

**BEFORE THE NATIONAL GREEN TRIBUNAL  
PRINCIPAL BENCH, NEW DELHI  
ORIGINAL APPLICATION No. 606 OF 2018**

**IN THE MATTER OF:**

**Compliance of Municipal Solid Waste Management Rules, 2016**

**N.D.O.H. 28.02.2020**

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Filed on: 25.02.2020  
New Delhi

Filed by

*[Handwritten signature]*

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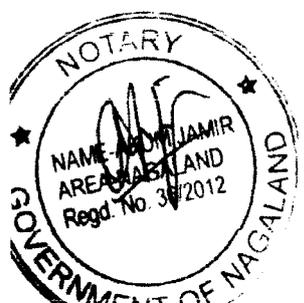
ACTION TAKEN REPORT ON BEHALF OF STATE OF NAGALAND IN  
COMPLIANCE OF ORDER DATED 25.4.2019

I, PEMSEN TOY, S/O LAMU TOY, having office at  
Civil Secretariat, Kohima, Nagaland do hereby solemnly affirm and state as  
under:-

1. That I am the CHIEF SECRETARY, Government of Nagaland,  
and being familiar with the facts of the case based on perusal of official  
records state that I am competent to swear this present affidavit in my  
official capacity.
2. In compliance with the directions issued by this Hon'ble Tribunal vide  
order dated 25.4.2019 the Deponent is putting on record the current  
status and the following actions and steps taken by the State: -

RE: IMPLEMENTATION OF MUNICIPAL SOLID WASTE  
MANAGEMENT RULES, 2016 'MSW Rules'

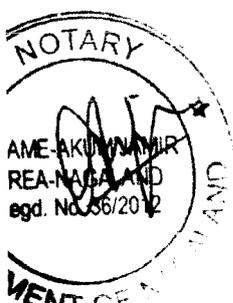
- i. That in order to effectively deal with the issue of waste  
management the State has notified "NAGALAND INTEGRATED



WASTE MANAGEMENT POLICY 2019” for sustainable waste management in the State of Nagaland. That in order to achieve sustainable waste management throughout the State by 2030, the said policy has been notified as an integrated policy encompassing the following rules framed under The Environment Protection Act, 1986, with clear standards for appropriate segregation, storage, handling, transport and disposal:-

- a. Solid Waste Management Rules, 2016;
  - b. Plastic Waste Management Rules, 2016;
  - c. Construction and Demolition Waste Management Rules, 2016;
  - d. E-Waste Management Rules, 2016;
  - e. Batteries (Handling and Management) Rules, 2001;
  - f. Hazardous and other Wastes (Management & Transboundary Movement) Rules, 2016.
- ii. That in terms of the directions issued by this Hon’ble Tribunal the State has submitted quarterly reports on 30.7.2019 and on 20.12.2019 to the Central Pollution Control Board submitting the status to review the progress on all the directions issued in order dated 25.4.2019. That the latest data with regard to Municipal Solid Waste submitted to the Central Pollution Control Board is marked and annexed as **Annexure**

R/1

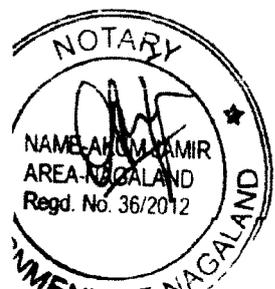


iii. The State level Committee, 'SLC,' has been constituted under the Chairmanship of the Chief Secretary as directed by this Hon'ble Tribunal and had its first meeting on 15.02.2019. Pursuant to the order dated 25.4.2019, the State-Level Committee headed by the Chief Secretary has held meetings on 18.7.2019, 26.8.2019, 2.11.2019 and 4.2.2020 review the implementation of the Municipal Solid Waste Management Rules, Plastic Waste Management Rules, Biomedical Waste Management Rules and the various directions issued by this Hon'ble Tribunal.

Copies of the Minutes of meetings held dated 25.05.2018, 15.02.2019, 18.7.2019, 26.8.2019, 2.11.2019 and 4.2.2020 by the State Level Committee in pursuance and in compliance of the order dated 25.4.2019 the is marked and annexed as **Annexure R/2 (COLLY)**.

iv. In compliance of Rule 23 of the MSW Rules, a State Level Advisory Body, 'SLAB' has been constituted vide Notification dated 11.5.2018 by the Urban Development Department for advising the municipal authorities in implementation of the MSW Rules.

v. In compliance of the directions passed by this Hon'ble Tribunal on 5.3.2019, the State has issued Notification dated 15.4.2019 wherein 3 model cities, 3 model towns and 3 model villages in each of the 11

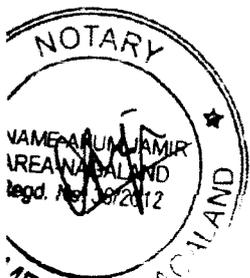


(Eleven) Districts have been notified which will fully be made compliant of the "Solid Waste Management Rules, 2016". That another town Chumukedima Town under Dimapur District has been included as a model town on 25.9.2019.

Copies of Notifications dated 15.4.2019 and 25.9.2019 issued by the Urban Development notifying model cities, towns and villages in the State is marked and annexed as **Annexure R/3 (COLLY)**

- vi. In compliance of the direction of this Hon'ble Tribunal, Special Task Force has been constituted in every District. In compliance of Rule 13 read with Rules 11 and 12, preparation of action plan for the villages are going on in the State as per Rule 13 of the Solid Waste Management Rules 2016.
- vii. Status report on submission of action plan received from the Villages from various districts of the State are as follows:-

Sl.No	Name of the District	No of Blocks	No of Villages in the District	No of Villages that have submitted the Action Plan
1	Dimapur	6	213	213
2	Kohima	7	94	94
3	Longleng	3	40	40
4	Mon	8	114	114
5	Peren	4	85	85
6	Phek	8	95	95
7	Tuensang	9	117	117



8	Wokha	7	133	133
9	Kiphire	5	93	93
10	Mokokchung	9	85	85
11	Zunheboto	8	169	169

viii. The Rural Development Department of the State have also prepared an action plan which is to be implemented in each village of the State. Efforts are on to incorporate waste management at the village level as an essential component in the village development plan and no approval will be given without incorporating waste management.

The main features of the action plan to be carried out by each village are:-

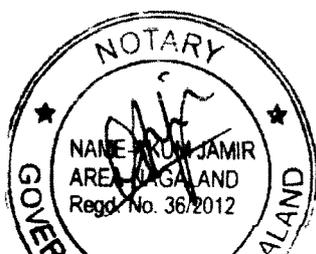
- a) The Village council shall be the nodal authority for fostering the clean and green village drive.
- b) Institute a Committee on SWM involving every section of the society and formulate protocols and engage community members for garbage collection and segregation.
- c) Village Council to conduct awareness campaign, Community Education, workshops and IEC activities on management of solid and plastic wastes.
- d) Provide waste bins and collection points to collect and segregate waste.
- e) Proper collection and transportation of solid waste and timely disposal.
- f) Identify site for segregation and waste disposal for the village.
- g) Incineration of hazardous and biomedical waste.



- h) Financial planning for the implementation of the solid and plastic waste and biodegradable waste management in the village.

**RE: IMPLEMENTATION OF PLASTIC WASTE MANAGEMENT  
RULES (AMENDMENT), 2018.**

- i. The State of Nagaland has been actively taking actions and steps under the Plastic Waste Management Rules, 2016. That the State Pollution Control Board had issued a Public Notice which was published pointing out the salient features of the Rules and notifying all manufacturers, importers, Stockists, Distributors, sellers and users of plastic to comply with the provisions of the said rules.
- ii. That in the year 2018, the State pursuant to the meeting held on 6.8.2018 under the Chairmanship of the Chief Secretary along with HOD's of several departments, notified the policy for restricting the use of plastics with a view to eradicate the menace of plastic and to contain the serious consequences of environmental and ecological challenges posed by the rampant use of plastics with immediate effect.
- iii. That the State has constituted a State Empowered Committee to monitor the ban of single use plastics in the State on 27.2.2019. The said Committee has been given the task for drafting guidelines and also to formulate a

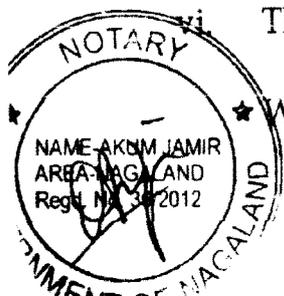


time frame for enforcing total ban of plastics in the State as notified. That the first meeting of the said Committee has been held on 11.3.2019.

- iv. Pursuant to the constitution of the Empowered Committee, correspondences have been issued to the District Commissioners in the State to constitute a Task Force to implement the "Policy of restricting the use of Plastics in the State" which was notified on 29.11.2018. That correspondences has also been issued to the Administrators to take steps to implement the said policy and submit Action Taken Report.
- v. In continuation of the Notification dated 29.11.2018 on the "Policy for Restricting the Use of Plastics in Nagaland" the State has imposed a total ban on all single - use plastic in the State with a view to eradicate the menace of plastic and the serious environmental and ecological challenges posed by rampant use of plastics. That the following single use plastic products have been totally banned:- a) all plastic carry bags, with or without handles, irrespective of thickness and size; b) plastic cutlery including plates, plastic cups, straws, stirrers etc; c) cutlery and other decorative made of Styrofoam; d) polythene; e) nylon; f) polyvinyl chlorides; g) poly - propylene; and h) poly-styrene.

A copy of the Notification dated 17.6.2019 published in the Nagaland Gazette is marked and annexed as **Annexure R/4**.

vi. That the State is preparing an action plan titled "Action Plan for Plastic Waste Management in Nagaland". It is also preparing an illustrative info

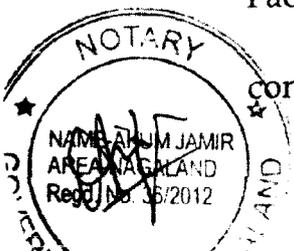


graphic on the single use plastic ban in the State. For the Swachhta Hi Seva campaign, directions have been issued to all ULB's to set up Ward Level Plastic Collection Centre (WLPCC) and Material Recovery Facility (MRF) to collect the segregated plastic waste. Further, for storage and logistic facility, it has procured bailing machines for all district headquarters so that the plastic waste from all the ULB's within their respective district can be collected at the headquarter.

- vii. Apart from taking up the issue of implementation and requiring the gram panchayats and the urban local bodies to submit action report, the State is also taking initiative to involve the public at large to create awareness to say "no to plastic".

**RE: STATUS REPORT ON BIO-MEDICAL WASTE MANAGEMENT  
RULES, 2016**

- i. In compliance with the Biomedical Waste Management Rules, 2016 Advisory Committee under Rule 11 and District Level Monitoring Committee under Rule 12.4 & 12.6 has been constituted in the State. That a status report of the Nagaland Biomedical Waste Management has been prepared. A copy of the status report is marked and annexed as **Annexure R/5**.
- ii. That the proposal for setting up a Common Biomedical Waste Treatment Facility (CBMTF) in Dimapur and Kohima Districts was submitted to the concerned authority. However, the reaction has been received to select only



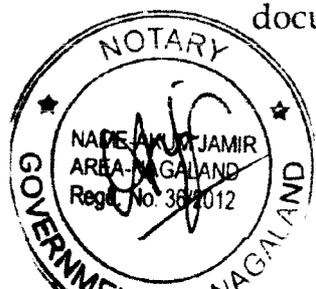
one District for setting up the treatment facility and the issue is in deliberation.

**RE: IMPLEMENTATION OF E-WASTE MANAGEMENT RULES, 2016.**

- i. Guidelines for disposal of e- waste in the government departments, autonomous bodies/local bodies and PSU's have been issued by the Department of Information Technology and Communication. With regard to e-waste management presently two ULBs, viz., Dimapur Municipal Council and Chumukedima Town Council, are collaborating with an authorised e-waste channeliser, viz., E-Circle, to channelize the e-waste generated within its jurisdictions in conformity with Schedule - IV of the Rules. Other ULBs have also been directed to follow the guidelines for the disposal of the E- waste.
- ii. A copy of the Notification dated 2.12.2019 is marked and annexed as **Annexure R/6.**

**RE: CONSTRUCTION AND DEMOLITION WASTE MANAGEMENT RULES, 2016.**

- i. The waste generated is usually utilised by the waste generators for other construction and development works as filler for road or house construction. That the assessment of construction and demolition waste generated within the State is yet to be conducted so as to prepare a policy document for management of such waste.

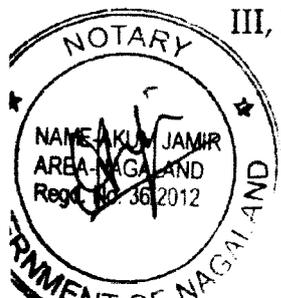


**RE: HAZARDOUS AND OTHER WASTES (MANAGEMENT AND TRANSBOUNDARY MOVEMENT) RULES, 2016**

- i. it is stated that the hazardous waste generated within the State is negligible, however, an inventory and assessment is required to be made to ascertain the same. As of date, the Nagaland Pollution Control Board has identified one hazardous waste generator M/s IOCL which generates 10 MTA. That the State is in the process of identifying a site for setting up of TSDF.

**COMPLIANCE WITH REGARD TO OA 673/2018**

- i. The State had already constituted the River Rejuvenation Committee, 'RRC' and the action plan was submitted to CPCB. However, the report of the CPCB showed that Nagaland has furnished incomplete action plan and therefore revised action plan for rejuvenation of River Dhansiri, Dimapur falling under Priority I was submitted in July, 2019. A copy of the Action Plan submitted to the Central Pollution Control Board is marked and annexed as **Annexure R/7**.
- ii. In the meeting of Task Team held in CBCB on 6.9.2019, the action plan submitted by the State was approved with recommendations.
- iii. A copy of the minutes of meeting dated 6.9.2019 of the Task Team is marked and annexed as **Annexure R/8**. Further, Action Plans for Priority - III, IV and V is being prepared.



- iv. With regard to sewerage waste/wastewater, the ongoing work on the STP, I&D and sewerage network in Dhansiri River is 95% completed. Further, the construction work on gravity sewer, interception and diversion works is ongoing with 33% of the work completed.
- v. The department of Soil and Water Conservation is implementing a pilot project on mitigation of flood and river bank erosion in Dzuma River which is a tributary of the Dhansiri River through integrated catchment area treatment approach under Dimapur district funded under flood management and border areas programme of ministry of Jal shakti. The project envisages treatment of an area extending to 16,178 ha of the catchment area.
- vi. In addition, The Nagaland Sand and Mining Guidelines, 2019 has also been prepared by the Geology and Mining Department for implementation in the State and is annexed as **Annexure R/9**.
- vii. The monthly progress report submitted to the Central Pollution Control Board for the month of January 2020 in compliance to the order dated 8.4.2019 in OA 673/2018 is marked and annexed as **Annexure R/10**.



RE: IMPLEMENTATION OF DIRECTION IN OA 681/2018

1. In relation to ambient air quality the State has constituted the "Air Quality Monitoring Committee (AQMC)" on 5.2.2019. That subsequently the Committee has submitted an action plan to CPCB for non-attainment Towns/ Cities with respect to air quality Management for Kohima and Dimapur Towns in compliance of order dated 18.10.2018 and 15.3.2019 passed by this Hon'ble Tribunal.  
Copies of action plans submitted to the CPCB for Kohima and Dimapur Towns is marked and annexed as **Annexure R/11**.
2. That the latest quarterly report was submitted to the Central Pollution Control Board pursuant to the submission of action plans of non-attainment cities on 15.2.2020. Copies of the status report along with the covering letter dated 15.2.2020 submitted to the Central Pollution Control Board is marked and annexed as **Annexure R/12**.
3. That in compliance to the direction of this Hon'ble Tribunal a monitoring cell comprising of the Deponent, and for other officials OSD, Department of Environment, Forest and Climate Change; Member Secretary, Nagaland Pollution Control Board; Deputy Director, Urban Development Department and Assistant Director, Municipal Affairs Department have been constituted. That two assistant legal consultants have also been

appointed to assist the cell.



4. Further, to evaluate and understand the current waste management status in Nagaland, the Monitoring Cell has entrusted a third party, an environmental based NGO, to assess the waste management practises in all the ULBs. The report presents the prevailing and actual waste management scenario in Nagaland.
5. I say that the facts stated in the above paras are true and correct to the best of my knowledge and information.



DEPONENT

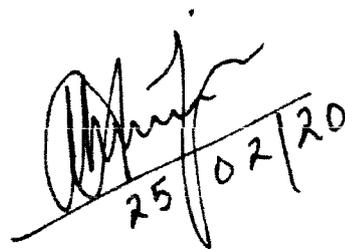
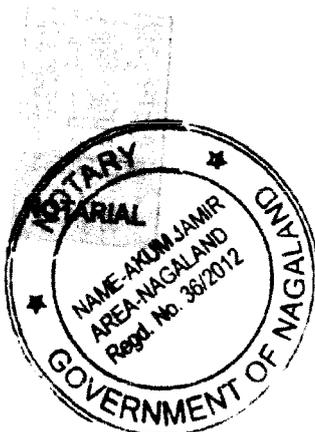
VERIFICATION

Verified at **KOIHIMA** on this the **25<sup>th</sup>** day of February, 2020 that the contents of the above affidavit are true and correct to the best of my knowledge and belief. No part of it is false and nothing material has been concealed there from.



DEPONENT

Solemnly Declared  
Before Me



Handwritten signature of Akum Jamir and the date "25/02/20".

Akum Jamir  
Notary Public

Q	Questions	Remarks	Target	Gap	Timeframe
1	Numbers of ULBs	32			
2	Over all waste management status in States/UTs		32	32	13 As and when resources are available
a	Quantity of MSW generated (TPD)	335.5			30 IEC and as and when adequate resources are available
b	Quantity of MSW collected (TPD)	216.8			30 procurement of vehicles as and when resources are available
c	Quantity of MSW segregated & transported (TPD)	86.8			
d	Quantity of MSW processed (TPD)	76.6			
e	Quantity of MSW disposed in secured land fill site	30			
f	Gap in Solid Waste Management UTs (TPD) [ (a)-(d)- (e)]	233.9			
g	Solid Waste Management Plan				
3	Waste Collection				
a	ULBs in which waste door-to-door collection is implemented	19	19	32	13 As and when resources are available
b	ULBs in which segregation of waste is implemented	2	2	32	30 IEC and as and when adequate resources are available
c	ULBs in which transportation of segregated waste is implemented	2	2	32	30 procurement of vehicles as and when resources are available
4	Waste Processing				
a	Material Recovery facilities				
(i)	Total Capacity (TPD)	8TPD			As and when resources are available
(ii)	Number	1	1	31	
(iii)	Number of ULBs covered	1	1	32	
b	Recycling				
(i)	Total Capacity (TPD)				
(ii)	Number				
(iii)	Number of ULBs covered				
c	Composting				
(i)	Total Capacity (TPD)				As and when resources are available
(ii)	Number				
(iii)	Number of ULBs covered				
d	Biomethanation				
(i)	Total Capacity (TPD)				As and when resources are available
(ii)	Number				
(iii)	Number of ULBs covered				
e	RDF				
(i)	Total Capacity (TPD)				As and when resources are available
(ii)	Number				
(iii)	Number of ULBs covered				
f	Waste to Energy Plants				
(i)	Total Capacity (TPD)				As and when resources are available
(ii)	Number				
(iii)	Number of ULBs covered				
4	Waste Disposal				
a	Landfill				
(i)	Total Capacity (T)	Not estimated			
(ii)	Number				
(iii)	Number of ULBs covered				
5	Legacy Waste Management				
a	Number of dumpsites (No.)	6			
b	Quantity of Waste dumped at dumpsites (Tons)	Not estimated			
c	Number of dumpsites cleared (No.)	1			
d	Number of dumpsites in which biominimising gas	1			
e	Time frame for clearing all dumpsites				As and when resources are available
6	Other Information				
a	Information regarding development of model				Modalities is being deliberated upon to assess the condition of the Model Town/Cities/Villages to ascertain the assistance to be provided.
b	Creation of Environmental cell				Urban Development Department is on the process of setting up a Waste Management Cell
c	Standardization of rates for procurement of				Not initiated
<b>Improvements Since Last Hearing</b>					
Item	Present Status	Status at the	Whether		
1	Door-to-door collection (%)	60	50		
2	Source segregation of waste (%)	45	40		
3	Waste Processing (TPD)	75.6	35		
4	Dumpsites capped (No.)	NIL	NIL		
5	Dumpsites Bio-remediated (No.)	1	1		

Sl.No	Issue	Remarks
1	a	Quantity of Sewage generated in the State Not estimated
2	a	Quantity of Sewage treated in the State NIL
3	a	Existing Coverage of Sewerage Network NIL
4	a	Has Sewage generation (town / City wise) been estimated for present and future population? Please provide details of the same No
5	a	Has adequate treatment capacity been developed for treatment of sewage? NO
	b	If not, then what is present percentage of sewage being treated? NIL
	c	If not, please provide the the timeframe by which all sewage generated in the State shall be treated As and when resources are available
6	a	Please provide details of STPs (Town/ City Wise) along with details on compliance status and treatment capacity NIL
7	a	Is entire sewage generated from each town being linked with sewerage network in the state? NIL
	b	If not, then what is the present current percentage of sewage being collected through the existing sewerage network? NIL
	c	If not, then please provide the the timeframe by which all sewage generated in the State shall be collected through sewerage network As and when resources are available
8	a	Have all drains carrying waste water in each town / city been identified No
	b	Provide details on the pollution load due to these drains NA
	c	Has in-situ treatment of wastewater being carried out in all such drains for reduction of pollution load? NO
	d	If not, then please indicate the number of drains in which in-situ treatment of waste water has commenced NO
	e	If not, then please provide the the timeframe within which in-situ treatment of wastewater shall be carried out in all such drains for reduction of pollution load As and when resources are available
6	a	Have all bulk users for reuse of wastewater been identified ? No
	b	Is all treated wastewater from the STPs being reused for different purposes? NA
	c	If not, then what is current percentage of wastewater being reused? Nil
	d	If not, then please provide the the timeframe within which all treated wastewater from STP shall be reused for different purposes As and when resources are available

Meeting minutes of the meeting held in the conference hall of Chief Secretary, Nagaland on 18<sup>th</sup> July, 2019 at 12.00 PM of the State level Committee for monitoring the implementation of Municipal Solid Waste Management Rules, 2016, Plastic Waste Management Rules, 2016, Biomedical Waste Management Rules, 2016 and to review the implementation of various directions issued by the National Green Tribunal.

A meeting of the State level monitoring Committee was held under the Chairmanship of the Chief Secretary Nagaland in the Conference Hall of the Chief Secretary on 18<sup>th</sup> July, 2019, at 12.00 noon to discuss on various directions that were issued by the National Green Tribunal such as submission of action plan, status report on action plan and also the implementation of various Management Rules.

To begin with, the Chairman welcome the officers of the various departments present and emphasized on the importance of the NGTs directions that has to be followed and also requested all the departments present to take the directions of the NGT seriously and keeping in view of the financial situation of the State. the Chairman emphasized on compliance of the directives, so as not to attract penalties and monetary compensation.

OSD EF & CC highlighted the agendas / discussion points for review by the chair.

**a) Implementation of Biomedical Waste Management Rules**

OSD, EF & CC have highlighted on requirements of quarterly progress report for Solid Waste, Plastic Waste and Biomedical Waste, to be submitted to CPCB by this month. Under BMW Rules CPCB has not accepted the action plan submitted by the State and has asked the State Government to set up the Common Treatment & Disposal Facility and the Tribunal has directed the same to be set up within 2 months;

3. to complete inventory of HCF and BMW generation;

4. To ensure that HCF's obtain the authorisation of SPCB to operate.

Health & Family welfare was directed to complete the inventory of HCFs By 25-07-2019 and submit to NPCB at the earliest.

Veterinary Services and Animal Husbandry to also submit the inventory of animal HCFs to NPCB by 25-07-2019.

The Chief Secretary then directed the Municipal Department to ask DMC to submit DPR at the earliest.

KMC and DMC are also to be asked to identify land for setting up of Common Treatment Plan for Biomedical Waste and intimate by 25<sup>th</sup> July 2019.

As per the suggestion of Member Secretary NPCB it was decided to submit the proposal of KMC to MoEF&CC for funding.

**b) Implementation of Municipal Solid waste.**

Nagaland has notified the Nagaland Integrated Waste Management Policy 2019. With regard to the implementation of the Municipal solid waste management Rules 2016, the urban Development, Municipal affairs and Rural Development departments to submit a action taken and status report.

Member Secretary, NPCB has pointed out that segregation of waste is happening at source-collection of vegetable and other wet waste from homes and also purchasing from vegetable vendors for pig by those rearing pig. In regard to dry waste it was state that NPCB has made a form to be filled by the scrap dealers to indicate how much waste is collected and sent for recycling companies.

Municipal department has also supplemented on the door to door collections of the waste and stated that they are at present collecting from 19 wards and with addition of 11 new vehicles it will improve. They also stated that they have prepared a concept plan and submitted, which will require additional funds for implementation.

**c) Implementation of Plastic Waste Management Rules 2016.**

Nagaland Government has already banned the use of single use plastics. Nodal department and NPCB to submit a status report.

**d) Steps taken with regard to garbage dumping in Dimapur.**

Dimapur Municipal council to submit a status report.

17

e) Steps taken to address the problem of domestic sewage being dumped into nullahs in Kohima.

Kohima Municipal Council to submit a status report.

f) Utilization of water from Sewage treatment plant

PHED department has informed that action plan for the ongoing construction of STP at Dimapur has already been prepared and submitted to CPCB. A copy of the action plan to be send to EF&CC Department and NPCB.

g) Implementation of the Wetlands ( Conservation and Management ) Rules 2017

EF & CC has been directed to initiate for convening a meeting of the State Wetland Authority to discuss on issues for identification and Notification of the wetlands of the State.

EF&CC Department to prepare the action plan on restoration of water bodies in the State as per the guidelines issued by CPCB in consultation with the other line departments.

h) Framing of Rules/ Guidelines for Sand mining from rivers

In this issue the Geology and Mining Department has stated that the Nagaland Minor Mineral Concession Rules, 2004 covers all the aspects of the sand mining regulations therefore no action required as of now, may amend if required in future. Geology and Mining Department to examine the NMMCR 2004 and consider framing separate rules/guidelines for sand mining in the State.

i) Implementation of the Biological Diversity Act and Rules in the State.

Member Secretary, Nagaland State Biodiversity Board presented a power point in this matter and pointed out that out of 1238 villages 544 BMCs is constituted i.e., 43.94 % is covered and is likely to cover 70% by the end of the year. In regard to the PBRs, it is done only for 15 villages. Member Secretary highlighted the fund constraints with the board to taken up more villages.

Chief Secretary directed NSBB to complete at least few PBRs in each of the 74 Blocks of the State. With regard to the financial constraints faced by NSBB the Chief Secretary has asked the NSBB to write to Finance Department through the nodal department for consideration.

j) Implementation of E-Waste Management Rules 2016

IT department is requested to submit status report in this regard. The Chief Secretary Directed the IT Department to have a relook and re-examine the existing Rules of the Department keeping in view of the E-waste Management Rules 2016. He also suggested making use of E-Circle located in Dimapur which deals in collecting and disposing of E-waste.

k) The state level Monitoring Committee Review- The next meeting will be held before 15<sup>th</sup> of August 2019.

l) Steps taken to spread awareness-

Urban Development department and Information and publicity Department to submit a report in this regard.

Deputy Secretary, Chief Secretary Office is also requested to give the photos and videos received from information and public relation department taken in awareness campaign to the Department of EF & CC.

m) NGT has directed that at least some major cities/towns/villages be first adopted as model and thereafter successful experiment replicated in remaining cities/towns/villages.

State UDD has notified three cities/towns and three villages in each districts as model cities/towns/villages vide Notification dated 15.4.2019. A status report to be submitted by Urban Development Department and Rural Development Department.

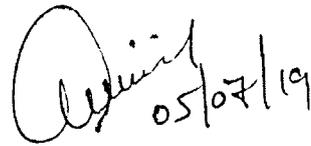
The meeting concluded with a note of thanks from the Chair.

**Sd/-TEMJEN TOY, IAS**  
Chief Secretary to the Government of Nagaland  
Dated: 25<sup>th</sup> July, 2019

File No. FOR/SWM/46-1/2018/832

Copy to:-

1. The Home Commissioner, Nagaland, Kohima for information
2. The Principal Chief Conservator of Forest & HoFF for information and necessary action.
3. The Principal Secretary, Urban Development Department, Nagaland, Kohima for information and necessary action
4. The Principal Secretary, Rural Development Department, Nagaland, Kohima for information and necessary action.
5. The Commissioner & Secretary, Municipal Affairs, Nagaland, Kohima, for information and necessary action
6. The Commissioner & Secretary, PHED, Nagaland, Kohima for information and necessary action
7. The Commissioner & Secretary, AH & VS, Nagaland, Kohima for information and necessary action.
8. The Commissioner & Secretary, Geology & Mining, Nagaland, Kohima for information and necessary action.
9. The Commissioner & Secretary, IT department, Kohima, Nagaland for information and necessary action
10. The Development Commissioner, Nagaland, Kohima, for information and necessary action.
11. The Member Secretary, NPCB, Nagaland, Dimapur, for information and necessary action
12. The Member Secretary, NSBB, Nagaland, Kohima, for information and necessary action
13. The Head of Department, R.D/ H&FW/AH & VS/PHED/U.D/Geology & Mining/IPR/IT

  
05/07/19

**(MOALILA)**

Under Secretary to the Government of Nagaland

Meeting minutes of the meeting held in the Conference Hall of Chief Secretary, Nagaland on 26<sup>th</sup> August, 2019 at 02.00 P.M by the State Level Committee for monitoring the implementation of Municipal Solid Waste Management Rules, 2016, Plastic Waste Management Rules, 2016 Biomedical Waste Management Rules, 2016 and to review the implementation of various directions issued by the Hon'ble National Green Tribunal.

The meeting of the State Level Monitoring Committee was held on 26<sup>th</sup> August, 2016 at 02:00 P.M under the Chairmanship of the Chief Secretary, Nagaland to discuss the issues relating to the submissions of action plans, status report on action plans on various waste management rules and also for the discussions on the directions issued by the Hon'ble National Green Tribunal.

The Chief Secretary, Nagaland, welcomed the officers of various department and requested the OSD EF & CC to brief on the various issues.

OSD EF & CC briefed about the quarterly report which was submitted to the Central Pollution Control Board, he also requested all the department present to update on the status report on various waste management rules.

**Status on implementation of BMWR-2016**

**Status of inventorisation of Health Care Facilities (HCFs)**

Health & Family Welfare has stated 109 government and 155 private Health Care facilities has been registered to Nagaland Pollution Control Board (NPCB), however, 50 more Health Care Facilities is yet to register, which are mainly PHC's due to shortage of doctors but they are also in the process of and soon to be registered.

Regarding the implementation of BMW, Rules, H & FW department has highlighted that they had a serious of meeting out of which the first evaluation was on the supply of equipments, which was held on March, 2019 in the presence of the World Bank, Nagaland. They have issued the tender for supply of gears but said there was no much of takers, which lead to the delay in procurement. Another problem highlighted was the delay due to the legal notice from Delhi based advocate, so they had to keep the process on hold.

Unless they get the clearance from World Bank and also without the bidders they cannot procure the components for protective gear which has to be done as it is suggested by the World Bank.

The delay in setting-up of inventory is attributed to the reason stated above.

Veterinary and Animal Science Department informed that due to insufficient funds they are finding it difficult to implement the rules. Chief Secretary asked the department to send the proposal to the government based on their requirement.

**Status on CBWTF.**

The Member Secretary, NPCB has mentioned that land is made available for Common Biomedical Waste Treatment Facility (CBWTF) by Dimapur and Kohima, in this regard, DMC has forwarded its DPR to Municipal Affairs Department and KMC to Department of EF & CC, the Chief Secretary has directed Municipal Affairs to forward back to EF & CC department so as the EF & CC department could sent to MOEF & CC for assistance of funds for the construction of CBWTF in Nagaland. The Chief Secretary also requested OSD, EF & CC to assign on officer particularly to follow up with the DPR in the Ministry.

**Status on MSWMR, 2016.**

Action Plan in regard to Solid Waste Management has been submitted to CPCB. On the status report on implementation on SWM, RD department has stated that the it is yet to be done, the problem being the unavailability of funds particularly for this purpose, the officer further stated that much of the works are dependent on MGNREGA funds, and as of now the funds meant for MGNREGA is in the process of being released to the villages. OSD, EF & CC has suggested the without much of making financial implication, the department may ask the concern village council to pass a resolution on the said matter and submit, to which the RD department has agreed upon.

Urban Development Department has also highlighted on the status of implementation of rule 22 of the SMW where they had to identify and procure suitable land, however, they have stated that only three to four ULB's has land available. They have also written to ULB's in this regard. The Chief Secretary has directed the Urban Development Department to write to Deputy Commissioners in this regard and follow-up to be done from his office.

**Status on PWMR 2016.**

The action plan for the state has been submitted to CPCB. Urban Development Department and NPCB to monitor for effective implementation of the same.

**Status on implementation of the action plan for air Pollution in Kohima and Dimapur.**

The action plan submitted to CPCB had been approved for implementation. NPCB has also written to all the department concern for the status of the implementation of the action plan. Chief Secretary directed that all concern departments/ agencies to implement the action plan diligently.

**Status on dumping of waste in dimapur and Kohima**

NGT have specifically noted the dumping of waste/garbage in nullahs and roadsides in Kohima and Dimapur towns. KMC and DMC Submitted a very brief note on action taken to solve the problem for preparing the quarterly report, OSD, EF & CC suggested for making an action plan with time line in this regard to solve the problem.

**Monitoring Cell -**

OSD EF&CC informed that a four member monitoring Cell is already functioning .

**Status of imparting training to the Deputy Commissioners and other officers of the State.**

Training of DCs and other officers to be done by Urban Development Department. Urban Development Department was asked to organize the sensitization training to all concern officers and staff of the state at the earliest.

**To Personally monitor by Chief Secretary about progress with DC**

A Video Conferencing with all the Deputy Commissioners of the State was scheduled on 28.8.2019 at 03.00 P.M

**Status of action plan River Rejuvenation -**

Member Secretary NPCB informed that the revised action plan has been submitted to CPCB and he was hopeful that this time it will be approved by CPCB. Regarding imposing of penalty to the State OSD (EF&CC) that the appeal filed in the Supreme Court is still pending.

**Status on E-Waste Management Rules-**

E-Waste management draft policy was prepared by NPCB and submitted to IT & C and IT&C department has also work out some modalities for the disposal of the E- waste. Chief Secretary opined that the rules/ modalities may be kept simple and easy to implement in the State.

**Status on Sand Mining and river bed mining.-**

Geology and Mining department informed that though NMMCR is there no specific guidelines for sand mining or river bed mining is there in the Rules. Chief Secretary directed that the Department should come up with guidelines for sand and stone mining from river beds by November 2019

**Status on Biological diversity act and Rules-**

Member Secretary NSBB briefed the house on the affidavit filed by NSBB in NGT and also informed that the Tribunal have directed all the States to complete the formation of BMCs and preparation of PBRs by January 2020. It was also decided that either the Chairman or Member Secretary will attend the monthly Review meeting. EF &CC Department to convene a co-ordination meeting with Rural Development department and NSBB in this regard.

The meeting concluded with vote of thanks to the chair.

**Sd/- TEMJEN TOY, IAS**

Chief Secretary to the Government of Nagaland

File No: FOR/SWM/46-1/2018/832/ 578 .

Dated: Kohima 10<sup>th</sup> September, 2019

Copy to,

1. The PPS to Chief Secretary, Nagaland for information and necessary action.
2. The PPS to Minister, Environment, Forest & Climate Change, for information.
3. The AHOD's Urban Development, Rural Development, Municipal Affairs, PHED, AH & VS, Geology and Mining, IT & C, H & FW
4. The HoD's Urban Development, Rural Development, Municipal Affairs, PHED, AH & VS, Geology and Mining, IT & C, H & FW, PCCF & HoFF
5. The Member Secretary, NPCB, for information and necessary action
6. The Member Secretary, NSBB, for information and necessary action
7. The Administrators KMC/DMC for information and necessary action
8. Office copy



(MOALILA)

Under Secretary to the government of Nagaland

Meeting minutes of the meeting held in the Conference Hall of Chief Secretary, Nagaland on 2<sup>th</sup> November, 2019 at 11.00 A.M of the State Level Committee for monitoring the implementation of Municipal Solid Waste Management Rules, 2016, Plastic Waste Management Rules, 2016 Biomedical Waste Management Rules, 2016 and to review the implementation of various directions issued by the Hon'ble National Green Tribunal.

The meeting of the State Level Monitoring Committee was held on 2<sup>th</sup> November, 2019 at 11:00 A.M under the Chairmanship of the Chief Secretary, Nagaland to discuss the issues relating to the submissions of action plans, status report on action plans on various waste management rules and also for the discussions on the latest directions issued by the Hon'ble National Green Tribunal.

The Chief Secretary, Nagaland, welcomed the officers of various departments and requested the OSD EF & CC to brief on the various issues.

OSD EF & CC briefed about the quarterly report which was submitted to the Central Pollution Control Board and also mentioned that the delay in submission of second quarterly report is due to the new directions issued by the Hon'ble NGT. He also presented a power point highlighting the status report and the action to be taken for compliance.

#### **Status of implementation of MSWMR in Model Towns/Cities/Villages.**

OSD EF & CC stated that as per the discussion with Chief Secretary, Chumukedima Town Council has been identified and they have submitted a report, which will be submitted to CPCB along with the second quarterly progress report as desired by NGT. He also stated that action plan from all the villages has been received and requested the RD Department to give status report on the implementation of the various rules in Notified Villages.

Principal Secretary, RD Department informed that they have worked out training schedule for the 33 notified villages which will be conducted in the month of November this year, he also stated that IEC activities could not be conducted due to fund constrain however, he assured that it would be done by coming months.

#### **Status of Performance Audit of Regulatory Body**

The performance audit of regulator body of NPCB has been completed.

#### **Status of Quarterly Report to be Submitted by Chief Secretary**

First quarterly report was submitted on 30<sup>th</sup> July, 2019. Second quarterly report is delayed due to thematic areas required by NGT; the report shall be submitted by November.

#### **Status on Implementation of Wetland Rules, 2017.**

OSD EF & CC stated that a brief document on Doyang has been prepared and Ministry has also sanctioned some funds for its development. Process is on for preparing a document for Shilloi lake. The Department of EF&CC is also undertaking identification of water bodies in the State

#### **Status on implementation of the action plan for air Pollution in Kohima and Dimapur.**

The action plan submitted to CPCB had been approved and is in the process of implementation. NPCB has also written to all the department concern for the status of the implementation of the action plan. First quarterly report which was due in Sept 2019 has been submitted to CPCB by NPCB.

#### **Status on dumping of waste in Dimapur and Kohima**

KMC and DMC has Submitted a very brief note on action taken to solve the problem for preparing the quarterly report. but the follow up action is yet to receive. In this regard the Chief Secretary has directed the Municipal affairs department concerned to take note and comply at the earliest.

## Monitoring Cell

23

OSD EF&CC informed that a four member monitoring Cell is already functioning.

### Status of imparting training to the Deputy Commissioners and other officers of the State.

Urban Development Department and Swachh Bharat has conducted sensitization programme for all the ULB Administrators and officers from other line departments in Dimapur on 21<sup>st</sup> Sept 2019. Sensitization programme for Deputy Commissioners was also conducted on 27<sup>th</sup> October, 2019.

### To Personally monitor by Chief Secretary about progress with DC

OSD, EF & CC stated that review meeting minutes have been received from all most all the districts and requested the authorities to continue the same for the upcoming months too.

### Status of Action plan on River Rejuvenation –

Member Secretary, NPCB informed that the action plan has been approved by CPCB with minor modifications such as to specify the frequency of meeting of monitoring Committee and include extra parameters in water quality assessment; he confirmed that the revised action plan shall be sent by next week. OSD EF & CC has mentioned that our appeal in Supreme Court regarding payment of Rs. 2 Cr. Compensation to be paid is still pending.

### Status on Sand Mining and river bed mining.-

Geology and Mining department informed that they are in the process of preparing the draft Guidelines and will submit the guidelines at the earliest.

### Status on Biological Diversity Act and Rules-

Officer representing NSBB informed that after the review meeting 60.18% has been achieved in constitution of BMC's but the preparation of PBR is still lacking behind due to fund constrain. She also stated that as per the last review meeting co-ordination meeting with EF & CC and RD Department was convened and necessary directions is issued to Project Directors of all the district and DFO. In this regard EF & CC department has also written to Home Department to give necessary instruction to the villages which comes under their jurisdiction for constitution of BMC's and preparation of PBR's.

### Status of ETP, STP, CETP:-

As per report of NPCB there are six (6) ETPs. NGT has asked for performance report of the 6 ETPs in this regard Member Secretary, NPCB was asked to submit a report. There is also one STP under construction by PHED Department and PHED has submitted action plan but yet to ascertain whether the action plan will be approved or not.

### Status of Non-attainment Cities

The action plan of Non-attainment cities i.e, Dimapur and Kohima has been approved and is now in the implementation stage.

The power point on the provisions of the various Management Rules was presented by Assistant Legal Consultant. She also presented a brief overview on the immediate action the state can take for comply of the various management rules such as Solid Waste Management Rule, 2016, Plastic Waste Management Rule, 2016, Bio-Medical Waste Management Rule, 2016, E-Waste Management Rule, 2016, Hazardous & Other Waste (Management & Transboundary Movement) Rule, 2016 and also on the information as per thematic areas as directed by NGT. The consultant stated that to ensure compliance a Waste Management Cell is required to oversee all the issues relating to waste management, which will also accelerate the process of compliance. The action is to be taken within three (3) months, before 20<sup>th</sup> February, 2020 which include assessment of various waste in all the ULBs, preparing of Bye-laws, action plan and IEC. Further the consultant stated that agrees Life NGO was willing to take up the task of Assessment

of various waste in the State within a time frame of two to three months if the Government Funds it. Chief Secretary directed the department of EF & CC to sit with the consultants and work out the financial forecast for the assessment.

With regard to the establishment of Waste Management Cell Chief Secretary agreed upon the proposal which can be under the Urban Development Department and directed the consultant and the officials from Urban Development to chalk out the modalities.

The meeting concluded with vote of thanks to the chair.

**Sd/- TEMJEN TOY, IAS**

Chief Secretary to the Government of Nagaland

File No: FOR/SWM/46-1/2018(Vol-I)/780

Dated: Kohima 14<sup>th</sup> November, 2019

Copy to,

1. The PPS to Chief Secretary, Nagaland for information and necessary action.
2. The PPS to Minister, Environment, Forest & Climate Change, for information.
3. The AHOD's Urban Development, Rural Development, Municipal Affairs, PHED, AH & VS, Geology and Mining, IT & C, H & FW, Transport
4. The HoD's Urban Development, Rural Development, Municipal Affairs, PHED, AH & VS, Geology and Mining, IT & C, H & FW, PCCF & HoFF, Transport
5. The Member Secretary, NPCB, for information and necessary action
6. The Member Secretary, NSBB, for information and necessary action
7. The Administrators KMC/DMC/MMC for information and necessary action
8. The Assistant Legal Consultant, Monitoring Cell, Office of the Chief Secretary, Nagaland, for information and necessary action.
9. Office copy



(MOALILA)

Under Secretary to the government of Nagaland

o/c

**Meeting minutes of the State level Monitoring Committee held under the Chairmanship of Chief Secretary on 04-02-2020 at 10.00 AM to review and monitor the implementation of the MSWMR 2016, BMWMR 2016, PWMR 2016 and various other directions of the Hon'ble National Green Tribunal.**

The meeting to review and monitor the implementation of the MSWMR, PWMR, BMWMR and various other directions of the Hon'ble NGT was held on 4<sup>th</sup> February, 2020 at 10.00 A.M in the Conference Hall of Chief Secretary, Nagaland.

Chief Secretary welcomed all the members to the meeting and highlighted the importance of this meeting.

OSD (EF& CC) gave a brief overview on the grading given to the state on the progress of the various waste management rules and other orders of the NGT. The grading was carried out by CPCB based on the quarterly report submitted by the State in December 2019. The shortcomings in the various parameters and the non submission of information to the CPCB were highlighted to the members and all concern departments were asked to take immediate steps to comply and furnish the information..

As per the information submitted by the State, CPCB have given grading for the progress in the implementation of the MSWMR 2016, BMWMR 2016, E-waste management rules, hazardous waste management rules, rejuvenation of polluted river stretches and abatement of air pollution in Kohima and Dimapur.

Member Secretary NSBB highlighted the progress in the formation of BMCs and PBRs in the State with a request to the home department to write to all the VCCs. Chief Secretary asked the NSBB to take up the matter with the home department at the earliest.

With regard to O.A No.597/2019 Shri.Rajendra Tyagi Vrs UOI & Ors PHED to submit the action taken report (ATR) to ministry of Jal Shakti at the earliest

In M.A No. 823/2018 of O.A No. 360/2018 Shree Nath Sharma Vs Uoi & Ors NPCB to prepare the State Environment Plan and submit to CPCB within this month.

Regarding River Rejuvenation, as directed in the NGT order dated 29.11.2019, the River Rejuvenation Committee (RRC) have to prepare the actions plan for 5 (five) river stretches of the state relating to Priority-III and Priority-IV, within the time frame mentioned.

Regarding Hazardous and Other Waste (Management and Transboundary Movement) Rules, 2016, Member Secretary NPCB stated that only one unit generate a hazardous waste in Dimapur and that NPCB will follow up for fulfilling the necessary guidelines for disposal and treatment of hazardous waste.

Urban Development Department to take up steps for creation of Waste Management Cell to deal with all the matters pertaining to waste management in the State in compliance to the Hon'ble NGT's directions.

With the next appearance of the State before the Hon'ble National Green Tribunal fixed on 28<sup>th</sup> February 2020 it was decided that all concern departments to furnish the latest updates and progress to the department of EF& CC for compiling and filing the information prior to the hearing.

The meeting concluded with vote of thanks to the Chair.

**Sd/- TEMJEN TOY, IAS**

Chief Secretary to the Government of Nagaland

File No: FOR/NPCB-27/6/18/ 665,

Dated: Kohima. the 06<sup>th</sup> February, 2020

Copy to,

1. The PPS to Chief Secretary, Nagaland for information and necessary action.
2. The AHOD's Urban Development, Rural Development, Municipal Affairs, PHED, AH & VS, Geology and Mining, IT & C, H & FW, Water Resources,
3. The HoD's Urban Development, Rural Development, Municipal Affairs, PHED, AH & VS, Geology and Mining, IT & C, H & FW, PCCF & HoFF
4. The Member Secretary, NPCB, NSBB, for information and necessary action
5. The Administrators KMC/DMC for information and necessary action
6. Office copy

*(Signature)*  
27/2/2020  
**(KIEZO TENO)**

Under Secretary to the government of Nagaland

*65/4/18/665*

THE SECRETARY

GOVERNMENT OF NAGALAND  
URBAN DEVELOPMENT DEPARTMENT  
NAGALAND : KOHIMA

NOTIFICATION

Dated Kohima, the 15<sup>th</sup> April, 2019

NO.UDD/7-GEN/173-SW/2010 :: In pursuance to directions of Hon'ble National Green Tribunal, Principal Bench, New Delhi Order dated 05.03.2019 in Original Application No.606/2018 in Para 32 (ii), the Governor of Nagaland is pleased to notify the following 3 (three) cities/towns/villages in respective districts in Nagaland as model cities/towns/villages for compliant of "Solid Waste Management Rules 2016" with immediate effect.

A. MODEL CITIES (MUNICIPALITIES)

Sl. No.	Name of Cities	District
1	Kohima	Kohima
2	Dimapur	Dimapur
3	Mokokchung	Mokokchung

B. MODEL TOWNS

Sl. No.	Name of Towns	District
1	Mon	Mon
2	Tuensang	Tuensang
3	Wokha	Wokha

C. MODEL VILLAGES

Sl. No.	Name of District	Name of Villages
1	Kohima	i) Kohima Village ii) Jotsoma iii) Khonoma
2	Dimapur	i) Thahekhu ii) Padampukhuri iii) Ruzaphema
3	Mokokchung	i) Mokokchung Village ii) Ungma iii) Mopungchuket
4	Mon	i) Mon Village ii) Chui iii) Longwa
5	Wokha	i) Wokha Village ii) Longsa iii) Lakhuti
6	Tuensang	i) Tuensang Village ii) Noklak Village iii) Chessore Village
7	Kiphire	i) Anatongre ii) Chomi iii) Seyochung Village

8	Longleng	i) Yachem ii) Tamlu Village iii) Pongo
9	Peren	i) Benreu ii) Tening iii) B' Jalukie
10	Zunheboto	i) Asukhomi ii) Lazami iii) Surumi
11	Phek	i) Phek Village ii) Meluri Village iii) Kikruma

2. The remaining cities, towns and villages of the State will be made fully compliant in respect of environment norms within one year, from the date of issue of this Notification.

Sd/- TEMJEN TOY, IAS

Chief Secretary to the Government of Nagaland

Dated Kohima, the 15<sup>th</sup> April, 2019

NO.UDD/7-GEN/173-SW/2010

Copy to:-

1. The Principal Secretary to Governor of Nagaland, Raj Bhawan, Kohima.
2. The Principal Secretary to Chief Minister, Nagaland, Kohima.
3. The OSD to Deputy Chief Minister, Nagaland, Kohima.
4. The Sr. PS to Minister, Urban Development & Municipal Affairs, Nagaland, Kohima.
5. The SPS to all Ministers/Advisors/Chairmen, Nagaland.
6. The OSD to Chief Secretary, Nagaland, Kohima.
7. All Additional Chief Secretary / Principal Secretaries / Commissioner & Secretaries / Secretaries, Nagaland.
8. The Commissioner, Nagaland, Kohima.
9. The Commissioner & Secretary, Information and Public Relation, Nagaland, Kohima.
10. The Chief Information Commissioner, Nagaland, Kohima.
11. The Director General of Police, Nagaland, Kohima.
12. All Head of Departments, Nagaland.
13. The Publisher, Nagaland Gazetted, Kohima.
14. The Director, Urban Development, Nagaland, Kohima.
15. The Additional Director (HoD), Municipal Affairs, Nagaland, Kohima.
16. The Member Secretary, Nagaland Pollution Control Board for necessary action.
17. All Deputy Commissioners/ADCs/SDOs(C)/EACs, Nagaland.
18. All Administrators, Municipal Councils/Town Councils, Nagaland for necessary action.
19. Office copy.

(ABHISHEK SINGH) IAS

Principal Secretary to the Government of Nagaland

**GOVERNMENT OF NAGALAND  
URBAN DEVELOPMENT DEPARTMENT  
NAGALAND : KOHIMA**

**NOTIFICATION**

Dated Kohima, the 25<sup>th</sup> September, 2019

NO.UDD/7-GEN/173-SW/2010 :: In partial modification to this Department's Notification of even number dated 15.04.2019, the Governor of Nagaland is pleased to notify Chumukedima Town, Dimapur District, Nagaland as **Model Town** for compliant of "Solid Waste Management Rules 2016" with immediate effect.

Sd/- TEMJEN TOY, IAS

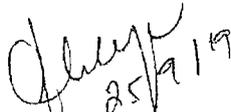
Chief Secretary to the Government of Nagaland

Dated Kohima, the 25<sup>th</sup> September, 2019

NO.UDD/7-GEN/173-SW/2010

Copy to:-

1. The Commr. & Secretary to Governor of Nagaland, Raj Bhawan, Kohima.
2. The Addl. Chief Secretary to Chief Minister, Nagaland, Kohima.
3. The OSD to Deputy Chief Minister, Nagaland, Kohima.
4. The SPS to all Ministers/Advisors/Chairmen, Nagaland.
5. The SPS to Advisor, Urban Development & Municipal Affairs, Nagaland, Kohima.
6. The OSD to Chief Secretary, Nagaland, Kohima.
7. All Additional Chief Secretary / Principal Secretaries / Commissioner & Secretaries / Secretaries, Nagaland.
8. The Commissioner, Nagaland, Kohima.
9. The Commr. & Secretary, Information & Public Relations, Nagaland, Kohima.
10. The Chief Information Commissioner, Nagaland, Kohima.
11. All Head of Departments, Nagaland.
12. The Publisher, Nagaland Gazette, Kohima.
13. The Director, Urban Development, Nagaland, Kohima.
14. The Additional Director (HoD), Municipal Affairs, Nagaland, Kohima.
15. The Member Secretary, Nagaland Pollution Control Board for necessary action.
16. All Deputy Commissioners/ADCs/SDOs(C)/EACs, Nagaland.
17. All Administrators, Municipal Councils/Town Councils, Nagaland.
18. Office copy.

  
(BENDANGLILA)

Deputy Secretary to the Government of Nagaland



सत्यमेव जयते

**THE NAGALAND GAZETTE  
EXTRAORDINARY  
PUBLISHED BY AUTHORITY**

No.62 Kohima

Monday, June 17, 2019

Jyaistha 27, 1941(Saka)

**NOTIFICATION**Dated Kohima, the 17<sup>th</sup> June, 2019

**NO.UDD/7-GEN/07-PWM/2018** :: In continuation to State Government's Notification dated 29.11.2018 on the "Policy for Restricting the Use of Plastics in Nagaland", the Governor of Nagaland is pleased to impose "Total Ban on all Single-Use Plastic in Nagaland" with a view to eradicate the menace of plastic and the serious environmental and ecological challenges posed by rampant use of plastics.

2. The following single-use plastic products shall be totally banned in the State:

- All plastic carry bags, with or without handles, irrespective of thickness and size;
- Plastic cutlery including plates, plastic cups, straws, stirrers etc.;
- Cutlery and other decorative made of Styrofoam (Thermocol);
- Polythene;
- Nylon;
- Poly-Vinyl-Chlorides (P.V.C)
- Poly-Propylene; and
- Poly-Styrene.

"Single-use plastics, often also referred to as disposable plastics (use-and-throw items), are commonly used for plastic packaging and include items intended to be used only once before they are thrown away or recycled. These include, among other items, carry bags, food packaging, bottles, straws, containers, cups and cutlery".

3. Any individual, institution/commercial establishment (educational institutions, offices, hotels, shops, restaurants, religious institutions, industrial establishments, banquet halls etc.) shall abide the aforesaid total ban and any breach shall be liable for penalties.

4. The District Administration/Local Bodies shall decide and levy penalties against the defaulters in their jurisdiction.

5. A District Task Force already constituted in respective District shall strictly monitor and function as Squads for vigilance purpose and ensure imposing of total ban on stocking, distribution, selling and use of all single-use plastics.

6. The total ban on all single-use plastics shall be made effective after 3 (Three) months from the date of publication in Official Gazette in the entire State of Nagaland in the public interest and for the manufacturers, stockiest, shopkeepers to dispose off their stocks and no financial loss is caused to them.

7. This is issued with the approval of State Cabinet in its meeting held on 10.06.2019 communicated vide O.M. NO.CAB-2/2013(P1) dated 12.06.2019.

Sd/-

**S. NYANBEMO TSANGLAO**  
Secretary to the Government of Nagaland

Kohima : Printed and published by the Directorate of Printing & Stationery, Nagaland  
(Ex-Gazette) No. 62/150+50/17-06 -2019



**NAGALAND BIO-MEDICAL WASTE MANAGEMENT  
STATUS REPORT**

**DIRECTORATE OF HEALTH AND FAMILY WELFARE**

**STATUS:**

As per the rules a total of approximately 6000 health workers were immunized involved in handling bio-medical waste with Hepatitis B. The immunization of health care workers with Tetanus is in process regularly.

**4. OCCUPATION SAFETY**

Protecting the occupational health of health workers is critical to having an adequate workforce of trained and healthy health personnel. Health protecting health care workers has the added benefit to contributing to quality patient care and health system strengthening. The purpose of personal protective equipment is to prevent blood and body fluids from reaching the workers skin, mucous membranes or personal clothing. It must create an effective barrier between the exposed worker and any blood or other body fluids.

**STATUS:**

Every health care worker will be ensured for occupational safety by providing appropriate and adequate personal protective equipment. Personal protective equipment includes gloves, apron/ gown, boot, goggles, masks etc. Procurement of personal protective equipment is completed with contract awarded and sample tested at site. The final consignment of all the goods will reach the respective health facilities by June 2020.

**5. SEGREGATION AND COLLECTION**

Bio-medical waste shall not be mixed with other general wastes. Bio-medical waste shall be segregated into containers/bags at the point of generation in accordance to Bio-medical waste management rules 2016 (amendment) 2018. The collection containers shall be also labelled as per the rules.

**STATUS:**

Every health care worker is sensitized about segregation of bio-medical waste as per the rules at the point of generation. Procurement of colour coded bins is completed and contract awarded with sample tested on site. The final consignment will reach the health facilities by June 2020. The procurement of non-chlorinated bags is in process and distribution of the same to all the health facility will be completed latest by June 2020.

**6. DISINFECTION/ PRE-TREATMENT**

Bio-medical waste shall be treated and disposed off in accordance with Bio-medical waste management rules 2016 (amendment) 2018, and in compliance with the standards provided in in the rules by the health facility. Pre-treatment, treatment and disinfection of different category of waste can be done by different treatment equipment like autoclave, microwave, hydroclave, shredder; ETP etc. the standards and operating parameters of the treatment equipment are to be as per the bio-medical waste management rules. Different categories of waste are to be treated in a different manner as stated in Bio-medical waste management rules 2016 (amendment) rules 2018.

**STATUS:**

Procurement of treatment equipment is completed and will be delivered to all the health facility latest by June 2020. For the disinfection of bio-medical waste in District Hospital microwaves will be issued, disinfection in the remaining health facility is to be done by autoclave. For the liquid waste disinfection Effluent treatment Plant (ETP) is already installed in Wokha District Hospital and all the remaining district hospital to install and follow the

**STATUS:**

In compliance to the provisions of the Bio-medical waste management rules 2016 (amendment) 2018, the State Government have constituted the Advisory Committee and District Level Monitoring committee to monitor the compliance of the provisions of the rules in the health care facilities and in the state as a whole.

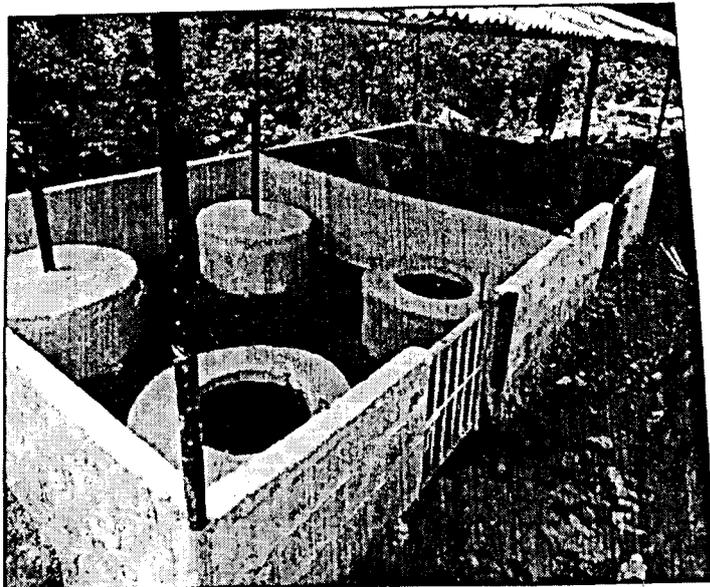
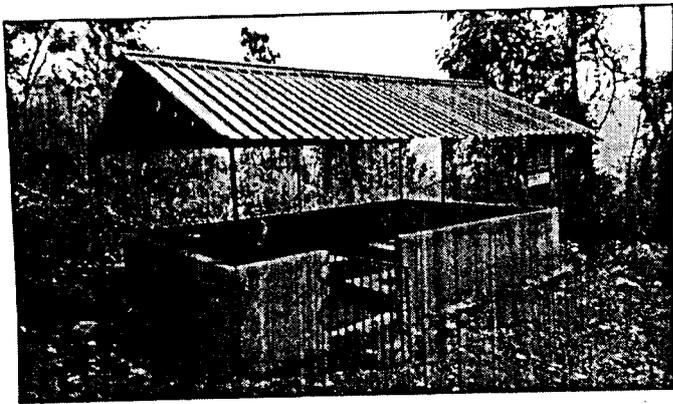
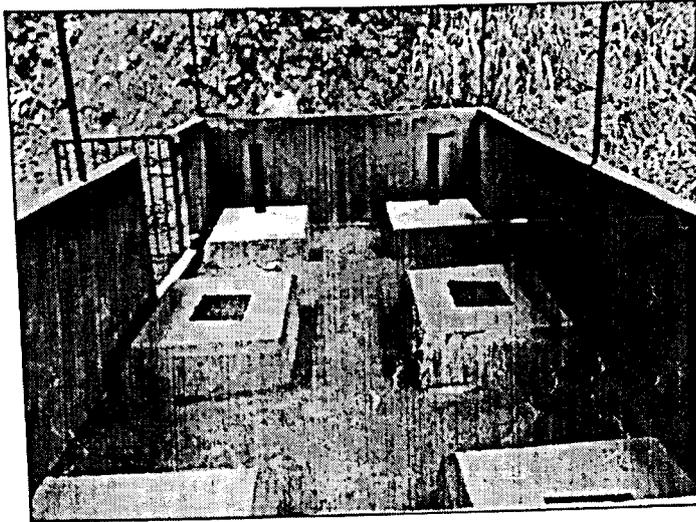
**10. ANNUAL REPORT**

As per the Bio-medical waste management rules 2016 (amendment) 2018, every health facility have to make available the annual report on its website and shall submit an annual report to the prescribed authority in prescribed form on or before the 30<sup>th</sup> of June every year.

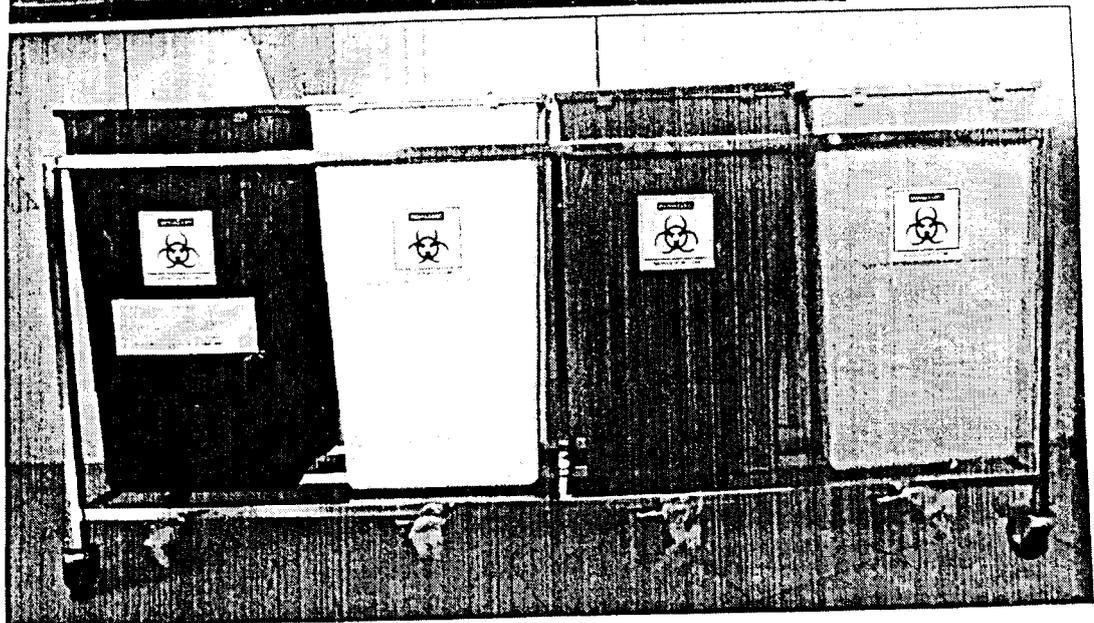
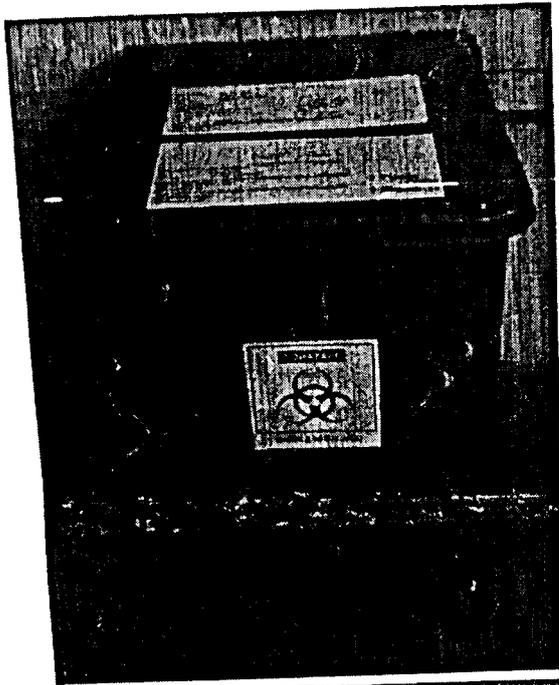
**STATUS:**

In compliance with the rules Bio-medical waste management annual report has been submitted to the prescribed authority.

DEEP BURIAL PIT AND SHARP PIT



Biomedical waste bins sample



No. IT&amp;C/15-15/19

Dated Kohima the      December, 2019

NOTIFICATION

**Subject:- Guidelines for Disposal of Information Communication Technology (ICT) related products/equipments (e-Waste) in the Government Departments, Autonomous Bodies / Local Bodies and PSUs under the Government of Nagaland.**

While there has been an increasing growth of Information and Communication Technology (ICT) infrastructure in all Government Departments to meet the growing requirement for daily functioning of Government offices and whereas the average life period of ICT products/equipment is normally 3 years, in the State of Nagaland, the Government Departments are allowed to continue with these ICT products/equipment even though they are becoming non-repairable/beyond economic repair/technologically obsolete. There has also been an increasing number of ICT products/equipment in Government offices across the State for office automation which are either becoming non-repairable/beyond economical repair / technologically Obsolete.

The Department of IT&C is the Nodal Department for all matters relating to ICT in the State and therefore a guideline to address the concern for condemnation and disposal of obsolete ICT Products / Equipment was issued vide Notification No. IT&C/13-19/08/17 dated 9<sup>th</sup> March 2015.

Further, in consonance with the E-WASTE MANAGEMENT RULES, 2016, Government of India, a revised Guideline in supersession of the earlier Notification is hereby notified with immediate effect (copy enclosed). The guideline may also be downloaded from <https://nagaland.gov.in>.

This is issued with the concurrence of Finance Department conveyed vide U.O. No. 167 Dated 26/09/2019.

**Enclosed: As above.**

**Sd/- Temjen Toy, IAS**

Chief Secretary to the Government of Nagaland

Dated Kohima the      December, 2019

No. IT&C/15-15/19

Copy to:

1. The OSD to Hon'ble Chief Minister, Nagaland for kind information of Hon'ble Chief Minister please.
2. The PS to all Minister/Advisers/Chairman of Boards for kind information please.
3. The OSD to Chief Secretary, Nagaland for kind information please.
4. All AHODs/HODs for kind information.
5. Director (Printing & Stationery) for publication in the Nagaland Gazette.
6. Office Copy.

(K.D. Vizo) ITS

Principal Secretary to the Government of Nagaland

**Guidelines for Disposal of Information Communication Technology (ICT) related products / equipments (e-Waste) in the Government Departments, Autonomous Bodies / Local Bodies and PSUs under the Government of Nagaland.**

**1. Background**

While there has been an increasing growth of ICT infrastructures in all Government Departments and there is greater reliance on ICT for office automation in daily functioning of the Government offices, there has also been an increasing number of ICT products / equipment in Government offices across the State which are either becoming non-repairable / beyond economical repair / technologically Obsolete.

This is primarily due to the fact that the average life period of ICT products / equipment is 3(three) years and the same is becoming obsolete depending upon the intensity of usage, serviceability, type of technology and other related factors.

It is therefore felt that a policy must be in place to address the concerns for disposal of condemned ICT Products / Equipment in various Government Departments.

Accordingly, the Department of Information Technology & Communication had issued Notification No. IT&C/13-19/08/17 dated 9<sup>th</sup> March 2015 stipulating a set of norms / guidelines in the State of Nagaland to act as a reference point for their disposal of Information and Communication Technology (ICT) related items.

Further, in consonance with the E-WASTE MANAGEMENT RULES, 2016, Government of India, a revised Guideline in supersession of the earlier Notification is hereby issued. This Guideline is applicable to:-

- a) All Government Departments under Government of Nagaland
- b) All Autonomous Bodies/Local Bodies under Government of Nagaland
- c) All PSU's under Government of Nagaland

**2. Guidelines for Disposal of ICT Products /Equipment**

**2.1. ICT Products / Equipment :**

ICT Products/Equipment includes the following items:

- a) Personal Computers
- b) Servers
- c) Laptops
- d) Printers
- e) Scanners
- f) UPSs
- g) Data Communication Equipment.
- h) Dumb Terminals
- i) Package Software

- j) Photocopier/Xerox machine
- k) Network equipment.
- l) Handheld / Portable Devices
- m) Other Electronic Items.

The above list is not exhaustive and is subject to the interpretation / approval of the concerned Departmental e-Waste Board.

## **2.2. Grounds for Disposal :**

All ICT Products / Equipment can be disposed on following grounds:

### **2.2.1. Technically Obsolete :**

- a) Completed 3 years life-span and not in working condition. OR
- b) Completed 3 years life-span and technology outdated thereby affecting performance and output that is expected out of it.
- c) Package Software can only be condemned by declaring it as technically obsolete when no more updates or support are available from OEM.

### **2.2.2. Beyond Economical Repairs (BER) :**

ICT Products/Equipment can be declared BER when these Products/Equipment cannot be upgraded / maintained economically / warrant extensive repairs and replacement of sub-assemblies or accessories and the combined cost of which exceeds 50% of the current cost of an equivalent system. If required the same can be ascertained from the vendor who is giving Annual Maintenance Contract support.

### **2.2.3. Non-repairable :**

ICT Products/Equipment can be condemned due to non-availability of spare-parts.

### **2.2.4. Physically damaged :**

ICT Products/Equipments that have been damaged beyond repair due to fire or any other reasons beyond human control can be condemned as Physically Damaged.

## **3. Mode of Disposal :**

All concerned Departments, Autonomous Bodies / Local Bodies and PSUs under the Government of Nagaland, wishing to dispose of ICT related products/equipment shall constitute an e-Waste Board comprising of the following members:-

1. Concerned Departmental, Autonomous Bodies / Local Bodies and PSUs Members.
2. Representative of Finance Department.
3. Representative of IT&C Department.

- a. The table describes only the average life of an equipment, however, all these items(except items under Category-I) can be used beyond the mentioned / specified life till the time these items continue to serve the purpose. Obsolete
- b. On completion of productive life period (column no. 3 of the above table), if required,the items may be replaced with equipment of latest and better configurations.
- c. On completion of End of Life period (column no. 4 of the above table), the items may be declared as electronic waste (e-Waste), if not in use.

#### 6. Calculating rates of depreciation.

The depreciation value for the items (category-wise) may be calculated as per the following criteria:

##### Category-I:

As most of the items in this category are consumable items and of junk value after one-time use, there is no need to calculate the depreciation value. Once used, the residual value of these items may be treated as NIL. The SMF (Sealed Maintenance Free) batteries under this category may be hazardous for health and environment and therefore, if not in use, immediately be declared as e-Waste.

##### Category – II:

The depreciation value for items under this category may be calculated as under

Items	Year of Completion				
	Year 1	Year 2	Year 3	Year 4	Year 5
Items under Category II	60%	40%	20%	10%	0%
<b>Eg: Base Value (INR)</b>	<b>Depreciated Value</b>				
50,000.00	30,000	20,000	10,000	5,000	0

The e-Waste Board is authorized to recommend disposal of ICT related products/equipment as per these guidelines and the e-Waste Management Rules, 2016, Government of India.

The disposal report will be prepared by the concerned Department e-Waste Board, based on these guidelines. The e-Waste Board will also specify the disposal mode and the concerned Department can dispose it through Tender, Auction or Scrap depending on assessed residual value of the ICT Products / Equipment and as per the procedure laid down in General Finance Rules 2005, as follows:-

1. For the Products/Equipment with residual value above **Rupees Two Lakhs**, the Departments can dispose it through Advertised Tender or Public Auction.
2. For Products/Equipment with residual value **less than Rupees Two Lakhs**, the mode of disposal will be determined by Departments/Competent Authority, keeping in view the necessity to avoid accumulation of such Products/Equipment and consequential blockage of space and also the deterioration in value of Products/Equipment to be disposed of.
3. The identified e-Waste shall be disposed through e-Waste recyclers, collectors, material recovery centres, scrap dealers as authorized by the Nagaland Pollution Control Board (NPCB) from time to time.
4. All disposed e-Waste shall be maintained in an inventory as per Annexure – I and copy of the same should be submitted to the Department of IT&C for record.

##### 5. Classification of ICT Equipment and Lifespan

Sl.	Obsolescence	Items	Productive life	End of Life
1	Category I (Immediate)	Printing Consumables (Ink, Toners, Cartridges), DVDs, CDs, UPS Batteries	As per usage	Immediate on non-usability
2	Category II (Fast)	Tablets-Mobile phones, Pen Drives, External Hard Disk Drives (HDD), Laptops, Notebooks, Desktop, Computers-Printers, Scanners, Copiers, Multi-Functional Devices (MFDs), Projectors, UPS Systems, All Networking items	3 years	5 years
3	Category III (Medium)	Servers, FAX, EPABX, Electronic Attendance Systems, Digital Cameras, DVD Players, TVs, LCDs, LEDs, Air Conditioners, Precision Air Conditioners (PACs), Other Electronics items	5 years	7 years

**Category III:**

The depreciation value for items under this category may be calculated as under

Items	Year of Completion						
	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7
Items under Category II	60%	40%	25%	15%	3%	1%	0%
Eg: Base Value (INR)	Depreciated Value						
50,000.00	30,000	20,000	12,500	7,500	1,250	500	NIL

**7. Drive the Shift towards Refurbishing**

While the focus of has predominantly been on Recycling of unused electrical and electronic equipment, the Government of Nagaland intends to boost the idea of *Refurbishing Activities* in the State. *Sale and use of Refurbished goods is the proper way to truly realize the Reduce-Reuse-Recycle motto.*

The Department of Information Technology & Communication would like to encourage all concerned Departments / Autonomous Bodies / Local Bodies, PSUs under the Government of Nagaland to promote the use of Refurbished electronic equipment.

**8. Awareness & Capacity Building**

All India statistics pertaining to electrical & electronic waste processing point towards the largely unorganized recycling centres that, in many cases, also engages in Hazardous Activities such as metal extraction. About 95% of the recycling happens in the un-recognized sector. This is a matter of grave concern primarily because of the life threatening risks, the individuals in the sector are exposed to. In order to curtail the rampant growth of the un-recognized sector and to provide formal, safer and better opportunities to the un-recognized sector employees.

The Nagaland Pollution Control Board will be conducting various awareness campaigns to educate the general populace on the adverse effects of unsafe e-Waste disposal practices and to dispose e-Waste only through recognized e-Waste recyclers, collectors, material recovery centres, scrap dealers as authorized by the Nagaland Pollution Control Board (NPCB).

**ANNEXURE - I**

**INVENTORY**  
*(For use by Department e-Waste Board)*  
**OBSOLETE DECLARATION FORM**

Department / Autonomous Body / Local body / PSU Name: \_\_\_\_\_

Item No.	Particulars of ICT Product / Equipment	Asset Register Number	Manufacturer / OEM	Model	Serial No.	Year of Purchase	Original Purchased value	Condition of the Equipment (Functioning / Non Functioning)	Reason for Disposal (Technically Obsolete / Beyond Economic Repair/ Non repairable/ Physical Damaged)	Mode of Disposal (Tender / Auction/ Scrap)
1										
2										
3										
4										
5										

**For Finance Department**

Name: \_\_\_\_\_

Designation: \_\_\_\_\_

Signature: \_\_\_\_\_

**For IT&C Department**

Name: \_\_\_\_\_

Designation: \_\_\_\_\_

Signature: \_\_\_\_\_

**Head of Department**

Name: \_\_\_\_\_

Designation: \_\_\_\_\_

Signature: \_\_\_\_\_

**FORMAT FOR STATE WISE REVIEW OF COMPLIANCE TO HON'BLE NGT  
DIRECTIONS FOR CONTROL OF RIVER POLLUTION**

43

1. Name of State/ UT

Nagaland

2. No of identified Polluted River Stretches P-I to P-V

: 6 (six)

1. Priority - I : 1(River Dhansiri)
2. Priority -III : 1 (Dzuna)
3. Priority – IV: 1 (Chathe)
4. Priority –IV : 1 (Dzu)
5. Priority – V : 1 (Dzucha)
6. Priority – V : 1 (Sano Ru)

3. Water Quality

A. Polluted River Stretch (Range in Year 2019)

Parameters		1	2	3	4	5	6
BOD (mg/l)	Min	4.4	1.8	1.6	1.6	1.4	1.6
	Max	9.76	2.8	2.94	3.5	2.16	3.42
Fecal Coliform (MPN/100ml)	Min	NA	NA	NA	NA	NA	NA
	Max	NA	NA	NA	NA	NA	NA

In absence of FC, TC may be given

B. Has the State identified all pollution contributing drains : Yes

If yes, please provide details in table 1

4. Action plan addressing the gaps

A. Gap assessment in sewage treatment completed

: Yes

If yes, please provide details in table 2

B. Gap assessment for industrial pollution completed

: Yes

If yes, please provide details in table 3

C. Solid waste management addressed

: Yes

If yes, please provide details in table 4

D. Other Wastes

: Yes

If yes, please provide details in table 5

5. Measures taken for

A. Control of Illegal Ground Water Abstraction

: Yes/ No

B. River catchment/ Basin Management

: Yes/ No

C. Flood Plain Zone Protection

: Yes/ No

D. E Flow maintenance &amp; Watershed Management

: Yes/ No

E. Ground water recharge/ Rain water harvesting

: Yes/ No

F. Setting up of Biodiversity Parks, Greenery/ plantation along the banks of river stretch

: Yes/ No

G. Removal of encroachments

: Yes/ No

6. Progress in line with target dates of March 2021

: Yes/ No

**Table 1: Details of drains contributing to pollution in polluted river stretch**

River Stretch: Dhansiri			Priority: I	
Drain	Type Domestic/ industrial/ mixed	Quantity (MLD)	BOD (mg/l)	FC (MPN/100ml)
1	Hospital Nullah	2.33 MLD	-	-
2	Lengri Nullah	3.9 MLD	-	-
3	Sugarmill Nullah	1.72 MLD	-	-

In absence of FC, TC may be given

**Table 2: Details for sewage management (in MLD)**

Generated	Processed/ Treated	Gap
Hospital Nullah (2.33 MLD)	-	-
Lengri Nullah (3.9 MLD)	-	-
Sugarmill Nullah (1.72 MLD)	-	-
<b>Dimapur - 7.95 MLD</b>	<b>Nil</b>	<b>100%</b>

**Table 3: Details for industrial effluent management (in MLD)**

Generated	Processed/ Treated	Gap
<b>44.3 KLD</b>	<b>26 KD</b>	<b>18.3 KLD</b>

**Table 4: Details for MSW (in TPD)**

Generated	Processed/ Treated	Gap
<b>Dimapur – 115 TPD</b>	<b>Nil</b>	<b>100%</b>
<b>Kohima – 80 TPD</b>	<b>80%</b>	<b>20%</b>

**Table 5: Details for other wastes (in TPD)**

Type of Waste	Generated	Processed/ Treated	Gap
BMW(Dimapur)	<b>205 Kg/day</b>	<b>125 kg/day</b>	<b>80 kg/day</b>
HW (Dimapur)	<b>1.5MT/Year</b>	<b>Spent oil generated from Indian Oil Corporation Depot, Kevijau Colony, Dimapur is transported to Assam for bioremediation</b>	<b>-</b>
Plastic Waste (Dimapur)	<b>65.4 TPA</b>	<b>54.6 TPA</b>	<b>10.8 TPA</b>
E Waste (Dimapur)	<b>5.6 TPA</b>	<b>5.2 TPA</b>	<b>0.4 TPA</b>
C& D waste (Dimapur)	<b>Data not available</b>	<b>Data not available</b>	<b>Data not available</b>

  
Member Secretary

45

**ACTION PLAN FOR REJUVENATION OF  
RIVER DHANSIRI, DIMAPUR,  
NAGALAND**

**PRIORITY - I**

Approved by:

**Nagaland River Rejuvenation Committee**

(Constituted in compliance of order of the  
Hon'ble National Green Tribunal)

Submitted to:

**Central Pollution Control Board, Delhi**

**July, 2019**

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## EXECUTIVE SUMMARY

Dimapur is the oldest human settlement in Nagaland. It is situated between longitude 93° 43' East and latitude 25° 54' North bordering Assam on the west of the state. Mainly flat terrain of the town supports the settlement to come up, hence fast growth of the town is observed in the last two decades. The extended area of the town increases municipal limit over the years and likely to increase further in forthcoming years. The project area considered as the total municipal limit for interception diversion and treatment of sewage and waste water as well as collection, transportation and disposal of solid waste. Besides this the public awareness is considered as the component for sustainability and participation of end users in the noble cause of pollution abatement. The treatment plant and disposal site for the solid waste management is to be considered part of the project irrespective of its location. Similarly the rivers that receive pollution load are also considered part of the project area to be studied for better management.

Sl. No	Salient Features of Town	Data
1	Geographic location	25°48' & 26°00' N 93°30' & 93°54' E
2	Altitude	145 m
3	Climate	Subtropical
4	Temperature	10° – 40° C
5	Rainfall	1500-2000mm

Dhansiri and Diphu (Chathe) are the main rivers of Dimapur district of Nagaland. River Dhansiri originates from Laisang peak of Nagaland. It flows through a distance of 352 km from south to north before joining the Brahmaputra on its south bank. Its total catchment area is 1220 km<sup>2</sup>. While flowing as the boundary between Karbi Anglong and Nagaland, it flanks a large wilderness very rich in wildlife. On one side is the Dhansiri Reserved Forest and on the other Intangki National Park. There are numerous perennially waterlogged swampy regions locally known as bils associated with this river. Point and non-point sources of pollution along with anthropogenic pressures affect the lotic ecosystems of the town.

In compliance to the Hon'ble National Green Tribunal order dated 20.09.2018, 19.12.2018 and 08.04.2019, Action Plan has been prepared for restoration of pollution river stretch of Dhansiri river from Full Nagarjan (station code:1796) as it enters Dimapur city area to Kushiabill, Nagaland-Assam Border (station code: 1928) as it exits Dimapur city area.

In order to improve the river water quality, proposed activities are interception, diversion and treatment of municipal drains, establishment of solid waste processing and disposal facility for Dimapur city, surveillance of water polluting industries, monitoring of drains, prohibition on illegal disposal of waste in river beds, groundwater quality monitoring and recharge of groundwater, plantation in catchment etc. In addition to the ongoing project of pollution abatement of river Diphu and Dhansiri sanctioned by Ministry of Environment, Forests & Climate Change, about Rs. 668.25 lakhs would be required for interception, diversion and treatment of municipal drains and establishment of solid waste processing and disposal facility for Dimapur city and river training works to prevent soil erosion.

## 1. INTRODUCTION:

The River Dhansiri originates from the Laisang peak in Peren district and flows through a distance of 352 km (219 miles) from south to north before joining the Brahmaputra on its south bank. It has a total catchments area of 1,220 km<sup>2</sup> (470 sq. miles). For the first 37 kms from the source, the river flows in a north-western direction where after turning to the north-east it flows for about 75.635 kms upto Dimapur, thereafter the direction of flow is generally northerly upto Golaghat, Assam. The river receives almost all the western and southern drainages of Nagaland.

## 2. ACHIVABLE TARGETS AS PER HON'BLE NGT DIRECTIONS:

Hon'ble NGT, Principal Bench, New Delhi in their Order dated 28<sup>th</sup> September, 2018 in O.A. No.673/2018 regarding monitoring and restoration of water quality of identified polluted river stretches have inter alia directed all States and Union Territories to prepare action plans within two months for bringing all the polluted river stretches to be fit at least for bathing purposes (i.e. BOD < 3 mg/L and FC < 500 MPN/100ml) within six months from the date of finalization of the action plans.

In compliance of the direction of Hon'ble National Green Tribunal, Principal Bench, New Delhi in the matter of news published in "The Hindu" authored by Shri Jacob Koshy, Titled "More river stretches are now critically polluted CPCB", Government of Nagaland constituted River Rejuvenation Committee (RRC) for effective abatement of pollution, rejuvenation, protection and management of the identified polluted River stretches under Priority-I, for bringing the polluted river stretches to be fit at least for bathing purposes within six months from the date of finalization of the action plans.

## 3. WATER QUALITY REPORTS FOR THE YEAR 2016-17:

Water quality monitoring is being carried out by the Nagaland Pollution Control Board under National Water Quality Monitoring Programme (NWMP), the data collected for the year 2016 and 2017 are as given blow:

Under Dimapur District in the year 2016, 2017 & 2018, there were 6 NWMP locations being monitored and analyzed in the river Dhansiri, which are discussed with various parameters in the *Tables 1 (a) (b) & (c)* given below.

Table 1 (c): Water Analysis report showing different parameters of minimum and maximum values during 2018 is given below:

Sl. No	PARAMETERS	STATION CODE											
		1796		1797		1798		1799		1800		1928	
		MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX
1	Dissolved Oxygen (mg/l)	3.6	9.2	3.4	9.2	3.6	9	2.4	8.8	0.8	3.4	3.1	8.8
2	pH	7	8	6.5	8	7	7.6	7	7.5	6.4	7.3	6.5	8.5
3	Conductivity ( $\mu$ S/cm)	34.1	268	71.1	512	83	295	48.5	201	77.5	321	23.8	331
4	BOD (mg/l)	0.8	3.6	1.6	4.4	1.6	4.4	0.8	4.8	3	10.4	2	5.6
5	Nitrate- Nitrogen (mg/l)	0.3	1.3	0.4	1.1	0.3	1.2	0.28	0.8	0.3	1.8	0.29	1
6	Turbidity (NTU)	8.01	531	4.97	591	4.76	565	17.1	213	2.66	464	2.49	474
7	Phenolphthalein Alkalinity (mg/l)	0	4	0	6	0	6	0	0	0	0	0	2
8	Total Alkalinity (mg/l)	32	126	36	152	34	130	48	96	56	130	32	140
9	Chloride (mg/l)	2	13.6	5.2	39	5	11.2	3.6	13.8	13.4	27.3	6	18.6
10	Chemical Oxygen Demand (mg/l)	14	44	24.4	45	14.9	50	16.1	68	26.2	71	12.9	43
11	Ammonia Nitrogen (mg/l)	0.03	0.55	0.04	2.1	0.11	1.3	0.04	0.32	1.22	4.6	0.19	0.97
12	Total Hardness (mg/l)	28	120	32	228	30	118	42	94	54	94	32	114
13	Calcium Hardness (mg/l)	14	56	16	70	18	68	22	44	30	62	18	68
14	Magnesium Hardness (mg/l)	3.41	15.61	3.9	40.01	2.92	17.57	4.39	14.15	2.92	14.15	3.42	17.08
15	Sulphate (mg/l)	18	36	26	43	23	46	20	36	18	33	23	43
16	Total Dissolved Solids (mg/l)	12	134	23	256	32	147	22.1	104	32	139	12	165
17	Total Suspended Solids(mg/l)	0.09	0.43	0.08	0.376	0.07	0.94	0.06	0.26	0.04	0.68	0.05	0.312
18	Phosphate (mg/l)	0.03	1.86	0.07	4.46	0.05	5.2	0.06	0.73	0.13	2.81	0.04	1.06
19	Boron (mg/l)	0.02	0.18	0.03	0.07	0.03	0.09	0.02	0.14	0.03	0.5	0.03	0.24
20	Potassium (mg/l)	4.2	9.3	4.4	12	4	7.3	3.9	10	6	13.5	4.3	7.1

Sl. No	PARAMETERS	STATION CODE											
		1796		1797		1798		1799		1800		1928	
		MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX
21	Fluoride (mg/l)	0.06	0.7	0.07	0.6	0.05	0.5	0.08	0.27	0.06	0.5	0.06	0.25
22	Cadmium (mg/l)	0.004	0.005	0.008	0.01	0.003	0.004	0.006	0.008	0.007	0.009	0.005	0.007
23	Copper (mg/l)	0.1	0.17	0.12	0.21	0.04	0.05	0.14	0.48	0.08	0.09	0.08	0.09
24	Lead (mg/l)	0	0.004	0	0.003	0	0.004	0	0.002	0	0.005	0	0.007
25	Chromium (mg/l)	0	0	0	0	0	0	0	0	0	0	0	0
26	Nickel	0	0.03	0	0.05	0	0.02	0	0.03	0	0.57	0	0.06
27	Zinc (mg/l)	0.09	2.14	0.16	2.21	0.12	1.57	0.11	1.82	0.52	1.45	0.13	2.46
28	Iron (mg/l)	0.21	0.61	0.16	0.43	0.29	0.42	0.22	3.35	0.19	2.59	0.09	0.66
29	Arsenic (mg/l)	0	0	0	0	0	0	0	0	0	0	0	0

Sl. No	BIOMONITORING	STATION CODE											
		1796		1797		1798		1799		1800		1928	
		MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX
1	Saprobic Score	-	-	-	-	-	-	-	-	-	-	5.6	6
2	Diversity Score	-	-	-	-	-	-	-	-	-	-	0.44	0.8
3	Water Quality	-	-	-	-	-	-	-	-	-	-	Mod	Mod
4	Water Quality Class	-	-	-	-	-	-	-	-	-	-	C	C
5	Indicator Colour	-	-	-	-	-	-	-	-	-	-	Green	Green

Dissolved oxygen (DO) is the amount of oxygen present in the water in the dissolved form. In one of the drains at Naga Cemetery, Dimapur DO level was found very low on an average of 0.2 mg/l during 2016. As per designated best use, DO should be above 4mg/l and in all the monitoring station it was recorded above the prescribed standards.

Biochemical Oxygen Demand (BOD) is a measure of the quantity of oxygen used by microorganisms (e.g., aerobic bacteria) in the oxidation of organic matter. BOD is one of the most important indicators of pollution. At the same station at Naga Cemetery, Dimapur, the highest BOD was observed at 50 mg/l. As per designated best use, BOD should be below 3mg/l however, the high levels of BOD may be attributed to the discharge of domestic wastewater mostly in untreated form and the municipal waste thrown directly into the water bodies without treatment. The relatively high levels of BOD can also be attributed to the presence of decaying organic matter. The other reason for high BOD level may be due to increased runoff from urban and agricultural fields.

The requirement of river water quality for wild life and fish propagation also requires more stringent conditions and river water quality has to maintain adequate Dissolved Oxygen (DO) content so as to support survival of fish and other aquatic life.

**4. IDENTIFIED POLLUTED RIVER STRETCHES IN THE STATE:**

Based on the water quality data for the year 2016, 2017 and 2018 which was submitted to the Central Pollution Control Board (CPCB), in Nagaland, River Dhansiri has been identified as polluted river stretches under Priority I based on high concentration of BOD, the details of the polluted rivers stretches is given below in the **Table 2** below:

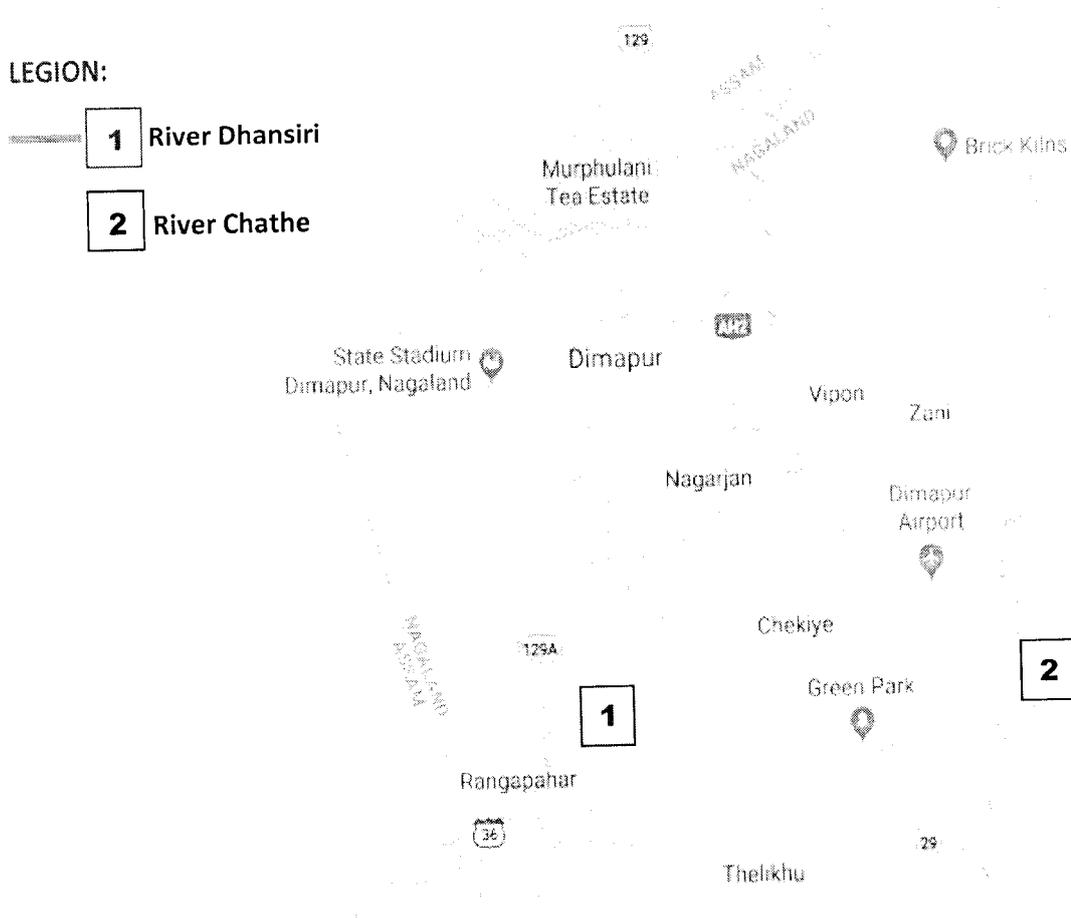
**Table 2: Details of the polluted river stretches under Priority I in the state of Nagaland**

SL. No	Name of the rivers/streams	Details	Identified polluted stretches	BOD range	Priority wise
1	Dhansiri	River Dhansiri originates from Laisang peak in Peren district and flows through Dimapur. It flows through a distance of 352 km from south to north before joining River Brahmaputra.	Polluted stretches are tributaries & drains of Dhansiri and downstream of Dimapur city.	30 mg/l	I

**5. ACTION PLAN FOR RESTORATION OF POLLUTED RIVER STRETCHES OF RIVER DHANSIRI (PRIORITY-I):**

The River Dhansiri originates from the Laisang peak in Peren district and flows through a distance of 352 km (219 miles) from south to north before joining the Brahmaputra on its south bank. It has a

total catchments area of 1,220 km<sup>2</sup> (470sq miles). For the first 37 kms from the source, the river flows in a north-western direction where after turning to the north-east it flows for about 75.635 kms upto Dimapur, thereafter the direction of flow is generally northerly upto Golaghat, Assam (*Figure 1*). The river receives almost all the western and southern drainages of Nagaland.



*Figure 1: Map showing the River Dhansiri and River Chathe and the catchment areas*

The Diphu River traverses its entire journey through the hills of Nagaland and outflows into the Dhansiri(s) 9.6 km downstream of Dimapur. The length of the river is 48 km.

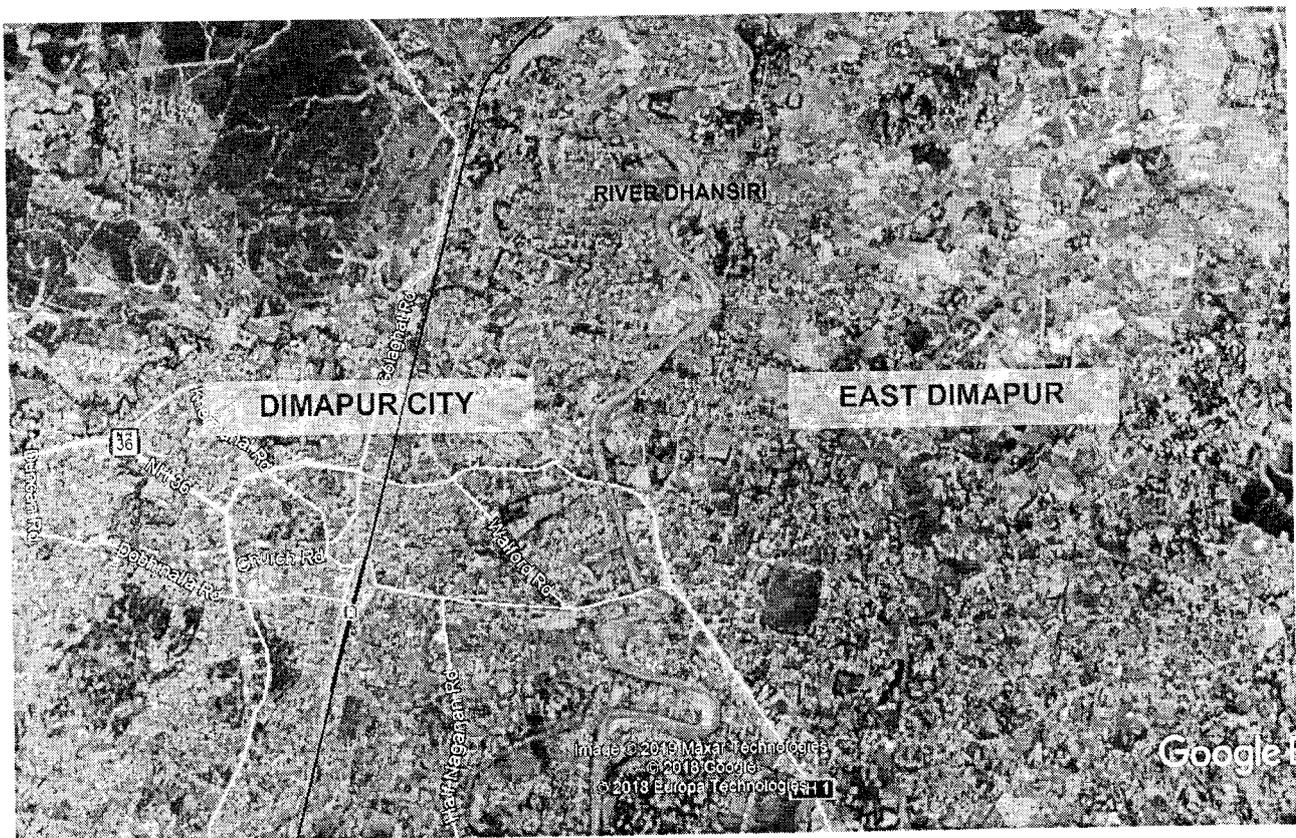
The water quality of River Dhansiri and its tributaries is being monitored at six locations on monthly basis by the Nagaland Pollution Control Board under National Water Quality Monitoring Programme (NWMP).

The Biochemical Oxygen Demand (BOD) is one of the most common measures of pollutant organic material in water. BOD indicates the amount of permissible organic matter present in water. As per the NWMP report on Dhansiri River, it states that the organic pollution measured in terms of BOD varying on different points or sources in Dimapur. There are no major polluting industries in Dimapur that discharges effluents in large quantity to cause serious contamination. Therefore, the main source of pollution is due to domestic waste and municipal sewage which is being dumped and flows into the nullahs & river. All sorts of waste and untreated sewage are released randomly into

the Dhansiri River in absence of a sewage treatment facility. It is an important aspect for revival of river Dhansiri in context of its utility as it is an important Perennial River. Under the present status, it appears that river Dhansiri may serve the purpose of drinking, bathing and irrigation and for this objective, municipal sewage generated should be treated properly.

## 6. MAJOR TOWNS AND INDUSTRIAL POCKETS IN THE CATCHMENT OF RIVER DHANSIRI

The major towns located on the catchment of River Dhansiri are Dimapur city and East Dimapur. However, the main pollution load comprises after crossing Dimapur city which has a total population of 1,22,834 (2011 census) consisting of 23 administrative wards with 35,000 households, whereas East Dimapur comprises a total population of 27,000.



*Figure 2: Map showing Dimapur city and East Dimapur along the catchment of River Dhansiri*

There are no major industrial areas along the catchment of River Dhansiri, however, isolated industries are present in the catchment areas. The water polluting industry along the catchment of River Dhansiri is the M/s Modern Abattoir (Slaughter house) which has an ETP with a total capacity of 50 KLD, apart from this there is no such big industries consuming and generating waste water.

There is **no Common Effluent Treatment Plant (CEFT) in the state of Nagaland.**

**7. MAJOR DRAINS CONTRIBUTING POLLUTION INTO RIVER DHANSIRI**

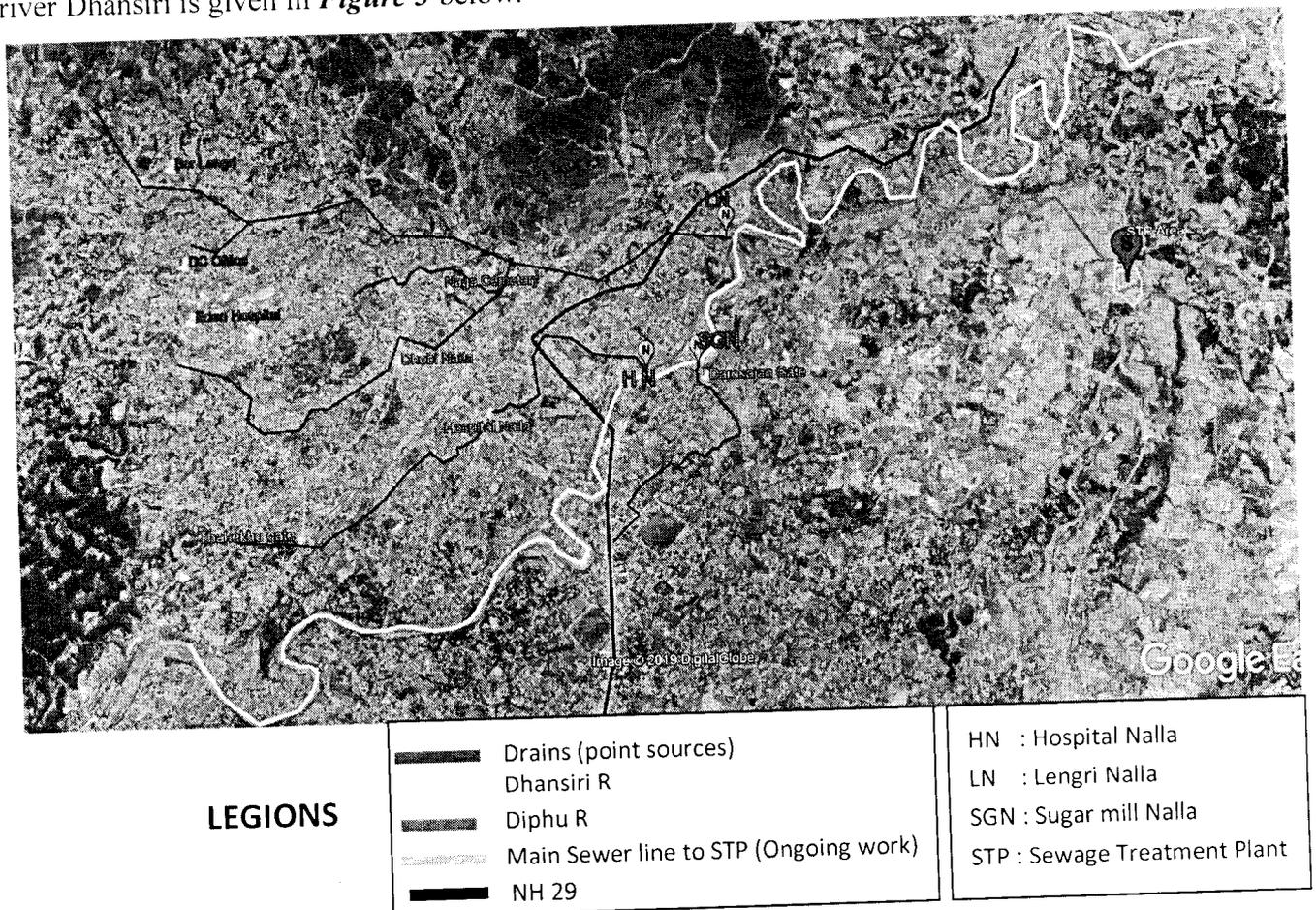
There is no underground planned sewerage system in Dimapur and similar situation exist in other towns of the state, thus sewage management is being done with natural slope in open drain system leading to valleys. Means of night soil disposal is mostly through septic tanks, two pit privies.

There are 3 major drains contributing to the pollution load in the River Dhansiri which finally merges into River Dhansiri, the details are mentioned in the **Table 3** given below.

**Table 3: Details of the major drains contributing to river Dhansiri**

Sl. No	Details of nallah & Code	Latitude	Longitude	Altitude	Name of the Nallah and Location
1	Hospital Nallah (HN)	25°54.763'N	093°44.584'E	126 m	Near Purana bazaar bridge
2	Lengri Nallah (LN)	25°55.922'N	093°44.359'E	126 m	Below bridge, near slaughter house
3	Sugarmill Nallah(SGN)	25°55.194'N	093°45.036'E	133 m	Near Darogajan gate

A map showing the drains and wards/colonies contributing to pollution load and submerging into river Dhansiri is given in **Figure 3** below.



**Figure 3: Map showing the three major drains contributing to River Dhansiri and the site of the proposed STP**

The analysis report and the water quality of all the drains are shown in the **Table 4** given below:

**Table 4: Analysis reports of different parameters for the three major drains.**

Sl. No.	Parameter	Hospital Nullah (HN)	Lengri Nullah (LN)	Sugarmill Nullah (SGN)
1	Depth (cm)	23	28	27
2	Colour	Clear	Clear	Clear
3	Odour	Unpleasant	Septic	Unpleasant
4	Velocity (m/sec)	0.3	0.28	0.32
5	Water Temperature (°C)	29.6	26.8	25.4
6	Air Temperature (°C)	25.7	25	25.9
7	Dissolved Oxygen (mg/l)	4	0.8	3.04
8	pH	7.3	6.9	7.1
9	Conductivity (µS/cm)	325	559	344
10	Biochemical Oxygen Demand (mg/l)	6.4	8.28	5.02
11	Nitrate- Nitrogen (mg/l)	0.7	0.8	0.7
12	Turbidity (NTU)	46	15.65	9.63
13	Phenolphthalein Alkalinity (mg/l)	0	0	0
14	Total Alkalinity (mg/l)	238	384	232
15	Chemical Oxygen Demand (mg/l)	92	63	89
16	Ammonia- Nitrogen (mg/l)	3.2	3.23	1.97
17	Total Hardness (mg/l)	84	88	108
18	Calcium Hardness (mg/l)	40	70	72
19	Magnesium Hardness (mg/l)	10.37	4.39	8.78
20	Total Dissolved Solids (ppm)	143	258	163
21	Total Suspended Solids (mg/l)	0.26	0.18	0.12
22	Phosphate (mg/l)	0.48	1.5	0.47
23	Boron (mg/l)	0.06	0.08	0.07
24	Potassium (mg/l)	7.6	11.7	17.1
25	Fluoride (mg/l)	0.07	0.08	0.06

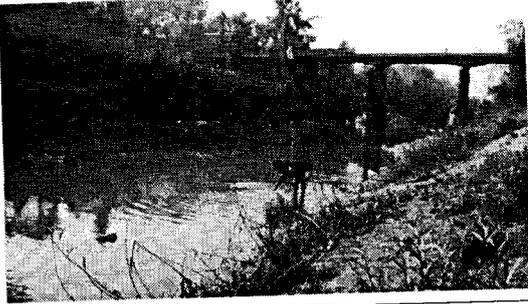
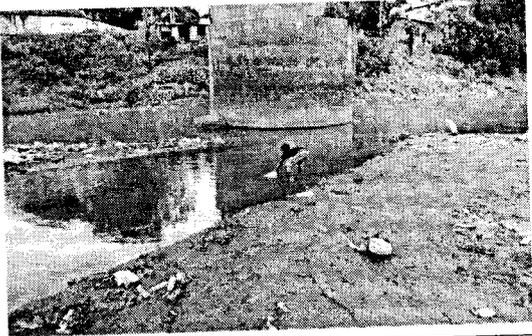
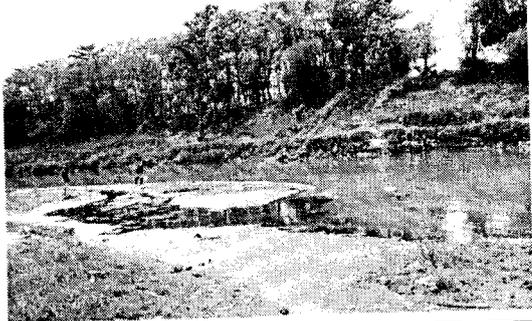
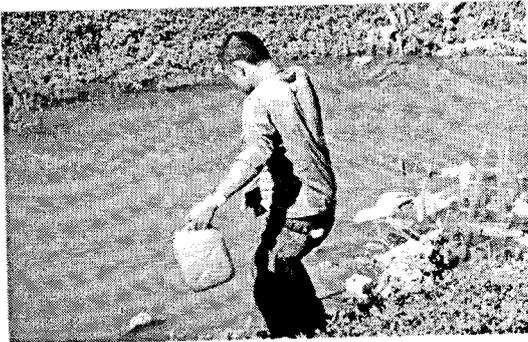
The discharge from the 3 major drains of River Dhansiri is given in **Table 5** below:

Sl. No.	Drains	Discharge (m <sup>3</sup> /s)	
		Peak discharge	Lean discharge
1	Hospital Nullah (HN)	0.035	0.02
2	Lengri Nullah (LN)	0.089	0.06
3	Sugarmill Nullah (SGN)	0.05	0.025

### 8. NATIONAL WATER QUALITY MONITORING PROGRAMME (NWMP) ALONG THE RIVER DHANSIRI

In order to assess the water quality in the state, the Nagaland Pollution Control Board in collaboration with the Central Pollution Control Board under the National Water Quality Monitoring Programme (NWMP) monitors 6 (six) stations in the river Dhansiri, which are monitored on a monthly basis. Groundwater quality from 10 stations is monitored in Dimapur on a half yearly basis. The NWMP locations with coordinates are given in the **Table 6** below:

Table 6: Water Monitoring Stations at River Dhansiri and its tributaries:

District	Latitude & Longitude	Monitoring Location	Photos
Dimapur	25°53.21' N 93°44.15' E	Full Nagarjan, Dimapur	
Dimapur	25°54.77' N 93°44.58' E	Bridge near Purana Bazaar, Dimapur	
Dimapur	25°55.66' N 93°44.832' E	Near check gate (Dimapur-Khatkhathi Road)	
Dimapur	25°54.22' N 93°40.90' E	Town boundary bridge (Diphu road) Dimapur	
Dimapur	25°55.28' N 93°43.49' E	Nuton Bosti, (Naga Cemetery) Dimapur, Nagaland	

Dimapur 25°557.11' N Nagaland - Assam border,  
93°45.46' E Dimapur, Nagaland



Biochemical Oxygen Demand (BOD) is one of the most common measures of pollutant organic material in water. BOD indicates the amount of permissible organic matter present in water. As per the National Water Quality Monitoring Programme report on Dhansiri River, it states that the organic pollution measured in terms of bio-chemical oxygen demand (BOD) varying on different points or sources in Dimapur. There are no major polluting industries in Dimapur that discharges effluents in large quantity to cause serious contamination. Therefore, the main source of pollution is due to domestic waste and municipal sewage which is being dumped and flows into the nullahs & river. All sorts of waste and untreated sewage are released randomly into the Dhansiri River in absence of a sewage treatment facility. The details of the River Dhansiri are as follows:

**Table 7: Details of River Dhansiri**

Name of the rivers/streams	Details	Identified polluted stretches	Priority wise
Dhansiri (Nagaland)	River Dhansiri originates from Laisang peak in Peren district and flows through Dimapur. It flows through a distance of 352 km from south to north before joining River Brahmaputra.	Polluted stretches are tributaries & drains of Dhansiri and downstream of Dimapur city.	I

Comparison of the Annual Average value of DO and BOD in the Upstream and Downstream of River Dhansiri for the year 2016 to 2019 is given in the **Table 8** below:

**Table 8: Upstream and Downstream value of River Dhansiri for the year 2016 to 2019.**

Sl. No.	Year	Parameter of annual average value	River Dhansiri	
			Upstream (Full Nagarjan-1796)	Downstream (Nagaland-Assam Border-1928)
1	2016	Dissolved Oxygen (mg/l)	4.26	3.38
		Biochemical Oxygen Demand (mg/l)	3.5	8
2	2017	Dissolved Oxygen (mg/l)	4.77	4.46
		Biochemical Oxygen Demand (mg/l)	3.39	5.15
3	2018	Dissolved Oxygen (mg/l)	5.83	5.66
		Biochemical Oxygen Demand (mg/l)	2.15	3.87
4	2019 (January to June)	Dissolved Oxygen (mg/l)	5.63	5.51
		Biochemical Oxygen Demand (mg/l)	1.83	3.38

## 9. LATEST WATER QUALITY CHARACTERISTICS OF RIVER DHANSIRI

In order to assess the water quality in the state, the Nagaland Pollution Control Board in collaboration with the Central Pollution Control Board under the National Water Quality Monitoring Programme (NWMP) monitors 28 (twenty eight) stations in Nagaland. Four major rivers namely Dhansiri and Chathe at Dimapur, Dzu at Kohima and Milak at Mokokchung are monitored on monthly basis. Groundwater quality sources are monitored from 10 stations on half yearly basis.

The water quality monitoring data have been analysed with respect to indicator of the Biochemical Oxygen Demand (BOD). The BOD measures the oxygen consumed by microorganisms in the oxidation of organic matter under specified incubation period. At the Station 1800, Naga Cemetery in Dimapur the highest BOD has reported at 6.72 mg/l. As stated by the designated best use, BOD should be below 3mg/l however, the discharge of domestic wastewater/sewage mostly in untreated form and the municipal waste thrown directly into the water bodies/nullahs/drains has been identified as prime source for this contaminates. The other reason for high BOD level may be due to increased runoff from urban and agricultural fields.

The Dissolved Oxygen (DO) is the amount of oxygen present in the water in the dissolved form. In the same nullah/drains at Naga Cemetery, Dimapur the DO level was found low on an average of 2.2 mg/l during 2018. As per designated best use, DO should be above 4mg/l and in all the monitoring station it was recorded above the prescribed standards.

The water analysis data for all the stations along the river Dhansiri for the year 2018 and 2019 (Jan-June) has been shown in the Tables 9 (a) & (b) given below:

**Table 9 (a): Water Analysis Report showing the average values of different parameters during the year 2018 for River Dhansiri is given below:**

Sl. No.	PARAMETERS	STATION CODE					
		1796	1797	1798	1799	1800	1928
1	Dissolved Oxygen (mg/l)	5.83	5.63	5.82	5.70	2.28	5.66
2	pH	7.4	7.32	7.4	7.25	6.8	7.35
3	Conductivity ( $\mu$ S/cm)	155.5	195.6	183.1	144.2	212.9	166.8
4	BOD (mg/l)	2.15	2.88	3.25	3.04	6.72	3.87
5	Nitrate- Nitrogen (mg/l)	0.60	0.67	0.56	0.50	0.7	0.56
6	Turbidity (NTU)	156.6	130.8	138.6	89.8	70.1	99.8
7	Phenolphthalein Alkalinity (mg/l)	0.83	0.83	0.5	0	0	0.16
8	Total Alkalinity (mg/l)	77	83.5	78.3	71.4	87.5	74.5
9	Chloride (mg/l)	8.1	16.4	8.5	7.4	17.3	10.6
10	Chemical Oxygen Demand (mg/l)	23.8	32.1	28	38.5	41.3	24.3
11	Ammonia Nitrogen (mg/l)	0.20	0.45	0.41	0.18	2.6	0.5
12	Total Hardness (mg/l)	76.6	89.5	80.6	63.6	71.5	72.6

Sl. No.	PARAMETERS	STATION CODE					
		1796	1797	1798	1799	1800	1928
13	Calcium Hardness (mg/l)	36.6	37.1	39.2	33.1	40.6	33.3
14	Magnesium Hardness (mg/l)	9.7	12.7	10.1	7.4	7.5	9.8
15	Sulphate (mg/l)	28.4	32.8	32.5	29.9	24.3	32.4
16	Total Dissolved Solids (mg/l)	77	96	90	71.5	100.3	81.8
17	Total Suspended Solids(mg/l)	0	0	0	0.14	0.19	0.22
18	Phosphate (mg/l)	0.47	0.61	1	0.25	0.73	0.36
19	Boron (mg/l)	0.08	0.04	0.05	0.06	0.07	0.07
20	Potassium (mg/l)	5.6	6.5	5.5	5.7	8.6	5.04
21	Fluoride (mg/l)	0.19	0.21	0.19	0.16	0.16	0.15
22	Arsenic (mg/l)	0	0	0	0	0	0
23	Cadmium (mg/l)	0.12	0.11	0.09	0.33	0.33	0.09
24	Copper (mg/l)	0.13	0.16	0.04	0.31	0.08	0.08
25	Lead (mg/l)	0.004	0.003	0.004	0.002	0.005	0.007
26	Nickel	0.03	0.05	0.02	0.03	0.57	0.06
27	Zinc (mg/l)	1.11	1.18	0.84	0.96	0.98	1.29
28	Iron (mg/l)	0.41	0.29	0.35	1.75	1.39	0.37
<b>BIO- MONITORING</b>							
29	Saprobic Score	-	-	-	-	-	5.8
30	Diversity Score	-	-	-	-	-	0.62
31	Water Quality	-	-	-	-	-	Moderate
32	Water Quality Class	-	-	-	-	-	C
33	Indicator Colour	-	-	-	-	-	Green

**Table 9 (b): Water Analysis Report showing Average Value of different parameters during the year 2019 (Jan-June) is given below:**

Sl. No.	PARAMETERS	STATION CODE					
		1796	1797	1798	1799	1800	1928
1	Dissolved Oxygen (mg/l)	5.64	5.68	5.67	5.77	<b>0.84</b>	5.51
2	pH	7.99	7.46	7.6	7.6	7.06	7.48
3	Conductivity ( $\mu$ S/cm)	208	271	227	181	305	232
4	BOD (mg/l)	1.83	2.5	<b>3.13</b>	1.84	<b>10.16</b>	<b>3.38</b>
5	Nitrate- Nitrogen (mg/l)	0.51	0.71	0.7	0.65	0.9	0.65
6	Turbidity (NTU)	28.30	22.00	26.37	63.11	11.28	27.87
7	Phenolphthalein Alkalinity (mg/l)	1.33	1.33	0.66	0	0	1.33
8	Total Alkalinity (mg/l)	109	148	115	120.3	162.1	113.3
9	Chloride (mg/l)	7.91	7.58	9.28	5.4	23.01	12.3
10	Chemical Oxygen Demand (mg/l)	71.5	55.66	40	26.33	74	47.83
11	Ammonia Nitrogen (mg/l)	0.16	1.45	0.60	0.14	2.99	1.16
12	Total Hardness (mg/l)	83	97	85	81.33	77.66	85.66
13	Calcium Hardness (mg/l)	40.33	47	45.66	41.33	47.33	43.66
14	Magnesium Hardness (mg/l)	10.48	12.04	9.52	9.75	7.39	10.23
15	Total Dissolved Solids (mg/l)	101.4	131.5	111.0	101	146.3	116.5
16	Total Suspended Solids(mg/l)	0.326	0.3	0.19	0.225	0.223	0.265
17	Phosphate (mg/l)	0.651	0.236	0.241	0.203	0.596	0.278
18	Boron (mg/l)	0.033	0.045	0.046	0.03	0.05	0.038
19	Potassium (mg/l)	4.28	6.24	5.2	3.3	8.3	4.66
20	Fluoride (mg/l)	0.056	0.056	0.181	0.121	0.066	0.316

Sl. No.	PARAMETERS	STATION CODE					
		1796	1797	1798	1799	1800	1928
21	Arsenic (mg/l)	0	0	0	0	0	0
22	Cadmium (mg/l)	0.007	0.003	0.004	0.039	0.008	0.004
23	Copper (mg/l)	0.22	0.08	0.1	0.23	0.08	0.09
24	Lead (mg/l)	0.002	0.002	0.003	0.002	0.004	0.005
25	Chromium (mg/l)	0	0	0	0	0	0
26	Nickel	0.02	0.03	0.02	0.01	0.03	0.04
27	Zinc (mg/l)	0.25	1.33	1.6	0.1	0.23	1.75
28	Iron (mg/l)	0.47	0.17	0.12	2.59	1.44	0.34

**BIO- MONITORING**

29	Saprobic Score	-	-	-	-	-	5.3
30	Diversity Score	-	-	-	-	-	0.57
31	Water Quality	-	-	-	-	-	Moderate
32	Water Quality Class	-	-	-	-	-	C
33	Indicator Colour	-	-	-	-	-	Green

Station Code	Location	District	Type	Latitude	Longitude	Monitoring frequency
1796	Full Nagarjan	Dimapur	R	25°53.21'	93°44.15'	M
1797	Bridge near Purana Bazaar	Dimapur	R	25°54.77'	93°44.58'	M
1798	Near Check Gate (Dimapur-Khatkhathi Road)	Dimapur	R	25°55.66'	93°44.832'	M
1799	Town Boundary Bridge (Diphu Road)	Dimapur	R	25°54.22'	93°40.90'	M
1800	Nuton Bosti, (Naga Cemetery)	Dimapur	R	25°55.28'	93°43.49'	M
1928	Nagaland- Assam Border	Dimapur	R	25°557.11'	93°45.46'	M

**10. OBJECTIVE OF THE ACTION PLAN-ACHIEVABLE TARGETS:**

It is an important aspect for revival of river Dhansiri in context of its utility as it is an important Perennial River. The ultimate goal for beneficial use of river will determine the level of actions to be taken for maintaining the water quality. Under the present circumstances, it appears that river Dhansiri may serve the purpose of bathing and irrigation and for this objective, municipal sewage generated should be treated properly.

*The requirement of river water quality for wild life and fish propagation also requires more stringent conditions and river water quality has to maintain adequate Dissolved Oxygen (DO) content so as to support survival of fish and other aquatic life. Municipal sewage which flows to River Dhansiri should be treated to meet the effluent discharge stipulated under Schedule – VI of the Environment (Protection) Rules, 1986, as well as the criteria given below in the Table 10.*

Table 10: Suggested criteria for irrigation, wild life and survival of fish life:

Sl. No	Parameters	Class B (Outdoor bathing criteria)	Class 'D' Water Quality Criteria –for Propagation of Wildlife and Fish	Class 'E' Water Quality Criteria for Irrigation
1	pH	6.5 to 8.5	6.5 to 8.5	6 to 8.5
2	Dissolved Oxygen (DO)	5mg/l or more	≥ 4.0 mg/l	-
3	Sodium Absorption Ratio	-	-	≤ 26
4	Boron	-	-	≤ 26
5	Free Ammonia	-	≤ 1.2 mg/l	-
6	Electrical Conductivity at 25 ° C μmhos/cm	-	-	≤ 2250
7	BOD	3mg/l	-	-
8	Fecal coliform	500MPN/100ml	-	-

### The Basis of Proposed Action Plan for rejuvenation of polluted river Dhansiri in Nagaland:

- Analysis reports of Nagaland Pollution Control Board & Central Pollution Control Board.
- Order of the Hon'ble NGT (PB) New Delhi, titled "More river stretches are now critically polluted": CPCB (OA. 673/ 2018 in the matter of news item publish in the Hindu authored Shri. Jacob Koshy.

The National Water Quality Monitoring Programme under the Ministry of Environment and Forests and Climate Change (MoEF&CC) has listed Dhansiri river, running along the stretch of Dimapur, under the category of 'Polluted Rivers' (Priority I) in the country indicating that the water quality of Dhansiri river is degrading further beyond human consumption or even for bathing.

### 11. IDENTIFICATION OF SOURCES OF POLLUTION:

Major sources of pollution in River Dhansiri are:

- Sewage / municipal drainage from the Dimapur city.
- Improper disposal of solid waste into the drains.
- Industrial effluents from the isolated located industries.

### 12. COMPONENTS OF ACTION PLAN:

Following components have been identified for preparation of action plan for rejuvenation of river in compliance to the Hon'ble NGT Orders. The proposed action plan covers following components:

#### SOURCE CONTROL

Source control includes industrial pollution and disposal of domestic sewage as detailed below:

**12.1 Channelization, treatment, utilization and disposal of treated domestic sewage:**

- (a) Identification of towns and villages in the catchment of river Dhansiri and estimation of quantity of sewage generation.
- (b) Storm water drains now carrying sewage and sullage joining river Dhansiri and interception and diversion of sewage to STPs.
- (c) Treatment and disposal of septage and controlling open defecation.
- (d) Identification of towns and villages for installing sewerage system and sewage treatment plants.

**12.2 Waste Management:**

- (a) Collection, segregation, transportation, disposal and treatment of municipal solid wastes generated from town in accordance of provisions of the Solid Waste Management Rules, 2016.
- (b) Restriction of illegal disposal of solid waste along the river bank and flood plain zones.
- (c) Burning of solid waste should be strictly prohibited.
- (d) Construction and demolition wastes should be disposed in designated areas and no case it should be disposed into river beds or flood plain zone.

**12.3 Industrial Pollution Control:**

- (a) Inventorization of industries
- (b) Category of industry and effluent quality
- (c) Treatment of effluents, compliance with standards and mode of disposal of effluents

**12.4 Flood Plain Zone:**

- (a) Regulating activities in flood plain zone.
- (b) Management of Municipal, Plastic, Hazardous, Bio-medical and Electronic wastes.
- (c) Afforestation in the catchment and aesthetic plantation programs.
- (d) Improve irrigation practices.

**12.5 Ecological/Environmental Flow (E-Flow):**

- (a) Issues relating to E-Flow.
- (b) Irrigation practices.

**13. DETAILED GAP ANALYSIS:**

Detail gap analysis with regard to sewage, industrial effluents, waste (municipal solid waste, industrial hazardous waste, biomedical waste, plastic waste, construction and demolition waste) waste management are detailed below:

## 13.1 SEWAGE MANAGEMENT:

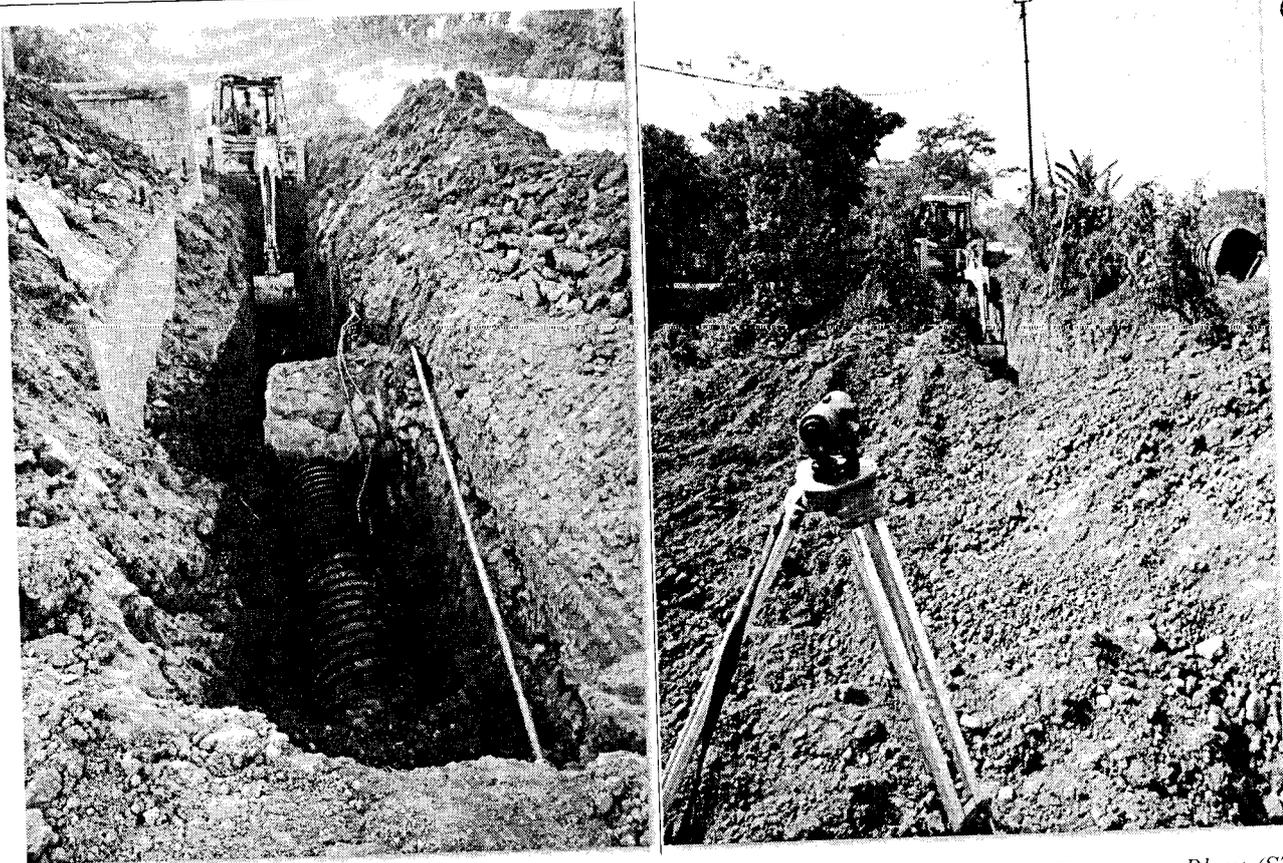
The major town attributing to River Dhansiri are Dimapur town and East Dimapur which are the main contributors of pollution load. Dimapur town has a total population of about 1,22,834 (2011 census) and the population is expected to grow 2,71,350 by 2035, whereas, East Dimapur has a population of 27,000 which is expected to grow by 59,644. Main source of water supply for this two towns are groundwater supply i.e. ring wells and bore wells. Considering, water supply is consumed at 135 LPCD, the sewage flow is considered as 80% of the net water supplied to the consumer which accounts to waste water generation of 16.19 MLD.

Presently, there are no STP in the Dimapur city, however, a project "Pollution abatement of rivers Diphu & Dhansiri" was approved and sanctioned by Ministry of Environment, Forests & Climate Change under National River Conservation Plan with 25.43 MLD capacity based on Waste Stabilization Pond Technology which will be implemented and 44% of the physical work is completed by the Public Health Engineering Department. The detail gap analysis of River Dhansiri is given in the Table 11.

Table 11: Detail GAP analysis of water consumption and generation in Dimapur city.

Sl. no	Town or City	Population (2011 census)	Expected population (in 2035)	Total Water consumption (at 135 LPCD) in MLD	Total sewage generation (80% of total water consumption) in MLD	Existing STPs details		GAP
						Total no. of STPs	Total capacity	
1	Dimapur	1, 22,834	271350	16.58	13.27	1 (under construction)	25.43 MLD	-9.24
2	East Dimapur	27,000	59644	3.65	2.92			ML
	<b>TOTAL</b>	<b>1,49,834</b>	<b>3,30,994</b>	<b>20.23</b>	<b>16.19</b>			<b>D</b>

Presently, the total sewage generation consisting of both Dimapur town and East Dimapur is about 16.19 MLD, however, the present STP which is under construction has a total capacity of 25.43 MLD, therefore, it has a **Gap analysis of -9.24 MLD**.

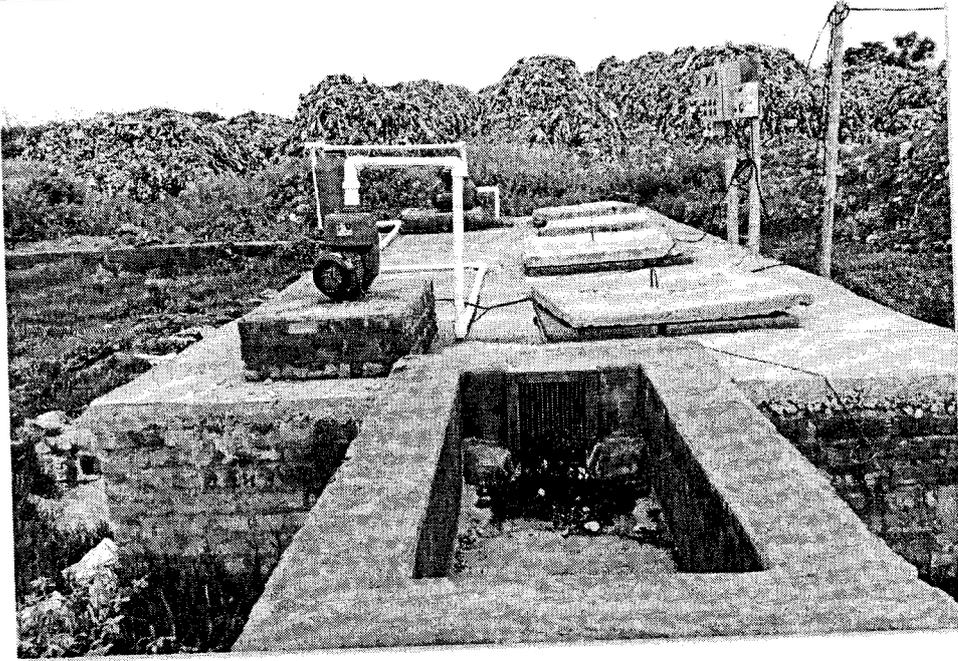


Picture 1: Installation of sewer line at Dimapur by the PHED Department for Sewage Treatment Plant (STP)

However, taking into consideration base on the projected population of 3,30,994 in the year 2035, the estimated gap analysis in sewage management is 19.25 MLD.

Septic tanks have been made by individual households for disposal of sewage and the supernatant is directly or indirectly disposed off in nearby drains which join into the 3 major drains which finally merges into River Dhansiri.

**Dimapur Municipal Council (DMC) under the AMRUT SAAP-I had constructed Septage Management Plant of 30 KLD capacity at Burma Camp, Dimapur. The Septage Management Plant is in operation.**



Picture 2: Construction of Septage Management Plant at Burma Camp, Dimapur

### 13.2 INDUSTRIAL EFFLUENT MANAGEMENT:

There is no industrial estate in the catchment of river Dhansiri, however, some of the industries are in isolation. There are **615 number of industries in Dimapur city comprising of 6 nos. of Red Category, 296 nos. of Orange Category, 294 nos. of Green Category and 19 in White Category** majorly comprising of stone crushers, brick kilns, steel fabrication, tyre retreading, mechanised furniture unit, etc (*Annexure 1*).

The total amount of water consumption by the different category of industries is about 157 KLD and the amount of industrial effluent generated is 44.3 KLD. However, in Red Category there is only 1 (one) water polluting industries i.e. M/s. Modern Abattoir Unit, Burma Camp, Dimapur which is generating waste water of about 16.27 KLD, however, it has an ETP with a capacity of 50 KLD. Whereas, in Green and Orange category the industries are mainly small scale industries and the water consumption is not high. However, there is a Gap analysis of 11 KLD and 7.3 KLD in Orange and Green category respectively.

There are four (4 Nos) Hospitals with ETPs with a total capacity of 259 KLD and generating waste water of about 156 KLD.

All the 615 numbers of industries have been issued consent under Air (Prevention & Control of Pollution) Act, 1981 and Water (Prevention & Control of Pollution) Act, 1974.

The samples of effluent from the ETPs are tested from time to time to check if the industries are complying as per the treated effluent standards. All the units operating ETPs facility are complying with the discharge norm as prescribed.

**Table 12: Details of industries with water consumption and generation:**

Sl. No	Type of industries	Number of industries	Total Water consumption	Total industrial effluent generation	Existing treatment facilities		GAP
					Total no. of ETPs	Total capacity	
1	Red	6	76 KLD	26 KLD	1	50 KLD	-24 KLD
2	Orange	296	52 KLD	11 KLD	-	-	100%
3	Green	294	29 KLD	7.3 KLD	-	-	100%
4	White	19	-	-	-	-	-

**13.3 MUNICIPAL SOLID WASTE MANAGEMENT:**

Dimapur town is the major town in the catchment area of river Dhansiri. The Dimapur Municipal Council (DMC) and East Dimapur Town Council is the authority for collection, handling and disposal of municipal solid waste. There are 23 (twenty three) wards under the Dimapur Municipal Council.

A table showing the details of the towns in the catchment area of the Dhansiri River:

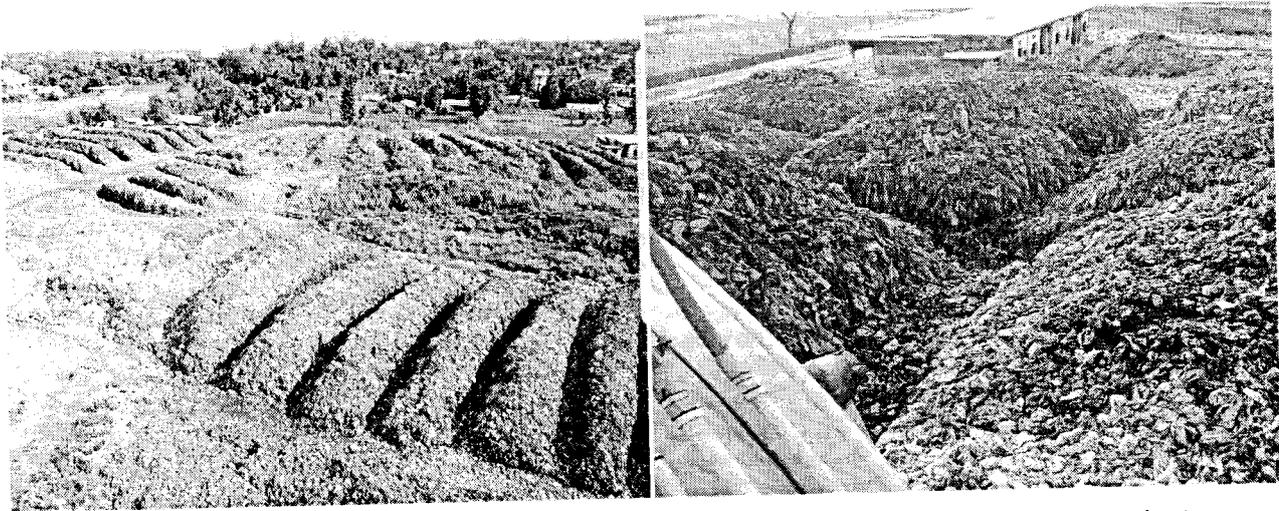
**Table 13: Detail of the two towns projecting the waste generation**

Sl. no	Town or City	Population (2011 census)	Expected population (in 2035)	Total solid waste generation (at 0.35 kg per head per day) in TPD	Existing treatment facility		GAP
					Total no. of Treatment facilities	Total capacity	
1	Dimapur	1, 22,834	2,71,350	109 TPD	Nil	-	100%
2	East Dimapur	27,000	59,644	9.4 TPD	Nil	-	100%

For managing the municipal solid waste, a Solid Waste Management Project has been proposed by the Dimapur Municipal Council (DMC) under Swachh Bharat Mission to the Ministry of Housing and Urban Affairs (MoHUA) with a total sanction of **Rs. 1,10.72 crores (One Hundred Ten Crores and Seventy Two Lakhs only)** wherein development of the scientific waste management facilities for Dimapur City will include Recycling Plant, bio-fertilizer production, particle board from waste matters and bricks will be manufactured. Only 5 to 10 % of the waste will land filled. However, financial assistance is still awaited.

The legacy waste in the DMC dumping site is in the bioremediation process is being implemented with the technical support from Dr. Ragini Jain, Founder & CEO Geetanjali

Envirotech & National Technical Expert in Swachh Bharat Mission India, SA UNEP Tech Partner, Member of ISWA.



Picture 3: Aerial view of Dimapur Municipal Council waste dump site in-process Bioremediation

Bioremediation process will be continued till the Solid Waste Management Project under Swachh Bharat Mission by Ministry of Urban Development is completed.

**The Dimapur Municipal Council (DMC) has started the process of bio-mining in the existing dumpsite after the wastes are treated and bioremediated.**

#### 13.4 INDUSTRIAL HAZARDOUS WASTE:

There is only 1 (one) industrial hazardous wastes generating industry generating hazardous waste which is given below, however, the sludge generated is taken to IOC refinery in Assam following manifest as per Hazardous Waste (Management, Handling & Transboundary Movement) Rules, 2016 as amended. *Therefore, considering the economic viability option for disposal of hazardous generated from only one industry no hazardous waste treatment, storage and disposal facility in Nagaland at this stage is required.*

Table 14: Detail of the industry handling hazardous waste:

Sl. no	Name & address of the industry	Name & quantity of hazardous chemicals being handled	Hazardous waste Generation in TPA
1	Indian Oil Corporation Limited, Dimapur Depot, Kevijau Colony, Dimapur- 797112, Nagaland	HSD-6280 KL MS- 1580 KL SKO- 2990 KL <b>Total: 10850 KL</b>	1500 kg/annum (1.5 TPA)

### 13.5 BIOMEDICAL WASTE MANAGEMENT:

There are about 75 numbers of Non bedded Clinics/Laboratory and 26 numbers of bedded Hospitals/ Nursing Homes operating in Dimapur city. **It is estimated that about 269 Kg/day biomedical waste is generated from these healthcare facilities (Annexure 2).**

Out of the 26 number of bedded hospital only 4 hospitals has ETP, the remaining 22 hospitals do not have ETPs and thus discharge the waste water directly into drains. The four (4) hospitals with ETPs facility are namely:

**Table 15: List of Hospitals with Effluent Treatment Plant.**

Sl. No	Name of the hospital	Capacity of the ETP (Litres/day)	Waste water generation
1.	M/s. Nikos Hospital & Research Centre Midland, Dimapur.	50,000 Litres/day	26,000 Litres/day
2.	M/s. Eden Medical Centre, Kashiram, Dimapur.	50,000 Litres/day	30,000 Litres/day
3.	M/s. Christian Institute of Health Sciences & Research, 4 <sup>th</sup> Mile, Dimapur.	84,000 Litres/day	54,000 Litres/day
4.	M/s Zion Hospital & Research Centre, Purana Bazar, Dimapur	75,000 Litres/day	46,000 Litres/day

*There is no Common Bio-medical Waste Treatment Facility (CBMWTF) in the state of Nagaland. Most of the HCFs are disposing their biomedical waste through deep burial, and the municipal waste generated is being collected by the Dimapur Municipal Council and East Dimapur Town Council for final disposal in the dumping yard. However, considering the environmental pollution control point of view there is a need for development of at least 1 (one) small scale CBWTF facility in the catchment of river Dhansiri.*

### 13.6 CONSTRUCTION & DEMOLITION WASTE:

Presently there is no proper inventory with regard to the generation of construction and demolition waste, same is required to be carried out to develop adequate infrastructure for management of C&D waste generating in the catchment of river Dhansiri.

The concerned departments/ULBs have to identify land for disposing off the construction and demolition waste. **However, at present the generated construction and demolition wastes are used for filling up in low lying areas.**

### 13.7 GROUNDWATER QUALITY MONITORING:

Groundwater is an important source for drinking as well as for other useful activities. About 70% of the population in Dimapur district depends on groundwater. The groundwater quality management

is performed under the provision of the Water (Prevention and Control of Pollution) Act, 1974. The National Water Quality Monitoring Programme (NWMP) facilitates evaluation of nature and extent of pollution and effectiveness of pollution control measures, water quality trends and prioritization of pollution control efforts.

In collaboration with the Central Pollution Control Board the Nagaland Pollution Control Board (NPCB) under the NWMP monitors 8 stations from Ground water source in and around Dimapur District twice a year i.e., April and October. The NPCB follows the Monitoring Protocol as recommended by the Central Pollution Control Board and the Results are referred according to the Indian Standard Drinking Water Specification (Second Revision), BIS 10500:2012. Apart from field observations, 20 Core and General Parameters (physico-chemical) and 8 parameters of Trace Metals are measured/analyzed at the NPCB Laboratory. Assessment of pesticides could not be carried out; however, it will soon monitor and assess along with the other parameters.

The details of the sampling station along with location and the annual average value of different parameters are provided in the **Tables 16 to 18** given below.

**Table 16: The list of NWMP stations monitoring the ground water quality is given below:**

Station Code	Location	District	Type	Latitude	Longitude
2898	Openwell at Doyapur Dhansiripar	Dimapur	W	25°45'41"	93°36'01.6"
2899	Borewell at Dhansiripar	Dimapur	W	25°47'11.5"	93°37'35.9"
2900	Open well at Toulazouma village	Dimapur	W	25°52'10.8"	93°44'06.1"
2901	Open well at Lungwiram village	Dimapur	W	25°52'57.7"	93°44'36.7"
2902	Borewell at Thahekhu village	Dimapur	W	25°52'00.6"	93°42'55.6"
2903	Open well at Signal Angami village	Dimapur	W	25°53'32.8"	93°42'37.6"
2904	Open well at Naga Cemetery	Dimapur	W	25°55'11.5"	93°43'29.9"
2905	Borewell at Signal Point	Dimapur	W	25°53.757'	93°43.203'

Note: W – (ring well & borewell)

**Table 17: Groundwater analysis report showing Average Value of different parameters during the year 2018 is given below:**

Sl. No	PARAMETERS	Station code								IS 10500: 2012 norms for drinking water
		2898	2899	2900	2901	2902	2903	2904	2905	
1	Dissolved Oxygen (mg/l)	-	-	-	-	-	-	-	-	-
2	pH	5.75	7	6.5	6.5	8	7.1	6.65	6.4	6.5-8.5
3	Conductivity (µS/cm)	157	251	201.5	216.5	374	781	723	794.5	-
4	Nitrate- Nitrogen (mg/l)	2.3	0.3	1.5	9.95	0.26	0.33	5.9	0.4	-
5	Turbidity (NTU)	3.6	2.8	18.1	0.9	2.9	3.5	1.8	1.5	-
6	Phenolphthalein Alkalinity (mg/l)	0	5	0	0	8.15	0	0	0	1

7	Total Alkalinity (mg/l)	20	135	44	45	208	140	105	39	-
8	Chloride (mg/l)	27.8	9.2	27	13.4	6.8	29	167	29	200
9	Chemical Oxygen Demand (mg/l)	17.2	15.2	11	7.3	13	7.4	31.2	6.6	250
10	Ammonia Nitrogen (mg/l)	0.5	0.67	.016	0.08	0.73	1.48	11.12	0.2	-
11	Total Hardness (mg/l)	40	53	63	88	89	192	130.5	151	0.5
12	Calcium Hardness (mg/l)	21	10	43	67	20	117	37.5	111	200
13	Magnesium Hardness (mg/l)	4.6	10.4	4.8	5.1	16.8	32	22.6	9.7	75
14	Sulphate (mg/l)	19	21.5	24.5	22.5	26.5	34	25.5	26	30
15	Total Dissolved Solids (mg/l)	87.1	119.5	95	105	176.5	373	242	397	-
16	Total Suspended Solids(mg/l)	0.3	0.3	0.3	0.3	0.6	0.6	0.22	1.3	500
17	Phosphate (mg/l)	0.05	0.18	0.08	0.04	0.15	0.68	0.11	0.06	-
18	Boron (mg/l)	0.02	0.02	0.03	0.09	0.05	0.05	0.07	0.22	0.5
19	Potassium (mg/l)	3	3.7	3.4	3.9	3.1	15.9	7.3	3.9	-
20	Fluoride (mg/l)	0.07	0.12	0.07	0.07	0.09	0.23	0.08	0.07	1.0
21	Arsenic (mg/l)	0	0	0	0	0	0	0	0	0.01
22	Copper (mg/l)	0.04	0.10	0.09	0.07	0.07	0.04	0.06	0.24	-
23	Lead (mg/l)	0.03	0	0.03	0	0	0.02	0.01	0.01	0.003
24	Nickel	0.03	0	0.03	0	0	0.09	0.05	0.07	0.05
25	Zinc (mg/l)	0.1	0.1	0.09	0.1	0.1	0.09	0.05	0.07	0.01
26	Iron (mg/l)	1.41	0.42	0.99	0.52	0.18	0.75	2.27	2.04	0.01
26	Iron (mg/l)	0.29	1.07	0.40	0.13	0.38	0.62	1.14	3.26	0.02

Some of the following parameters reported to be below/beyond the Acceptable Limit are discussed below.

pH is basically the measurement of the concentration of hydrogen ions in water, in terms of acidity or alkalinity. Dissolved minerals from rocks and soil contribute to pH, but reaction of dissolved carbon dioxide with water is a major determinant. The pH of 5.75 and 6.4 from Station 2898 and 2905 are recorded to be below the Acceptable Limit.

Turbidity is the measure of the degree to which water loses its transparency due to the presence of suspended particles that include soil, algae, plankton, microbes and other substances. 0.9NTU at Station 2901 was the only station recorded to be Acceptable. Higher levels are associated with higher levels of disease-causing micro-organisms such as viruses, parasites and some bacteria. High turbidity also increases temperature which may lower dissolved oxygen levels in the water. The suspended particle can also help the attachment of heavy metals and many other toxic organic compounds and pesticides.

Alkalinity is the measure of the buffering capacity of a system or the ability of a solution to neutralize acids. It is greatly influenced by the underlying bedrock type and soil. High values may be caused by leaching of sewage and livestock waste, while very low readings may be due to heavy

rains or other acidic contamination. Abrupt changes may signify pollution. The highest alkalinity was observed at Station 2902 with a value of 208mg/l.

At Station 2904 the Ammonia Nitrogen was measured to be the highest with an average value of 11.12mg/l. The major sources of Phosphate contamination are from wastewater from faulty septic systems, livestock confinement and fertilizer runoff/agricultural drainage etc. Slight increase in Phosphate may cause numerous undesirable effects such as accelerated plant growth, algae blooms, and low dissolved oxygen levels. Phosphate levels below 0.03mg/l are generally considered to be unpolluted whereas all the stations reported to be above the limit.

Iron in one of the most common elements found on the earth's crust and nearly all water contains some measurable amount of iron. The highest Iron value of 3.26mg/l was detected at Station 2905. The lowest value of Copper has reported at 0.04mg/l from stations 2898 and 2903. The reports of the slightly presence of toxic substances such as Cadmium, Lead and Nickel also contributes to the contaminant for pollution of groundwater in Dimapur District.

**Table 18: Groundwater analysis report showing Average Value of different parameters during the year 2019 (Jan to June) is given below:**

Sl No	PARAMETERS	STATION CODE								IS 10500: 2012 norms for drinking water
		2898	2899	2900	2901	2902	2903	2904	2905	
1	Dissolved Oxygen (mg/l)	-	-	-	-	-	-	-	-	-
2	pH	5.9	6.8	6.09	6.7	7.3	6.6	6.47	6.55	6.5-8.5
3	Conductivity ( $\mu$ S/cm)	170	254	201	461	382	175	858	780	-
4	BOD (mg/l)	-	-	-	-	-	-	-	-	-
5	Nitrate- Nitrogen (mg/l)	2.1	0.7	1.1	16.7	0.4	0.5	12.8	0.5	-
6	Turbidity (NTU)	6.89	2.58	8.39	33.8	3.79	19.93	1.17	2.79	1
7	Phenolphthalein Alkalinity (mg/l)	0	0	8	0	0	20	0	0	-
8	Total Alkalinity (mg/l)	24	144	56	104	112	104	72	36	200
9	Chloride (mg/l)	28.6	3.5	29	4.7	5.5	6.5	6.7	2.6	250
10	Chemical Oxygen Demand (mg/l)	44	24	32	16	37	12	22	19	-
11	Ammonia Nitrogen (mg/l)	0.3	0.62	0.02	0.03	0.75	0.13	0.22	0.03	0.5
12	Total Hardness (mg/l)	76	68	88	132	88	88	128	152	200
13	Calcium Hardness (mg/l)	20	8	48	112	20	44	120	96	75
14	Magnesium Hardness (mg/l)	13.66	14.64	9.76	4.88	16.59	10.73	1.95	13.66	30
15	Total Dissolved Solids (mg/l)	88	125	102	233	191	91	436	419	-
16	Total Suspended Solids(mg/l)	0.26	0.21	0.28	0.57	0.3	0.14	1.27	1.53	500

17	Phosphate (mg/l)	0.07	0.28	0.52	0.18	0.3	0.11	0.07	0.14	
18	Boron (mg/l)	0.05	0.04	0.04	0.03	0.02	0.05	0.03	0.03	<b>0.5</b>
19	Potassium (mg/l)	-	-	-	-	-	-	-	-	
20	Fluoride (mg/l)	0.06	0.23	0.19	0.09	0.28	0.31	0.21	0.32	<b>1.0</b>
21	Arsenic (mg/l)	0	0	0	0	0	0	0	0	<b>0.01</b>
22	Cadmium (mg/l)	0.049	0.079	0.012	0.164	0.014	0.001	0.039	0.033	-
23	Copper (mg/l)	0.07	0.06	0.1	0.1	0.1	0.07	0.1	0.05	<b>0.003</b>
24	Lead (mg/l)	0.01	0	0.01	0	0	0.03	0.02	0.02	<b>0.05</b>
25	Chromium (mg/l)	0	0	0	0	0	0	0	0	<b>0.01</b>
26	Nickel	0.03	0.08	0.04	0.02	0.03	0.04	0.03	0.02	<b>0.02</b>
27	Zinc (mg/l)	2.09	1.21	2.47	2.93	1.68	1.22	1.48	0.87	<b>5</b>
28	Iron (mg/l)	0.58	1.29	0.2	0.16	0.11	0.21	0.08	0.22	<b>0.3</b>

The groundwater quality in comparison with the drinking water norms IS 10500; 2012 shows that most of the parameters monitored/analyzed are within the permissible limit, however, the trace metals especially Copper, Lead, Nickel and Iron are found in some of the monitoring stations which are the main contaminants for groundwater quality in Dimapur city.

#### 14. RIVER DHANSIRI REJUVENATION PLAN:

##### 14.1 ACTION PLAN FOR MANAGEMENT OF SEWAGE:

- (a) Department of Water Resources would undertake measurement of flow of the drains formulate detailed project report (DPR) for each drain and corresponding town.
- (b) The flow in each drain should exclude monsoon flow. Further, any drain if receiving fresh water from any escape channel etc, should be examined for its diversion rather than mixing with sewage.
- (c) Sewage Treatment Plants (STP) for each town and related drains should be properly designed with the interception and diversion plan.
- (d) Sewage Treatment Plant (STP) and its design should be based on its full utilization capacity and ensuring simultaneous house connections to sewers as applicable to each drain and town.
- (e) Sewage Treatment Plan should also consider treatment and disposal of sewage from Villages including discharges from toilets constructed under Swachh Bharat Abhiyan.
- (f) Hotels/Restaurants particularly located on road-side should not dispose untreated sewage and solid waste into nearby public drain or rivers. A directions will be issued to install a captive ETP and such establishments which do not comply will be regulated and levied with fines in case of any violation.

##### 14.2 ACTION PLAN FOR MANAGEMENT OF INDUSTRIAL EFFLUENTS:

- (a). All the industries (water polluting) will be directed to have captive ETPs and ensure to compliance to effluent discharge norms.

- (b). All the water polluting industries will be directed to have online Continuous Effluent Monitoring System (OCEMS).
- (c). Industries will be directed to adopt best practices to minimize water consumption and for recycling of treat waste water.
- (d). Provision of waste water treatment system.

#### 14.3 ACTION PLAN FOR MANAGEMENT OF UTILIZATION OF TREATED SEWAGE:

Treated sewage will be utilized for irrigation or agricultural or industrial cooling or construction activities purposes once the STPs become operational in the catchment of river Dhansiri Treated water channel may also linked with irrigation network in order to reduce ground water consumption for irrigation uses.

#### 14.4 ACTION PLAN FOR MANAGEMENT OF SOLID WASTE:

- i. Implementation of Door-to-Door collection.
- ii. Source segregation as biodegradable and non-biodegradable wastes.
- iii. Identification of suitable site for setting up common waste processing and secure landfill facility.
- iv. Transportation, disposal and treatment facilities of municipal solid wastes generated from town in accordance of provisions of the Solid Waste Management Rules, 2016.
- v. Restriction illegal disposal of solid waste along the river bank and flood plain zones.
- vi. Prohibition on burning of solid wastes.
- vii. Development of integrated solid waste management facility (provision of segregation, treatment, compost, pellets making as well as sanitary landfill with leachate treatment provision in accordance with solid waste management rules, 2016 as further amendments made thereof.
- viii. Bio-mining and capping of existing municipal dumpsite in accordance with the Solid Waste Management Rules, 2016.

#### 14.5 ACTION PLAN FOR MANAGEMENT OF FLOOD PLAIN ZONE (FPZ):

Department of Water Resources should identify /demarcate Flood Plain Zone and regulate the activities. Such regulations would also cover;

- i) Plantation in Flood Plain Zone (FPZ).
- ii) Checking and removal of encroachments periodically.
- iii) Prohibition of disposal of municipal and bio-medical waste particularly in drains;
- iv) Notification of the Flood Plain Zones.

#### 14.6 ACTION PLAN FOR MANAGEMENT OF GREENERY DEVELOPMENT:

Adjacent to the banks of river Dhansiri, green coverage /parks wherever feasible will be developed by the Nagaland Forest Department and Public Health Engineering Department also under the project “Pollution abatement of rivers Diphu & Dhansiri” sanctioned by Ministry of Environment, Forests & Climate Change under National River Conservation Plan will undertake afforestations along the STP sites.

The Chief Wildlife Warden under the Department of Environment, Forests & Climate Change has declared and notified the status of community reserves forests (Privately/community owned protected areas) as on 8<sup>th</sup> May, 2019 vide letter no. CWL/GEN/391(Vol-VI)/197 Dated Dimapur the 8<sup>th</sup> May, 2019. *It has notified 10 community reserved forests in Dimapur district which falls in the upstream and catchment area of the River Dhansiri with a total area of 23.025 Sq. km, it is unique as only few parts of the country where the privately/community owned protected area is more as compared to the Government Owned Protected Area.* The Nagaland Forest Department along with the communities/tribes and allied departments of the state, have worked together, by involving hunting communities to bring about a conservation story in the remotest parts of the state, along the Indo-Myanmar border, through Community Reserve projects.

#### 14.7 ACTION PLAN FOR MANAGEMENT OF ENVIRONMENTAL FLOW (E-FLOW):

The river Dhansiri carry natural waters during the monsoon and even during the lean season as the two rivers are perennial rivers. Provisions of roof top rain water harvesting in Govt. building, commercial buildings, hotels and Houses will be emphasized. **Restoration of old lakes for enhancement in storage capacity and as well as creation of artificial lakes or ponds.**

### 15. MONITORING OF THE ACTION PLANS:

In compliance with the order passed on OA No. 673/2018 dated 20.09.2018 by the Hon’ble National Green Tribunal (NGT) Principal Bench, New Delhi, “River Rejuvenation Committee” was constituted by the Governor of Nagaland, vide Notification No. FOR/NPCB-27/6/18, dated 2<sup>nd</sup> November, 2018.

The proposed Action Plans will be monitored by the River Rejuvenation Committee (RRC) which has been constituted by Government of Nagaland. CPCB experts also shall be invited for the RRC review meetings for taking feedback and suggestions.

The Committee shall function under the supervision and coordination of Principal Secretary, Environment, Forests and Climate Change. Action Plan for River Rejuvenation of polluted river stretches shall be prepared and monitored by the Committee.

**River Rejuvenation Committee:**

- |   |   |                  |
|---|---|------------------|
| 1. Director, Urban Development Department               | - | Member           |
| 2. Director, Industries & Commerce                      | - | Member           |
| 3. Chief Engineer, Public Health Engineering Department | - | Member           |
| 4. APCCF (Environment, Forests & Climate Change)        | - | Member           |
| 5. Member Secretary, Nagaland Pollution Control Board   | - | Member Secretary |

The River Rejuvenation Committee shall hold meeting every quarterly to review the process of works carried out.

**16. ACTION PLAN****Short Term and Long Term Action and the Identified Authorities for initiating actions and the time limits for ensuring compliance**

Short term and long term action plans and the implementing agencies responsible for execution of the action plans and the time limits are given in the table below.

Action plans with time lines and executing authorities with the budget estimates are given in the following Table below:

Sl. No	Action Plan for rejuvenation of River Dhansiri	Execution Agency/ Department	Time Target	Amount (in rupees)	Remarks
<b>SEWAGE MANAGEMENT</b>					
1	(i) Sewage Treatment Plant of 25.43 MLD capacity based on Waste Stabilization Pond Technology.	Public Health Engineering Department	30 <sup>th</sup> June, 2021	82.80 Crores Sanctioned by MoEF&CC	Ongoing project The project "Pollution abatement of rivers Diphu & Dhansiri" was approved and sanctioned by Ministry of Environment, Forests & Climate Change under National River Conservation Plan with sharing pattern 70 (Centre) : 30 (State) Pollution Abatement Project 44.91% of physical work in progress. (Annexure I) An appeal for extension of time for completing the project
	(ii) Gravity sewer (300 mm to 1200 mm dia) Interception & Diversion works: Interception of major drains of Dimapur Town (Lengri Nalla, Hospital Nalla, Dhobinalla and Sugar Mill Nalla) contributing to Dhansiri River pollution and diverting it to the STP.				

Sl. No	Action Plan for rejuvenation of River Dhansiri	Execution Agency/ Department	Time Target	Amount (in rupees)	Remarks
	(iii) Laboratories & equipments for monitoring the quality of effluent of STPs.				is made to MoEF & CC till 30 <sup>th</sup> June, 2021.
	(iv) STPs with a provision electromagnetic flow meters at inflow and outflow of STPs.	PHED	30 <sup>th</sup> June, 2021	7 lakhs	Will propose the amount to National River Conservation Directorate (NRCD) in MoEF&CC
	(v) Installation of OCEMS at outlet of STPs and uploading of data in the NPCB and CPCB servers.	PHED	30 <sup>th</sup> June, 2021	2.5 crore	
	(vi) STP with a provision of digester or drum filters for utilizing sludge cake as resource recovery or as manure.	PHED	30 <sup>th</sup> June, 2021	5 crore	
2	Utilisation of treated waste water 1. Irrigating the nearby plantation areas within the vicinity of Sewage Treatment Plant. 2. Use of treated waste water for construction of infrastructure projects or building activity. 3. Flushing/cleaning of sewage drains. 4. Fire brigades. 5. Flushing purposes in the upcoming buildings especially Govt. building, etc. 6. Operation and maintenance of STP	1. Public Health Engineering Department 2. Dimapur Municipal Council 3. Nagaland Fire and Emergency Services Department	30 <sup>th</sup> June, 2021	-	
3	Construction of Septage Management at Dimapur	Dimapur Municipal Council	Completed	-	Dimapur Municipal Council had constructed Septage

Sl. No	Action Plan for rejuvenation of River Dhansiri	Execution Agency/ Department	Time Target	Amount (in rupees)	Remarks
					Management Plant of 30 KLD capacity at Burma Camp, Dimapur under AMRUT SAAP-I. The Septage Management Plant is in operation.
<b>INDUSTRIAL EFFLUENT MANAGEMENT</b>					
1	Action against the identified industries in operation without Consent under Water & Air Act/Authorization under Hazardous and Other Wastes (Management & Trans-boundary Movement) Rules, 2016.	NPCB	31 <sup>st</sup> March, 2020	Department own Budget	Action as per relevant provisions of Water Act, 1974 and Air Act, 1981 shall be taken against any unit found operating without mandatory consent of the NPCB.
2	Inventorization of the water polluting industries in the catchment of River Dhansiri covering assessment on aspects relating to Effluent Generation, ETP Capacities and final mode of effluent discharge	NPCB	31 <sup>st</sup> Dec, 2019		
3	Action against the industries who have not installed ETPs or existing ETPs but not operating or treated effluent is not meeting the prescribed standards.	NPCB	31 <sup>st</sup> Dec, 2019	Department own Budget	Directions will be issued to Hotels and car servicing centres to set up an ETP or settling tanks for trapping the oil and grease.
3	Estimation of industrial effluent generation and setting up of Common Effluent Treatment Plant wherever feasible.	Dept. of Industries and NPCB	31 <sup>st</sup> Dec, 2019	-	A detail inventory and study will be carried out in the catchment of the River Dhansiri to ascertain the effluent generation and thereafter a proposal will be initiated to the MoEF&CC for setting up of Common Effluent Treatment

Sl. No	Action Plan for rejuvenation of River Dhansiri	Execution Agency/ Department	Time Target	Amount (in rupees)	Remarks
					Plant.
4	Prohibition of Burning of any kind of waste including agro residue.	District Administration, and DMC	Ongoing	-	Notification already circulated and published in the local dailies.
<b>SOLID WASTE MANAGEMENT:</b>					
1	Solid Waste Management Project. A Solid Waste Management Project has been proposed under Swachh Bharat Mission to the Ministry of Housing and Urban Affairs. Development of the scientific waste management facilities for Dimapur City will include Recycling Plant, bio-fertilizer production, particle board from waste matters and bricks will be manufactured. Only 5 to 10 % of the waste will land filled.	Dimapur Municipal Council	31 <sup>st</sup> June 2021	110.72 Crores	Approval from the Ministry of Housing and Urban Affairs still awaited.
2	Providing two waste bins for segregation of dry and wet waste	Dimapur Municipal Council	Completed	-	Dimapur Municipal Council has provided 70428 nos. of two waste bins (green & blue) to every household for segregation of dry and wet waste at source in 2018 under Swachh Bharat Mission.
3	Bioremediation of Dimapur Municipal Council existing dumpsite	Dimapur Municipal Council	On-going	-	Bioremediation process is implemented by the DMC with the technical support from Dr. Ragini Jain. Founder & CEO Geetanjali Envirotech & National Technical Expert in Swachh Bharat Mission India, SA UNEP Tech

Sl. No	Action Plan for rejuvenation of River Dhansiri	Execution Agency/ Department	Time Target	Amount (in rupees)	Remarks
					Partner, Member of ISWA. Bioremediation process will be continued till the Solid Waste Management Project under Swachh Bharat Mission by Ministry of Urban Development is completed.
<b>BIO-MEDICAL WASTE MANAGEMENT:</b>					
1	Development of one Common Biomedical Waste Treatment and Disposal Facility	Dimapur Municipal Council	31 <sup>st</sup> March 2021	-	Land for setting up of CBWTF is available at Bamunpukhuri. DMC had submitted the DPR to the Government of Nagaland.
2	Setting up of ETPs in all the bedded hospitals including the Government and private hospitals.	NPCB	31 <sup>st</sup> Dec, 2019	-	Will give directions to all the HCFs to set up an ETP.
<b>E-WASTE AND PLASTIC WASTE ASSESSMENT:</b>					
1	Inventory (Assessment, quantification and characterization) on E-Waste & Plastic waste	Nagaland Pollution Control Board	Completed	-	NPCB has completed inventory, assessment, quantification and characterization of E-Waste & Plastic waste in 2018.
2	Development of collection and dismantling centres	Dimapur Municipal Council	Ongoing	-	A one day interactive and awareness programme on handling and management of wastes was organized by NPCB on the 28 <sup>th</sup> Feb. 2019 targeting the Material Recovery Facilities/Scrap dealers on how it can be managed most efficiently with least harm to the environment.

Sl. No	Action Plan for rejuvenation of River Dhansiri	Execution Agency/ Department	Time Target	Amount (in rupees)	Remarks
<b>PUBLIC SANITATION:</b>					
1	Construction of community toilets at vulnerable areas.	Dimapur Municipal Council	Completed	-	Dimapur Municipal Council under Swachh Bharat Mission (Urban) constructed 40 nos. of Community toilet in Dimapur.
2	Low Cost Sanitation: a) Community latrines with 12 seater capacity (17 Nos) b) Public lavatory with 3 seater capacity (16 nos)	PHED	30 <sup>th</sup> June, 2021	-	It will covers in the project "Pollution abatement of rivers Diphu & Dhansiri" which was approved and sanctioned by Ministry of Environment, Forests & Climate Change under National River Conservation Plan
<b>GROUND WATER AND DRAINS MANAGEMENT:</b>					
1	Groundwater quality monitoring at salient points in the catchment of river Dhansiri and DMC dumping site during summer (May-June) and winter (December-January).	NPCB	31 <sup>st</sup> Dec, 2019	-	Along with the existing 8 NWMP Ground water stations an additional Groundwater monitoring will be done in Summer and winter month.
2	Aspects such as ground water extraction, adopting ground water charging.	Water Resources Department.	Ongoing programmes	-	Water Resources department under the State Plan carry out activity wherein wells are dug for ground water extraction.  Sensitization programme for ground water charging will also be imparted.
3	Adopting Good irrigation practices	Water Resources Department.	Ongoing programmes	-	Water Resources Department has been carrying out activities under the Minor Irrigation Schemes wherein diversion weir, protection wall

Sl. No	Action Plan for rejuvenation of River Dhansiri	Execution Agency/ Department	Time Target	Amount (in rupees)	Remarks
					and line & unlined canals are been constructed under the Ministry of water Resources.
<b>FLOOD PLAIN ZONES:</b>					
1	Prohibition on illegal disposal of waste and removal of encroachment from river banks.	District Administration & DMC	Continuous activity	-	Direction in this regard on illegal disposal of waste in the drainage has been issued by DMC in the local dailies on 13.03.2019. It further authorized the colony councils/GBs to implement the order and also impose fine against the defaulters in their respective colonies.  It will be monitored regularly.
<b>ENVIRONMENTAL FLOW (E-Flow):</b>					
1	Provisions of roof top rain water harvesting in Govt. building, commercial buildings, hotels wherever feasible.	District Administration	31 <sup>st</sup> Dec, 2019	-	Directions to be issued by the Government of Nagaland.
2	Water shed management in the catchment wherever feasible (restoration of old lakes for enhancement in storage capacity and as well as creation of artificial lakes or ponds)	PHED and Water Resources Department	-	-	A project proposal, "Conservation and Ecological development of Padampukhuri lake" has been submitted to the MoEF&CC by the PHED Department.
<b>GREEN DEVELOPMENT:</b>					
1	Plantation on both sides of the river and in the private land and individual land owner	Department of Environment, Forests & Climate Change	-	-	Development of Community Reserves in the upstream and catchment areas of River Dhansiri.
2	Afforestations along the	PHED	30 <sup>th</sup> June,	-	It will covers in the

Sl. No	Action Plan for rejuvenation of River Dhansiri	Execution Agency/ Department	Time Target	Amount (in rupees)	Remarks
	STPs.		2021		project "Pollution abatement of rivers Diphu & Dhansiri" which was approved and sanctioned by MoEF&CC under National River Conservation Plan
<b>CLEANING &amp; AWARENESS ACTIVITIES</b>					
1	Awareness and cleaning of clogged drains	Dimapur Municipal Council	31 <sup>st</sup> Dec. 2019	-	Cleaning of clogged drains and awareness. Will Seek financial assistance from CPCB under Environmental Compensation.
2	Public awareness programme through add on media	PHED	30 <sup>th</sup> June, 2021	-	It will covers in the project "Pollution abatement of rivers Diphu & Dhansiri" which was approved and sanctioned by Ministry of Environment, Forests & Climate Change under National River Conservation Plan
<b>MISCELLANOUS</b>					
1	Regular monitoring and sampling of water quality of River Dhansiri and various drains on monthly basis.	NPCB	Monthly	-	Ongoing under the NWMP
2	Impact of water pollution on health of public and awareness thereof.	State Health Department	31 <sup>st</sup> Dec, 2019	-	The Department of Health & Family Welfare will conduct awareness and health camps.
3	Prohibition of disposal of Municipal, Plastic and Bio-medical Waste particularly in drains	District Administration and DMC	31 <sup>st</sup> Dec, 2019	-	The DMC had already issued notification to the wards/colonies.
4	Maintaining E-Flows	PHED	30 <sup>th</sup> June,	-	E-flow will be

Sl. No	Action Plan for rejuvenation of River Dhansiri	Execution Agency/ Department	Time Target	Amount (in rupees)	Remarks
			2021		assessed after completion of STP and evaluation of the discharge during the lean season.
5	Development of bio-diversity parks	Department of Environment, Forests & CC	-	-	The Chief Wildlife Warden under the Department of Environment, Forests & CC has declared and notified the status of 10 community reserved forests (privately/community owned protected area) in Dimapur district which falls in the upstream and catchment area of the River Dhansiri with a total area of 23.025 Sq. km.
<b>GRAND TOTAL AMOUNT</b>				-	-

ANNEXURE R/8

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18.09.2019

F.No.A-14011/1/2019-WQM-I 6656-6658

To

1. Shri R M Bhardwaj  
Consultant, National Mission for Clean Ganga  
MoWR, RD & CR  
1st Floor, Major Dhyan Chand National Stadium  
India Gate, New Delhi - 110002
2. Shri Lalit Bokolia  
Additional Director,  
National River Conservation Directorate,  
Ministry of Environment Forest & Climate Change,  
Pt. Deen Dayal Antodaya Bhawan,  
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3. Shri Rohit Kakkad  
Deputy Advisor (CPHEEO)  
Ministry of Housing and Urban Affairs  
Maulana Azad Road, Rajpath Road Area,  
Central Secretariat, New Delhi-110001
4. Dr. A. B. Akolkar, (Member) Former Member  
Secretary, CPCB, Delhi
5. Sh. B. Vinod Babu, AD & DH, IT Division (Member)

**Sub: Minutes of the 8<sup>th</sup> meeting of Task Team held in CPCB on 6.09.2019 in compliance to Hon'ble NGT (PB) New Delhi orders dated 20.09.2018, 19.12.2018 & 08.04.2019 in O. A No. 673/2018**

Sir,

Please find enclosed minutes of 8<sup>th</sup> meeting of the Task Team held on 6<sup>th</sup> September, 2019 in CPCB, Delhi, for kind information please.

Yours faithfully,



(A. Sudhakar)  
Division Head, WQM-1

o/c

Encl: As above

Copy to:

1. PS to 'MS' : For kind information of 'MS' please
2. Law Officer (Mrs. Urmila Thakur), Law Section, CPCB : For information, please

कन्द्रीय प्रदूषण नियंत्रण  
निर्गत 19/9/19  
दिनांक 19/9/19

(A. Sudhakar)

o/c



## Central Pollution Control Board

(Ministry of Environment, Forest & Climate Change, Govt. of India)  
Parivesh Bhawan, East Arjun Nagar,  
Delhi – 110032

\*\*\*\*\*

**Minutes of 8<sup>th</sup> meeting of the Task Team held on 06.09.2019 in Committee Room, 5<sup>th</sup> Floor, CPCB, Delhi for ensuring compliance to Hon'ble NGT (PB), New Delhi orders dated 20.09.2018, 19.12.2018 and 08.04.2019 in OA No 673/2018 in the Matter of News Item Published in 'THE HINDU' Titled "More river stretches are now critically polluted: CPCB"**

Eight meeting of the Task Team was held on September, 6, 2019 in CPCB under the Chairmanship of Dr. Prashant. Gargava, Member Secretary, CPCB for reviewing revised action plans for rejuvenation of identified polluted river stretches (P-I & P-II category) received from States viz. Nagaland, Meghalaya, Assam, Manipur & Delhi for ensuring compliance to Hon'ble NGT orders dated 20.09.2018, 19.12.2018 and 08.04.2019. List of participants is annexed (Annexure-I)

Dr. Prashant. Gargava, Chairman of the Task Team who joined task team after attending one more meeting in CPCB welcomed the officials of Nagaland, Meghalaya, Assam, Manipur & Delhi Governments. Sh. J.C. Babu, Additional Director briefed about Hon'ble NGT orders and action taken so far by CPCB. He apprised the Committee that CPCB Task Team has approved so far, 52 out of 61 action plans w.r.t P-I & II polluted river stretches pertaining to 15 States and action plans 9 out of 61 stretches pertaining to 5 States viz State of Nagaland, Meghalaya, Assam, Manipur, and Union Territory of Delhi are placed before the task team members in eighth Task Team meeting.

Thereafter, Task Team requested representatives of State Boards/ State Government/ UT administration officials to present detailed action plans proposed for rejuvenation of the identified polluted river stretches in the respective State. The representatives from Nagaland, Meghalaya, Assam, Manipur & Delhi presented action plans and task team reviewed the action plans. Upon detailed deliberations, State-wise decisions/ suggestions made are detailed in the table below:

S. No	State/UT	Identified Polluted River Stretches		Observations of the Task Team	Recommendations of the Task Team
		River	Stretch		
1	Nagaland	Dhansiri P-I	Check Gate To Diphu Bdg	<ul style="list-style-type: none"> <li>Water quality of polluted river and drains contributing to pollution to be assessed and reported in accordance with the SOP or protocol laid down by CPCB only (max/min BOD values are to be reported in place of average values)</li> <li>Hazardous waste generated from IOC, Dimapur to be disposed of through IOC, Guwahati, Assam in accordance with provisions laid down under HWOW (M &amp; TM) Rules, 2016 as amended as the activity involves interstate disposal of hazardous waste.</li> <li>Action plan for maintaining E-flow also be included</li> </ul>	Recommended subject to conditions

				<ul style="list-style-type: none"> <li>All STPs under commissioning should be directed to obtain CoE under Water (Prevention and Control of Pollution) Act, 1974.</li> <li>Frequency of meetings of Monitoring Committee proposed to be constituted for review of implementation of actions plans also be included.</li> <li>All timelines for implementation of approved action plans to be included in line with Hon'ble NGT order dated 08.04.2019</li> </ul>	
2.	Meghalaya	Umkhrah P-I	Mawlai To Shillong	<ul style="list-style-type: none"> <li>Ground water quality with respect to Fecal Coliform and Heavy metals also required to be included</li> <li>Automobile Service Centres be covered under Consent under Water Act (Prevention and Control of Pollution) Act, 1974. and Authorization under HW&amp; OW (M &amp; H) Rules, 2016 as amended.</li> <li>Hospitals generating biomedical waste should have deep burial provision for temporary disposal of generated biomedical waste till existing CBWTF is upgraded/ new CBWTF becomes operational.</li> <li>Action plan for septage management and provision for in-situ bioremediation of all minor drains also be included in the action plan</li> <li>Interception and Diversion of sewage from all drains contributing to pollution to be included for ensuring tapping and conveyance of sewage to STPs</li> <li>Proposal for assessment of GW quality at salient points in the catchment areas as per CPCB criteria be submitted to CPCB by 30.09.2019 for inclusion under NWMP.</li> <li>Timelines for implementation of approved action plans to be included in line with Hon'ble NGT order dated 08.04.2019</li> </ul>	Recommended subject to conditions
		Umshym pri P-I	Umshyrpi Bridge To Dhanketi		
3.	Assam	River Bharalu	Guwahati To Chilarai Nagar	<ul style="list-style-type: none"> <li>A location map showing all minor drains (before and after merging) with 6 major drains and their locations as well as the proposed STPs to be included in the report.</li> <li>Interception and Diversion of all drains for ensuring tapping of domestic sewage/industrial effluent and its diversion to STPs/ CETP be included in the action plan.</li> <li>Construction of conventional STPs will take time and as short term measures, bio-remediation of all major drains also be included.</li> <li>Treatment capacity of 03 proposed STPs</li> </ul>	Recommended subject to conditions
		River Borosola	Along Sarabbhatti Guwahati		
		River Silkaso	Along Chachal, Guwahati		
		River Sorusola	Along Paltan Bazar, Guwahati		

				<p>to be specified clearly in the proposed action plans</p> <ul style="list-style-type: none"> <li>• Industry utilizing ground water as resource should be directed to obtain NOC from CGWB.</li> <li>• Plan to recharge ground water through ground water recharge ponds and creation of artificial ponds or restoration of existing lakes/ponds if any to be included as watershed management for maintaining E-flow need to be included.</li> </ul>	
4.	Manipur	River Nambul	Singda Dam To Bishnupur	<ul style="list-style-type: none"> <li>• Action plan for sludge generated from STPs also be included by having methane recovery/Bio-digester unit as a part of STP</li> <li>• All HCFs should have ETP as per BMWWM Rules 2016 as amended and timelines also be included.</li> <li>• Gap analysis with respect to C &amp; D waste, E waste and the proposed action plan to be included</li> <li>• Adoption of in-situ remediation and aspects related to watershed management ( ground water recharge ponds and creation of artificial ponds) also be included in the action plans.</li> </ul>	Recommended subject to conditions
5.	Delhi	Yamuna P-I	Wazirabad To Asgarpur	<ul style="list-style-type: none"> <li>• Actual inventory with respect to total no of industries in Delhi which have not obtained Consent under (Prevention and Control of Pollution) Act, 1974 or Authorization under Waste Management Rules as applicable to be identified and action be initiated for closure of such industries with immediate effect by DPCC</li> <li>• Inventory w.r.t total hazardous waste stored within hazardous waste generating industries to be included. Wherever, hazardous waste generating industries are closed, DPCC shall ensure safe storage of generated HW by such industries till TSDF becomes operational in Delhi State</li> <li>• Action to be taken by DPCC against units indulged in illegal procurement of E-waste or battery waste carried out in Mandoli Loni Border areas.</li> <li>• Achievable target w.r.t BOD should be indicated specifically in view of implementation of proposed action plans for rejuvenation of river Yamuna.</li> <li>• Installation of Real Time Water Quality Monitoring System (RTWQMS) on river Yamuna at all salient points also be included as a part of action plan of rejuvenation of river Yamuna.</li> </ul>	Needs revision and approval of RRC for consideration of approved action plans in next meeting of Task Team.

				<ul style="list-style-type: none"> <li>• Comprehensive plan to be included for Bio-mining and recommendation of existing municipal dumpsites which includes ground water remediation around existing MSW dumping sites.</li> <li>• Proposed action plans/plans under execution to be specified clearly rather than giving reference of the activities proposed in different OAs filed before Hon'ble NGT.</li> <li>• Budget estimates and specific time lines should be mentioned clearly specifying constraints w.r.t linked activities if any, for implementation of action plan in line with Hon'ble NGT order dated 08.04.2019</li> <li>• Revised action plans as approved by RRC to be submitted to CPCB prior to next Task Team meeting.</li> </ul>	
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The Task Team also suggested to States/ UTs that any difficulties faced in execution of the orders of Hon'ble NGT including some actions for rejuvenation of identified polluted river stretches, the concerned State should seek relief on the grounds justified before Hon'ble NGT for consideration and acceptance.

The Meeting ended with vote of thanks to the Chair.

-- OO --

8<sup>th</sup> meeting of the Task Team held on 6.9.2019 in Committee Room, 5<sup>th</sup> Floor, CPCB, Delhi for ensuring compliance to Hon'ble NGT (PB), New Delhi orders dated 20.09.2018, 19.12.2018 and 08.04.2019 in OA No 673/2018 in the Matter of News Item Published in 'THE HINDU' Titled "More river stretches are now critically polluted: CPCB"

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सत्यमेव जयते

**GOVERNMENT OF NAGALAND  
DEPARTMENT OF GEOLOGY AND MINING  
NAGALAND : KOHIMA**



**THE  
NAGALAND SAND AND MINING  
GUIDELINES, 2019**

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## THE NAGALAND SAND AND GRAVEL MINING MANAGEMENT GUIDELINES,

2019

### 1. BACKGROUND:

Sand is classified as a “Minor Mineral”, minor mineral includes building stones, gravel, ordinary clay, ordinary sand other than sand used for prescribed purposes, and any other mineral which the Central Government may, by notification in the Official Gazette, declare to be a minor mineral; as defined under Section 3(e) of the Mines and Minerals (Development and Regulations) Act, 1957 (MMDR Act). Under the MMDR Act, the legal and administrative control over minor minerals vests with the State Governments, who have the powers to make rules to govern minor minerals.

Accordingly the State Government of Nagaland has framed the “Nagaland Minor Mineral Concession Rule, 2004” (NMMCR 2004) under section 17 of the Nagaland Ownership Transfer of land and its Resources) NOTLAR Act 1990 for awarding, regulating, and administering the minor mineral concession granted under the aforesaid Rules.

Sand is a widely used commodity whose demand is continuously increasing with increasing infrastructure development of the country, and is widely used across the country by common citizens. Sand is an essential mineral and is used along with cement primarily in construction. This has resulted in mushrooming of illegal river sand mining activities and has resulted to various issues of river ecosystems and the environment in general.

Consequently, there have been various judicial interventions with Supreme Court and National Green Tribunal stepping in to control the situation.

### 2. LEGAL FRAMEWORK:

The State of Nagaland has its own legal framework of minerals namely; the Nagaland Minor Mineral Concession Rules 2004, framed under Section 17 of NOTLAR Act 1990 to regulate minor minerals, including sand and gravel mining. However, the State has no separate guidelines for mining sand distinct from other minerals. As per the Rules of Executive Business, 2016, the Department of Geology and Mining is authorized to implement regulations and overall administration of major minerals, oil and natural gas including minor minerals.

### 3. GUIDELINE INTRODUCTION:

This guideline may be called as “**The Nagaland Sand and Gravel Mining Management Guidelines 2019**”. The Main objective is to promote scientific mining of sand and gravel and encourage environmentally friendly management practices in order to restore and maintain the river bionetwork and its resources. The basic principle on which sustainable sand gravel mining guidelines can be based is that river resources must be utilized for the benefit of the present and future generation which should be prudently managed and developed.

The guideline is prepared as per the provision given in the NMMCR Act, 2004 for regulation and management of minor minerals in the state of Nagaland.

#### 4. OBJECTIVES OF THE GUIDELINE:

This Guideline is intended for use by relevant authorities and updates the existing Sand and Gravel permitting policies or guidelines to achieve the following regulatory and management objectives.

- a. Sand and Gravel mining guidelines and implementation shall be based on the Nagaland Minor Mineral Concession Rules, 2004 (NMMCR 2004).
- b. To ensure that sand and gravel extraction is carried out in a sustainable manner.
- c. To maintain the river equilibrium with the application of sediment transport principles in determining the locations, period and quantity to be extracted.
- d. to apply river model such as HEC-RAS in identifying the suitable locations, period and quantity that can be extracted
- e. To ensure the conservation of the river equilibrium and its natural environment by protection and restoration of the ecological system.
- f. To prevent ground water pollution by prohibiting sand mining on fissures where it works as filter prior to ground water recharge.
- g. To avoid aggradation at the downstream reach especially those with hydraulic structures such as jetties, water intakes etc. and to ensure the rivers are protected from bank and bed erosion beyond its stable profile.
- h. To improve the effectiveness of monitoring of mining and transportation of mined out material.

#### 5. STANDARD ENVIRONMENTAL CONDITIONS FOR SAND MINING:

Indiscriminate sand and gravel mining has deteriorated the river ecosystem in many part of the country due to lack of proper statutory Rules or Act. The Nagaland Sand and Gravel Mining Management Guideline has laid the following standard for sustainable management.

- a. Report of Geological, Hydrological and River-morphology
- b. Mining Plan, Mine Closure Plan, EMP, EIA etc.
- c. Mandatory possession of valid Mining lease with all necessary clearance /permits.
- d. District survey report prepared by the District Environment Impact Assessment Authority (DEIAA)

#### 6. IDENTIFICATION OF SAND BLOCKS

Identification deals with the preparatory work before a sand block is allocated or bid out for mining. The Geology and Mining Department of the state shall estimate district wise demand and thereupon for the entire state and accordingly come up with the requirement of further allotments. The department shall use the Survey of India Topo sheet map of the area and conduct spot inspection and confirm from field validation regarding availability of sand and gravel. Identification may be carried out under the following categories of work:

### 6.1 PREPARATION OF DISTRICT SURVEY REPORT:

It is important to prepare a survey document mapping the status of sand sources in the district. This survey should be conducted and report be prepared for each district.

- a. Identification of areas of aggradation/deposition where mining can be allowed and identification of areas of erosion and proximity to infrastructure structures and installations where mining should be prohibited. Use of satellite imagery for identifying areas of sand deposit and quantity and authentication through field validation.
- b. Calculation of annual rate of replenishment and allowing time for replenishment after mining in areas.
- c. Identifying ways of scientific and systematic mining.
- d. Identifying measures for protection of environment and ecology.
- e. Determining measures for protection of bank erosion.
- f. A bench mark (BM) with respect to mean sea level (MSL) should be made essential to in mining channel reaches (MCR). Below which no mining should be allowed.
- g. Identifying steps to conservation of minor mineral resources of the river.
- h. Permanent gauging facilities (for discharge and sediment both) should be made compulsory for the sites having excessive mining in consultation with Central Ground Water Board (CGWB) or any competent State Agency.
- i. Implementing safeguard for checking illegal and indiscrete mining and transportation.

### 6.2 Geological Report:

Detailed geological report containing details of the mining area, DGPS/GPS survey, infrastructure and environment, local geology, drainage, geomorphology, exploration status, geological map, laboratory analytical report of the samples etc. of each block should be prepared by the Assistant Geologist/Geologist of the district in which the block lies before putting it for auction/allotment. The potential areas of sand and gravel mining maps prepared using Total Station.

The report should also reflect sustainable mitigation measures for long term management of sand and gravel mining.

### 7. MINE MANAGEMENT PLAN:

The following management plan may be adopted while designing for sustainable sand mining:

#### 7.1. In-stream Mining recommendations:

- a. Permit mining volume based on measured annual replenishment.
- b. Establish an absolute elevation below which no extraction may occur ( minimum enveloped level or redline)
- c. Limit in-stream extraction methods to bar skimming.

- d. Extract sand and gravel from down-stream portion of the bar.
- e. Concentrate activities to minimise disturbance.
- f. Review cumulative effects of sand and gravel extraction.
- g. Maintain flood capacity.
- h. Establishing long term monitoring programme.
- i. Minimise activities that release fine sediments to the river.
- j. Retain vegetation buffer at edge of water and against river bank.
- k. Limit in-stream operations to the period between May and September
- l. An annual status and trends report.

**7.2. Off-channel or Flood plain extraction recommendation.**

- a. Flood plain extraction should be set back from the main channel
- b. The maximum depth of flood plain extraction should remain above the channel thalweg.
- c. Side slope of flood plain excavation should range from 3:1 to 10:1
- d. Place stockpiled top soil above the 25 years return period or automatic readability index (ARI) level.
- e. Flood plain pits should be restored to wetland habitat or reclaimed for agriculture
- f. Establish a long term monitoring programme
- g. An annual status and trends report.

**7.3. Reclamation plan:**

- a. Base line survey consisting of existing condition cross section data.
- b. Cross section of the replenished bar should be the same as the base line data
- c. Planimetric map showing the aerial extend of the excavation and extend of the riparian buffers
- d. Planting plan familiar with the river flora for areas such as road that need to be restored.
- e. Monitoring plans
- f. Appropriate reclamation plan for in-stream and flood plain sand and gravel.

**8. DISTRICT ENVIRONMENT IMPACT ASSESSMENT AUTHORITY (DEIAA)**

There shall be District Environment Impact Assessment Authority comprised of following Members;

- |                                  |                    |
|----------------------------------|--------------------|
| 1. Deputy Commissioner           | : Chairman         |
| 2. DCP/SP                        | : Member           |
| 3. DFO                           | : Member           |
| 4. Water Resource Deptt.         | : Member           |
| 5. Dist. Pollution Control Board | : Member           |
| 6. PHE                           | : Member           |
| 7. Dist. Officer G & M           | : Member Secretary |
| 8. Municipal/ Town Council       | : Member           |

The DEIAA shall visit the Mine site and inspect to examine and scrutinize EIA and EMP prepared by the authorized Officer and issue environmental clearance up to 5 hectares which has been applied for and make recommendation on suitability of site for mining or prohibit thereof.

A Sub-divisional Environment Impact Assessment Authority (SEIAA) shall be constituted for better monitoring and to assist the DEIAA.

**9. SAND BUSINESS ALLOCATION MODEL:**

The most common method of allocation followed across the country is the market model where private contractors are allocated sand mines through competitive bidding. The allocation model to be considered by a state depends on the objective of the state. If the State objective is revenue maximization then it can follow the **Market Model**, however, if the state desire to keep the prices and operations under control, then it can follow the **Notified Price Model**.

**a. Market Model:**

In case of Market Model all the lessees/certified dealers in the state should register themselves on the online portal. The Lessees/dealers have to enter the details of its concession/stockyard, location, quality and quantity of sand expected on weekly basis as per the reserve estimation and approved mining plan.

In market model, allocation is undertaken using one of the following methods:

- a) Tender
- b) Auction
- c) Tender cum auction mode

Over all it should provide the following details:

- a. Details of the mine including Geological Report.
- b. Eligibility criteria ( Technical and financial )
- c. Reserve price to be based on the % of royalty payable by the bidder.
- d. Security bid/EMD
- e. Other affidavit/annexures/ supporting documents.

**b. Notified Pricing Model/Nomination basis sand blocks)**

Under this model the State Government will be notified only after getting the mining plan approved and environment clearance obtained. The blocks can be allocated to any relevant State Corporation or Firms or Village Council or SHG. Prices and Selling under this model remain with the State/state nominated Agencies. It also requires strict monitoring for successful mining operation. Further the State Govt. should also specify the rates of transportation and keep the sand supply sufficient so that the prices are not increased artificially by the transporters.

## 10. DEMAND - SUPPLY ESTIMATION:

The State shall conduct Scientific Demand-Supply assessment of sand gravel reaches and to adopt business models with the following two methods for estimation of sand demand - supply.

### a. RBI Index based methodology

This method shall base on the data released by RBI, ratio of construction Gross Value Added (GVA) of State with construction GVA of India is calculated. Further, that number is multiplied by the cement sales in India. Once cement consumption of the State is known, the same is multiplied by the factor of 2.5 to derive the sand consumption.

### b. Cement consumption based methodology

In this method, the demand of sand shall be based on cement consumption in the State and district multiplied by a conversion factor in terms of assuming a normative cement to sand consumption ratio. Following inputs are required for estimation.

Inputs:

- a. Cement consumption in the State or district
- b. Conversion factor - cement to sand consumption ratio 1:2.5 (Normative)

### c. Alternate options for natural sand

After estimation of gap derived from demand supply assessment, State shall analyse the alternate options for sand, available with them. Considering the large deficits in demand and supply of sand, alternate options need to be promoted, as;

- a. Import of sand
- b. M. sand

## 11. AREA AND TIMELINES

The States shall define the area limits for the grant of concession as per the rules and policies. Mining methods shall be as per the approved environment clearance/ Mining Plan and as per notifications of the NMMCR 2004. Also, the minimum area is proposed at 5 Ha for better supply and better control by State Government's point of view. Sand gravel deficit offering large areas may result in delays in the process of obtaining clearances and approvals and hence may offer smaller areas as per limits of DEIAA.

**Table - 1 Suggested threshold area for sand gravel mining in a State\***

S. No.	Parameter	Minimum area	Maximum area	Time period of allotment
1	For Individual	5 Ha	50	3-5
2	For Community	5 Ha	100	3-5

*\*In case a State Government needs to allot smaller or larger areas, the State is free to do so as per their minor mineral concession rules.*

## **12. JOINT INSPECTION COMMITTEE:**

The purpose of Joint Inspection Report (JIR) is to provide a comprehensive assessment of sand available in each identified block and over all provide a go-no go decision. The JIR team responsible for identification inspects the various parameters that restrict sand mining as per the State rules and guidelines. During the identification stage itself, the details should be noted down and based on those details and other considerations that may be facing the state, it should be decided whether the block should be allocated for mining or not. Further, once the decision is taken the entire format along with considerations based on which the decision has taken should be uploaded on the departmental website which shall be available for public view. The Deputy Commissioner will issue instructions based on the Joint Inspection Report with clear recommendations to the concerned District Officer In-charge from G&M of sand Mining in the State.

A comprehensive Joint Inspection Report (JIR) should be prepared by the Joint Inspection Committee consisting of the following departments/concerned officials.

1. Deputy Commissioner : Chairman
2. Law enforcing (Police) : Member
3. PWD : Member
4. Water Resources Department : Members
5. Geology and Mining Deptt. : Member Secretary
6. EF and CC : Member
7. NSPCB : Member
8. Any other relevant department as per the State requirements.

## **13. MONITORING MECHANISM:**

Monitoring mechanism shall include inspection of mining site, quality, geo-environmental impacts and river ecosystem, river pollution, river morphology, legal and illegal Mining and transportations of sand and gravel etc.

## **14. PROMOTION OF M SAND:**

The State Govt. may encourage promotion of M sand as an alternate source from river sand. This may also reduce the intensive river sand mining in the State and to meet gap of demand and supply.

## **15. ROYALTY:**

Royalty/Revenue in respect of Mining Lease/Leases is specified in the NMMCR Act, 2004 and also in the Section 9 of the MMDR Act 1957. Royalty is a variable return and it varies with quantity of minerals extracted or mined.

**16. SALES AND TRANSPORT:**

In case of market model, all the lessees/ certified dealers in the State should register themselves Offline/Online in the department of Geology and Mining or through the portal. For registering, lessee/ certified dealer will have to enter the details of its concession/ stockyard, location, quantity of sand expected on a weekly basis, as per the approved mining plan.

**17. TRANSPORTATION AND STOCKYARD:**

The supply of sand to consumers should be through stockyards that should be maintained by all individual leaseholders/ raising contractor/ State corporations etc. as the case may be. The stockyard should be established in the vicinity of the reach within a distance of 200 meters from the motor-able road/pucca road. In case of small size leases or cluster of leases, a single stockyard for a group of sand reaches may be established. The size of the stockyard should be such that it has the capacity to store the stock of 3 months of extraction from the reach, this would also help in maintaining supply during monsoon

There shall be provision of weigh bridges at the stockyard and all the vehicles transporting sand to the consumers should pass through it to keep a track of exact quantity of sand in the vehicle as per the loading capacity of the vehicle prescribed by the transport department.

All sand gravel carrying vehicles shall have a valid transport permit. The transport permit for transportation of sand gravel should be generated at the stockyard after verification of the payment.

**18. ILLEGAL SAND GRAVEL MINING**

Illegal Sand Mining is so prevalent that it has developed into black market that continues to exploit millions of tons of commodity annually in the open loot of the riverbeds, canals and beaches is being drained by illegal means. Illegal mining in sand gravel may be categorized into 4 types.

- a. Illegal extraction from the un-notified areas
- b. Illegal extraction due to over the permissible limits
- c. Illegal stocking and
- d. Illegal transportation

**19. APPLICATION PROCESS, CLEARANCE, AND APPROVAL FOR GRANT OF MINING LEASES, QUARRY PERMITS AND STOCKYARDS:**

The following mandatory documents are required to obtain leases and permits from the Govt. to carry out sand gravel mining, stockyards and transportation.

- a. Land possession and NOC from land owner and District administration.
- b. NOC from Village Council if the land falls under the village community land.
- c. Consent from Nagaland State Pollution Control Board.
- d. Geological report prepared by an authorized RQP/ Geologist. The report shall include and specify the stretch of the river and stream orders, river morphology, quality and quantity for sand concessions.
- e. Mine plan and reclamation plan prepared by an authorized RQP/Mining Engineer
- f. Environment Impact Assessment (EIA) and Environment Management Plan (EMP) prepared by the concerned DFO.
- g. Consent from the District Environment Impact Assessment Authority (DEIAA), the Deputy Commissioner of the concerned district.
- h. Consent/approval from the competent authority for modification of any mining plan during operation period.
- i. Copy of GST registration certificate.



# NAGALAND POLLUTION CONTROL BOARD

Signal Point, Dimapur – 797112, Nagaland

Tel.: 03862-245727, Telefax: 03862-245726

Website: www.npcb.nagaland.gov.in e-mail: npcb2@yahoo.com

ANNEXURE R/110

102

NPCB/NGT/OA No. 673/2018 / 2668

Dated 22/01/2020

To

The Secretary  
Ministry of Jal Shakti  
1<sup>st</sup> Floor, Major Dhyan Chand National Stadium  
India Gate, New Delhi - 110002

**Sub: Monthly progress report for the month of January 2020 in compliance of Hon'ble National Green Tribunal Order dated 08.04.2019 in O.A. No.673 of 2018**

Sir,

I am enclosing herewith the monthly progress report for River Dhansiri (Priority I) for the month of January 2020 in compliance of Hon'ble National Green Tribunal Order dated 08.04.2019 in O.A. No.673 of 2018.

Encl: As stated

Yours faithfully,

(Dr. Kenei Miachio, IFS)  
Member Secretary

Copy to :

The Member Secretary, Central Pollution Control Board for kind information and necessary action.

Member Secretary

**Format for submission of Monthly Progress Report by States/UTs  
(Hon'ble NGT in the matter of OA No. 673/2018 dated 06.12.2019)**

Sl. No.	Activity to be monitored	Timeline	Submission of Progress by State/UT-Compliance status
1	Ensure 100% treatment of sewage atleast in-situ remediation	31.03.2020	Work under progress
	Commencement of setting up of STPs and connecting all the drains and other sources of generation of sewage to the STPs must be ensured	31.03.2020	Gravity sewer, Interception and diversion works 33 % completed
2	Timeline for completing all steps of action plans including completion of setting up STPs and their commissioning	31.03.2021	Work under progress
3	Chief Secretaries may set up appropriate mechanism at State level <ul style="list-style-type: none"> <li>Specify accountability of nodal authorities not below the Secretary level</li> <li>Chief Secretaries may have an accountable person attached in their office for this purpose</li> </ul>	22.01.2020  22.01.2020	River Rejuvenation Committee  1. OSD Environment & Forests, 2. Deputy Director, Industries & Commerce 3. Member Secretary, NPCB
	<ul style="list-style-type: none"> <li>Monitoring at State level must take place</li> </ul>	Fortnightly commencing 21.12.2019	
4	Progress report may be furnished by the States/UTs to <ul style="list-style-type: none"> <li>Secretary, Ministry of Jal Shakti</li> <li>Member Secretary, CPCB</li> </ul>	Monthly (Preferably before 20 <sup>th</sup> of every month)	-
4.1	Progress report may be comprised of details along with completion timelines (i) Identification of polluting sources including drains contributing to river pollution and action as per NGT order on in situ treatment	31/5/2020	Survey work ongoing
	(ii) Status of STP, I&D and sewerage networks. Details of existing infrastructure, Gap analysis, proposed along with completion timeline.		STP 95% completed
	(iii) Status of CETPs. Details of CETPs and ETP infrastructure, Gap Analysis, Proposed along with the completion timeline. No. of industries and complying status		There is no CETPs. There are 2 nos. of ETPs in operation. Directions will be issued to Hotels for setting up of ETP.
	(iv) Status of Solid Waste Management & Details of Processing Facilities. Details of existing infrastructure, Gap analysis, Proposed along with the completion timeline		Proposal of Rs.110.72 crores submitted to the Ministry of Housing and Urban Affairs, Gol.

(v)	Latest water quality of polluted river, its tributaries drains with flow details and ground water quality in the catchment of polluted river		Enclosed
(vi)	Preventing dumping of waste and scientific waste management including bio-medical waste, plastic wastes and decentralized waste processing including waste generated from hotels, ashrams, etc.		Direction in this regard on illegal disposal of waste in the drainage has been issued by DMC in the local dailies on 13.03.2019. It further authorized the colony councils/GBs to implement the order and also impose fine against the defaulters in their respective colonies. Proposal for setting up of Common Bio-medical Waste Treatment Facility for Dimapur sent to MoEF &CC
(vii)	Ground water regulation		Water Resources department under the State Plan carry out activity wherein wells are dug for ground water extraction. Sensitization programme for ground water is also under implementation.
(viii)	Adopting good irrigation practices		Water Resources Department has been carrying out activities under the Minor Irrigation Schemes wherein diversion, protection wall and line & unlined canals are been constructed under the Ministry of water Resources.
(ix)	Protection and management of Flood Plain Zones		Dimapur Municipal Council implement for the protection and management of Flood Plain Zones.
(x)	Rain water harvesting		District Administration will notify for provisions of roof top rain water harvesting in Govt. building, commercial buildings and hotels.
(xi)	Maintaining environment flow of the river		Environment flow is being assessed by the Water Resources Department
(xii)	Plantation on both sides of the river	July 2020	Nursery work is ongoing
(xiii)	Setting up biodiversity parks on flood plain by removing encroachments		The Chief Wildlife Warden under the Department of Environment, Forests & CC has declared and notified the status of 10 community reserved forests (private/ community owned protected area) in Dimapur district which falls in the upstream and catchment area of the River Dhansiri with a total area of 23.025 Sq. km.

*[Signature]*  
Member Secretary

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ANALYSIS REPORT OF NATIONAL WATER QUALITY MONITORING PROGRAMME FOR JANUARY 2020

FIELD OBSERVATION AND PARAMETERS	STATION CODE				1928
	1796	1797	1798	1799	
Date of collection	15-01-2020 07:01AM	15-01-2020 12:47PM	15-01-2020 12:23PM	15-01-2020 01:34PM	15-01-2020 01:15PM
Visible Effluent Discharge	Nil	Nil	Nil	Nil	Nil
Use of Water in Down Stream <i>Irrigation/Industrial/Domestic/Drinking Water Source/ Cultivation/Fishing/Bathing/Ghat</i>	Fishing Bathing	Fishing Bathing	Fishing Bathing	Fishing	Fishing Bathing
Weather	Clear	Clear	Clear	Clear	Clear
Depth of water body (in cm)	35	42	47	27	107
Human Activities <i>Bathing/Washing/Cultivation/Fishing/Boating/ Gardening/Tourism spot/ cattle wading/others</i>	Bathing Washing Fishing	Bathing Washing Fishing	Fishing Bathing Washing Sand recovery	Fishing	Fishing Bathing Washing Boating
Colour	Clear	Clear	Light Brown	Light Brown	Light Brown
Odour	Odour free	Odour free	Odour free	Odour free	Odour free
Velocity of flow (m/sec)	0.21	0.20	0.22	0.05	0.30
Water Temperature (°C)	17.9	20.7	17.8	15.1	18.70
Dissolved Oxygen (mg/l)	5.32	5.04	4.8	5	4.5
pH	7.5	7.3	7.2	8.4	7.5
Conductivity (µS/cm)	195.6	228	233	192.1	239
Biochemical Oxygen Demand (mg/l)	1.52	2.04	2.01	1.4	2.8
Nitrate - Nitrogen (mg/l)	0.7	0.8	1	1	1
Turbidity (NTU)	4.54	2.56	2.25	35.1	2.31
Phenolphthalein Alkalinity (mg/l)	0	0	0	0	0
Total Alkalinity (mg/l)	56	116	128	72	100
Chemical Oxygen Demand (mg/l)	9	16	18	14	17
Ammonia- Nitrogen (mg/l)	0.14	0.13	0.07	0.07	0.2
Total Hardness (mg/l)	116	100	96	76	96
Calcium Hardness (mg/l)	44	60	56	40	60
Magnesium Hardness (mg/l)	17.57	9.76	9.76	8.79	8.79
Total Dissolved Solids (mg/l)	97.7	114	116	96	117
Total Suspended Solids (mg/l)	0.14	0.15	0.1	0.12	0.16
Phosphate (mg/l)	0.04	0.05	0.09	0.05	0.11
Boron (mg/l)	0.05	0.02	0.05	0.06	0.05
Potassium (mg/l)	3	3.1	3.2	3	3.2
Fluoride (mg/l)	0.16	0.11	0.09	0.22	0.14
Bio-monitoring	-	-	-	-	4.2
Saprobic Score	-	-	-	-	0.5
Diversity Score	-	-	-	-	Moderate
Water Quality	-	-	-	-	C
Water Quality Class	-	-	-	-	Green
Indicator Colour	-	-	-	-	Green

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ANNEXURE R/II  
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**ACTION PLAN FOR CONTROL OF AIR  
POLLUTION IN NON-ATTAINMENT CITY OF  
DIMAPUR CITY AND CONGLOMERATES,  
NAGALAND.**



By

**AIR QUALITY MONITORING COMMITTEE  
NAGALAND**

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1. ACTION PLAN FOR CONTROL OF AIR POLLUTION IN NON-ATTAINMENT CITY OF DIMAPUR (NAGALAND).
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9. ACTION PLAN FOR CONTROL OF AIR POLLUTION IN NON-ATTAINMENT CITY OF DIMAPUR.

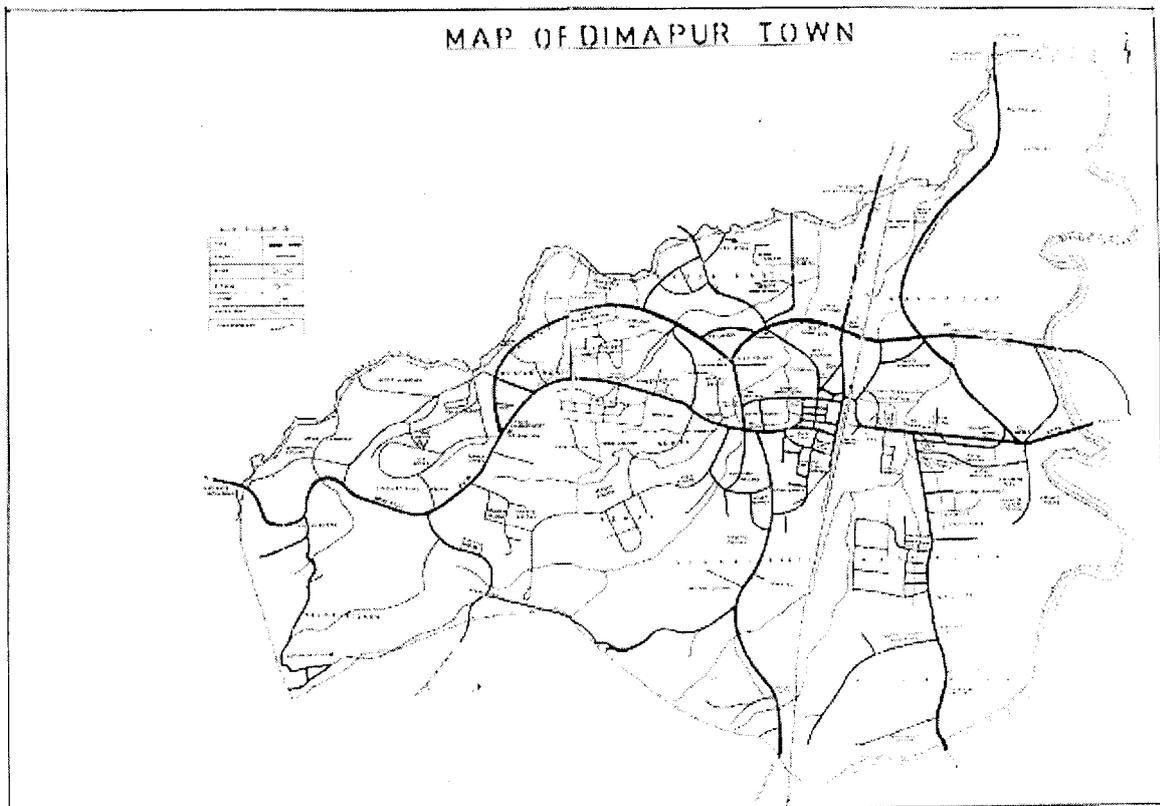
## ANNEXURE

**ANNEXURE 1:** STATUS OF AMBIENT AIR QUALITY OF DIMAPUR CITY.

**ANNEXURE 2:** NOTIFICATION OF AIR QUALITY MONITORING COMMITTEE.

## **ACTION PLAN FOR CONTROL OF AIR POLLUTION IN NON-ATTAINMENT CITY OF DIMAPUR (NAGALAND)**

Dimapur is the commercial hub and largest city amongst all the other districts of Nagaland. It is located at 25°54'45"N and 93°44'30"E and is bounded by Kohima district on the south and east, Karbi Anglong district of Assam on the west, and stretch of Golaghat District of Assam in the north. The estimated population of Dimapur is 3,75,782 (as per 2011 census). As of 2011 census it is the most populous district of Nagaland. Dimapur is hot and humid in summers and moderately cold in winters. It is also the gateway to Nagaland and its only railhead. The city also has the only functional airport in the state.



Total number of petrol and diesel vehicles registered under Dimapur District comprises of 61,823 nos. Out of which non commercial vehicles registered are around 48,482, commercial passenger vehicles around 8,497 and commercial goods vehicles around 4,830. And the total no. of vehicles based on wheel based categorization are 2 wheelers comprises of 27,737, 3 wheelers of 8,061 and 4 & above wheelers comprises of 26,025. However, Dimapur city being the commercial hub vehicles are centric towards Dimapur city from all the other districts.

In Dimapur District, industries consented with the Nagaland Pollution Control Board accounts to total 617 unit which are categorized accordingly 12 units of Red Category, 303 Orange Category and 302 Green Category.

#### OBJECTIVES:

Dimapur city has been placed under non-attainment cities because it was found that for a period of 5 years (2011-2015) the air quality was consistently above the National Ambient Air Quality Standards for PM<sub>10</sub>. Accordingly, this action plan is proposed to bring down the level of air pollutants within a given time frame by the responsible departments and implementing agencies and the co-operation of the public at large. The agencies responsibilities time frame and budgetary requirements are as given in the chart.

#### SOURCES OF AIR POLLUTION IN DIMAPUR CITY:

The major sources of air pollution in Dimapur city are:

- i. Dust raised from vehicular movement on the dusty roads.
- ii. Vehicular emissions.
- iii. Burning of wastes such as municipal waste bins, garden/leave waste, etc.
- iv. Emission from small scale industries such as stone crushers, sand mahals, tyre vulcanization unit, etc
- v. Construction activity.
- vi. Burning of fossil fuel for domestic purpose.

#### AIR QUALITY MONITORING NETWORK (NAMP):

The Nagaland Pollution Control Board has been regularly monitoring the air quality under National Air Monitoring Programme (NAMP) in Dimapur city using manually operated Respirable Dust Samplers. Under the National Air Monitoring Programme (NAMP) there are two monitoring stations in Dimapur i.e. in Bank colony (317) & Dhobinala (448). Under this programme three air pollutants are monitored and analyzed viz., Nitrogen dioxide (NO<sub>2</sub>), Sulphur dioxide (SO<sub>2</sub>) and Respirable Suspended Particulate Matter (RSPM). The monitoring of pollutants is carried out for 24 hours (4 hourly sampling for gaseous pollutants (NO<sub>2</sub> & SO<sub>2</sub>) and 8 hourly sampling for particulate matter (RSPM) twice in a week.

The gaseous pollutants i.e. Nitrogen dioxide (NO<sub>2</sub>) and Sulphur dioxide (SO<sub>2</sub>) are within the national standards in both the monitoring stations.

**MONITORING STATIONS UNDER NAMP PROGRAMME IN DIMAPUR, NAGALAND.**

Sl. no	Station name	Station code	Station type	District
1	Bank Colony	317	Residential	Dimapur
2	Dhobinala	448	Commercial	Dimapur

5 new additional NAMP stations for Dimapur city had been sanctioned and financial assistance have been received. The Board is in the process to operate and monitor the new additional stations.

**MONITORING MECHANISM FOR IMPLEMENTATION:**

The aforesaid action plan shall be implemented by Nagaland Pollution Control Board in co-ordination with various stakeholders/Department such as Department of Environment, Forest & Climate Change, Department of Industries & Commerce, Urban Development Department, Transport Department, Municipal Councils, Traffic Police, Town Planning, Border Roads, PWD and District Administration.

**IMPLEMENTATION STATUS:**

The Chief Secretary, Government of Nagaland convened meeting on 27<sup>th</sup> November, 2017 with the concerned departments and briefed the importance of Action Plan to improve the Air Quality in Dimapur and its conglomerates and how each departments should work to improve the air quality. A series of meeting with the various departments have been convened to mitigate the air quality and work on the various objectives entrusted in the action plan to each department.

**GRADED RESPONSE ACTION PLAN (GRAP) FOR DIMAPUR CITY:**

In pursuance to the Hon'ble Supreme Court order dated 2<sup>nd</sup> December, 2016 in the matter of M.C Metha Vs Union of India regarding air quality in Dimapur city a Graded Response Action Plan (GRAP) has been prepared where a new category of "Severe Plus or Emergency" has been added to the present categories of Moderate, Poor, very poor and severe.

Based on the present level of air pollution and trends observed in last few years, the GRAP points given below have been incorporated in the Action Plan, which include:-

1. Regular cleaning of road dust and sprinkling of water on unpaved roads.
2. Strict vigilance and no tolerance for visible emissions, impounding or imposing heavy fine on plying of visible polluting vehicles.

3. Strict enforcement of PUC emission norms.
4. Deployment of traffic police for smooth traffic flow at identified vulnerable traffic cross section areas.
5. Strict enforcement of Hon'ble Supreme Court directions dt. 23.10.2018 on use of fire crackers.
6. Intensify public transport system with cleaner fuel.
7. Strict enforcement of ban on open burning of garbage, etc, covered movement of vehicles carrying solid waste, construction materials, etc.
8. Shut down and shifting of small polluting industries.

#### ACTION PLAN FOR CONTROL OF AIR POLLUTION IN NON-ATTAINMENT CITY OF DIMAPUR

1. Name of the city : **Dimapur**
2. Air Pollution concerns : Particulate matter (PM<sub>10</sub>)
3. Air pollution levels: (provide range of 24-hourly average concentration values; annual average for past eight years) : Annexed as Annexure-1
4. Months with high air pollution levels : January, February, March, November & December.

**ACTION PLAN FOR NON-ATTAINMENT TOWNS/CITIES WITH RESPECT TO AIR QUALITY MANAGEMENT IN DIMAPUR CITY AND CONGLOMERATES, NAGALAND.**

Source group	Action	Implementation period (Short/Mid/Long term)	Time target for Implementation	Responsible Agency(ies)	Budget (in ₹)	Remarks (any other)
<b>Vehicles</b>	1. Restriction on plying and phasing out of 15 years old commercial diesel driven vehicles.	Mid	On-going	Transport Department.	-	Trucks have been debarred from entering the main city roads during the day. Restriction on phasing out 15 years commercial diesel vehicles is under consideration.
	2. Introduction of cleaner fuels (CNG/LPG) for vehicles.	Mid	On-going	Transport Department & Oil Company.	-	Check on quality fuel is being done. No immediate plan for CNG/LPG.
	3. Regular checking of vehicular emission and issue of Pollution under Control Certificate (PUC).	Short	On-going	Transport Department & Traffic Police.	-	Pollution under Control Certificate (PUC) issued by Transport Department. Better monitoring of compliance needs to be increased imposing penalties so that it may act as deterrent to the careless/ negligent automobile drivers/owners.
	4. Good traffic management including re-direction of traffic movement to avoid.	Mid	On-going	Traffic Police.	-	Frequent and regular traffic congestion and jam density are two most important reasons for air pollution load in the city.  Traffic density and carrying capacity of the roads are required to be looked into with optimal transport network with effective movement of traffic and minimal traffic congestion with training of commercial vehicles/public transport drivers.

Source group	Action	Implementation period (Short/Mid/Long term)	Time target for Implementation	Responsible Agency(ies)	Budget (in ₹)	Remarks (any other)
						The traffic personnel are being trained regularly for better management along with youths engaged by the DMC in managing parking of vehicles.
	5. Ban on registration of Diesel driven auto-rickshaw/Tempo.	Long	3 years	Transport Department.	-	The pros and cons shall be discussed at the Govt. level and appropriate action shall be implemented.
	6. Promotion of operationalization of E-rickshaw.	Mid	1 year	Transport Department.	-	Introduction of E-rickshaws has been done recently by M/s Goenka Electric Motor Vehicles.
	7. Development of multi-layer parking.	Long	3 year	DMC, UDD & District Adm.	5 crore	-
	8. Retrofitting of particulate filters in diesel driven vehicle.	Mid	2 years	Transport Department.	-	The AQMC is considering recommendation to the concerned department for compulsorily retrofitting of particulate filters in all diesel vehicles within the next 2 years. Notice to be issued.
	9. Checking of fuel adulteration.	Short	On-going	District Administration, NPCB & Oil Company.	10 lakhs	Quality checks are carried out. Besides this NPCB shall purchase necessary instruments for testing fuel adulteration and setting up of laboratory.
	10. Monitoring on vehicle fitness.	Short	On-going	Transport Department & Traffic Police.	-	Pollution under Control Certificate (PUC) issued by Transport Department. No separate budget is allocated

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Source group	Action	Implementation period (Short/Mid/Long term)	Time target for Implementation	Responsible Agency(ies)	Budget (in ₹)	Remarks (any other)
						as the same is carried out as routine work when required. Setting up of PUC mobile testing centers.
	11. Periodic calibration test of vehicular emission monitoring instrument.	Short	On-going	NPCB & Transport Department.	10 lakhs	For purchase of monitoring instruments by the NPCB.
	12. Install weigh bridges at the borders of cities/towns and state to prevent overloading of vehicles.	Mid	Dec, 2020	Department of Legal Metrology & Consumer Protection.	4.08 crore	Installation of weigh bridge should be implemented in the major entry points to avoid overloaded vehicles plying the roads, thereby damaging the roads.
Road Dust	1. Regular cleaning of road dust.	Short	1 year	DMC	20 lakhs	Road dust is mainly due to bad road condition, traffic load, insufficient water spraying, etc. In addition to the routine work DMC proposes to clean the dust accumulated along the stretches of the road.
	2. Water spraying on road through tankers.	Mid	1 year	DMC & PWD (R&B)	50 lakhs	In the areas where there is road dust, water sprinkling is to be done regularly. DMC proposed to purchase tankers for sprinkling of water.
	3. Widening of roads and improvement of infrastructure for decongestion of road.	Short	-	DMC and Traffic Police	-	The occupation of roads and footpaths by street vendors and building materials by the public hampers the traffic movement, all such hindrances to be removed by the DMC and traffic police immediately.

Source group	Action	Implementation period (Short/Mid/Long term)	Time target for Implementation	Responsible Agency(ies)	Budget (in ₹)	Remarks (any other)
	4. Construction of pucca pavement along the roads.	Long	<p>1. Flexible pavement improvement works started in November 2018. To be completed in two years.</p> <p>2. Repair of road and drains at the Naga Shopping area, Dimapur (2 Years)</p>	<p>1. PWD (R&amp;B)</p> <p>2. Development Authority of Nagaland (DAN).</p>	<p>1. 70 crores (Additional requirement).</p> <p>2. 6.37 crores.</p>	Bituminous flexible pavement provided along the road shoulders and construction of road and drain.
	5. Tree plantation along the roads.	Long	July, 2021	Department of Environment, Forest & CC	225 lakhs	Planting of Fifty thousand seedlings (including casualty replacement) along with iron tree guard @ ₹450 per plant
	6. Development of green belt in open areas, gardens, parks/ community places, schools & housing societies.	Long	July, 2021	Department of Environment, Forest & CC	1 crore	Development 10 nos. green belt @ ₹10 lakhs per green belt. All the Govt. departments as and where space is available tree plantation activities have to be carried out.
	7. Introduction of water fountains at major traffic intersection/ Golambar/Circle.	Long	2 year	DMC	1 crore	DMC will be the responsible agency for getting the installation of fountains at major traffic points.

Source group	Action	Implementation period (Short/Mid/Long term)	Time target for Implementation	Responsible Agency(ies)	Budget (in ₹)	Remarks (any other)
Construction activities	1. Covering of construction site.	Short	On-going	PWD (Housing) and DMC	-	It is in practice using bamboo lathe frames and green house cover. DMC to issue directions to all the concerned construction agencies and individuals for covering of construction sites.
	2. Transportation of construction material like sand, soil, stone chips etc in covered system.	Short	6 months	Transport Dept, District Adm & Traffic Police.		Notification to this effect will be issued.
	3. Restriction on storage of construction materials along the road.	Short	1 year	DMC	5 lakhs	Creating awareness in all the wards under DMC. Notice will be issued for strict compliance. At present, the C&D waste are being used for filling up in low lying areas.
Biomass and garbage burning	1. Restriction on open burning of municipal solid waste, Biomass, plastic horticulture waste etc.	Short	Implemented	DMC	-	DMC had already issued Notification for banning burning of garbage on 28 <sup>th</sup> March, 2019 and 25 <sup>th</sup> June, 2019. More awareness activity is required to be created.
	2. Immediate lifting of solid wastes generated from desilting and cleaning of municipal drains for its disposal.	Short	1 year	DMC	20 lakhs	Clearing and lifting of wastes from clogged drains
	3. Transportation of municipal solid wastes, construction materials and debris in covered system	Short	Implemented	DMC	-	-
	4. Ensuring promotion & use of cleaner fuel for commercial purposes like local dhaba/eateries	Long	1 year	District Adm & Oil Company.	-	Most of the eateries/Dhaba are using commercial LPGs. However, direction to this effect will be given for strict implementation of using only LPG as fuel.

Source group	Action	Implementation period (Short/Mid/Long term)	Time target for Implementation	Responsible Agency(ies)	Budget (in ₹)	Remarks (any other)
	5. Reducing use of wood as domestic fuel and maximizing coverage of LPG for domestic and commercial cooking with target of 100% coverage.	Long	-	<ul style="list-style-type: none"> <li>Dept of Environment, Forests &amp; CC.</li> <li>Dept. of New and Renewable Energy.</li> </ul>	-	Under the Pradhan Mantri Ujjwala Yojana (PMUJ) it will try to reach out to all the households who use firewood as domestic fuel. Renewable energy options like solar energy to be looked into.
	1. Ensuring installation and operation of air pollution control devices in industries	Short	Dec, 2019	NPCB	20 lakhs	For inventorization and monitoring of industries
	2. Ensuring emission standards in industries.	Short	Dec, 2019	NPCB	-	All industries causing Air, Water and Noise pollution shall be made compliant w.r.t. causing emission levels within the standards as are issued by NPCB. No separate budget is allocated as the same is carried out as routine work when required.
	3. Adoption of cleaner technology in brick kilns	Mid	Dec, 2019	NPCB & Industry Department	5 lakhs	For capacity building of NPCB & Industry Department officials.
	4. Shifting of polluting industries	Long	Dec, 2020	NPCB & Industry Department	-	No separate budget is allocated as the same is carried out as routine work when required.
	5. Ban on polluting industries.	Short	Dec, 2019	NPCB & Industry Department	-	No separate budget is allocated as the same is carried out as routine work when required.
	1. Installation of four CAAQMS at City Name A. Two CAAQMS stations under CSR funds of CPSU through Central	Mid	Dec, 2020	NPCB	2.4 crore	<ol style="list-style-type: none"> <li>One station to be set up at NPCB compound, Dimapur city, and</li> <li>One station to be set up at</li> </ol>
<b>Industries</b>						

Source group	Action	Implementation on period (Short/Mid/Long term)	Time target for Implementation	Responsible Agency(ies)	Budget (in ₹)	Remarks (any other)
Strengthening of AQ monitoring	Pollution Control Board at Dimapur NPCB Office and Chumoukiedima town. B. Two CAAQM stations under State Govt. financial assistance					Chumoukiedima town Dimapur.
	2. National Air Monitoring Programme (NAMP) stations at Dimapur.	-	Ongoing	NPCB	-	NPCB has been regularly monitoring the air quality of Dimapur city under NAMP at two stations (Bank colony (317) & Dhoibinala (448)). However, 5 new additional NAMP stations have been sanctioned and in operation. Thus, increasing the number of monitoring stations to 7 (seven) for Dimapur district in strengthening the air quality monitoring network. NPCB had proposed to the CPCB vide letter no. NPCB/NAMP-2/2117-18 Dated 26.06.2019 for up gradation of monitoring PM <sub>2.5</sub> parameters at all the existing NAMP stations.
	3. Source apportionment study	Mid	Dec, 2020	NPCB	10 lakhs	So far no source apportionment study with respect to air pollution in the city has been conducted by the NPCB or any other agency. Therefore, the NPCB contemplates to carry out emission inventory on the

Source group	Action	Implementation period (Short/Mid/Long term)	Time target for Implementation	Responsible Agency(ies)	Budget (in ₹)	Remarks (any other)
						basis of sources apportionment study and thereby, remedial measures will be implemented.
						Advisories have been issued from time to time to the public for prevention and control of pollution. Same needs to be continued in future as well through mass awareness programmes using print and electronic media.
						NPCB proposes for financial assistance for creating awareness.
						NPCB conducts awareness programmes amongst the students through National Green Corps (NGC) registered Eco-clubs.
						NPCB proposes for financial assistance to conduct workshops and pamphlets, signage, etc through which the students can spread more awareness to the public.
						NPCB conducts the monitoring/inspection of DG set as and when required. However, budget provisions for NPCB to carry out inventory and monitoring of DG sets is required.
Public Awareness	<ol style="list-style-type: none"> <li>1. Issue of advisory to public for prevention and control of air pollution</li> </ol>	Short	Dec, 2019	NPCB & SDMA	10 lakhs	
	<ol style="list-style-type: none"> <li>2. Involvement of school and other academic institution in awareness program</li> </ol>	Mid	Dec, 2019	NPCB	20 lakhs	
Others	<ol style="list-style-type: none"> <li>1. Compliance of guidelines on D.G. sets and action against violation.</li> </ol>	Short	Dec, 2019	NPCB & DMC	5 lakhs	

Source group	Action	Implementation period (Short/Mid/Long term)	Time target for Implementation	Responsible Agency(ies)	Budget (in ₹)	Remarks (any other)
	2. Help line to oversee non compliances on aforesaid issues.	Short	Dec, 2019	NPCB & DMC	-	NPCB had already created a helpline for public complaint in the NPCB website. <a href="http://www.npcb.nagaland.gov.in">www.npcb.nagaland.gov.in</a>
<b>GRAND TOTAL AMOUNT</b>					<b>93.95 crore</b>	

(Rupees Ninety Three Crores Ninety Five Lakhs only)

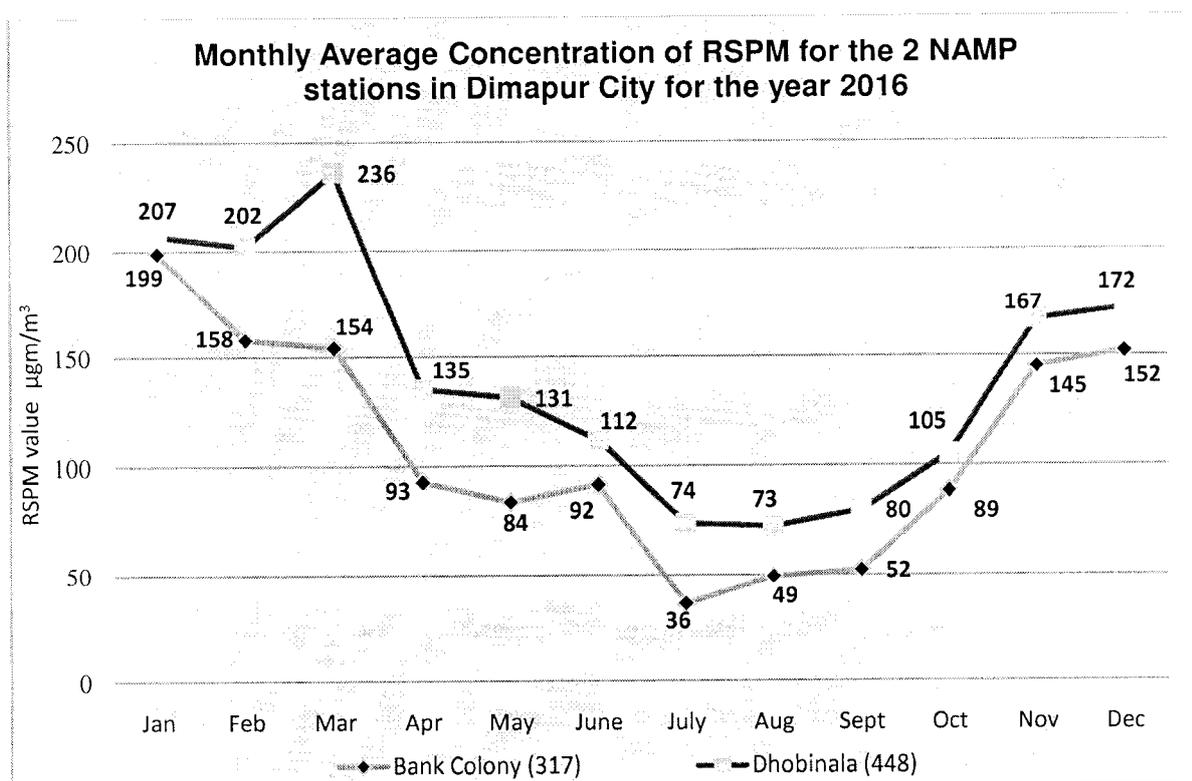


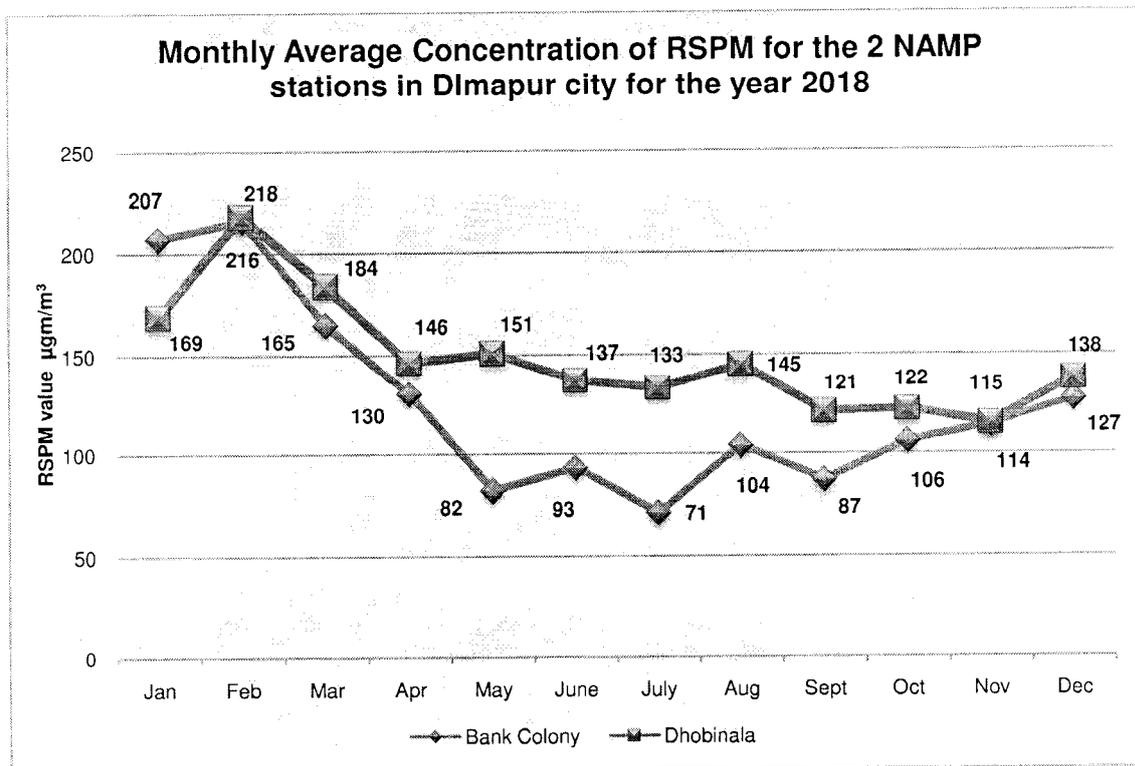
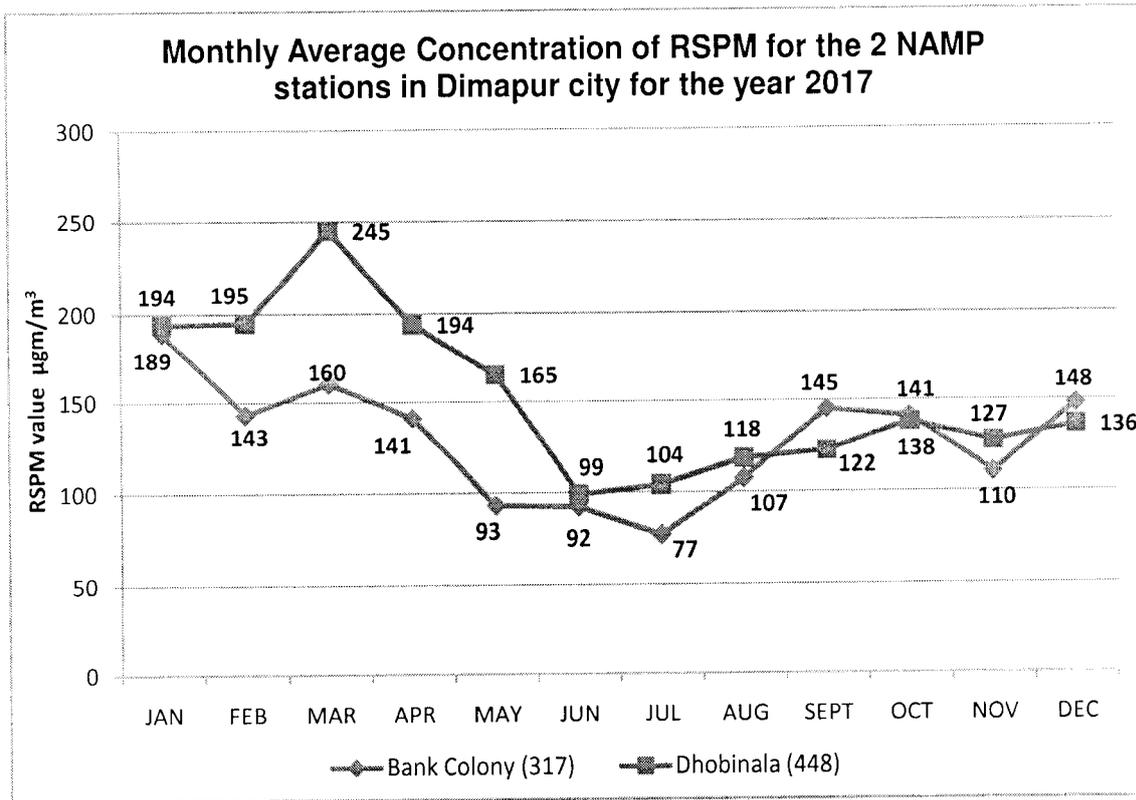
Member Secretary  
Air Quality Monitoring Committee

## STATUS OF AMBIENT AIR QUALITY OF DIMAPUR CITY:

Annual Average Concentration of Particulate Matter (RSPM) in Dimapur city for the past 8 years i.e. from 2011 to 2018:

Years	NAMP stations		Dimapur (Average)	Standards for Residential, Rural and other Areas
	Bank Colony	Dhobinala		
2011	80	98	89	60 $\mu\text{g}/\text{m}^3$ (Annual)
2012	76	95	86	
2013	89	116	103	
2014	111	158	135	
2015	109	142	126	
2016	109	141	125	
2017	129	153	141	
2018	125	148	137	





*[Signature]*  
Member Secretary  
Air Quality Monitoring Committee

**ACTION PLAN FOR NON-ATTAINMENT  
TOWNS/CITIES WITH RESPECT TO AIR  
QUALITY MANAGEMENT IN KOHIMA CITY,  
NAGALAND.**



By

**AIR QUALITY MONITORING COMMITTEE  
NAGALAND**

## CONTENTS



1. ACTION PLAN FOR CONTROL OF AIR POLLUTION IN NON-ATTAINMENT CITY OF KOHIMA (NAGALAND).
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9. ACTION PLAN FOR CONTROL OF AIR POLLUTION IN NON-ATTAINMENT CITY OF KOHIMA.

## ANNEXURE

**ANNEXURE 1:** STATUS OF AMBIENT AIR QUALITY OF KOHIMA CITY.

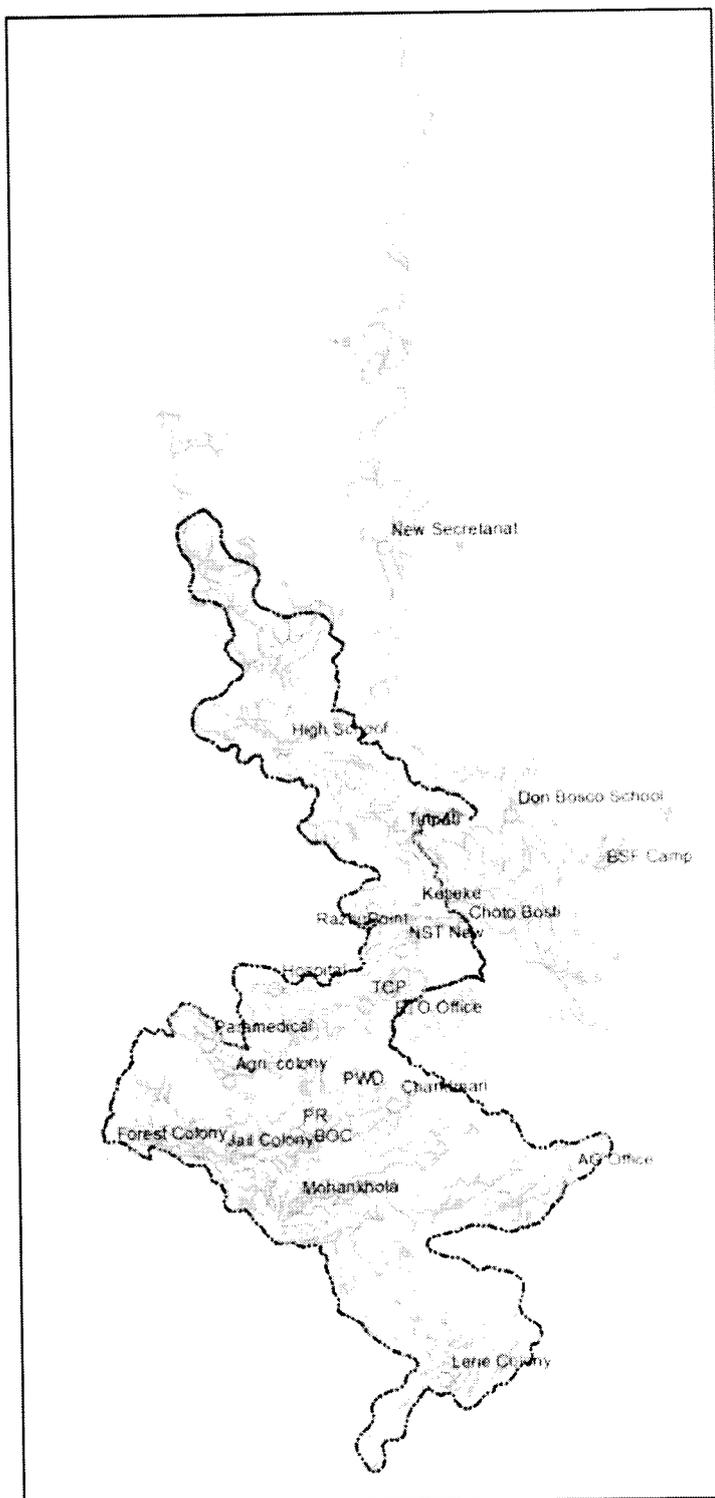
**ANNEXURE 2:** NOTIFICATION OF AIR QUALITY MONITORING COMMITTEE.

## ACTION PLAN FOR CONTROL OF AIR POLLUTION IN NON-ATTAINMENT CITY OF KOHIMA (NAGALAND)

### INTRODUCTION:

Kohima, is a hilly district of India's North Eastern State of Nagaland, it is located at 25°40'N 94°07'E and 25.67°N 94.12°E sharing its borders with Dimapur District in the West, Phek District in the East, Manipur State and Peren District in the South and Wokha District in the North. When Nagaland became a full fledged state on 1st December, 1963, Kohima was christened as the capital of the state. It has an average elevation of 1261 metres (4137 feet) and covers an area of 1,463 sq. km, with a density of 183 per sq. km. Kohima town is located on the top of a high ridge and the town serpentine all along the top of the surrounding mountain ranges as is typical of most Naga settlements. As of 2011 Census, Kohima district has a population of 2,67,988.

Kohima features a more moderate version of a humid subtropical climate. Kohima has a pleasant and moderate climate - not too cold in winters and pleasant summers. December and January are the coldest months when frost



occurs and in the higher altitudes, snowfall occurs occasionally. During peak summer

months from July-August, temperature ranges an average of 80-90 Fahrenheit. Heavy rainfall occurs during summer.

Total number of petrol and diesel vehicles registered under Kohima District comprises of 93,476 nos. Out of which non commercial vehicles registered are around 28,343; commercial passenger vehicles around 3,572 and commercial goods vehicles around 61561. And the total no. of vehicles based on wheel based categorization are 2 wheelers comprises of 3424; 3 wheelers of 2 and 4 & above wheelers comprises of 90,050.

In Kohima District, industries consented with the Nagaland Pollution Control Board accounts to total 106 unit which are categorized accordingly 3 units of Red Category, 41 Orange Category and 62 Green Category.

#### OBJECTIVES:

Kohima city has been placed under non-attainment cities because it was found that for a period of 5 years (2011-2015) the air quality was consistently above the National Ambient Air Quality Standards for PM10. Accordingly, this action plan is proposed to bring down the level of air pollutants within a given time frame by the responsible departments and implementing agencies and the co-operation of the public at large. The agencies responsibilities time frame and budgetary requirements are as given in the chart.

#### SOURCES OF AIR POLLUTION IN KOHIMA CITY:

The major sources of air pollution in Kohima city are:

- i. Dust raised from vehicular movement on the dusty roads.
- ii. Vehicular emissions.
- iii. Burning of wastes such as municipal waste bins, garden/leave waste, etc.
- iv. Construction activity.
- v. Burning of fossil fuel for domestic purpose.

#### AIR QUALITY MONITORING NETWORK (NAMP):

The Nagaland Pollution Control Board has been regularly monitoring the air quality under National Air Monitoring Programme (NAMP) in Kohima city using manually operated Respirable Dust Samplers. Under the National Air Monitoring Programme (NAMP) there are two monitoring stations in Kohima i.e. in Opposite NST Office (609)

and Opposite War Cemetery (610). However, station Opposite War Cemetery (610) has been shifted to a new location in PWD junction.

Under this programme three air pollutants are monitored and analyzed viz., Nitrogen dioxide (NO<sub>2</sub>), Sulphur dioxide (SO<sub>2</sub>) and Respirable Suspended Particulate Matter (RSPM). The monitoring of pollutants is carried out for 24 hours (4 hourly sampling for gaseous pollutants (NO<sub>2</sub> & SO<sub>2</sub>) and 8 hourly sampling for particulate matter (RSPM) twice in a week.

The gaseous pollutants i.e. Nitrogen dioxide (NO<sub>2</sub>) and Sulphur dioxide (SO<sub>2</sub>) are within the national standards in both the monitoring stations.

#### **MONITORING STATIONS UNDER NAMP PROGRAMME IN KOHIMA CITY, NAGALAND.**

<b>Sl. no</b>	<b>Station name</b>	<b>Station code</b>	<b>Station type</b>	<b>District</b>
1	Opposite NST office	609	Residential	Kohima
2	PWD junction	610	Commercial (Along the National Highway-29)	Kohima

2 (two) new additional NAMP stations for Kohima city has been proposed to the Central Pollution Control Board, however, sanctioning of the new station is still awaited.

#### **MONITORING MECHANISM FOR IMPLEMENTATION:**

The aforesaid action plan shall be implemented by Nagaland Pollution Control Board in co-ordination with various stakeholders/Department such as Department of Environment, Forest & Climate Change, Department of Industries & Commerce, Urban Development Department, Transport Department, Municipal/Town Councils, Traffic Police, Town Planning, Border Roads, PWD and District Administration.

#### **IMPLEMENTATION STATUS:**

The Chief Secretary, Government of Nagaland convened meeting on 27<sup>th</sup> November, 2017 with the concerned departments and briefed the importance of Action Plan to improve the Air Quality in Kohima and how each departments should work to improve the air quality. A series of meeting with the various departments have been convened to mitigate the air quality and work on the various objectives entrusted in the action plan to each department.

### GRADED RESPONSE ACTION PLAN (GRAP) FOR KOHIMA CITY:

In pursuance to the Hon'ble Supreme Court order dated 2<sup>nd</sup> December, 2016 in the matter of M.C Metha Vs Union of India regarding air quality in Kohima city a Graded Response Action Plan (GRAP) has been prepared where a new category of "Severe Plus or Emergency" has been added to the present categories of Moderate, Poor, very poor and severe.

Based on the present level of air pollution and trends observed in last few years, the GRAP points given below have been incorporated in the Action Plan, which include:-

1. Regular cleaning of road dust and sprinkling of water on unpaved roads.
2. Strict vigilance and no tolerance for visible emissions, impounding or imposing heavy fine on plying of visible polluting vehicles.
3. Strict enforcement of PUC emission norms.
4. Deployment of traffic police for smooth traffic flow at identified vulnerable traffic cross section areas.
5. Strict enforcement of Hon'ble Supreme Court directions dt. 23.10.2018 on use of fire crackers.
6. Intensify public transport system with cleaner fuel.
7. Strict enforcement of ban on open burning of garbage, etc, covered movement of vehicles carrying solid waste, construction materials, etc.
8. Shut down and shifting of small polluting industries.

#### Action Plan for Control of Air Pollution in Non-Attainment city of Kohima

1. Name of the city : **Kohima**
2. Air Pollution concerns : Particulate matter (PM<sub>10</sub>)
3. Air pollution levels: (provide range of 24-hourly average concentration values; annual average for past Eight years) : Annexed as Annexure-1
4. Months with high air pollution levels : January, February, March, November & December.

**ACTION PLAN FOR NON-ATTAINMENT TOWNS/CITIES WITH RESPECT TO AIR QUALITY MANAGEMENT IN KOHIMA CITY,  
NAGALAND.**

Source group	Action	Implementation period (Short/Mid/Long term)	Time target for Implementation	Responsible Agency(ies)	Budget (in ₹)	Remarks (any other)
<b>Vehicles</b>	1. Restriction on plying and phasing out of 15 years old commercial diesel driven vehicles.	Mid	On-going	Transport Department and Traffic Police	-	Trucks have been debarred from entering the main city roads during the day.  Restriction on phasing out 15 years commercial diesel vehicles is under consideration.
	2. Introduction of cleaner fuels (CNG/LPG) for vehicles.	Mid	On-going	Transport Department & Oil Company.	-	Check on quality fuel is being done. No immediate plan for CNG/LPG.  Pollution under Control Certificate (PUC) issued by Transport Department.
	3. Regular checking of vehicular emission and issue of Pollution under Control Certificate (PUC).	Short	On-going	Transport Department & Traffic Police.	-	Better monitoring of compliance needs to be increased imposing penalties so that it may act as deterrent to the careless/negligent automobile drivers/owners.
	4. Good traffic management including re-direction of traffic movement to avoid.	Mid	On-going	Traffic Police.	-	Frequent and regular traffic congestion and jam density are two most important reasons for air pollution load in the city.  Traffic density and carrying capacity of the roads are required to be looked into with optimal transport network with effective movement of traffic and minimal traffic congestion with training of commercial vehicles/public transport drivers.

Source group	Action	Implementation period (Short/Mid/Long term)	Time target for Implementation	Responsible Agency(ies)	Budget (in ₹)	Remarks (any other)
						The traffic personnel are being trained regularly for better management along with youths engaged by the KMC in managing parking of vehicles.
	5. Ban on registration of Diesel driven auto-rickshaw/Tempo.	Short	-	Transport Department.	-	There are no auto-rickshaws in Kohima.
	6. Promotion of operationalization of E-rickshaw.	Mid	-	Transport Department.	-	There are no auto-rickshaws in Kohima.
	7. Development of multi-layer parking.	Long	3 years	KMC, UDD & District Adm.	25 crore	For approximately 60-70 parking lot.
	8. Retrofitting of particulate filters in diesel driven vehicle.	Mid	2 years	Transport Department.	-	The AGMC is considering recommendation to the concerned department for compulsorily retrofitting of particulate filters in all diesel vehicles within the next 2 years. Notice to be issued.
	9. Checking of fuel adulteration.	Short	On-going	District Adm, NPCB & Oil Company.	10 lakhs	Quality checks are carried out. Besides this NPCB shall purchase necessary instruments for testing fuel adulteration and setting up of laboratory.
	10. Monitoring on vehicle fitness.	Short	On-going	Transport Department & Traffic Police.	-	Pollution under Control Certificate (PUC) issued by Transport Department. Setting up of PUC mobile testing centers.
	11. Periodic calibration test of vehicular emission monitoring instrument.	Short	On-going	NPCB & Transport Department.	10 lakhs	For purchase of monitoring instruments by the NPCB.

Source group	Action	Implementation period (Short/Mid/Long term)	Time target for Implementation	Responsible Agency(ies)	Budget (in ₹)	Remarks (any other)
Road Dust	1. Regular cleaning of road dust.	Short	On-going	KMC	3 lakhs	Road dust is mainly due to bad road condition, traffic load, insufficient water spraying, etc. KMC proposes to clean the dust accumulated along the stretches from Lerie to High School junction.
	2. Water spraying on road through tankers.	Mid	On-going	KMC & PWD (R&B)	-	In the areas where there is road dust, water sprinkling is to be done regularly. No separate budget is allocated as the same is carried out as routine work when required.
	3. Widening of roads and improvement of infrastructure for decongestion of road.	Short	-	KMC and Traffic Police	-	The occupation of roads and footpaths by street vendors and building materials by the public hampers the traffic movement, all such hindrances to be removed by the KMC and traffic police immediately.
	4. Construction of pucca pavement along the roads.	Long	Flexible pavement improvement works started in November 2018. To be completed in two years.	KMC and PWD (R&B)	95 crore	Bituminous flexible pavement provided along the road shoulders (Additional requirement).
	5. Tree plantation along the roads.	Long	July, 2021	Department of Environment, Forest & CC	225 lakhs	Planting of Fifty thousand seedlings (including casualty replacement) along with iron tree guard @ ₹450 per plant

Source group	Action	Implementation period (Short/Mid/Long term)	Time target for Implementation	Responsible Agency(ies)	Budget (in ₹)	Remarks (any other)
	6. Development of green belt in open areas, gardens, parks/ community places, schools & housing societies.	Long	-	Department of Environment, Forest & CC	-	There is not much scope for such intervention. However, all the Govt. departments as and where space is available tree plantation activities have to be carried out.
	7. Introduction of water fountains at major traffic intersection/ Golambar/Circle.	Long	2 years	KMC	30 lakhs	KMC will be the responsible agency for getting the installation of fountains at major traffic points, the KMC had suggested this locations: 1. Classic island. 2. High school junction. 3. New secretariat junction.
Construction activities	1. Covering of construction site.	Short	On-going	PWD (Housing) and KMC	-	It is in practice using bamboo lathes frames and green house cover. KMC to issue directions to all the concerned construction agencies and individuals for covering of construction sites.
	2. Transportation of construction material materials like sand, soil, stone chips etc in covered system.	Short	6 months	Transport Department, District Adm & Traffic Police.	-	Notification to this effect will be issued.
	3. Restriction on storage of construction materials along the road.	Short	Dec, 2019	KMC	1 lakh	Creating awareness in all 19 wards under KMC. Notice will be issued for strict compliance. At present, the C&D waste are being used for filling up in low lying areas.

Source group	Action	Implementation period (Short/Mid/Long term)	Time target for Implementation	Responsible Agency(ies)	Budget (in ₹)	Remarks (any other)
Biomass and garbage burning	1. Restriction on open burning of municipal solid waste, Biomass, plastic horticulture waste etc.	Short	Dec, 2019	KMC	1.5 lakhs	KMC had already issued Notification for banning open burning of garbage on 26 <sup>th</sup> April, 2019. More awareness activity is required to be created.
	2. Immediate lifting of solid wastes generated from desilting and cleaning of municipal drains for its disposal.	Short	Dec, 2019	KMC	20 lakhs	Lifting/clearance of un-segregated waste dump at Lerie Landfill, etc.
	3. Transportation of municipal solid wastes, construction materials and debris in covered system	Short	Dec, 2019	KMC	10 lakhs	For body fabrication of the existing KMC fleet/open trucks.
	4. Ensuring promotion & use of cleaner fuel for commercial purposes like local Dhaba/eateries	Long	1 year	District Adm & Oil Company.	-	Most of the eateries/Dhaba are using commercial LPGs. However, direction to this effect will be given for strict implementation of using only LPG as fuel.
	5. Reducing use of wood as domestic fuel and maximizing coverage of LPG for domestic and commercial cooking with target of 100% coverage.	Long	-	<ul style="list-style-type: none"> <li>Dept of Environment, Forests &amp; CC.</li> <li>Dept. of New and Renewable Energy.</li> </ul>	-	Under the Pradhan Mantri Ujjwala Yojana (PMUJ) it will try to reach out to all the households who use firewood as domestic fuel. Renewable energy options like solar energy to be looked into.
Industries	1. Ensuring installation and operation of air pollution control devices in industries	Short	Dec, 2019	NPCB	5 lakhs	For inventorization and monitoring of industries
	2. Ensuring emission standards in industries.	Short	Dec, 2019	NPCB	-	All industries causing Air, Water and Noise pollution shall be made compliant w.r.t. causing emission levels within the standards as are issued by NPCB. No separate budget is allocated as the same is carried out as routine work when required.

Source group	Action	Implementation period (Short/Mid/Long term)	Time target for Implementation	Responsible Agency(ies)	Budget (in ₹)	Remarks (any other)
	3. Adoption of cleaner technology in brick kilns	Mid	-	NPCB	-	There are no brick kilns in Kohima district
	4. Shifting of polluting industries.	Long	Dec, 2020	NPCB & Industry Department	-	No separate budget is allocated as the same is carried out as routine work when required.
	5. Ban on polluting industries.	Short	Dec, 2019	NPCB & Industry Department	-	No separate budget is allocated as the same is carried out as routine work when required.
	1. Installation of four CAAQMS at City Name A. Two CAAQMS stations under CSR funds of GPSU through Central Pollution Control Board at New Secretariat complex and PWD junction. B. Two CAAQM stations under State Govt. financial assistance	Mid	Dec, 2020	NPCB	1.2 crores	1. One CAAQMS financed by CPCB is in the process of installation at Kohima. 2. The second CAAQMS will be installed at PWD NH-29 junction for which budget is indicated.
Strengthening of AQ monitoring	2. Installation of additional National Air Monitoring Programme (NAMP) stations at Kohima	-	-	NPCB	24.50 lakhs	Presently, there are 2 (two) NAMP stations in Kohima namely Below NST Office (609) and PWD junction (610). However, an additional 2 (two) more stations have been proposed to CPCB vide our latest letter no. NPCB/NAMP-K/2120-21 Dated 26.06.2019. Thus increasing the number of monitoring stations to 4 (four) for Kohima district to strengthen the air quality monitoring network. Sanction and approval from the CPCB still awaited.

Source group	Action	Implementation period (Short/Mid/Long term)	Time target for Implementation	Responsible Agency(ies)	Budget (in ₹)	Remarks (any other)
	3. Source apportionment study	Mid	Dec, 2020	NPCB	10 lakhs	So far no source apportionment study with respect to air pollution is the city has been conducted by the NPCB or any other agency. Therefore, the NPCB contemplates to carry out emission inventory on the basis of sources apportionment study and thereby, remedial measures will be implemented.
	1. Issue of advisory to public for prevention and control of air pollution	Short	Dec, 2019	NPCB & SDMA	10 lakhs	Advisories have been issued from time to time to the public for prevention and control of pollution. Same needs to be continued in future as well through mass awareness programmes using print and electronic media. NPCB proposes for financial assistance for creating awareness.
Public Awareness	2. Involvement of school and other academic institution in awareness program	Mid	Dec, 2019	NPCB	20 lakhs	NPCB conducts awareness programmes amongst the students through National Green Corps (NGC) registered Eco-clubs. NPCB proposes for financial assistance to conduct workshops and pamphlets, signage, etc through which the students can spread more awareness to the public.

Source group	Action	Implementation period (Short/Mid/Long term)	Time target for Implementation	Responsible Agency(ies)	Budget (in ₹)	Remarks (any other)
Others	1. Compliance of guidelines on D.G. sets and action against violation.	Short	Dec, 2019	NPCB & KMC	5 lakhs	NPCB conducts the monitoring/inspection of DG set as and when required. However, budget provisions for NPCB to carry out inventory and monitoring of DG sets is required.
	2. Help line to oversee non compliances on aforesaid issues.	Short	Dec, 2019	NPCB & KMC	-	NPCB had already created a helpline for public complaint in the NPCB website. <a href="http://www.npcb.nagaland.gov.in">www.npcb.nagaland.gov.in</a>
<b>GRAND TOTAL AMOUNT</b>					<b>125.05</b>	<b>Crore</b>

(Rupees One Hundred Twenty Five Crores Five Lakhs only)

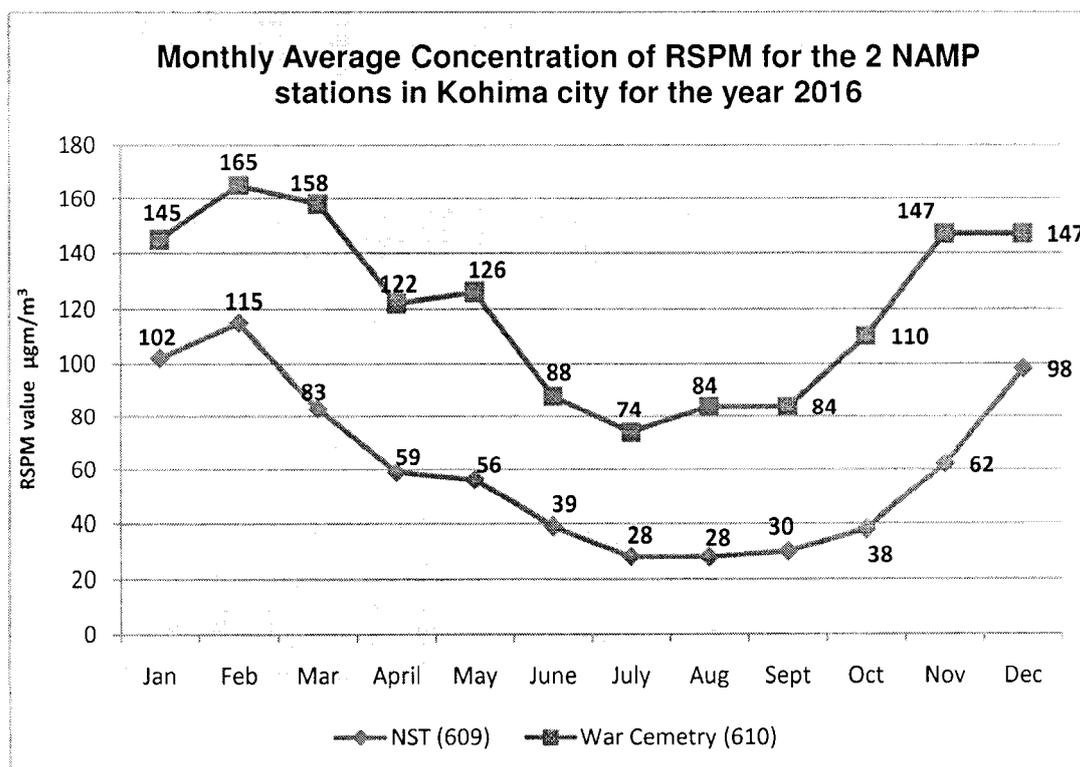


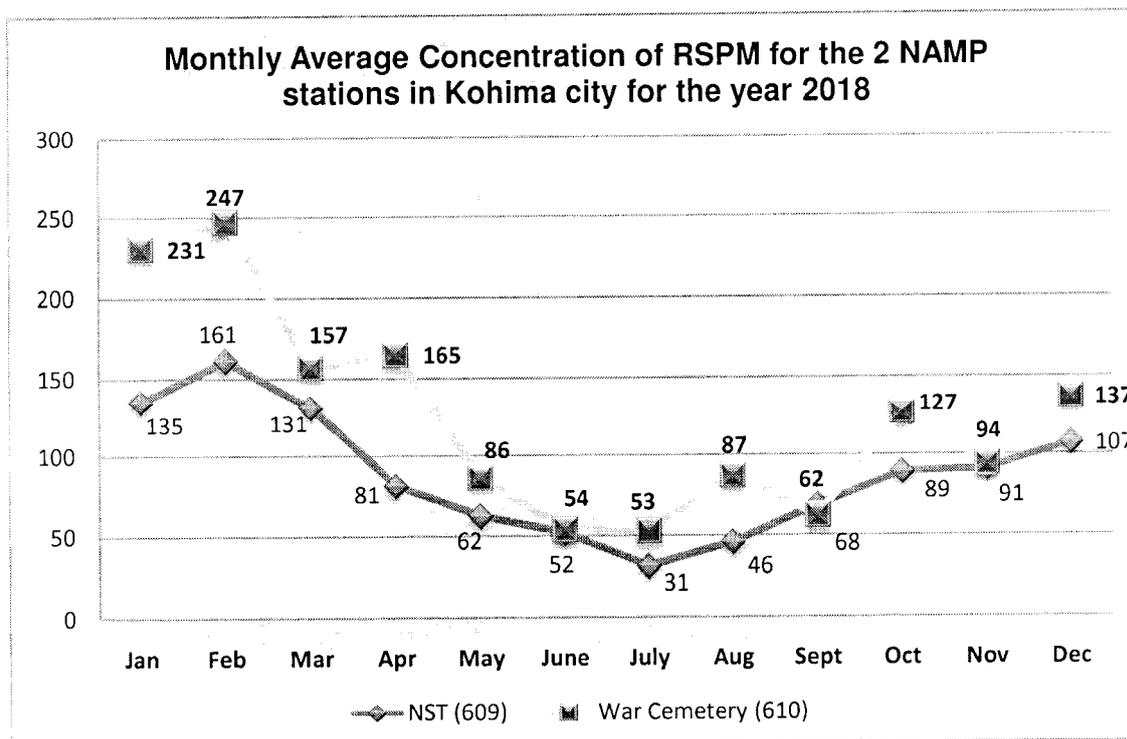
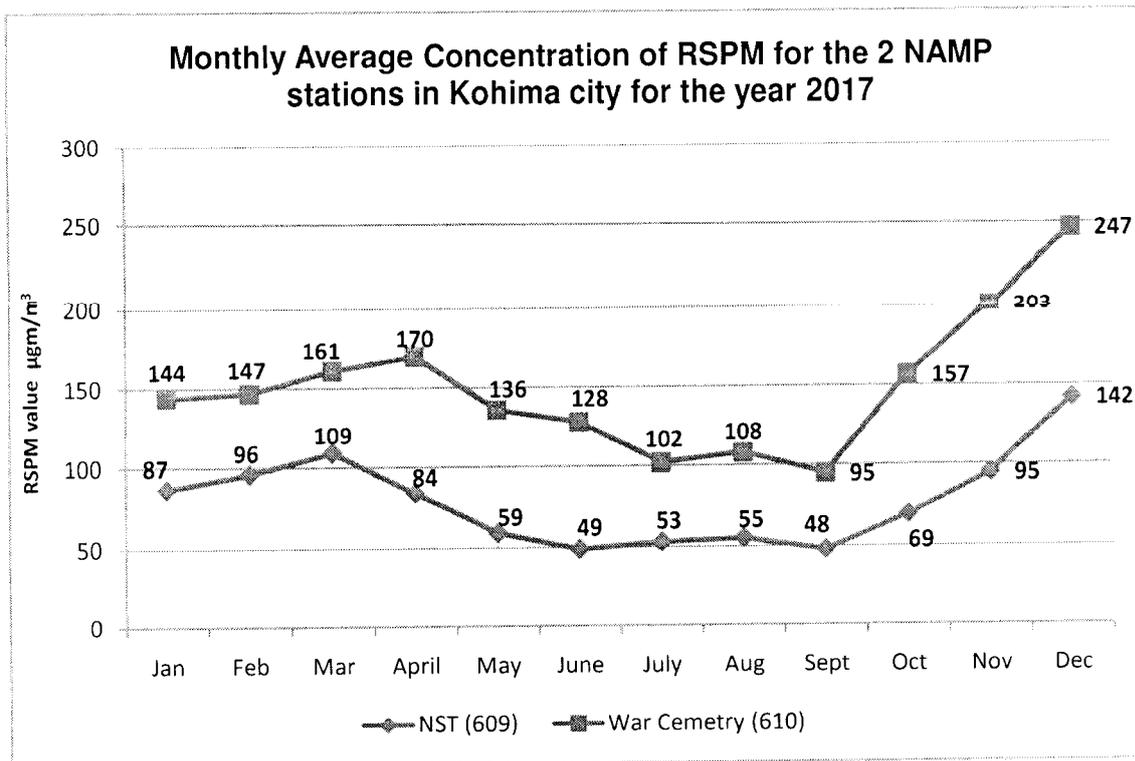
Member Secretary  
Air Quality Monitoring Committee

## STATUS OF AMBIENT AIR QUALITY OF KOHIMA CITY:

Annual Average Concentration of Particulate Matter (RSPM) in Kohima city for the past 8 years i.e. from 2011 to 2018:

Years	NAMP stations		Kohima (Average)	Standards for Residential, Rural and other Areas
	Opp. NST office (609)	Opp. War Cemetery (610)		
2011	62	92	77	60 $\mu\text{g}/\text{m}^3$ (Annual)
2012	63	100	82	
2013	66	104	85	
2014	71	113	92	
2015	71	119	95	
2016	62	121	92	
2017	79	150	115	
2018	88	125	107	





  
 Member Secretary  
 Air Quality Monitoring Committee



# NAGALAND POLLUTION CONTROL BOARD

ANNEXURE R/12  
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NPCB/NAMP/NA/2660

Dated: 15/02/2020

To

The Member Secretary,  
Central Pollution Control Board,  
Parivesh Bhavan,  
East Arjun Nagar,  
Delhi-110 032.

*(Kind attention of Shri V.K.Shukla, Add. Director & Head AQM Division)*

**Sub: Action plan for non-attainment towns: Compliance to Hon'ble NGT and CPCB Directions-reg.**

Sir,

With reference to the above cited subject, I am enclosing herewith the quarterly progress report for the approved city Action Plans of Non-attainment cities i.e. for Dimapur and Kohima cities for the state of Nagaland for your kind information and necessary action.

Thank you.

Encl: As stated

Yours faithfully,

(Dr. Kenei Miachieo, IFS)  
Member Secretary  
Nagaland Pollution Control Board



# NAGALAND POLLUTION CONTROL BOARD

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## FORMAT FOR PROGRESS OF IMPLEMENTATION OF ACTION PLAN

State : Nagaland

City : Dimapur

Year : 2019

Date of direction for ground implementation of action plan (Zero date): 31<sup>st</sup> December, 2019

S. No	Action Plan	Implementation period (short/medium/long)	Implementation status	Action completion date as per city plan	Deviation from targeted timelines, if any	Expected date of completion	Total cost	Remarks
1	Restriction on plying and phasing out of 15 years old commercial diesel driven vehicles.	Mid	On-going	-	-	-	-	Trucks have been debarred from entering the main city roads during the day time with timings of entry i.e. 05:00-07:00 AM during morning hours and 07:00-10:00 PM during night hours.
2	Regular checking of vehicular emission and issue of Pollution under Control Certificate (PUC).	Short	On-going	-	-	On-going	-	Under the directive of DC Dimapur, checking of vehicle emission on vehicles plying under Dimapur town was conducted on September 19, 2019.
3	Good traffic management including re-direction of traffic movement to avoid.	Mid	On-going	-	-	March, 2021	-	Two bridges i.e. Nagarian Bridge and Old Dhansiri Bridge (connecting Super Market to Purana bazaar) are in the process of construction. Completion of these two bridges will ease the traffic congestion in Dimapur city.
4	Regular cleaning of road dust.	Short	On-going	On-going	-	On-going	-	Dimapur Municipal Council (DMC) with the usual routine work carries out the cleaning of road dust, and



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S. No	Action Plan	Implementation period (short/medium/long)	Implementation status	Action completion date as per city plan	Deviation from targeted timelines, if any	Expected date of completion	Total cost	Remarks
5	Water spraying on road through tankers.	Mid	On-going	1 year	-	On-going	-	with the improvement of roads in so many areas cleaning of dust has improved. Dimapur Municipal Council (DMC) and PWD (R&B) had been carrying out activity for sprinkling of water at regular intervals.
6	Widening of roads and improvement of infrastructure for decongestion of road.	Long	On-going	-	-	-	-	The PWD (R&B) Department is carrying out repairing and construction of roads in and around Dimapur city and also the colony lanes. Construction of drainage along the side of the roads is also being carried out.
7	Construction of pucca pavement along the roads.	Long	On-going	2 years	-	2021	-	An estimated 29.02 km road is to be paved and blacktopped, wherein 89.2% work of the physical progress has been completed with a estimated cost of approx. ₹ 654.79 lakhs, which has resulted in mitigating the air pollution and reducing the pollution load generated from particulate matter within the city and colonies areas ( <b>Annexure-1</b> ).
8	Shifting and ban of polluting industries.		On-going	-	-	-	-	3 (three) stone crushers which was located in the residential area under Burma Camp Colony was closed down.



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S. No	Action Plan	Implementation period (short/medium/long)	Implementation status	Action completion date as per city plan	Deviation from targeted timelines, if any	Expected date of completion	Total cost	Remarks
9	Installation of CAAQMS	Mid	-	Dec, 2020	-	-	-	As per the criteria for designing the ambient air quality monitoring network a minimum number of CAAQMS station should be One (1). Therefore, taking into account all this, the Board had sent a proposal under Environmental Compensation (EC) vide letter no. NPCB/PP/2355 Dated 26.08.2019 for setting up of Continuous Ambient Air Quality Monitoring Station (CAAQMS) at Dimapur, Nagaland. However, vide CPCB letter no. PCP/EC/2019-20/7502 Dated October 10, 2019 minutes of the 3 <sup>rd</sup> meeting of Committee for Appraisal and Approval of Project Proposals for Utilization of EC Funds mentioned that it may be covered under NCAP and therefore rejected the proposal. Therefore, the NPCB had again proposed for 1 CAAQMS station under NCAP to Central Pollution Control Board.
10	National Air Monitoring Programme (NAMP)	-	On-going	-	-	-	-	NPCB had installed and commissioned all the 5 new additional NAMP monitoring



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S. No	Action Plan	Implementation period (short/medium/long)	Implementation status	Action completion date as per city plan	Deviation from targeted timelines, if any	Expected date of completion	Total cost	Remarks
11	stations at Dimapur. Involvement of school and other academic institution in awareness program	Mid	On-going	-	-	-	-	stations which was sanctioned by CPCB, and have been sending the data's to CPCB at a regular interval. NPCB with the involvement of local artistes produced a short film on "Air Pollution & its mitigation" to create awareness among general masses through e-media. <a href="https://youtu.be/YoRxOPfgZIo">https://youtu.be/YoRxOPfgZIo</a>

Member Secretary



# NAGALAND POLLUTION CONTROL BOARD

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## FORMAT FOR PROGRESS OF IMPLEMENTATION OF ACTION PLAN

State : Nagaland  
 City : Kohima  
 Year : 2019

Date of direction for ground implementation of action plan (Zero date): 31<sup>st</sup> December, 2019

S. No	Action Plan	Implementation period (short/medium/long)	Implementation status	Action completion date as per city plan	Deviation from targeted timelines, if any	Expected date of completion	Total cost	Remarks
1	Regular cleaning of road dust.	Short	On-going	On-going	-	May, 2020	-	Under the Kohima Smart City, 6 mini vacuum cleaners to clean the road dust have been purchased and further 1 (one) road sweeping machine is in the process of procurement.
2	Widening of roads and improvement of infrastructure for decongestion of road.	Long	On-going	-	-	-	-	The PWD (R&B) Department is carrying out repairing and construction of roads in and around Kohima city and also colony lanes. Construction of drainage along the side of the roads is also being carried out.
3	Construction of pucca pavement along the roads.	Long	On-going	2 years	-	2021	-	An estimated 33.2 km road is to be paved and blacktopped, wherein 83.75% work of the physical progress has been completed with an estimated cost of approx. ₹ 2487.85 lakhs, which has resulted in mitigating the air pollution and reducing the pollution load generated



# NAGALAND POLLUTION CONTROL BOARD

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S. No	Action Plan	Implementation period (short/medium/long)	Implementation status	Action completion date as per city plan	Deviation from targeted timelines, if any	Expected date of completion	Total cost	Remarks
4	Shifting of polluting industries	Long	On-going	Dec, 2020	-	-	-	from particulate matter within the city and colonies areas (Annexure-1). The KMC along with the District Administration is carrying out survey for relocating polluted units within the town vicinity.
5	Transportation of municipal solid wastes, construction materials and debris in covered system	Short	On-going	Dec, 2019	-	Completed	-	KMC have decentralized waste management in all the 19 wards/colonies and have formed 19 wards sanitation committees for primary waste management and collection. It has declared community bins free in all the 19 wards. Covered vehicles with dry and wet compartment facility have been provided to the decentralized colonies.
6	Installation of CAAQMS	Mid	-	-	-	-	-	The installation of 1 (one) CAAQMS in Kohima city has been completed and was inaugurated by the Hon'ble Minister for Environment, Forest & Climate Change and Justice & Law Shri C.M Chang on 28 <sup>th</sup> November, 2019.
7	National Air Monitoring Programme (NAMP) stations.	-	On-going	-	-	May, 2020	-	NPCB is in the process of installation of PM2.5 equipment which was sanctioned by CPCB, which will be located in the present NAMP stations.



# NAGALAND POLLUTION CONTROL BOARD

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S. No	Action Plan	Implementation period (short/medium/long)	Implementation status	Action completion date as per city plan	Deviation from targeted timelines, if any	Expected date of completion	Total cost	Remarks
8	Involvement of school and other academic institution in awareness program	Mid	On-going	Dec, 2019	-	-	-	<p>1. NPCB with the involvement of local artistes produced a short film on "Air Pollution &amp; its mitigation" to create awareness among general masses through e-media.  <a href="https://youtu.be/YoRxoPfqZjQ">https://youtu.be/YoRxoPfqZjQ</a></p> <p>2. Under the NCAP, the NPCB in collaboration with the Kohima College carried out an awareness programme on Clean Air Campaign with the theme, "Clean Air: Life with be Rare without fresh air".            Various activities such as essay competition, prepared speech competition and model projects were conducted along with the participation from 6 colleges. Besides these badges on the theme "Call for Clean Air" was also distributed. (Annexure-2).</p>

Member Secretary