MIZORAM STATE POLLUTION CONTROL BOARD

No. H.88088/Poltn./50 (XIX)-MPR/2021-MPCB/ : Dated Aizawl, the 20th December 2021.

To,

The Secretary,
Ministry of Jal Shakti,
2nd Floor, Block-III, CGO Complex,
Lodhi Road, New Delhi – 110003.

Subj.: Submission of monthly progress report of Mizoram for the month of November 2021 as per the revised format in compliance to Hon'ble NGT order dated 24.09.2020 in the matter of OA No. 673/2018

Sir,

With reference to the above cited subject, may I submit herewith monthly progress report of Mizoram for the month of **November 2021** on OA. 673/2018 as per the revised format for favour of your kind information and further necessary action.

Yours faithfully,

Enclo: As above

(C.LALDUHAWMA)
Member Secretary
Mizoram Pollution Control Board

Memo No. H.88088/Poltn./50 (XIX)-MPR/2021-MPCB/ : Dated Aizawl, the 20th December 2021.
Copy to: Member Secretary, Central Pollution Control Board

(C.LALDUHAWMA)
Member Secretary
Mizoram Pollution Control Board

Monthly Progress Report for the State of MIZORAM for OCTOBER 2021
(As per revised format)

(in compliance to NGT order dated 24.09.2020 in the matter of OA No. 673 of 2018)

Overall status of the State:

I. Total Population: Urban Population & Rural Population (as per 2011 census).

Urban & Rural Population	*2011*	*Projected population in 2021*
Urban Population	525435	638722
Rural Population	571771	632013
Total	**1097206**	**1270735**

II. Estimated Sewage Generation (MLD) as per projected population for 2021:

Urban	68 MLD
Rural (692 villages)	36 MLD
Total	**104 MLD**

Note*: The Sewage Generations are arrived taking into consideration the water supply at 70 lpcd and 135 lpcd in rural and urban respectively.*

III. <u>Details of Sewage Treatment Plant:</u>

- Existing no. of STPs and Treatment Capacity (in MLD):
  - 1 STP in Aizawl with a capacity of 10 MLD operational from 6th Feb., 2021
- Capacity Utilization of existing STPs:
  - **0.45 MLD**
- MLD of sewage being treated through Alternate technology:
  - 0.578 MLD (Bio Digester etc.) by PHED
  - 0.245 MLD Bio Digester constructed by SIPMIU
- Gap in Treatment Capacity in MLD:
  - 104 MLD – 10.821 MLD = 93.177 MLD
    (Counting the operation of 10 MLD at hand)
- No. of Operational STPs:
  - **1**
- No. of Complying STPs:
  - **1**
- No. of Non-complying STPs:
  - **Nil**

Details of each existing STP in the State

No.	Location	Existing STP Capacity	Capacity Being Utilized	Operational Status of STP	Compliance Status of STP
1.	Bethlehem Vengthang, Aizawl	(10 MLD)	0.45 MLD	(Operation has started on 6th February, 2021)	Consent to Operate for STP obtained from the Mizoram Pollution Control Board (MPCB). Online Continuous Effluent Monitoring System (OCEMS) installed as per the specific conditions of the CTO. Calibration of equipment is completed and functioning.

Details of under construction STPs in the State

No.	*Location*	*Capacity of the plant in MLD*	*Physical Progress in %*	*Status of I&D or House sewer connections*	*Completion Timeline*
1.	Bethlehem Vengthang, Aizawl	10 MLD	Sewerage network – 76.17%	**4136** registered Households (House connection works considerably slow due to Total Lockdown imposed within Aizawl City area)	Although STP has started operation, additional network connection is still ongoing to increase capacity utilization of the STP. As water supply in Aizawl has not achieved the design 135 lpcd, the anticipated utilization is also considerably low.

Details of proposed STPs in the State

No.	*Location*	*Capacity of the STP proposed in MLD*	*Status of Project (at DPR Stage/ Under Tendering/ Work to be Awarded)*	*Likely Date of Completion*
1.			• Action Plan for 100% sewage treatment Including recycle and reuse of treated waste water was submitted to the State Govt., will be implemented after due approval and instruction from the State Govt. • Seeing the scope of much needed urban infrastructure ((Urban Water/Solid Waste Management/Drainage/ Urban Roads/ Sewerage) for Tier–II cities and towns, the State Government had formulated and submitted a Preliminary Project Proposal Report (PPR) to the Central Ministry, MoHUA for NERUDP type financing scheme. • PeyJalSurvekshan under JalJeevan Mission (JJM) is recently launched by Central Ministry with an objective to ascertain the equitable distribution of water ,reuse of wastewater and mapping of water bodieswith respect to quantity and quality of water through a challenging process. Since the mission is only at the preparatory stage, there is no achievement at the implementation stage. However, 100% coverage will be the objective at the implementation stage.	

IV. Details of Industrial Pollution:

- No. of industries in the State:
  - 735units
- No. of water polluting industries in the State:
  - 56 units (Status of the industry and the functioning of ETP is enclosed at **Annexure-I)**
- Quantity of effluent generated from the industries in MLD:
  - 0.04384 MLD
- Quantity of Hazardous Sludge generated from the Industries in TPD:
  - Nil
- Number of industrial units having ETPs:
  - 56units
- Number of industrial units connected to CETP:
  - Nil (No CETP exists)
- Number and total capacity of ETPs (details of existing/ under construction / proposed)
  - 56 units with total capacity of 0.099 MLD
- Compliance status of the ETPs:
  - ETPs are functional and effluents are found to be complied with standards.
- Number and total capacity of CETPs (details of existing/ under construction / proposed) :
  - Nil (No CETP exists)
- Status of compliance and operation of the CETPs: No CETP exists

Town	No. of industries	Industrial discharge	Status of ETPs	Status of CETPs (existing, under construction & proposed)
N/A				

V. Solid Waste Management:

- Total number of Urban Local Bodies and their Population:
  - Only 1 notified ULB in Mizoram i.e. Aizawl Municipal Corporation
  - Population: 293,416 as per 2011 census
  - 22 Urban Towns with Population:278,355 as per 2011 census

- Current Municipal Solid Waste Generation:
  - 348.19 TPD (23 Urban towns)
- Number, installed capacity and utilization of existing MSW processing facilities in TPD (bifurcated by type of processing eg.- Waste to Energy (Tonnage and Power Output), Compost Plants (Windrow, Vermi, decentralized pit composting), biomethanation, MRF etc.:
  - Landfill : 44TPD & Material Recovery Facility 74 TPD (Aizawl city)
  - Composting:
    i. Aizawl city: a) Vermi-composting plant – 22 TPD
    b) Mechanical Composting Plant – 50 TPD

    ii. Lunglei Town: Vermi-composting Plant – 45 TPD is under cosntruction

    ii. KolasibTown: Vermi-composting Plant of - 20 TPD is under construction.

    iii. Champhai Town: Vermi-composting Plant of - 25 TPD is under construction

    iv. Remaining 19 Urban towns: Vermi-composting Plant - 0.5TPD each are operational

    v. DPR for Land Development for Solid Waste Management Centre for 5 (Five) remaining towns have been approved and Administrative Approval& Expenditure Sanction amounting to Rs 60.00 Lakhs each have been received from the state Government.

    vi. Out of the 23 Urban towns, only 4 (Four) Urban Towns have SWM Center under implementation stage. Therefore, Concept Note have been submitted to various Ministries/Agencies for consideration under the following schemes such as
    1. NLCPR, 2. NEC, 3. NITI Ayog etc for remaining 19 Urban Towns.

  - Action plan to bridge gap between Installed Capacity and Current Utilization of processing facilities (if Gap > 20%):
    - ❖ Solid Waste Management Center at Tuirial, Aizawl started functioning since 12th December, 2019 which caters a total of 214 TPD including 44 TPD capacity Landfill, 74 TPD capacity Material Recovery Facility, 50 TPD Mechanical Composting Plant and 46 TPD Vermicomposting Plant.
    - ❖ In order the bridge gap of Solid Waste Management at Urban Towns, UD&PA Department have prepared and submitted Concept Note as well as Detailed

Project Report to various Ministries/Agencies for consideration under the following schemes such as 1. NLCPR, 2. NEC, 3. NITI Ayog, etc.

- No. and capacity of C&D waste processing plants in TPD (existing, proposed and under construction):
  - Nil
- Total no. of wards, no. of wards having door to door collection service, no. of wards practicing segregation at source:
  - No. of wards in Aizawl city: 19
  - No. of wards having door to door collection service: 19
  - No. of wards practicing segregation at source: 19
- Details of MSW treatment facilities proposed and under construction (no., capacity, and technology):
  - In addition to one existing MSW treatment facility at Tuirial (Eastern part of Aizawl city), 3 more sites have been identified for closing the gap in waste management at the following locations for which concept paper preparation is under process:
    i) Hualngo Hmun (southern part of Aizawl city)
    ii) Sihphir Neihbawih (Nothern part of the Aizawl city)
    iii) Luangmual (Eastern part of Aizawl City)

The Status of ongoing and pipeline SWM Projects in Mizoram Urban Areas are:

Sl. No	Name of city /Town	2020 Population Projected	Projected SW Generation Per/capita/ Day(TPD)	Plant Capacity		Funding	Project Amount	Status
				Existing TPD	Pipeline TPD			
1	Aizawl	343619	178.68	190		ADB	34 Cr. (Approx)	Functioning since 12th December,2019
2	Lunglei	66766	34.72	0.0	45	NLCPR (MoDONER)	600 Lakhs	Under construction 1stInstalment pending with the ministry)
3	Champhai	38335	19.93	0.0	25	SBM (U) (MoHUA)	667 Lakhs	Under construction (90%Physical Progress completed)
4	Kolasib	28425	14.78	0.0	20	NEDP 2018-2019 (State Fund)	400 Lakhs	Under construction (90%physical progress completed)
5	Serchhip	24778	12.88	0.5	20	Rs.60 Lakhs each for Land Development	Rs. 60 Lakhs	Budget Allocation Received and Sanctioned
6	Mamit	9233	4.80	0.5	15		Rs.60 Lakhs	

7	Saitual	13607	7.08	0.5	15	have been received under special Assistance under Capital Expenditure Free Loan	Rs.60 Lakhs	order awaited
8	Khawzawl	12908	6.71	0.5	15		Rs.60 Lakhs	
9	Hnahthial	8417	4.38	0.5	15		Rs.60 Lakhs	
10.	Siaha	29406	15.29	0.5	20			
11	Lawngtlai	24394	12.68	0.5	20	Concept Note Submitted to NEC, NESIDS, NITI Aayog Etc for Solid Waste Management Centre		Existing facilities for Wet waste (vermin composting) and Dry Waste (WasteResource Management Centre) has been in placed in all urban towns. Response awaited from Government of India
12	Zawlnuam	4372	2.27	0.5	10			
13	Vairengte	12360	6.43	0.5	10			
14	Lengpui	3844	2.00	0.5	10			
15	N.Kawnpui	9055	4.71	0.5	10			
16	Thenzawl	8501	4.42	0.5	10			
17	Sairang	6968	3.62	0.5	10			
18	Tlabung	5333	2.77	0.5	10			
19	Bairabi	5059	2.63	0.5	10			
20	Darlawn	4414	2.30	0.5	10			
21	N.Vanlaiphai	4218	2.19	0.5	10			
22	Khawhai	2923	1.52	0.5	10			
23	Biate	2667	1.39	0.5	10			

- No. and area (in acres) of uncontrolled garbage dumpsites and Sanitary Landfills:
  - One at Tuirial Dumping Ground having approximately 487 sq.m. It has been closed recently since 1st November 2020 following the commissioning of the newly constructed Waste Management Centre at Tuirial.
- No. and area (in acres) of legacy waste within 1km buffer of both side of the rivers:
  - Nil
- No. of drains falling into rivers and no. of drains having floating racks/screens installed to prevent solid waste from falling into the rivers:
  - Nil

VI. Bio-medical Waste Management:

- Total Bio-medical generation:
  - 863.13 Kg/ day
- No. of Hospitals and Health Care Facilities:
  - 144 (Bedded Hospitals & Nursing Home -64, Clinics & Dispensaries- 76, Veterinary institution-1, Nursing Institution- 2)
- Status of Treatment Facility/ CBMWTF
  - Treatment Facility – 3 Nos of incinerator
  - Captive Disposal – Deep burial pit/sharp pit
  - Setting up of one CBMWTF is being initiated by the state Government for which public hearing was already conducted on 30.09.2021. It is proposed to be set up at Tuirial near Solid Waste Management, Center, Aizawl District, Mizoram.

VII. Hazardous Waste Management:

- Total Hazardous Waste generation
  - 51.132 MTA (As per revision of Annual Inventory report (2020-2021)
- No. of Industries generating Hazardous waste
  - 24
- Treatment Capacity of all TSDFs:
  - No TSDF exists at present.
- Avg. Quantity of Hazardous waste reaching the TSDFs and Treated:
  - N/A
- Details of on-going or proposed TSDF:
  - Suitable Site at Industrial Growth Centre, Luangmual, Aizawl has been identified by the State Govt. for setting up common TSDF. The Commerce and Industries department is in search of consultancy firm for setting up of the common TSDF but is held back due to non-availability of empanelled firm in the state. The problem has been conveyed to the higher authority.

VIII. Plastic Waste Management:

- Total Plastic Waste generation:
  - *7905.5 TPA (Municipal Corporation) & 3.1 TPA (Urban and Rural areas)*
- Treatment/ Measures adopted for reduction or management of plastic waste:
  - The Plastic Wastes Management Bye-laws, 20 I 9, prepared by Aizawl Municipal Corporation (AMC) was notified vide Mizoram Gazette Notification No M.12011 /6/2014-AMC Dt 16.07.2019.
  - AMC has imposed complete ban on plastic carry bags below 50 micron within its jurisdiction with effect from 1st August 2019.
  - The State Govt. has imposed ban on distribution or placing of packaged drinking water made of plastic in all official meetings or conferences or gathering w.e.f 20th May 2019.
  - The AMC has initiated of segregation of wastes at source and has set up **Plastic waste Collection Centre** at Riangvai Thlanmual, Zemabawk, Aizawl.
  - As per initiatives taken by Mizoram Pollution Control Board, Public Works Department has initiated a program for utilization of plastic wastes in road construction following the 'Guidelines for utilization of plastic wastes' and has recently constructed 800 m long of road using plastics at Reiek, Mamit district.
  - Extensive Awareness campaigns were launched in beating plastic pollution to schools and colleges by MPCB. As as result, the state now has 126 schools and 11 colleges declared as **"Plastic Free" institutions**.

IX. Details of Alternate Treatment Technology being adopted by the State/UT:

-

X. Identification of polluting sources including drains contributing to river pollution and action as per NGT order on insitu treatment:

- Water quality of the polluted drains has been regularly monitored by Mizoram Pollution Control Board on quarterly basis and the data for the last quarter i.e August to October 2021 is enclosed in **Annexure-I.**

XI. Details of Nodal Officer appointed by Chief Secretary in the State/UT:

- Mr. Lalrotluanga, Chief Engineer, Irrigation &Water Resources Department, Govt. of Mizoram Vide Notification No.A.46012/1/2019-GAD Dt.27.02.2020

XII. Details of meetings carried under the Chairmanship Chief of Secretary in the State/UT:

- State Level Monitoring Committee has been constituted under the Chairmanship of Chief Secretary, Govt. of Mizoram notified vide letter No.C.18013/2/2020-I&WR/243 dt. 21.07.2020. The Committee comprises of the following members:

1. Chief Secretary	*Chairman*
2. Principal Secy./Secy., EF&CC	*Member*
3. Secy., PHED	*Member*
4. Secy., LRS&WCD	*Member*
5. Secy., UD&PA	*Member*
6. Commissioner, AMC	*Member*
7. Chairman, MPCB	*Member*
8. Secy., I&WRD	*Member Secy.*

- Review meeting under the Chairmanship of Chief Secretary, Govt. of Mizoram with Secretaries of the concerned departments to oversee implementation status of the Action Plan in the matter of the orders of the Hon'ble NGT in O.A No.673/2018 was held on 2nd February 2021.

XIII. Latest water quality of polluted river, its tributaries, drains with flow details and ground water quality in the catchment of polluted river:

- Analysis of polluted river has been regulary undertaken by Mizorfam Pollution Control Board and the water quality data of polluted stations for the month of November 2021 is enclosed in **Annexure-II.**

XIV. : Ground water regulation

- In Mizoram, surface water serves as the main sources of water for drinking, domestic and industrial purposes. Ground water extraction is insignificant in Mizoram and the State Govt. has no separate notified Ground water regulations, however, regulations issued by Central Ground Water Authority has been followed in the state.

XV. Good irrigation practices being adopted by the State:

- Although e-flow is not yet assessed, discharge of streams/rivers are never fully diverted for irrigation purposes.

- Guidelines for 'Environment Health & Social Safety' are incorporated in the Dept's Construction Manual which is expected to be approved soon.

XVI. Rain Water Harvesting:

- State Govt. has framed Rain Water Harvesting Policy for the state of Mizoram which is expected to be notified soon.
- Various stakeholder departments such as, PHE, Rural Development, PWD, AMC have taken up schemes for implementing construction of rainwater harvesting structures in the state.
- AMC has mandated provision of rainwater harvesting facility and discharge of rainwater in AMC Building Regulation, 2012 No 5(6) and No.32.
- For rejuvenation of polluted rivers, construction of rainwater harvesting structures have been proposed to be constructed in the river catchment areas for which concerned department, PHED has initiated actions.

XVII. Demarcation of Floodplain and removal of illegal encroachments:

- Not relevant for the state as Mizoram is a hilly region and has no floodplain zone.

XVIII. Maintaining minimum e-flow of river:

For assessment of e-flow of the rivers, actions have been initiated as briefed below:

- Regression models were developed for all parameter using a forward stepwise-regression considering non-transformed and log-transformed data. Leave-one-out cross validation was utilized as the basic criteria for selecting the best performing models. The results showed that the log-transformed models outperformed the non-transformed ones. For high flows (q5), it was observed that precipitation (PREC), potential evapotranspiration (ETpot), drainage density(D), catchment area (A) and percent of Scurbland (LST) area are the explanatory variables. For median flow (q50), precipitation (PREC), minimum elevation (H-), potential evapotranspiration (ETpot), catchment area (A) and percent of Scurbland (LST)were observed as the dominant explanatory variables. For low flows (q90) prediction, precipitation (PREC), drainage density(D), mean elevation (Hm), potential evapotranspiration (ETpot), percent of forest dense (LFD), catchment area (A) and percent of Scurbland (LST) appears in the stepwise model. And for low flows i.e., e-flows (q95), precipitation (PREC), drainage density(D), mean elevation (Hm), potential evapotranspiration (ETpot), percent of forest dense (LFD), catchment area (A) and percent of Scurbland (LST) are the dominant explanatory variables. The identified most substantial variables for the regionalization of FDCslp are mean elevation (Hm), precipitation (PREC), drainage density (D), catchment perimeter (Cp), catchment area (A)and potential evapotranspiration (ETpot).

XIX. Plantation activities along the rivers:

- Environment, Forests and Climate Change Department has been taking up plantation drives in the catchment areas of the polluted rivers with a targeted area of 595.5 Ha out of which about 186.8 Ha has been already covered.

XX. Development of biodiversity park:

- Some of the rivers already have Riverine Reserved Forests of about 800 metres on either side of the river banks which are well protected. As such, a separate biodiversity park was not proposed for rejuvenation of the polluted rivers, instead plantation drives have been undertaken in the catchment area of the polluted rivers.

XXI. Reuse of Treated Water:

The treated sewage water shall be utilized as per the action plan such as agriculture, irrigation/horticulture, and industrial re-use, construction activities, fire tender and urban reuse when the STP is fully operation.

XXII. Model River being adopted by the State & Action Proposed for achieving the bathing quality standards:

- Review meeting under the Chairmanship of Chief Secretary, Govt. of Mizoram with Secretaries of the concerned departments held on 2nd February 2021 identified Chite stream as a model polluted river in Mizoram. A meeting to discuss preparation of Action Plan for Polluted River was held on 30th March 2021 and the meeting decided to complete preparation of the action plan on urgent basis and follow up action be carried out vigorously by the stakeholders.

XXIII. Status of Preparation of Action Plan by the 13 Coastal States:

- Not applicable to the state of Mizoram as Mizoram is a landlocked state and has no coastal areas.

XXIV. Regulation of Mining Activities in the State/UT:

- In Mizoram, there are no major mining activities yet. Most of the mining activities are that of minor mineral mining such as sandstone (stone quarry) and sand mining (sand extraction from river beds)
- Mining activities are strictly regulated in the state under The Mizoram Minor Minerals Consession Rules, 2000, notified by the State Govt. on 20.09.2005 as per the provisions of Section 15 (i) of the The Mines and Minerals (Development and Regulation) Act, 1957.
- Apart from the above Rules, provisions under Central Act and Rules such as, The Explosive Rules, 2008 and The Mines Act, 1952 are effectively followed.

XXV. Action against identified polluters, law violators and officers responsible for failure for vigorous monitoring:

- Actions have been taken and fines imposed from time to time against the identified polluters, law violators in the past. However, during the reporting months, there is no such action taken.

ANNEXURE - I

Polluted Rivers Data With Drains Joining the Polluted locations October, 2021

Sl.No	Name of Polluted River	Name of Drains	A. STATIONS DETAILS												
			Sampling Date	Sampling Time	Used Based Class	Major Polluting Sources	Visibility Effluent Discharge	Use of water in Down Stream (irrigation, industrial, domestic, drinking water source, organised water source, cultivation, fishing, bathing ghat, others)	Weather	Depth of Water Body (m)	Human activities (Bathing, Washing, Cultivation, Fishing, Boating, Gardening, Tourist spot, cattle wedding, others)	Floating matter	Colour	Odour	Flow (m/s)
			1	2	3		5	6	7	8	9	10	11	12	13
1	**Tiau River**	LK KAI													
2	**Tlawng River**	Drain -1 flowing between Pukpui & Zotlang	16-10-2021	11.30						N/A			Clear	Odourless	N/A
		Drain -2 flowing between nothern side of Serkawn & Zotlang	16-10-2021	1.00				Bathing		N/A	Public Water Supply		Clear	Odourless	N/A
		Drain -3 flowing between Southern side of Serkawn	16-10-2021	2.30						1.2	Bathing, Dwelling, Paddy Field		Clear	Odourless	0.3
		Dak Lui, Sairang	21-10-2021	11.40						0.1			Pale Yellow	Odourless	0.5
		Lawngpu lui	21-10-2021	12.00					Rainy	0.1			Pale Yellow	Odourless	0.5
		Bawng lui	19-10-2021	3.00						1			Clear	Odourless	1
3	**Tuipui River**	Keilungliah Stream													
4	**Tuivawl River**	Serlui	25-10-2021	12.45		Agriculture		Jhum Cultivation	Clear	0.1	Jhum Cultivation		Clear	Odourless	0.2
5	**Chite Stream**	Tlak Lui	14-10-2021	1.50						0.2			Yellow	Pungent	0.3
		Bangla Lui	14-10-2021	1.30						0.2			Brown	Pungent	0.3
		Luihnai & Darnam Lui	14-10-2021	12.20						0.2			Clear	Odourless	0.5
		Sakawrpu lui	14-10-2021	12.50						0.2			Browm	Pungent	0.5
6	**Mat River**	Hmawngawn lui,Serchhip	15-10-2021	1.30	Domestic, Agriculture			Irrigation	Clear	0.5	Domestic, Gardening	Algae	Clear	Odourless	1.2
7	**Saikah Stream**	NIL													
8	**Tuikual Lui**	Chawnpui Lui	25-10-2021	12.15					Clear	0.1			Clear	Odourless	0.3
		Dinthar Lui	25-10-2021	12.30					Clear	0.2			Clear	Odourless	0.3
		Dawrpui Kawr	25-10-2021	12.00					Clear	0.2			Clear	Pungent	0.3
9	**Tuirial River**	Theihai Lui	05-10-2021	11.30					Hot	0.1			Clear	Odourless	0.4
		Hmawngkai Lui	05-10-2021	11.20						0.1			Clear	Odourless	0.4
		Lawibual Lui	05-10-2021	11.15						0.1			Clear	Odourless	0.5

Polluted Rivers Data With Drains Joining the Polluted locations October, 2021

Sl.No	Name of Polluted River	Name of Drains	B. CORE PARAMETERS								C. GENERAL PARAMETERS											
			Water Temp (°C)	D.O (mg/L)	pH	Conductivity µs/cm	B.O.D (mg/L)	Nitrogen Nitrite (N-No_2) (mg/L)	Faecal Coliform MPN	Total Coliform MPN	Turbidity NTU	Total Alkalinity (mg/L)	Chlorides (mg/L)	Ammonia-N (mg/L)	Total Hardness (mg/L)	Calcium (mg/L)	Magnesium (mg/L)	Sodium (mg/L)	K (mg/L)	TDS (mg/L)	TSS (mg/L)	Total Phosphate (mg/L)
			14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33
1	**Tiau River**	LK KAI																				
2	**Tlawng River**	Drain -1 flowing between Pukpui & Zotlang	21	6.3	6.2	139	1.8	0.022			2.5	27.6	22.2	0.22	44	8	5.8			90	10	0.065
		Drain -2 flowing between nothern side of Serkawn & Zotlang	20	5.5	6.1	129	1.5	0.021			2.6	31.5	16.9	0.201	42	8.8	4.8			140	10	0.086
		Drain -3 flowing between Southern side of Serkawn	21	5.5	6.8	128	1	0.026			2.9	43.3	17.8	0.228	40	6.4	5.8			60	10	0.09
		Dak Lui, Sairang	27	8.2	7.5	144	2.4	0.12	35	2400	50.9	49.2	18.7	1.227	40	12.8	1.9					0.289
		Lawngpu lui	26	8.6	7.1	1556		0.249	15	1100	100	49.2	6.4	4.609	60	20.8	1.9					0.964
		Bawng lui	30	5.2	7.3	251	2.5	0.071			23.3	159.4	13.3	0.866	102	36	2.9			190	30	1.62
3	**Tuipui River**	Keilungliah Stream																		70	40	
4	**Tuivawl River**	Serlui	21	8.4	6.8	158	1.4	0.024			12.7	39.4	10.7	0.232	70	23.2	2.9			50	30	0.052
5	**Chite Stream**	Tlak Lui	30	3	7.4	411	6.7	0.038	43	240	32	239	72.9	5.529	124	24	15.4			740	130	1.372
		Bangla Lui	30	2.9	7.7	805	8.8	0.113	9.1	23	18.7	266.5	76.4	5.936	122	22.4	15.8			690	30	1.843
		Luihnai & Darnam Lui	30	6.2	8	555	3.3	0.531	24	2400	8.4	193	90.6	0.555	144	32	15.4			490	20	0.419
		Sakawrpu lui	30	1.6	7.2	751	7.3	0.045	240	2400	21.3	167.3	64.9	5.358	136	25.6	17.3			860	80	1.919
6	**Mat River**	Hmawngawn lui,Serchhip	18	5.1	7	89	2.4	0.023			2.9	49.6	16	0.232	36	4.8	5.8			90	50	0.078
7	**Saikah Stream**	NIL																				
8	**Tuikual Lui**	Chawnpui Lui	28	2.7	7.8	822	4.4	0.064	120	2400	20.4	275.6	115.5	5.464	110	34.4	5.8					1.695
		Dinthar Lui	28	3.5	7.5	553	4.9	0.449	20	1100	8.9	216.5	62.2	3.268	146	55.2	1.9					0.527
		Dawrpui Kawr	28	1.8	7.4	106	6.4	0.136	27	2400	80.4	472.4	112	7.038	104	38.4	1.9					1.719
9	**Tuirial River**	Theihai Lui	25	5.6	7.3	483	3.1	0.522	1100	2400	4.3	165.4	57.8	2.28	140	32.8	13.9			430	20	0.252
		Hmawngkai Lui	25	5.5	7.7	549	3	0.513	1100	2400	5	193	62.2	2.797	144	36	13			540	20	0.591
		Lawibual Lui	26	5.9	7.8	220	1.8	0.18	460	2400	3.3	128.7	48.9	0.201	100	16.8	13.9			480	30	0.2

ANNEXURE - II

Water Quality Data of 9 (NINE) Polluted River stretches in Mizoram
(OA - No. 673 of 2018)

NOVEMBER
2021

MIZORAM STATE POLLUTION CONTROL BOARD

DETAILS OF POLLUTED LOCATIONS & RESULTS OF FIELD PARAMETERS FOR THE MONTH OF NOVEMBER, 2021

Sl. No.	Station Code	Name of Station	Location	Co-Ordinates			A. STATIONS DETAILS												
							Sampling Date	Sampling Time	Used Based Class	Major Polluting Sources	Visibility Effluent Discharge	Use of water in Down Stream (irrigation, industrial, domestic, drinking water source, organised water source, cultivation, fishing, bathing ghat, others)	Weather	Depth of Water Body (m)	Human activities (Bathing, Washing, Cultivation, Fishing, Boating, Gardening, Tourist spot, cattle wedding, others)	Floating matter	Colour	Odour	Flow (m/s)
				Longitude	Latitude	Elevation	1	2	3	4	5	6	7	8	9	10	11	12	13
1	3756	Tiau River	Near Boundary Tiau Bridge, Zokhawthar Village, Champhai District, Mizoram	93°23′31.0″E	23°21′42.8″N	720m	14-11-2021	10.00		Domestic			Clear	1.1	Washing		Pale Yellow	Odourless	2.5
2	3709	Tlawng River, Sairang	Sairang Village, Aizawl District, Mizoram	92°39′10″E	23°48′49″N	80m	02-11-2021	11.30		Agriculture			Clear	1			Pale yellow	Odourless	0.5
	3734	Tlawng River, Upper Stream, Lunglei	Near Tlawng Bridge, Mausen Village, Lunglei District, Mizoram	92°49′15.0″E	22°51′21.2″N	1080m	16-11-2021	2.00		Agriculture		Domestic	Clear	0.7	Washing, Domestic Purpose		Clear	Odourless	0.2
	3736	Tlawng River, Pialthleng, Zotlang, Lunglei	Near P.H.E Water Treatment Plant, Zotlang, Lunglei Distirct, Mizoram	92°45′45.7″E	22°56′53.5″N	800m	16-11-2021	2.50		Agriculture		Drinking Water Source	Clear	3.1	Dwelling, Vehicular Movement		Clear	Odourless	0.3
	3754	Tlawng River, Downstream,Bairabi	Bairabi Village, Kolasib District, Mizoram	92°32′14.3″E	24°10′44.7″N	40m	06-11-2021	5.00		Agriculture			Clear	2	Fishing		Pale Yellow	Odourless	2
3	3757	Tuipui River	Near P.H.E Treatment Plant, Champhai District, Mizoram	93°16′27″E	23°30′18.8″N	800m	14-11-2021	11.30		Agriculture		Drinking Water Source	Clear	2.1			Clear	Odourless	0.8
4	3720	Tuivawl River	Near Tuivawl Bridge, Seling Village, Aizawl District, Mizoram	93°2′6″E	23°38′31″N	500m	20-11-2021	11.45		Agriculture		Domestic	Clear	0.6	Washing & Bathing		Clear	Odourless	0.5
5	3718	Chite River	Near Mini Sports Complex, Armed Veng, Aizawl, Mizoram	92°44′17.5″E	23°43′59.2″N	680m	08-11-2021	10.45		Domestic			Clear	0.3			Clear	Odourless	0.5
6	3735	Mat River	Near Mat Bridge, Dawn Village, Lunglei District, Mizoram	92°52′19.7″E	22°53′58.4″N	380m	16-11-2021	11.15		Agriculture		Washing, Domestic Purpose	Clear	1.2	Plantation, Gardening		Clear	Odourless	0.5
7	3740	Saikah stream	Saikah Village, Lawngtlai, Mizoram	92°53′40.1″E	22°27′21.3″N	800m	19-11-2021	12.00		Domestic		Drinking Water Source	Clear	0.2	Wasing		Pale Yellow	Odourless	0.5
8	3712	Tuikual Stream	Near PHE Water Treatment Plant, Reiek Kai, Aizawl District, Mizoram	92°39′46″E	23°42′57″N	270m	09-11-2021	12.48		Domestic			Clear	2			Clear	Odourless	0.5
9	2052	Tuirial U/s, Aizawl	Tuirial Village, upstream of Tuirial Bridge	92°47′58.25″E	23°43′8.99″N	187m	08-11-2021	12.40		Agriculture			Clear	2	Fishing		Pale yellow	Odourless	0.8
	2053	Tuirial L/s Aizawl	Turial Village, downstream of Tuirial Bridge	92°47′57.92″E	23°43′5.22″N	185m	08-11-2021	12.55		Agriculture			Clear	2	Fishing		Pale yellow	Odourless	0.8

WATER QUALITY DATA OF 9(NINE) POLLUTED RIVER STRETCHES
FOR THE MONTH OF NOVEMBER, 2021

Sl.No	Station Code	B. CORE PARAMETERS								C. GENERAL PARAMETERS											
		Water Temp (˚C)	D.O (mg/L)	pH	Conductivity µs/cm	B.O.D (mg/L)	Nitrogen Nitrite (N-No_2) (mg/L)	Faecal Coliform MPN	Total Coliform MPN	Turbidity NTU	Total Alkalinity (mg/L)	Chlorides (mg/L)	Ammonia-N (mg/L)	Total Hardness (mg/L)	Calcium (mg/L)	Magnesium (mg/L)	Sodium (mg/L)	K (mg/L)	TDS (mg/L)	TSS (mg/L)	Total Phosphate (mg/L)
		14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33
1	3756	19	5.8	6.9	102	0.5	0.13	120	1100	100	23.6	5.3	2.136	18	3.2	2.4			50	50	0.589
2	3709	26	7.3	7.9	117	0.9	0.012	15	1100	9.2	68.9	9.8	0.175	40	14.4	1			60	20	0.068
	3734	19	6.9	7.1	162	1.1	0.008	11	210	3.5	37.4	6.2	0.289	16	4.8	1					0.045
	3736	18	7	7.2	183	1.3	0.01	42	460	3.7	53.1	17.3	0.163	38	12	1.9					0.039
	3754	28	6.5	7.1	139	1.1	0.01	11	460	10.8	55.1	8.9	0.179	74	23.2	3.8			60	20	0.065
3	3757	18	6	6.9	165	0.3	0.041	15	460	4.3	31.5	7.1	0.209	20	6.4	1			70	40	0.063
4	3720	18	9	7.5	189	1.7	0.01	3	64	3.4	3.8	5.3	0.19	44	14.4	1.9					0.049
5	3718	26	4.7	7.8	630	2.5	1.055	15	44	3.7	224.4	73.8	2.785	144	31.2	15.8			280	40	0.471
6	3735	20	7.2	6.8	191	1.5	0.008	20	160	3.5	31.5	6.2	0.186	18	4.8	1.4					0.069
7	3740	22	7.8	6.9	125	1.3	0.016	3	160	18	25.6	6.2	0.334	28	8.8	1.4			90	20	0.09
8	3712	26	5.5	7.3	121	1.3	0.011	20	53	3.4	90.6	8.9	0.194	60	21.6	1.4			40	10	0.063
9	2052	26	6.8	8.1	140	0.5	0.018	43	210	12.4	88.6	10.7	0.319	48	14.4	2.9			40	20	0.102
	2053	26	6.9	7.8	163	0.55	0.022	43	210	10.6	82.7	8.9	0.331	40	12.8	1.9			100	20	0.106