Pandavpura, Mysuru, Hubballi (01) (Coaching Depot/ KSR Bengaluru)	(04) Yelahanka, Pandavpura Mysuru, Hubballi
		Hubballi-04	Hubballi-01			
15	WR	Mumbai Central-06	Mumbai Central-04	(02) Bandra Terminus, Dahod (02) (Coaching Depot/ Ahmedabad & Indore	(05) Mumbai Central, Bharuch, Valsad, Bilimora Jn, Dahod (03) (Coaching Depot/ Bandra Terminus, Ahmedabad & Indore)	(07) Mumbai Central, Bandra Terminus Vadodara, Bharuch, Valsad, Bilimora Jn, Dahod (03) (Coaching Depot/ Ahmedabad, Indore & Bandra Terminus)
		Vadodara-02	Vadodara-02			
16	WCR	Jabalpur-02	Jabalpur-02	(07) Jabalpur, Pipariya, Katni, Bhopal Hoshangabad, Kota & Sawai Madhopur (01) (Coaching Depot/ Jabalpur)	(07) Jabalpur, Pipariya, Katni, Bhopal Hoshangabad, Kota & Sawai Madhopur (01) (Coaching Depot/ Jabalpur)	(07) Jabalpur, Pipariya, Katni, Bhopal Hoshangabad, Kota & Sawai Madhopur (01) (Coaching Depot/ Jabalpur)
		Bhopal-04	Bhopal-01			
17	Metro/Kolkata			(04) Dum Dum, Esplanade, Kalighat, Mahanayak Uttam Kumar	(05) Dum Dum, Esplanade, Rabindra Sadan, Kalighat, Mahanayak Uttam Kumar	(05) Dum Dum, Esplanade, Rabindra Sadan, Kalighat, Mahanayak Uttam Kumar
Total				90 stations/ 25 coaching depots	71 stations/ 26 coaching depots	84 stations/ 26 coaching depots

Source- Records of selected stations/coaching depots, respective Divisions/Zones and

Joint Inspection

Annexure-2.7

(Referred in Para 2.11.1)

Statement showing the details of stations and Coaching depot on which transportation and disposal of solid waste not done in compliance to rule/instructions.

Sl. No.	Name of Zone	Total Selected stations & coaching depots	Solid Waste not disposed off	Segregated waste not transported in covered	No MoU between Rly and ULB/LB for disposal of solid waste	NGT/RB directives for keeping record of storage and disposal of waste	Waste not picked up by authorised waste picker/collector
1	2	3	4	5	6	7	8
1	CR	(07) Chhatrapati Shivaji Maharaj Terminus, Igatpuri, Panvel, Pune, Wadi, Nasik Road, Bhusawal (01) (Coaching Depot Lokmanya Tilak Terminus)	(01) Wadi (01) (Coaching depot/ Lokmanya Tilak)	(02) Panvel, Igatpuri	(05) Chhatrapati Shivaji Maharaj Terminus, Igatpuri, Panvel, Pune, Wadi, (01) (Coaching depot/ Lokmanya Tilak)	(04) Chhatrapati Shivaji Maharaj Terminus, Igatpuri, Panvel, Pune (01) (Coaching Depot/ Lokmanya Tilak Terminus)	-
2	ER	(05) Howrah, Bardhaman Bandel, Sealdah & Bhagalpur (01) (Coaching Depot/ Tikiapara)	-	-	(05) Howrah, Bardhaman Bandel Jn, Sealdah & Bhagalpur (01) (Coaching Depot/ Tikiapara)	-	(05) Howrah, Bardhaman Bandel Jn, Sealdah & Bhagalpur (01) (Coaching Depot/ Tikiapara)
3	ECR	(07) Danapur, Sonpur, Patna Jn, Hajipur Muzaffarpur, Rajendra Nagar, Dhanbad (02) (Coaching Depot/ Danapur & Rajendra Nagar Coaching complex)	(01) Danapur	(03) Sonpur, Muazaffarpur & Dhanbad	(07) Sonpur, Muazaffarpur Dhanbad, Hajipur, Patna, Danapur & Rajendra Nagar (02) (Coaching Depot/ Danapur & Rajendra Nagar Coaching Complex)	- (02) (Coaching Depot/ Danapur & Rajendra Nagar Coaching Complex)	(03) Hajipur, Sonpur & Muzaffarpur
4	ECoR	(05) Bhubaneswar, Cuttack, Puri, Vizianagaram & Vishakhapatnam (02) (Coaching Depot/ Bhubaneswar & Puri)	-	- (02) (Coaching Depot/ Bhubaneswar & Puri)	(05) Bhubaneswar, Puri, Cuttack, Vishakhapatnam & Vizianagaram (02) (Coaching Depot/ Bhubaneswar & Puri)	(05) Bhubaneswar, Puri, Cuttack, Vishakhapatnam & Vizianagaram (02) (Coaching Depot/ Bhubaneswar & Puri)	-

Sl. No.	Name of Zone	Total Selected stations & coaching depots	Solid Waste not disposed off	Segregated waste not transported in covered	No MoU between Rly and ULB/LB for disposal of solid waste	NGT/RB directives for keeping record of storage and disposal of waste	Waste not picked up by authorised waste picker/collector
1	2	3	4	5	6	7	8
5	NR	(10) Varanasi, Rae Bareli Jn, Barabanki, Moradabad, New Delhi, Panipat, Rohtak, Shri Mata Vaishno Devi Katra, Jalandhar Cant. & Rajpura Jn. (04) (Coaching Depot Amritsar, Varanasi, Hazrat Nizamuddin & Delhi S Rohilla)	(01) Rohtak (01) Coaching Depot/Delhi Sarai Rohilla	-	(10) Varanasi, Rae Bareli Jn, Barabanki, Moradabad, New Delhi, Panipat, Rohtak, Shri Mata Vaishno Devi Katra, Jalandhar Cant. & Rajpura Jn. (04) Coaching Depot/Hazrat Nizamuddin, Delhi Sarai Rohilla, Varanasi & Amritsar	(07) Varanasi, Rae Bareli Jn, Barabanki, New Delhi, Panipat, Rohtak & Rajpura (02) Coaching Depot/Hazrat Nizamuddin, & Amritsar	(04) Rohtak, Shri Mata Vaishno Devi Katra, Jalandhar Cant. & Moradabad (04) Coaching Depot/Hazrat Nizamuddin, Delhi Sarai Rohilla, Varanasi & Amritsar
6	NCR	(05) Prayagraj, Jhansi, Prayagraj Chheoki Agra Cantt. & Agra Fort (01) (Coaching Depot Prayagraj)	(03) Prayagraj Chheoki, Prayagraj & Jhansi (01) Coaching Depot/ Prayagraj	(01) Agra Fort	(05) Prayagraj Jhansi, Prayagraj Chheoki, Agra Cantt. & Agra Fort (01) Coaching Depot/Prayagraj	(05) Jhansi, Prayagraj, Prayagraj Chheoki Agra Cantt., Agra Fort (01) Coaching Depot/Prayagraj	(05) Prayagraj Jhansi, Prayagraj Chheoki, Agra Cantt. & Agra Fort (01) Coaching Depot/Prayagraj
7	NER	(07) Gorakhpur, Lucknow, Chhapra, Manduadih, Kathgodam, Halwani & Bareilly City (03) (Coaching Depot Gorakhpur, Lucknow & Kathgodam)	(03) Gorakhpur, Manduadih & Bareilly City (02) (Coaching Depot/ Aishbagh, Kathgodam)	(01) Manduadih (03) Coaching Depot/ Gorakhpur Aishbagh, Kathgodam	(07) Gorakhpur, Lucknow, Chhapra, Manduadih, Kathgodam, Haldwani & Bareilly City (03) Coaching Depot/ Gorakhpur, Aishbagh & Kathgodam	(07) Gorakhpur, Lucknow, Chhapra, Manduadih, Kathgodam, Haldwani & Bareilly City (03) Coaching Depot /Gorakhpur, Aishbagh & Kathgodam	(07) Gorakhpur, Lucknow, Chhapra, Manduadih, Kathgodam, Haldwani & Bareilly City (03) Coaching Depot/ Gorakhpur, Aishbagh & Kathgodam
8	NEFR	(07) Dimapur, Hojai, Guwahati, New Bongaigaon, New Coochbehar, New Jalpaiguri & Katihar (01) Coaching Depot Dibrugarh)	(01) Hojai	(03) Dimapur, Hojai & New Coochbehar	(07) Dimapur, Hojai, Guwahati, New Bongaigaon, New Jalpaiguri, New Cooch Behar, Katihar (01) (Coaching Depot- Dhibrugarh)	(05) Dimapur, Hojai, New Cooch Behar Katihar & New Jalpaiguri (01) (Coaching Depot- Dhibrugarh)	(04) Dimapur, Hojai, New Coochbehar & Katihar

Sl. No.	Name of Zone	Total Selected stations & coaching depots	Solid Waste not disposed off	Segregated waste not transported in covered	No MoU between Rly and ULB/LB for disposal of solid waste	NGT/RB directives for keeping record of storage and disposal of waste	Waste not picked up by authorised waste picker/collector
1	2	3	4	5	6	7	8
9	NWR	(07) Ajmer, Bikaner, Lalgarh, Jaipur, Jaipur Gandhinagar, Jodhpur & Rai Ka Bagh (02) (Coaching Depot/ Bikaner & Jodhpur)	(01) Gandhi nagar Jaipur, (01) (Coaching Depot/ Bikaner)	-	(07) Ajmer, Bikaner, Lalgarh, Jaipur, Gandhinagar Jaipur, Jodhpur & Rai Ka Bagh (02) (Coaching Depot/ Bikaner, Jodhpur)	(07) Ajmer, Bikaner, Lalgarh, Jaipur, Gandhinagar Jaipur, Jodhpur & Rai Ka Bagh (02) (Coaching Depot/ Bikaner, Jodhpur)	(05) Ajmer, Bikaner, Lalgarh, Gandhinagar Jaipur, & Rai Ka Bagh (01) (Coaching Depot/ Bikaner)
10	SR	(07) MGR Chennai Central, , Coimbatore Jn., Thiruvananthapuram central, Tiruchchirappalli Jn, Palakkad Jn Melmaruvattur, Ottappalam (03) (Coaching Depot/ Basin Bridge, Mangalore & Thiruvananthapuram)	-	-	(07) MGR Chennai Central, , Coimbatore Jn., Thiruvananthapuram central, Tiruchchirappalli Jn, Palakkad Jn Melmaruvattur, Ottappalam (03) (Coaching Depot/ Basin Bridge, Thiruvananthapuram & Mangalore)	-	(02) Tiruchchirappalli Jn & Melmaruvattur
11	SCR	(07) Secunderabad, Kachiguda, Vijaywada, Khammam, Ramagundam, Nellore, Bhimavaram (02) (Coaching Depot Secunderabad & Vijayawada)	- (01) (Coaching Depot/ Secunderabad)	-	(05) Bhimavaram, Nellore, Khammam, Kachiguda & Ramagundam (02) (Coaching Depot/Vijaywada & Secunderabad)	- (02) (Coaching Depot/ Vijaywada & Secunderabad)	-
12	SER	(04) Kharagpur, Shalimar, Digha & Ranchi (02) (Coaching Depot Santragachi & Hatia)	-	(01) Shalimar	(03) Kharagpur, Shalimar & Ranchi (02) (Coaching Depot- Santragachi & Hatia)	(02) Kharagpur, Shalimar, (01) (Coaching Depot/ Santragachi)	(04) Kharagpur, Shalimar, Digha & Ranchi (02) (Coaching Depot/ Santragachi & Hatia)

Annexure – Waste Management in Indian Railways

Sl. No.	Name of Zone	Total Selected stations & coaching depots	Solid Waste not disposed off	Segregated waste not transported in covered	No MoU between Rly and ULB/LB for disposal of solid waste	NGT/RB directives for keeping record of storage and disposal of waste	Waste not picked up by authorised waste picker/collector
1	2	3	4	5	6	7	8
13	SECR	(05) Bilaspur, Raigarh, Raipur, Durg, Gondia (01) (Coaching Depot/ Bilaspur)	(01) Raigarh	(02) Raigarh & Gondia	(01) Gondia	(03) Bilaspur, Durg, Gondia (01) (Coaching Depot /Bilaspur)	(01) Gondia
14	SWR	(07) KSR Bengaluru, Yeshvantpur, Krishnarajapuram, Yelahanka, Pandavpura, Mysuru, Hubballi (01) (Coaching Depot/ KSR Bengaluru)	-	(01) KSR Bengaluru	(07) KSR Bengaluru, Yeshvantapur, Krishnarajapuram, Yelahankaa, Pandavpura, Mysuru, Hubballi (01) (Coaching Depot/KSR Bengaluru)	(07) KSR Bengaluru, Yeshvantapur, Krishnarajapuram, Yelahankaa, Pandavpura, Mysuru, Hubballi (01) (Coaching Depot/KSR Bengaluru)	-
15	WR	(07) Mumbai Central, Bandra Terminus, Vadodara, Bharuch, Valsad, Bilimora Jn, Dahod (03) (Coaching Depot/ Bandra Terminus, Ahmedabad & Indore)	(02) Bilimora Jn & Valsad	-	(07) Mumbai Central, Bandra Terminus, Vadodara, Bharuch, Bilimora Jn, Valsad, Dahod (02) (Coaching Depot/ Ahmedabad, Bandra Terminus)	(07) Mumbai Central, Bandra Terminus, Vadodara, Bharuch, Bilimora Jn, Valsad, Dahod (02) (Coaching Depot/ Ahmedabad & Bandra Terminus)	(04) Valsad, Billimora, Bharuch & Dahod
16	WCR	(07) Jabalpur, Katni, Pipariya, Bhopal, Hoshangabad, Kota & Sawaimadhopur (01) (Coaching Depot/ Jabalpur)	-	(01) Hoshangabad	(04) Katni, Hoshangabad, Kota & Sawaimadhopur (01) (Coaching Depot/ Jabalpur)	(01) Katni, (01) (Coaching Depot-Jabalpur)	(06) Jabalpur, Pipariya, Katni, Hoshangabad, Kota & Sawaimadhopur (01) (Coaching Depot/ Jabalpur)
17	Metro/ Kolkata	(05) Dum Dum, Esplanade, Rabindra sadan, Kalighat & Mahanayak Uttam Kumar	-	-	(05) Dum Dum, Esplanade, Rabindra sadan, Kalighat & Mahanayak Uttam Kumar	(05) Dum Dum, Esplanade, Rabindra sadan, Kalighat & Mahanayak Uttam Kumar	-
Total		109 stations/ 30 coaching depots	14 stations/ 07 coaching depots	15 stations/ 05 coaching depots	97 stations/ 28 coaching depots	65 stations/ 22 coaching depots	50 stations/ 13 coaching depots

Source- Records of selected stations/coaching depots, respective Divisions/Zones and Joint Inspection

Annexure-2.8

(Referred in Para 2.11.2)

Statement showing the details of stations at which Facilities for Management of solid waste was not provided/installed.

Sl. No.	Name of Zone	Total Selected stations & coaching depots	Wet waste processing facility not provided	Material Recovery Facility not Provided	Waste segregation and recycling centre was not set up	Composting plant not planned	Solid waste management plant not provided
1	2	3	4	5	6	7	8
1	CR	(07) Chhatrapati Shivaji Maharaj Terminus, Igatpuri, Panvel, Pune, Wadi, Nasik Road, Bhusawal (01) (Coaching Depot/ Lokmanya Tilak Terminus)	(06) Chhatrapati Shivaji Maharaj Terminus, Igatpuri, Panvel, Pune, Wadi, Nasik Road, (01) (Coaching Depot/ Lokmanya Tilak Terminus)	(07) Chhatrapati Shivaji Maharaj Terminus, Igatpuri, Panvel, Pune, Wadi, Nasik Road, Bhusawal (01) (Coaching Depot/ Lokmanya Tilak Terminus)	(05) Igatpuri, Panvel, Pune, Wadi, Nasik Road (01) (Coaching Depot/ Lokmanya Tilak Terminus)	(06) Chhatrapati Shivaji Maharaj Terminus, Igatpuri, Panvel, Pune, Wadi, Nasik Road (01) (Coaching Depot/ Lokmanya Tilak Terminus)	(01) Chhatrapati Shivaji Maharaj Terminus
2	ER	(05) Howrah, Bardhaman Bandel, Sealdah & Bhagalpur (01) (Coaching Depot/ Tikiapara)	(04) Howrah, Bardhaman Bandel Jn & Bhagalpur (01) (Coaching Depot/ Tikiapara)	(05) Howrah, Bardhaman Bandel Jnl, Sealdah & Bhagalpur (01) (Coaching Depot/ Tikiapara)	(05) Howrah, Bardhaman Bandel Jnl, Sealdah & Bhagalpur (01) (Coaching Depot/ Tikiapara)	(04) Howrah, Bardhaman Bandel Jn, & Bhagalpur (01) (Coaching Depot/ Tikiapara)	02 Howrah, Sealdah

Sl. No.	Name of Zone	Total Selected stations & coaching depots	Wet waste processing facility not provided	Material Recovery Facility not Provided	Waste segregation and recycling centre was not set up	Composting plant not planned	Solid waste management plant not provided
1	2	3	4	5	6	7	8
3	ECR	(07) Danapur, Sonpur, Patna Jn, Hajipur, Muzaffarpur, Rajendra Nagar, Dhanbad (02) (Coaching Depot/ Danapur & Rajendra Nagar Coaching complex)	(01) Danapur (01) (Coaching Depot- Danapur)	(02) Danapur, Dhanbad --	(05) Hajipur, Sonpur, Muzaffarpur, Rajendra Nagar & Danapur (01) (Coaching Depot- Danapur)	(01) Danapur (01) (Coaching Depot- Danapur)	-
4	ECoR	(05) Bhubaneswar, Cuttack, Puri, Vizianagaram & Vishakhapatnam (02) (Coaching Depot Bhubaneswar & Puri)	- (02) (Coaching Depot/ Bhubaneswar & Puri)	(03) Bhubaneswar, Puri, Cuttack, (02) (Coaching Depot/ Bhubaneswar & Puri)	(05) Bhubaneswar, Puri, Cuttack, Vishakhapatnam & Vizianagaram (02) (Coaching Depot/ Bhubaneswar & Puri)	(02) (Coaching Depot/ Bhubaneswar & Puri)	N.A.

Sl. No.	Name of Zone	Total Selected stations & coaching depots	Wet waste processing facility not provided	Material Recovery Facility not Provided	Waste segregation and recycling centre was not set up	Composting plant not planned	Solid waste management plant not provided
1	2	3	4	5	6	7	8
5	NR	(10) Varanasi, Rae Bareli Jn, Barabanki, Moradabad, New Delhi, Panipat, Rohtak, Shri Mata Vaishno Devi Katra, Jalandhar Cant. & Rajpura Jn. (04) (Coaching Depot/ Amritsar, Varanasi, Hazrat Nizamuddin & Delhi S Rohilla)	(09) Varanasi, Rae Bareli Jn, Barabanki, Moradabad, Panipat, Rohtak, Shri Mata Vaishno Devi Katra, Jalandhar Cant. & Rajpura Jn. (04) (Coaching Depot/ Hazrat Nizamuddin, Delhi Sarai Rohilla, Varanasi & Amritsar)	(09) Varanasi, Rae Bareli Jn, Barabanki, Moradabad, Panipat, Rohtak, Shri Mata Vaishno Devi Katra, Jalandhar Cant. & Rajpura Jn. (04) (Coaching Depot/ Hazrat Nizamuddin, Delhi Sarai Rohilla, Varanasi & Amritsar)	(09) Varanasi, Rae Bareli Jn, Barabanki, Moradabad, Panipat, Rohtak, Shri Mata Vaishno Devi Katra, Jalandhar Cant. & Rajpura Jn. (04) (Coaching Depot/ Hazrat Nizamuddin, Delhi Sarai Rohilla, Varanasi & Amritsar)	(09) Varanasi, Rae Bareli Jn, Barabanki, Moradabad, Panipat, Rohtak, Shri Mata Vaishno Devi Katra, Jalandhar Cant. & Rajpura Jn. (04) (Coaching Depot/ Hazrat Nizamuddin, Delhi Sarai Rohilla, Varanasi & Amritsar)	(01) Varanasi
6	NCR	(05) Prayagraj, Jhansi, Prayagraj Chheoki Agra Cantt. & Agra Fort (01) (Coaching Depot/ Prayagraj)	(03) Prayagraj Jhansi, Prayagraj Chheoki (01) (Coaching Depot/ Prayagraj)	(05) Prayagraj Jhansi, Prayagraj Chheoki Agra Cantt., Agra Fort (01) (Coaching Depot/ Prayagraj)	(05) Prayagraj Jhansi, Prayagraj Chheoki Agra Cantt., Agra Fort (01) (Coaching Depot/ Prayagraj)	(05) Prayagraj Jhansi, Prayagraj Chheoki Agra Cantt., Agra Fort (01) (Coaching Depot/ Prayagraj)	(01) Prayagraj

Annexure – Waste Management in Indian Railways

Sl. No.	Name of Zone	Total Selected stations & coaching depots	Wet waste processing facility not provided	Material Recovery Facility not Provided	Waste segregation and recycling centre was not set up	Composting plant not planned	Solid waste management plant not provided
1	2	3	4	5	6	7	8
7	NER	(07) Gorakhpur, Lucknow, Chhapra, Manduadih, Kathgodam, Halwani & Bareilly City (03) (Coaching Depot/ Gorakhpur, Lucknow & Kathgodam)	(02) Haldwani & Bareilly City (03) (Coaching Depot/ Gorakhpur, Aishbagh & Kathgodam)	(07) Gorakhpur, Lucknow, Chhapra, Manduadih, Kathgodam, Haldwani & Bareilly City (03) (Coaching Depot/ Gorakhpur, Aishbagh & Kathgodam)	(07) Gorakhpur, Lucknow, Chhapra, Manduadih, Kathgodam, Haldwani & Bareilly City (03) (Coaching Depot/ Gorakhpur, Aishbagh & Kathgodam)	(02) Haldwani, Bareilly City (03) (Coaching Depot/ Gorakhpur, Aishbagh & Kathgodam)	N.A.
8	NEFR	(07) Dimapur, Hojai, Guwahati, New Bongaigaon, New Coochbehar, New Jalpaiguri & Katihar (01) (Coaching Depot Dibrugarh)	(05), Dimapur, Hojai, New Bongaigaon, New Jalpaiguri & Katihar (01) (Coaching Depot/ Dhibrugarh)	(07), Dimapur, Hojai, Guwahati, New Bongaigaon, New Coochbehar, New Jalpaiguri & Katihar (01) (Coaching Depot/ Dhibrugarh)	(06), Dimapur, Hojai, Guwahati, New Bongaigaon, New Coochbehar, New Jalpaiguri (01) (Coaching Depot/ Dhibrugarh)	(03), Hojai, New Bongaigaon, New Cooch Behar, (01) (Coaching Depot/ Dibrugarh)	N.A.
9	NWR	(07) Ajmer, Bikaner, Lalgarh, Jaipur, Gandhinagar, Jodhpur & Rai Ka Bagh (02) (Coaching Depot/ Bikaner & Jodhpur)	(05) Ajmer, Bikaner, Lalgarh, Gandhinagar Jaipur & Rai Ka Bagh (02) (Coaching Depot/ Bikaner & Jodhpur)	(06) Ajmer, Bikaner, Lalgarh, Jodhpur, Gandhinagar Jaipur & Rai Ka Bagh (02) (Coaching Depot/ Bikaner & Jodhpur)	(06) Ajmer, Bikaner, Lalgarh, Jodhpur, Gandhinagar Jaipur & Rai Ka Bagh (02) (Coaching Depot/ Bikaner & Jodhpur)	(05) Ajmer, Bikaner, Lalgarh, Gandhinagar Jaipur & Rai Ka Bagh (02) (Coaching Depot/ Bikaner & Jodhpur)	N.A.

Sl. No.	Name of Zone	Total Selected stations & coaching depots	Wet waste processing facility not provided	Material Recovery Facility not Provided	Waste segregation and recycling centre was not set up	Composting plant not planned	Solid waste management plant not provided
1	2	3	4	5	6	7	8
10	SR	(07) MGR Chennai Central, Coimbatore Jn., Thiruvananthapuram central, Tiruchchirappalli Jn, Palakkad Jn Melmaruvattur, Ottappalam (03) (Coaching Depot Basin Bridge, Mangalore & Thiruvananthapuram)	(07) MGR Chennai Central, Coimbatore Jn., Thiruvananthapuram central, Tiruchchirappalli Jn, Palakkad Jn Melmaruvattur, Ottappalam (03) (Coaching Depot/Basin Bridge, Thiruvananthapuram & Mangalore)	(03) Coimbatore Jn Melmaruvattur, Ottappalam (03) Coaching Depot/Basin Bridge, Thiruvananthapuram & Mangalore	(07) MGR Chennai Central, Coimbatore Jn., Thiruvananthapuram central, Tiruchchirappalli Jn, Palakkad Jn Melmaruvattur, Ottappalam (03) (Coaching Depot/Basin Bridge, Thiruvananthapuram & Mangalore)	(07) MGR Chennai Central, Coimbatore Jn., Thiruvananthapuram central, Tiruchchirappalli Jn, Palakkad Jn Melmaruvattur, Ottappalam (03) (Coaching Depot/Basin Bridge, Thiruvananthapuram & Mangalore)	(01) MGR Chennai Central
11	SCR	(07) Secunderabad, Kachiguda, Vijaywada, Khammam, Ramagundam, Nellore, Bhimavaram (02) (Coaching Depot/ Secunderabad & Vijaywada)	(06) Secunderabad, Vijaywada, Khammam, Ramagundam, Nellore, Bhimavaram (02) (Coaching Depot/ Secunderabad & Vijaywada)	- (02) (Coaching Depot/ Vijaywada & Secunderabad)	(07) Secunderabad, Kachiguda, Vijaywada, Khammam, Ramagundam, Nellore, Bhimavaram (02) (Coaching Depot/ Secunderabad & Vijaywada)	(06) Secunderabad, Vijaywada, Khammam, Ramagundam, Nellore, Bhimavaram (02) (Coaching Depot/ Secunderabad & Vijaywada)	(01) Secunderabad

Annexure – Waste Management in Indian Railways

Sl. No.	Name of Zone	Total Selected stations & coaching depots	Wet waste processing facility not provided	Material Recovery Facility not Provided	Waste segregation and recycling centre was not set up	Composting plant not planned	Solid waste management plant not provided
1	2	3	4	5	6	7	8
12	SER	(04) Kharagpur, Shalimar, Digha & Ranchi (02) (Coaching Depot/ Santragachi & Hatia)	(03) Ranchi, Digha & Shalimar (02) (Coaching Depot/ Santragachi & Hatia)	(03) Kharagpur, Digha & Shalimar (01) (Coaching Depot/ Santragachi)	(04) Kharagpur, Ranchi, Digha & Shalimar (02) (Coaching Depot/ Santragachi & Hatia)	(03) Kharagpur, Digha & Shalimar (01) (Coaching Depot/ Santragachi)	
13	SECR	(05) Bilaspur, Raigarh, Raipur, Durg, Gondia (01) (Coaching Depot/ Bilaspur)	(03) Bilaspur, Raigarh, Durg, (01) (Coaching Depot/ Bilaspur)	(05) Bilaspur, Raigarh, Durg, R & Gondia (01) (Coaching Depot/ Bilaspur)	(05) Bilaspur, Raigarh, Durg, R & Gondia (01) (Coaching Depot/ Bilaspur)	(03) Bilaspur, Raigarh, Durg, (01) (Coaching Depot /Bilaspur)	N.A.
14	SWR	07 KSR Bengaluru, Yesvantpur, Krishnarajapuram, Yelahanka, Pandavpura, Mysuru, Hubballi (01) (Coaching Depot/ KSR Bengaluru)	(07) KSR Bengaluru, Yeshvantapur, Krishnarajapuram, Yelahanka, Pandavpura, Mysuru, Hubballi (01) (Coaching Depot/ KSR Bengaluru)	(07) KSR Bengaluru, Yeshvantapur, Krishnarajapuram, Yelahankaa, Pandavpura, Mysuru, Hubballi (01) (Coaching Depot/ KSR Bengaluru))	(07) KSR Bengaluru, Yeshvantapur, Krishnarajapuram, Yelahankaa, Pandavpura, Mysuru, Hubballi (01) (Coaching Depot/ KSR Bengaluru)	(07) KSR Bengaluru, Yeshvantapur, Krishnarajapuram, Yelahankaa, Pandavpura, Mysuru, Hubballi (01) (Coaching Depot/ KSR Bengaluru)	N.A.

Sl. No.	Name of Zone	Total Selected stations & coaching depots	Wet waste processing facility not provided	Material Recovery Facility not Provided	Waste segregation and recycling centre was not set up	Composting plant not planned	Solid waste management plant not provided
1	2	3	4	5	6	7	8
15	WR	(07) Mumbai Central, Bandra Terminus, Vadodara, Bharuch, Valsad, Bilimora Jn, Dahod (03) (Coaching Depot/ Bandra Terminus, Ahmedabad & Indore)	(04) Valsad, Bilimora Jn, Bharuch Jn, Dahod (03) (Coaching Depot/ Ahmedabad, Bandra Terminus & Indore)	(06) Bandra Terminus, Vadodara, Valsad, Bilimora Jn, Bharuch Jn, Dahod (03) (Coaching Depot/ Ahmedabad, Bandra Terminus & Indore)	(07) Mumbai Central, Bandra Terminus, Vadodara, Valsad, Bilimora Jn, Bharuch Jn, Dahod (03) (Coaching Depot/ Ahmedabad, Bandra Terminus & Indore)	(04) Valsad Bilimora Jn, Bharuch Jn, Dahod (03) (Coaching Depot/ Ahmedabad, Bandra Terminus & Indore)	N.A.
16	WCR	(07) Jabalpur, Katni, Pipariya, Bhopal, Hoshangabad, Kota & Sawaimadhopur (01) (Coaching Depot/ Jabalpur)	(07) Jabalpur, Katni, Pipariya, Bhopal, Hoshangabad, Kota & Sawaimadhopur (01) (Coaching Depot/ Jabalpur)	(07) Jabalpur, Katni, Pipariya, Bhopal, Hoshangabad, Kota & Sawaimadhopur (01) (Coaching Depot/ Jabalpur)	(07) Jabalpur, Katni, Pipariya, Bhopal, Hoshangabad, Kota & Sawaimadhopur (01) (Coaching Depot/ Jabalpur)	(07) Jabalpur, Katni, Pipariya, Bhopal, Hoshangabad, Kota & Sawaimadhopur (01) (Coaching Depot/ Jabalpur)	N.A.
17	Metro/Kolkata	(05) Dum Dum, Esplanade, Rabindra sadan, Kalighat & Mahanayak Uttam Kumar	(05) Dum Dum, Esplanade, Rabindra sadan, Kalighat & Mahanayak Uttam Kumar	(05) Dum Dum, Esplanade, Rabindra sadan, Kalighat & Mahanayak Uttam Kumar	(05) Dum Dum, Esplanade, Rabindra sadan, Kalighat & Mahanayak Uttam Kumar	(05) Dum Dum, Esplanade, Rabindra sadan, Kalighat & Mahanayak Uttam Kumar	N.A.
Total		109 stations/ 30 coaching depots	77 stations/ 29 coaching depots	87 stations/ 27 coaching depots	102 stations/ 29 coaching depots	77 stations/ 28 coaching depots	

Source- Records of selected stations/coaching depots, respective Divisions/Zones and Joint Inspection

Annexure-3.1

(Referred in Para 3.1, 3.2, 3.4)

Statement comprising the workshops, sheds where CTE/CFO not obtained

Zonal Railway	CTE/CFO under water Act have not been obtained	CTE/CFO under Hazardous waste Rules have not been obtained
CR	Diesel Loco Shed /Kalyan	Diesel Loco Shed /Kalyan
	Car shed, Kurla	Car shed, Kurla
ER	Signal workshop, Howrah	Signal workshop, Howrah
	Electric Loco Shed, Howrah	Electric Loco Shed, Howrah
	EMU Car shed, Bandel	EMU Car shed, Bandel
	EMU Car shed, Howrah	EMU Car shed, Howrah
ECR	DEMU shed/Sonpur	DEMU shed/Sonpur
	Electric Loco Shed/Gomoh	Electric Loco Shed /Gomoh
ECoR	Electric Loco shed, Angul	Electric Loco shed, Angul
	MEMU shed, Khurda	MEMU shed, Khurda
NR	Charbag Workshop, Lucknow	Charbag Workshop, Lucknow
		Carriage & wagon Workshop, Kalka
	Signal Workshop/Ghaziabad	Signal Workshop/Ghaziabad
	Bridge Workshop, Jalandhar cantt	Bridge Workshop, Jalandhar cantt
	Diesel Shed /Alambag, lucknow	Diesel Shed /Alambag, lucknow
		Diesel Loco Shed /Tuglakabad
		Diesel Loco Shed /Ludhiana
	Electric Loco Shed/Khanalampura, Saharanpur	Electric Loco Shed/Khanalampura, Saharanpur
	DEMU/Jalandhar city	DEMU/Jalandhar city
	EMU/Ghaziabad	
NCR		Wagon Workshop, Jhansi
	Track Machine Centralized Periodical Overhauling, Subedarganj, Prayagraj Jn	Track Machine Centralized Periodical Overhauling, Subedarganj, Prayagraj Jn
		Diesel Loco Shed, Jhansi
	Electric Loco Shed/Kanpur central	Electric Loco Shed/Kanpur central
NER	Signal Workshop, Gorakhpur	Signal Workshop, Gorakhpur
	Bridge Workshop, Gorakhpur	Bridge Workshop, Gorakhpur
	DEMU shed, Aunrihar	DEMU shed, Aunrihar
NEFR		Carriage & W workshop, New Bongaigaon
	Engineering Workshop Bongaigaon	Engineering Workshop Bongaigaon
		Diesel loco shed, Siliguri
	DEMU shed, Siliguri	DEMU shed, Siliguri

Zonal Railway	CTE/CFO under water Act have not been obtained	CTE/CFO under Hazardous waste Rules have not been obtained
NWR		Loco Workshop, Ajmer
	DEMU shed, Merta Road	DEMU shed, Merta Road
SR		Diesel loco shed, Erode
	Electric Loco Shed, Arakkonam	Electric Loco Shed, Arakkonam
	EMU car shed, Tambaram	EMU car shed, Tambaram
SCR	S&T Workshop, Mettuguda	S&T Workshop, Mettuguda
	Engineering Workshop/Lallaguda	Engineering Workshop/Lallaguda
	EMU Carshed/ Moula Ali	EMU Carshed/ Moula Ali
SER	S&T Workshop, Khararagpur	S&T Workshop, Khararagpur
	Engineering Workshop, Sini	Engineering Workshop, Sini
	Electric Loco shed, Santragachi	Electric Loco shed, Santragachi
	EMU car shed, Tikiapara	EMU car shed, Tikiapara
SECR	Electric Loco Shed, Bhilai	Electric Loco Shed, Bhilai
	MEMU Shed, Bhilai	MEMU Shed, Bhilai
SWR	DEMU shed, Bangalore Cantonment	DEMU shed, Bangalore Cantonment
WR	EMU Car shed, Mumbai Central	EMU Car shed, Mumbai Central
Metro Rly	Car shed, Noapara	Car shed, Noapara
	Car shed, Kabi Subhas	Car shed, Kabi Subhas
	Workshop, Noapara	Workshop, Noapara
Total (Zones/Units)	16/40	16/50

Source- Records of Workshops, Loco/Car sheds, Production Units and Joint Inspection

Annexure-3.2

(Referred in Para 3.3)

Delay in Renewal of Authorization under the Water Act & the Hazardous Waste Management (HWM) Rules

Zonal Railway	Name of unit	Delay in renewal under the Water Act		Delay in renewal under the HWM Rules	
		Period	Duration	Period	Duration
CR	Electric Loco Works (POH) Bhusawal	01.04.2017 to 31.03.2020	36 months	01.04.2017 to 31.03.2020	36 months
	Loco Shed/Ajni	01.04.2018 to 31.03.2020	24 months	01.04.2018 to 31.03.2020	24 months
ER	Diesel shed, Howrah	01.06.2016 to 22.04.2018	22 months	01.07.2017 to 31.03.2020	33 months
	Carriage & Wagon Workshop/Liluah	01.01.2017 to 14.12.2017	12 month	01.03.2016 to 03.07.2017	16 months
NR	Diesel Loco Shed, Ludhiana	21.10.2009 to 15.04.2016 01.04.2019 to 31.03.2020	78 months and 12 months		
NCR	Wagon Workshop, Jhansi	01.01.2017 to 26.12.2019	36 months		
	Diesel Loco shed, Jhansi	01.01.2014 to 10.04.2019	63 months		
NER	Electric Loco shed, Gonda			01.01.2020 to 31.03.2020	03 months
NWR	Loco workshop, Ajmer	01.03.2018 to 21.06.2018	03 months		
	Workshop, Jodhpur	01.04.2018 to 21.05.2018	2 months		
SR	Carriage and wagon workshop, Perambur	01.04.2015 to 31.03.2017	24 months	01.04.2015 to 08.10.2018	42 months
	S&T Workshop, Podanur	01.04.2015 to 31.03.2017	24 months	01.04.2015 to 31.03.2020	60 months
	Engineering Workshop, Arakkonam	01.04.2015 to 31.03.2016	12 months		
	Diesel Loco shed, Erode	01.04.2015 to 31.03.2016	12 months		
	Integral Coach Factory, Perambur (Shell)	01.04.2015 to 31.03.2018	36 months		
	Integral Coach Factory, Perambur (Furnishing)	01.04.2015 to 31.03.2019	48 months		10.04.2018 to 31.03.2020 24 months
SWR	Rail Wheel Factory, Yelahanka	01.07.2016 to 02.07.2017	12 months		
	Diesel Loco shed, Krishnarajapuram	01.07.2015 to 04.09.2015 and 01.07.2016 to 24.07.2017	02 months and 12 months		
WR	Mechanical workshop, Lower Parel	01.01.2016 to 26.09.2017 and 01.01.2019 to 03.02.2020	21 months and 13 months		
	Electric Loco shed, Vadodara	28.03.2018 to 30.11.2018	08 months		

Zonal Railway	Name of unit	Delay in renewal under the Water Act		Delay in renewal under the HWM Rules	
		Period	Duration	Period	Duration
RPU & Metro Rly	Chittaranjan Locomotive works, Chittaranjan (Main shop)	01.04.2019 to 25.11.2019	07 months	01.04.2015 to 31.03.2020	60 months
	Chiittaranjan Locomotive works (ELLAU/Dankuni Shop)	-	-	09.09.2016 to 12.11.2019	38 months

Source- Records of Workshops, Loco/Car sheds, Production Units and Joint Inspection

Annexure-3.3

(Referred in Para 3.5)

Statement showing number of workshops, sheds, production units, coaching depots Zone wise where required forms for Hazardous waste were not maintained

Zonal Railway	Total selected unit (including Coaching Depots)	Form-3 for Records of waste for storage, re-use/ recycle, transfer, sale etc. is not maintained	Form- 8 for waste stored and labelled in a manner as prescribed is not maintained	Form-9 for Transport Emergency (TREM) Card, as prescribed, is not issued for every sale/ issue of hazardous waste	The manifest system (Form 10) is not being followed for each issue (sale) of hazardous waste
Central Railway	8	6	4	6	4
Eastern Railway, Kolkata	7	7	7	7	6
East Central Railway	8	7	6	8	8
East Coast Railway	6	5	4	5	5
Northern Railway	17	16	14	16	15
North Central Railway	5	5	5	5	3
North Eastern Railway	9	8	9	9	9
North East Frontier Railway	5	5	2	4	4
North Western Railway	7	7	7	7	6
Southern Railway	10	10	8	10	8
South Central Railway	11	9	7	6	5
South East Central Railway	5	3	4	5	6
South Eastern Railway	8	6	8	8	5
South Western Railway	5	2	2	3	2
West Central Railway	4	2	2	3	1
Western Railway	11	9	10	11	11
RPU and Metro Railway	5	3	3	4	3
Total (Units)	131	110	102	117	101

Source- Records of Workshops, Loco/Car sheds, Production Units, Coaching Depots and Joint Inspection

Annexure-4.1

(Para No 4.5)

(A) Progress of works related to management of waste water sanctioned under ERW Fund

Zonal Railway	Year wise details for the review period	No. of ETP/STPs sanctioned	Cost of ETP/STPs sanctioned (₹ in crore)	No. of ETP/STPs completed as on 31.03.2020	No. of WRPs sanctioned	Cost of WRPs sanctioned (₹ in crore)	No. of WRPs completed as on 31.03.2020
1	2	3	4	5	6	7	8
CR	2019-20	7	13.97	0	2	2.00	0
ER	2019-20	3	1.39	2	1	0.50	1
ECR	2018-19	0	0.00	0	4	8.39	0
	2019-20	0	0.00	0	2	2.37	0
ECoR	2017-18	6	2.72	5	3	2.86	2
	2018-19	4	0.73	0	0	0.00	0
	2019-20	6	2.09	0	0	0.00	0
NR	2019-20	0	0.00	0	2	7.00	0
NCR	2019-20	5	2.20	1	0	0.00	0
NER	2016-17	0	0.00	0	3	4.80	0
	2017-18	0	0.00	0	2	2.53	1
	2018-19	0	0.00	0	1	1.40	0
	2019-20	0	0.00	0	1	1.46	0
NFR	2019-20	2	4.99	2	0	0.00	0
NWR	2017-18	4	3.06	3	1	0.67	0
	2018-19	2	0.78	1	0	0.00	1
	2019-20	3	2.84	1	0	0.00	0
SR	2017-18	1	0.27	1	0	0.00	0
	2018-19	1	0.08	1	1	2.30	0
	2019-20	0	0.00	0	7	2.76	0
SCR	2018-19	0	0.00	0	0	0.00	0
	2019-20	6	17.20	1	2	0.93	0
SER	2017-18	1	0.63	0	0	0.00	0
	2018-19	2	1.67	0	0	0.00	0
	2019-20	11	14.60	1	6	8.03	1
SECR	2015-16	0	0	0	1	1.32	0
	2016-17	0	0	0	1	0.34	1
	2019-20	0	0	0	1	1.88	1
WR	2017-18	2	1.24	1	0	0.00	0
	2018-19	3	3.41	3	3	4.88	1
	2019-20	0	0.00	0	0	0.00	0
WCR	2017-18	6	1.82	2	5	2.20	0
	2018-19	0	0.00	0	0	0.00	0
	2019-20	12	7.48	1	5	8.00	0
Total		87 (11 Zones)	83.17	26	54 (13 Zones)	66.62	9

Annexure-4.1

(Para No. 4.5)

(B) Progress of works related to solid waste management sanctioned under ERW Fund

Zonal Railway	Year wise details for the review period	No. of waste to compost plant planned/ sanctioned during the year	Cost of waste to compost plant sanctioned (₹ in crore)	No. of waste to compost plant completed as on 31.03.2020	No. of Waste to Energy Plant planned/ sanctioned during the year	Cost of waste to energy Plant (₹ in crore)	No. of waste to energy plant completed as on 31.03.2020
1	2	3	4	5	6	7	8
CR	2019-20	1	0.15	0	0	0	0
ER	2019-20	1	0.95	0	0	0.00	0
ECR	2018-19	0	0.00	0	1	1.02	0
	2019-20	5	0.08	0	1	0.92	0
ECoR	2019-20	13	1.13	1	1	2.01	1
NCR	2019-20	4	0.45	0	0	0.00	0
NER	2018-19	12	0.05	12	0	0.00	0
NFR	2019-20	0	0.00	0	1	0.79	1
NWR	2017-18	2	0.05	0	0	0.00	0
	2018-19	1	0.07	0	0	0.00	0
	2019-20	7	2.93	7	0	0.00	0
SR	2018-19	1	1.18	0	1	0.17	0
	2019-20	6	4.50	1	0	0.00	0
SCR	2019-20	3	0.15	1	0	0.00	0
SER	2017-18	2	0.37	2	0	0.00	0
	2018-19	0	0.00	0	0	0.00	0
	2019-20	18	4.31	1	0	0.00	0
SECR	2018-19	1	0.10	1	0	0	0
SWR	2018-19	1	0.02	1	0	0	0
WR	2017-18	2	0.50	2	0	0.00	0
	2018-19	1	0.00	0	0	0.00	0
	2019-20	2	0.76	1	0	0.00	0
WCR	2019-20	10	2.52	0	0	0.00	0
Total		93 (14 Zones)	20.59	30	5 (04 Zones)	4.91	2

Source- Records of EnHM wing of the Zonal Railways/ Production Units

Annexure- 5.1

(Refer Para No 5.1)

Statement showing Railway Hospitals not obtained Authorization for handling Bio-Medical waste

Zonal Railway	Name of the Railway Hospitals	Number of such hospitals on the Zone
CR	Dr. B.R. Ambedkar Hospital, Byculla, Mumbai	4
	Divisional Railway Hospital, Nagpur	
	Sub-divisional Railway Hospital, Igatpuri	
	Sub-divisional Railway Hospital, Kurudwari	
ER	Sub-divisional Railway Hospital, Andal	1
ECR	Divisional Railway Hospital, Danapur	2
	Sub-divisional Railway Hospital, Gaya	
NR	Super Specialty Hospital, Lucknow	1
NCR	Divisional Railway Hospital, Agra	2
	Sub-divisional Railway Hospital, Kanpur	
NER	Lalit Narayan Mishra Railway Hospital, Gorakhpur	4
	Divisional Railway Hospital, Varanasi	
	Sub-divisional Railway Hospital, Gonda	
	Mechanical Workshop Hospital, Gorakhpur	
NEFR	Central Hospital, Maligaon	2
	Sub-divisional Railway Hospital, Rangiya	
SR	Divisional Railway Hospital, Goldenrock	5
	Divisional Railway Hospital, Arakkonam	
	Sub-divisional Railway Hospital, Podanur	
	Sub-divisional Railway Hospital, Villupuram	
	Railway Hospital, Integral Coach Factory	
SCR	Divisional Railway Hospital, Nanded	2
	Sub-divisional Railway Hospital, Purna	
SECR	Divisional Railway Hospital, Raipur	2
	Sub-divisional Railway Hospital, Bhilai Marshaling yard	
Metro Rly	Tapan Sinha Memorial Hospital, Tollygunge	1
Total		26 (11 Zones)

Source- Records of Hospitals.

Annexure-5.2

(Refer Para No. 5.2)

Delay/discontinuity in Authorization for handling Bio-Medical waste

Zonal Railway	Name of the Railway Hospitals	Period of delay/ discontinuity	Duration
CR	Divisional Railway Hospital, Kalyan	01.05.2015 to 31.03.2020	59 months
ER	B.R. Singh Hospital, Sealdah	01.03.2016 to 29.01.2018	23 months
	Divisional Railway Hospital, Howrah	01.12.2016 to 24.06.2019	31 months
	Liluah Workshop Hospital, Liluah	01.08.2018 to 29.08.2019	13 months
NR	Central Hospital, New Delhi	01.04.2017 to 31.03.2020	36 months
	Divisional Railway Hospital, Moradabad	02.06.2019 to 31.03.2020	10 months
	Divisional Railway Hospital, Ambala Cant	01.04.2018 to 31.03.2020	24 months
	Sub-divisional Railway Hospital, Amritsar	01.04.2016 to 31.03.2020	48 months
NCR	Central Hospital, Prayagraj	01.01.2015 to 31.03.2020	63 months
NEFR	Divisional Railway Hospital, Dibrugarh Town	01.04.2016 to 31.03.2020	48 months
NWR	Divisional Railway Hospital, Bikaner	01.07.2015 to 13.02.2017	19 months
SR	Railway Hospital, Perambur	01.04.2017 to 31.03.2020	36 months
SCR	Divisional Railway Hospital, Vijayavada	01.02.2017 to 31.03.2020	38 months
	CH/Lallaguda	30.06.2014 to 31.03.2020	69 month
SER	Divisional Railway Hospital, Kharagpur	01.04.2019 to 31.03.2020	12 months
SECR	Central Hospital, Bilaspur	06.10.2013 to 31.03.2020	77 months
SWR	Central Hospital, Hubballi	01.07.2017 to 07.01.2018	06 months
WR	Jagjivan Ram Hospital, Mumbai Central	01.01.2014 to 31.03.2020	75 months
	Divisional Railway Hospital, Ratlam	01.07.2016 to 31.03.2020	45 months
	Divisional Railway Hospital, Rajkot	01.04.2017 to 31.03.2020	36 months
WCR	Central Hospital, Jabalpur	01.07.2017 to 31.03.2020	33 months
	Divisional Railway Hospital, Kota	01.02.2015 to 31.03.2020	62 months
	Sub-divisional Railway Hospital, New Katni	20.07.2010 to 19.07.2019	108 months
RPU	Kasturba Gandhi Hospital, Chittaranjan	01.01.2017 to 06.04.2017	03 months

Source- Records of Hospitals.

Annexure-5.3

(Refer Para No. 5.3)

Creation of Infrastructure for handling Bio-Medical waste

Zonal Railway	Total No. of selected Hospitals	Hospitals in which no infrastructure created	
		Secured room for storage of BMW	ETP/STP for treatment of liquid waste
CR	5	4 (DRH/Kalyan, DRH/ Nagpur, SDH/Igatpuri & SDRH/Kurudwadi)	5 (CH/Byculla, DRH/Kalyan, DRH/Nagpur, SDRH/Igatpuri & SDRH/Kurudwadi)
ER	4	-	4 (CH/Sealdah, DRH/Howrah, SDRH/Andal & Workshop Hospital, Liluah)
ECR	4	4(Central Super Specialty Hospital/Patna, DRH/Danapur, DRH/Sonpur & SDRH/Gaya)	3 (DRH/Danapur, DRH/Sonpur & SDRH/Gaya)
ECoR	2	1 (DRH/ Waltair)	-
NR	8	6 (SSH/RDSO/LKO, PUH/RBL, DRH/Moradabad, DRH/Ambala cant., SDRH/ Amritsar, SDRH/Anand Vihar)	5 DRH/Moradabad, DRH/Ambala cant., SDRH/ Amritsar, SDRH/Anand Vihar & Workshop Hosp/Jagdhari))
NCR	3	3(CH/Prayagraj, DRH/Agra & SDRH/Kanpur)	3(CH/Prayagraj, DRH/Agra & SDRH/Kanpur)
NER	4	4 (Lalit Narayan Mishra Hospital/Gorakhpur, Mech. Workshop Hospital, Gorakhpur, SDRH/Gonda & DRH, Varanasi)	4 (Lalit Narayan Mishra Hospital /Gorakhpur, DRH/Varanasi, SDRH/Gonda & Mech. Workshop Hospital, Gorakhpur)
NEFR	5	4(DRH/Dibrugarh Town, DRH/Katihar, SDRH/ New Jalpaiguri & SDRH, rangiya)	4 (DRH/Dibrugarh Town, DRH/Katihar, SDRH/ New Jalpaiguri & SDRH/ Rangiya)
NWR	4	4 (CH/Jaipur, DRH/Bikaner, SDRH/Abu Road & SDRH/ Bandikui)	4 (CH/Jaipur, DRH/Bikaner, SDRH/Abu Road & SDRH/ Bandikui)
SR	6	3 (DRH/Arakkonam, SDRH/ Podnur & SDRH/Villupuram)	4 (DRH/ Goldenrock, DRH/ Arakkonam, SDRH/ Podnur & SDRH/Villupuram)
SCR	5	-	2 (DRH/ Nanded & SDRH/Purna)
SER	4	3 (DRH/Kharagpur, DRH/ Adra & SDRH/Tata)	4 (CH/GRC, DRH/Kharagpur, DRH/ Adra & SDRH/Tata)
SECR	3	3 (CH/Bilaspur, DRH/Raipur & SDRH/Bhilai Marshaling Yard)	3 (CH/Bilaspur, DRH/Raipur & SDRH/Bhilai Marshaling Yard)
SWR	3	1 (DRH/ Mysuru)	1(Railway Hosp./RWF)
WCR	4	-	2 (SDRH/New Katni Jn. & SDRH/ Gangapur City)
WR	5	3 (DRH/Ratlam, DRH/Rajkot & SDRH/Valsad)	3 (DRH/Rajkot, SDRH/Valsad & Workshop Hospital, Dahod)

Zonal Railway	Total No. of selected Hospitals	Hospitals in which no infrastructure created	
		Secured room for storage of BMW	ETP/STP for treatment of liquid waste
RPU & Metro Rly	3	3 (Tapan Sinha Memorial Hospital/ Tollygunge, CH/BLW/ Varanasi & KG Hospital, Chittaranjan)	3 (Tapan Sinha Hospital/ Tollygunge, CH/BLW/ Varanasi & KG Hospital, Chittaranjan)
Total	72	46 (14 Zones)	54 (16 Zones)

Source- Records of Hospitals.

CH- Central Hospital, PUH- Production Unit Hospital, SSH- Super Specialty Hospital, DRH- Divisional Railway Hospital, SDRH- Sub-divisional Railway Hospital

Annexure-5.4

(Refer Para No 5.4)

Pre-treatment of BMW before its storage

Zonal Railway	Total No. of selected Hospitals	Pre-treatment not carried out of:				
		laboratories waste	micro-biological waste	blood samples	blood Bags	other clinical laboratories waste
CR	5	-	(1) SDRH/ Igatpuri	(1) SDRH/ Igatpuri	(1) SDRH/ Igatpuri	(1) SDRH/ Igatpuri
ER	4	(4) B.R. Singh Hosp./ Sealdah, DRH/ Howrah, SDRH/ Andal & Workshop Hosp./Liluah	(3) B.R. Singh Hosp./ Sealdah, SDRH/ Andal & Workshop Hosp./ Liluah	(4) B.R. Singh Hosp./ Sealdah, DRH/ Howrah, SDRH/ Andal & Workshop Hosp./Liluah	(4) B.R. Singh Hosp./ Sealdah, DRH/ Howrah, SDRH/ Andal & Workshop Hosp./Liluah	(4) B.R. Singh Hosp./ Sealdah, DRH/ Howrah, SDRH/ Andal & Workshop Hosp./Liluah
ECR	4	(3) DRH/Danapur, DRH/Sonpur & SDRH/Gaya	(3) DRH/ Danapur, DRH/Sonpur & SDRH/Gaya	(3) DRH/Danapur, DRH/Sonpur & SDRH/Gaya	(3) DRH/Danapur, DRH/Sonpur & SDRH/Gaya	(3) DRH/Danapur, DRH/Sonpur & SDRH/Gaya
NR	8	(2) DRH/ Moradabad & SDRH/ Aanad Vihar	(2) DRH/ Moradabad & SDRH/ Aanad Vihar	(2) DRH/ Moradabad & SDRH/ Aanad Vihar	(3) DRH/ Moradabad, SDRH/ Amritsar & SDRH/ Aanad Vihar	(2) DRH/ Moradabad & SDRH/ Aanad Vihar
NEFR	5	-	-	-	(2) DRH/ Katihar & SDRH/ Rangiya	-
SECR	3	(1) SDRH/Bhilai	-	(1) SDRH/ Bhilai	(1) SDRH/ Bhilai	(1) SDRH/Bhilai
SWR	3	(3) CH/ Hubballi, DRH/ Mysuru & RH/ RWF	(3) CH/ Hubballi, DRH/ Mysuru & Railway Hospital/ RWF/ Yelahankla	(3) CH/ Hubballi, DRH/ Mysuru & RH/ RWF/ Yelahankla	(3) CH/ Hubballi, DRH/ Mysuru & Railway Hospital/ RWF Yelahankla	(2) CH/ Hubballi & DRH/ Mysuru

Zonal Railway	Total No. of selected Hospitals	Pre-treatment not carried out of:				
		laboratories waste	micro-biological waste	blood samples	blood Bags	other clinical laboratories waste
Metro Rly	3	-	(1) Tapan Sinha Memo. Hosp. Tollygunge			
Total (Zones/units)	8/35	5/13	6/13	7/15	8/18	7/14

CH- Central Hospital, PUH- Production Unit Hospital, SSH- Super Specialty Hospital, DRH- Divisional Railway Hospital, SDRH- Sub-divisional Railway Hospital

Source- Records of Hospitals.

Annexure-5.5

(Refer Para No 5.5)

Segregation and pre-treatment of liquid chemical waste

Zonal Railway	Total No. of selected Hospitals	Segregation of liquid chemical waste not carried out	Treatment of liquid waste was not done in accordance with the Water Act
CR	5	-	(1) SDRH/ Igatpuri
ER	4	(3) B.R. Singh Hosp./ Sealdah, SDRH/ Andal & Workshop Hosp./Liluah	(4) B.R. Singh Hosp./ Sealdah, DRH/Howrah, SDRH/ Andal & Workshop Hosp./Liluah
ECR	4	(4) CSSH/ Patna, DRH/Danapur, DRH/Sonpur & SDRH/Gaya	(3) DRH/Danapur, DRH/Sonpur & SDRH/Gaya
NR	8	(5) DRH/ Moradabad, SDRH/ Amritsar, SDRH/ Anand Vihar, Workshop Hospital/Jagdhari workshop & DRH, Ambala Cant.	(5) DRH/ Ambala Cant, DRH/ Moradabad, SDRH/ Anand Vihar, Workshop Hospital/Jagdhari & SDRH/ Amritsar
NCR	3	(3) CH/Prayagraj, DRH/ Agra & SDRH/Kanpur	(3) CH/ Prayagraj, DRH/ Agra & SDRH/Kanpur
NER	4	-	(1) DRH/ Varanasi
NEFR	5	(2) DRH/Katihar & SDRH/New Jalpaiguri	(2) DRH/Dibrugarh Town & SDRH/Rangiya
NWR	4	-	(1) SDRH/Bandikui
SR	6	(1) RH/ Perambur	(1) RH/ Perambur
SCR	5	(2) CH/Lallaguda, & DH/Vijayawada	(3) DRH/Nanded, SDRH/ Purna & DRH/Vijayawada
SER	4	(1) CH/Garden reach	(2) CH/Garden reach & SDRH/ Tata
SECR	3	(1) SDRH/Bhilai	(3) CH/Bilaspur, DRH/ Raipur & SDRH/Bhilai
Total (Zones/ units)	12/55	9/22	12/29

CH- Central Hospital, PUH- Production Unit Hospital, SSH- Super Specialty Hospital,
DRH- Divisional Railway Hospital, SDRH- Sub-divisional Railway Hospital

Source- Records of Hospitals.

Annexure-5.6

(Refer Para No. 5.6.)

Status of proper storage facility of BMW

Zonal Railway	Total No. of selected Units	Places, where BMW is stacked, were not fenced	Untreated BMW stored beyond 48 hours	Containers/bags, used for storing BMW, were not properly labeled
CR	5	1 (SDRH/ Igatpuri)	-	-
ER	4	-	3(DRH/Howrah, SDRH/ Andal & Liluah workshop Hospital)	-
ECR	4	-	-	1 (SDRH/Gaya)
NCR	3	-	1 (SDRH/ Kanpur)	2 (CH/ Prayagraj & SDRH/Kanpur)
NER	4	2 (Lalit Narayan Mishra Hospital Hospital, Gorakhpur & DRH/ Varanasi)	-	-
NEFR	5	1 (SDRH/Rangiya)	-	1 (SDRH/Rangiya)
SR	6	1 (RH/ Perambur)	-	1 (SDRH/ Podnur)
SER	4	-	-	1 (SDRH/Tata)
SECR	3	1(DRH/Raipur)	-	-
WR	5	3(DRH/Ratlam, DRH/ Rajkot & SDRH/ Valsad)	3 (JRH, Mumbai, DRH/Rajkot & Workshop Hospital, Dahod,)	-
Total (Zones/ units)	10/43	6/9	3/7	5/6

CH- Central Hospital, PUH- Production Unit Hospital, SSH- Super Specialty Hospital, DRH- Divisional Railway Hospital, SDRH- Sub-divisional Railway Hospital

Source- Records of Hospitals and Joint Inspection

Annexure-5.7

(Refer Para No 5.7)

Non-compliance of norms prescribed under BMW Rules for disposal of BMW

Zonal Railway	Total No. of selected Hospitals	Vehicles used for transporting not labeled as per BMW Rules	Bar coding of containers was not done	Global positioning system was not provided on the vehicles	Timely collection of BMW were not ensured by occupier	Occupier was not allowed to inspect the treatment facility by operator
1	2	3	4	5	6	7
CR	5	-	(4) CH/Byculla, DRH/ Kalyan, SDRH/ Igatpuri & SDRH/ Kurudwari	(4) CH/Byculla, DRH/ Kalyan, SDRH/ Igatpuri & SDRH/ Kurudwari	-	(2) CH/ Byculla & SDRH/ Igatpuri
ER	4	-	(1) Workshop hospital, Liluah	(4) CH/ Sealdah, DRH/Howrah, SDRH/ Andal & Workshop hospital, Liluah	(3) DRH/Howrah, SDRH/ Andal & Workshop Hospital/Liluah	(4) CH/ Sealdah, DRH/Howrah, SDRH/ Andal & Workshop hospital, Liluah
ECR	4	(1) SDRH/ Gaya	(3) CSSH/ Patna, DRH/ Danapur & SDRH/Gaya	(2) DRH/ Danapur & SDRH/Gaya	(1) SDRH/ Gaya	(2) CSSH/ Patna & DRH/ Sonpur
NR	8	-	(2) DRH/ Moradabad & SDRH/ Ananad Vihar	(2) DRH/ Moradabad & SDRH/ Ananad Vihar	-	(4) DRH/ Moradabad, SDRH/ Ananad Vihar, SDRH/ Amritsar & PUH/ Rae bareli
NCR	3	(1) SDRH/ Kanpur	(2) CH/ Prayagraj & DRH/Agra	(2) DRH/Agra & SDRH/Kanpur	(1) SDRH/ Kanpur	-
NER	4	-	(1) Mechanical workshop hospital, Gorakhpur	(1) Mechanical workshop hospital, Gorakhpur	-	(1) DRH, Varanasi
NEFR	5	(3) DRH/ Dibrugarh Town, DRH/ Katihar & SDRH/ Rangiya	(5) CH/ Maligaon, DRH/ Dibrugarh Town, DRH/ Katihar, SDRH/ New Jalpai & SDRH/ Rangiya	(5) CH/ Maligaon, DRH/ Dibrugarh Town, DRH/ Katihar, SDRH/ New Jalpai & SDRH/ Rangiya	-	

Annexure – Waste Management in Indian Railways

Zonal Railway	Total No. of selected Hospitals	Vehicles used for transporting not labeled as per BMW Rules	Bar coding of containers was not done	Global positioning system was not provided on the vehicles	Timely collection of BMW were not ensured by occupier	Occupier was not allowed to inspect the treatment facility by operator
1	2	3	4	5	6	7
NWR	4	-	(4) CH/ Jaipur, DRH/ Bikaner, SDRH/Abu Road & SDRH/ Bandikui	(4) CH/ Jaipur, DRH/ Bikaner, SDRH/Abu Road & SDRH/ Bandikui	-	(2) DRH/ Bikaner, SDRH/Abu Road
SR	6	-	(4) CH/ Perambur, Railway Hospital, ICF, DRH/ Arakkonam & SDRH/ Villupuram	-	-	-
SCR	5	-	(2) CH/ Lallaguda & DRH/ Vijayawada	(2) CH/ Lallaguda & DRH/ Vijayawada	-	-
SER	4	(01) SDRH/Tata	(03) CH/ Garden Reach, DRH/ Khrappur & SDRH/Tata	(03) CH/ Garden Reach, DRH/ Khrappur & SDRH/Tata	-	--
SECR	3	-	(3) CH/ Bilaspur DRH/ Raipur & SDRH/ Bhilai	(3) CH/ Bilaspur DRH/ Raipur & SDRH/ Bhilai	-	-
WR	5	-	(4) CH/ Mumbai, DRH/ Ratlam, DRH/ Rajkot & SDRH/ Valsad	-	(2) DRH/ Rajkot & Workshop hospital, Dahod	-
WCR	4	-	(3) DRH/ Kota, SDRH/ New Katni Jn. & SDRH/ Gangapur City	(2) DRH/ Kota, & SDRH/ Gangapur City	-	-
Metro Rly	3	-	-	(1) Tapan Sinha Memorial Hospital, Tollygunge	-	--
Total (Zones/ units)	15/67	4/6	14/41	13/35	4/7	6/15

CH- Central Hospital, PUH- Production Unit Hospital, SSH- Super Specialty Hospital, DRH- Divisional Railway Hospital, SDRH- Sub-Divisional Railway Hospital

Source- Records of Hospitals.

Annexure-5.8
(Refer Para No. 5.9)

Annual report under the BMW Rules not submitted by Selected Hospitals

Zonal Railway	No. of Units	Name of the Railway Hospitals	Period for which Annual report not submitted
CR	5	Dr. B.R. Ambedkar Hospital, Byculla, Mumbai	-
		Divisional Railway Hospital, Kalyan	2015-16, 2016-17, 2018-19 & 2019-20
		Divisional Railway Hospital, Nagpur	2015-16 to 2019-20
		Sub-divisional Railway Hospital, Igatpuri	2015-16 to 2019-20
		Sub-divisional Railway Hospital, Kurudwari	2015-16 to 2019-20
ER	4	B.R. Singh Hospital, Sealdah	-
		Divisional Railway Hospital, Howrah	2016-17
		Sub-divisional Railway Hospital, Andal	2015-16 to 2019-20
		Liluah Workshop Hospital, Liluah	2016-17, 2018-19 & 2019-20
ECR	4	Central Super Specialty Hospital, Patna	2015-16 to 2019-20
		Divisional Railway Hospital, Danapur	2015-16 to 2019-20
		Divisional Railway Hospital, Sonpur	2015-16 to 2019-20
		Sub-divisional Railway Hospital, Gaya	2015-16 to 2019-20
ECoR	2	Central Hospital, Bhubaneswar	2015-16 to 2019-20
		Divisional Railway Hospital, Waltair	2015-16 to 2019-20
NR	8	Super Specialty Hospital, RDSO, Lucknow	2015-16 to 2019-20
		Central Hospital, E&PI, New Delhi	-
		Production Unit Hospital, MCF, Raebareli	2015-16 to 2019-20
		Divisional Railway Hospital, Moradabad	2015-16 to 2019-20
		Divisional Railway Hospital, Ambala Cant	-
		Sub-divisional Railway Hospital, ANVT	-
		Sub-divisional Railway Hospital, Amritsar	2015-16 to 2019-20
		Workshop Hospital, Jagdhari	2015-16 to 2019-20
NCR	3	Central Hospital, Prayagraj	2015-16 to 2019-20
		Divisional Railway Hospital, Agra	2015-16 to 2019-20
		Sub-divisional Railway Hospital, Kanpur	2015-16 to 2019-20
NER	4	Lalit Narayan Mishra Railway Hospital, Gorakhpur	2015-16 to 2019-20
		Divisional Railway Hospital, Varanasi	2015-16 to 2019-20
		Sub-divisional Railway Hospital, Gonda	2015-16 to 2019-20
		Mechanical Workshop Hospital, Gorakhpur	2015-16 to 2019-20
NEFR	5	Central Hospital, Maligaon	2015-16 to 2019-20
		Divisional Railway Hospital, Dibrugarh Town	2015-16 to 2019-20
		Divisional Railway Hospital, Katihar	2015-16 to 2019-20

Zonal Railway	No. of Units	Name of the Railway Hospitals	Period for which Annual report not submitted
		Sub-divisional Railway Hospital, New Jalpaiguri	2015-16 to 2019-20
		Sub-divisional Railway Hospital, Rangiya	2015-16 to 2019-20
NWR	4	Central Hospital, Jaipur	2015-16 to 2019-20
		Divisional Railway Hospital, Bikaner	-
		Sub-divisional Railway Hospital, Abu Road	2015-16 to 2019-20
		Sub-divisional Railway Hospital, Bandikui	2015-16, 2016-17, 2018-19 & 2019-20
SR	6	Railway Hospital, Perambur	2015-16 to 2019-20
		Railway Hospital, Integral Coach Factory	2016-17 to 2019-20
		Divisional Railway Hospital, Goldenrock	2015-16 to 2019-20
		Divisional Railway Hospital, Arakkonam	2015-16 to 2019-20
		Sub-divisional Railway Hospital, Podanur	2015-16 to 2019-20
		Sub-divisional Railway Hospital, Villupuram	2015-16 to 2019-20
SCR	5	Central Hospital, Lallaguda	2015-16 to 2019-20
		Divisional Railway Hospital, Vijayawada	2015-16 to 2019-20
		Divisional Railway Hospital, Nanded	2015-16 to 2019-20
		Sub-divisional Railway Hospital, Purna	2015-16 to 2019-20
		Sub-divisional Railway Hospital, RYP (Wagon Workshop Hospital, Guntupalli)	2015-16 to 2019-20
SER	4	Central Hospital, Garden Reach	-
		Divisional Railway Hospital, Kharagpur	-
		Divisional Railway Hospital, Adra	2015-16 to 2019-20
		Sub-divisional Railway Hospital, Tatanagar	2015-16 to 2019-20
SECR	3	Central Hospital, Bilaspur	2019-20
		Divisional Railway Hospital, Raipur	2015-16 to 2019-20
		Sub-divisional Railway Hospital, Bhilai Marshalling yard	2015-16 to 2019-20
SWR	3	Central Hospital, Hubballi	-
		Divisional Railway Hospital, Mysuru	2015-16, 2017-18 & 2018-19
		Railway Hospital, Rail Wheel Factory, Yelahanka	2015-16 & 2016-17
WR	5	Jagjivan Ram Hospital, Mumbai Central	2015-16 to 2019-20
		Divisional Railway Hospital, Ratlam	2015-16 to 2018-19
		Divisional Railway Hospital, Rajkot	2015-16 to 2019-20
		Sub-divisional Railway Hospital, Valsad	2015-16 to 2019-20
		Workshop Hospital, Dahod	-
WCR	4	Central Hospital, Jabalpur	2015-16 to 2019-20
		Divisional Railway Hospital, Kota	2015-16 to 2019-20

Zonal Railway	No. of Units	Name of the Railway Hospitals	Period for which Annual report not submitted
		Sub-divisional Railway Hospital, New Katni Jn.	2015-16 to 2019-20
		Sub- divisional Railway Hospital, Gangapur City	2015-16 to 2019-20
RPU & Metro Rly	3	Tapan Sinha Memorial Hospital, Tollygunge	2015-16 to 2019-20
		Central Hospital, BLW, Varanasi	2015-16 to 2019-20
		Kasturba Gandhi Hospital, CLW/Chittaranjan	-

Source- Records of Hospitals.

Annexure-5.9

(Refer Para No. 5.11)

Non-existence of monitoring mechanism required under the BMW Rules

Zonal Railway	No. of Units	Name of the Railway Hospitals	Whether BMW management committee formed	If formed Whether minimum 2 meetings are held each year
CR	5	Dr. B.R. Ambedkar Hospital, Byculla, Mumbai	No	N.A
		Divisional Railway Hospital, Kalyan	No	N.A
		Divisional Railway Hospital, Nagpur	No	N.A
		Sub-divisional Railway Hospital, Igatpuri	No	N.A
		Sub-divisional Railway Hospital, Kurudwari	No	N.A
ER	4	B.R. Singh Hospital, Sealdah	Yes	Yes
		Divisional Railway Hospital, Howrah	Yes	Yes
		Sub-divisional Railway Hospital, Andal	No	N.A
		Liluah Workshop Hospital, Liluah	No	N.A
ECR	4	Central Super Specialty Hospital, Patna	No	N.A
		Divisional Railway Hospital, Danapur	No	N.A
		Divisional Railway Hospital, Sonpur	No	N.A
		Sub-divisional Railway Hospital, Gaya	No	N.A
ECoR	2	Central Hospital, Bhubaneswar	No	N.A
		Divisional Railway Hospital, Waltair	No	N.A
NR	8	Super Specialty Hospital, RDSO, Lucknow	No	N.A
		Central Hospital, E&PI, New Delhi	Yes	Yes
		Production Unit Hospital, MCF, Raebareli	No	N.A
		Divisional Railway Hospital, Moradabad	No	N.A
		Divisional Railway Hospital, Ambala Cant	No	N.A
		Sub- divisional Railway Hospital, ANVT	No	N.A
		Sub- divisional Railway Hospital, Amritsar	No	N.A
		Workshop Hospital, Jagdhari	No	N.A
NCR	3	Central Hospital, Prayagraj	No	N.A
		Divisional Railway Hospital, Agra	No	N.A
		Sub-divisional Railway Hospital, Kanpur	No	N.A
NER	4	Lalit Narayan Mishra Railway Hospital, Gorakhpur	Yes	Yes
		Divisional Railway Hospital, Varanasi	Yes	Yes

Zonal Railway	No. of Units	Name of the Railway Hospitals	Whether BMW management committee formed	If formed Whether minimum 2 meetings are held each year
		Sub-divisional Railway Hospital, Gonda	Yes	Yes
		Mechanical Workshop Hospital, Gorakhpur	No	N.A
NEFR	5	Central Hospital, Maligaon	Yes	No
		Divisional Railway Hospital, Dibrugarh Town	No	N.A
		Divisional Railway Hospital, Katihar	Yes	Yes
		Sub-divisional Railway Hospital, New Jalpaiguri	Yes	No
		Sub-divisional Railway Hospital, Rangiya	No	N.A
NWR	4	Central Hospital, Jaipur	Yes	No
		Divisional Railway Hospital, Bikaner	Yes	No
		Sub-divisional Railway Hospital, Abu Road	No	N.A
		Sub-divisional Railway Hospital, Bandikui	No	N.A
SR	6	Railway Hospital, Perambur	No	N.A
		Railway Hospital, Integral Coach Factory	No	N.A
		Divisional Railway Hospital, Goldenrock	No	N.A
		Divisional Railway Hospital, Arakkonam	No	N.A
		Sub-divisional Railway Hospital, Podanur	No	N.A
		Sub-divisional Railway Hospital, Villupuram	No	N.A
SCR	5	Central Hospital, Lallaguda	No	N.A
		Divisional Railway Hospital, Vijayawada	No	N.A
		Divisional Railway Hospital, Nanded	No	N.A
		Sub-divisional Railway Hospital, Purna	No	N.A
		Sub-divisional Railway Hospital, RYP (Wagon Workshop Hospital, Guntupalli)	Yes	No
SER	4	Central Hospital, Gardenrich	Yes	Yes
		Divisional Railway Hospital, Kharagpur	Yes	Yes
		Divisional Railway Hospital, Adra	Yes	Yes
		Sub-divisional Railway Hospital, Tatanagar	No	N.A
SECR	3	Central Hospital, Bilaspur	No	N.A
		Divisional Railway Hospital, Raipur	No	N.A
		Sub-divisional Railway Hospital, Bhilai Marshalling yard	No	N.A
SWR	3	Central Hospital, Hubballi	No	N.A
		Divisional Railway Hospital, Mysuru	No	N.A
		Railway Hospital, Rail Wheel Factory, Yelahanka	Yes	No
WR	5	Jagjivan Ram Hospital, Mumbai Central	Yes	Yes
		Divisional Railway Hospital, Ratlam	No	N.A
		Divisional Railway Hospital, Rajkot	No	N.A
		Sub-divisional Railway Hospital, Valsad	No	N.A
		Workshop Hospital, Dahod	Yes	No

Annexure – Waste Management in Indian Railways

Zonal Railway	No. of Units	Name of the Railway Hospitals	Whether BMW management committee formed	If formed Whether minimum 2 meetings are held each year
WCR	4	Central Hospital, Jabalpur	Yes	No
		Divisional Railway Hospital, Kota	No	N.A
		Sub-divisional Railway Hospital, New Katni Jn.	Yes	No
		Sub- divisional Railway Hospital, Gangapur City	No	N.A
RPU & Metro Rly	3	Tapan Sinha Memorial Hospital, Tollygunge	No	N.A
		Central Hospital, BLW, Varanasi	No	N.A
		Kasturba Gandhi Hospital, CLW/CRJ	No	N.A
Total (Zones/units)	17/72		Yes- 20 No- 52	11

Source- Records of Hospitals.

Annexure-6.1

(Referred in Para 6.2)

Statement showing non-maintenance of the records of generation, storage of E-Waste in the Form-2

Name of Zone	Unit in which details of E-Waste not maintained in Form 2	Name of Unit
1	2	3
CR	(03) EDP-02, PRS-01	EDP/Head Quarter/Chhatrapati Shiwaji Maharaj Terminus, EDP/Mumbai Divn., PRS/Pune
ER	(04) EDP-03, PRS-01	PRS/Howrah, EDP/Head Quarter, EDP/Sealdah, EDP/Howrah
ECR	(04) EDP-03, PRS-01	EDP/Hajipur, EDP/Sonpur, EDP/Danapur PRS/Rajendra Nagar
ECoR	(04) EDP-03, PRS-01	EDP/Bhubaneswar, EDP/Khurda, EDP/Sambalpur PRS/Vishakhapatnam
NR	(04) EDP-03, PRS-01	EDP/Lucknow, EDP/Patiala, EDP/Head Quarter, PRS/New Delhi
NCR	(04) EDP-03 PRS-01	EDP/Jhansi, EDP/Head Quarter, PRS/Agra, EDP/Agra
NER	(03) EDP-02, PRS-01	EDP/Head Quarter, EDP/Lucknow, PRS/Manduadih
NEFR	(04) EDP-03, PRS-01	EDP/Maligaon, EDP/Lumding EDP/Alipurduar PRS/Katihar
NWR	(04) EDP-03, PRS-01,	PRS/Ajmer, EDP/Bikaner, EDP/Jaipur, EDP/Head Quarter
SR	(04) EDP-03, PRS-01	PRS/Chennai, EDP/Head Quarter /Chennai, EDP/Chennai, EDP/Palakkad
SCR	(04) EDP-03, PRS-01	EDP/ Head Quarter/SCR, EDP/Secunderabad, EDP/Vijayawada & PRS/Secunderabad,
SER	(05) EDP-03, PRS-01	EDP/Head Quarter, EDP/Kharagapur, EDP/Ranchi, PRS/Ranchi
SECR	(04) EDP-03, PRS-01	PRS/Bilaspur, EDP/Head Quarter/Bilaspur, EDP/Raipur, EDP/Nagpur
SWR	(02) EDP-01, PRS-01	EDP/Hubballi PRS/Mysuru
WR	(04) EDP-03, PRS-01	EDP/Head Quarter/Church Gate, EDP/Mumbai Central, EDP/Ahmedabad, PRS/Mumbai Central,
WCR	(03) EDP-02, PRS-01	EDP/Jabalpur, EDP/Kota and PRS/ Jabalpur
RPU & Metro Rail	(03) EDP-03	EDP/Metro, EDP/BLW/Varanasi, EDP/CLW/Chittaranjan

Source- Records of stations/Divisions

Annexure-6.2

(Referred in Para 6.2)

Statement showing the details of non-maintenance of Form 2 and non-submission of returns in Form 3 by the scrap depots and non-compliance of manifest system for transportation of E-Waste.

Name of Zone	Name of Scrap/Store Depot where E-Waste data not maintained in Form 2	Annual Returns submitted in FORM 3	Manifest System for transportation followed
1	2	3	4
CR	SMM(G)/Curry Road	No	No
ER	Belur Scrap Yard	No	Yes
ECR	Scrap depot/Sonpur	No	No
ECoR	Scrap depot/Mancheswar	No	No
NR	General Scrap Depot/Shakurbasti	No	No
NCR	Divisional Scrap Depot /Jhansi	No	No
NER	Scrap Depot/Gorakhpur	No	No
NFR	Scrap depot/Pandu	No	No
SR	GSD/Perambur	No	No
NWR	Scrap Yard/ Bikaner	No	No
SCR	Scrap Depot/Lallaguda	No	Yes
SER	Divisional Scrap depot/Kharagpur	Yes	No
SECR	GSD/Raipur	No	No
SWR	GSD/Hubballi	No	No
WR	GSD/Mahalaxmi	No	No
WCR	Scrap depot/Jabalpur	No	No
Metro Rly	Scrap Depot/Noapara	No	No

Source- Records of stations/Divisions

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