STATE POLLUTION CONTROL BOARD
SIKKIM

ANNUAL REPORT 2022-2023

STATE POLLUTION CONTROL BOARD-SIKKIM

PARIVESH BHAWAN, DEORALI,
GANGTOK - 737102, SIKKIM

DR.GOPALPRADHAN
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FOREWORD

The State Pollution Control Board- Sikkim (SPCB-Sikkim) is the premier organization of the State Forest and Environment Department for regulating environment pollution related issues across theState.Itisastatutoryauthorityentrustedtoimplementvariousenvironmental laws,actsand ruleswithinthejurisdictionoftheStateofSikkim.

SPCB-SikkimpublishesitsAnnualReporttoenlightenitssignificantroleinthefieldof prevention,controlandabatementofpollutionandenvironmentconservation.Thereportmainly compiles the manifold activities of the State Board including management of different classified wastes;industrialpollutioncontrol;monitoringofambientairquality,waterqualityofmajor riversandotherwaterbodies;noiselevel;variousregulatoryactivitiesandnumerous environmentalawarenessprogrammes.

TheAnnualReport2022-2023hassix(06)chaptersandannexuressummarizingtheuseful environmental monitoring data and the status of compliance and monitoring and other annual activities.

Sincere efforts have been made to compile this report by SPCB-Sikkim team and we hope that the information provided in this report shall be beneficial to the students, researchers, scholars andthestategovernmentfortakingappropriatepolicydecision.

It is my privilege to convey heartiest thankfulness to my colleagues for their sincere efforts in compilingthisreportanditgivesmeimmensepleasuretopresentthisAnnualReport.

(DR.GOPALPRADHAN)
MEMBERSECRETARY

CONTENT

CHAPTER01
INTRODUCTION

TheGovernmentofSikkimentrustedtheimplementationofWater(PreventionandControlof Pollution) Act, 1974 through Notification No. 51(7)/ Home/88/868 dated 21/07/1988 to Land Use andEnvironmentBoardandtheActcameintoforcewitheffectfrom25/02/1989intheState throughnotificationno.1(4)F/89/214dated17/07/1989.

The State Pollution Control Board- Sikkim(SPCB-Sikkim) was created under the provision of sub-section (1) of section 4 of the Water (Prevention and Control of Pollution) Act, 1974 through Government notification no. 30/Home/2008 dated 19/03/2008 published in Extraordinary Gazetteno.119dated10/04/2008.

The main function of SPCB-Sikkim is to act as a regulatory body in addition to advisory body. SPCB-Sikkim (The Board) is mandated with the function to advise the State Government on any matter concerning the prevention, control or abatement of water and air pollution. Under the WaterAct(1974)theBoardismandatedtoadvisetheStateGovernmentwithrespecttothe locationofanyindustry,thecarryingofwhichislikelytopolluteastreamorwell.Underthe regulatory function, the Board is bestowed with the power of implementation of different Acts andRulespertainingtoenvironmentpollutioncontrol.

The State Pollution Control Board -Sikkim implements the following Acts and Rules in the StateofSikkim:

- Water(Prevention&ControlofPollution)Act,1974.
- Air(Prevention&ControlofPollution)Act,1981.
- Environment(Protection)Act,1986.
- PublicLiabilityInsuranceAct,1991.
- Hazardous&OtherWastes(Management&TransboundaryMovement)Rules,2016and itsamendments.
- Bio-MedicalWasteManagementRules,2016anditsamendments.
- SolidWasteManagementRules,2016.
- PlasticWasteManagementRules,2016anditsamendments.
- E-Waste(Management)Rules,2016anditsamendments.
- ConstructionandDemolitionWasteManagementRules,2016.
- NoisePollution(Regulation&Control)Rules,2000.
- Batteries(Management&Handling)AmendmentRules,2000.

SPCB-Sikkim is also mandated to perform such other functions as may be prescribed or asmay,fromtimetotime,beentrustedtoitbyCentralPollutionControlBoardortheState Government.

The Board works under the administrative control of Forest and Environment Department,GovernmentofSikkim.

CHAPTER02

STRUCTURE OF STATE POLLUTION CONTROL BOARD-SIKKIM(2022-2023)

ConstitutionofStatePollutionControlBoardSikkimduring2022-2023

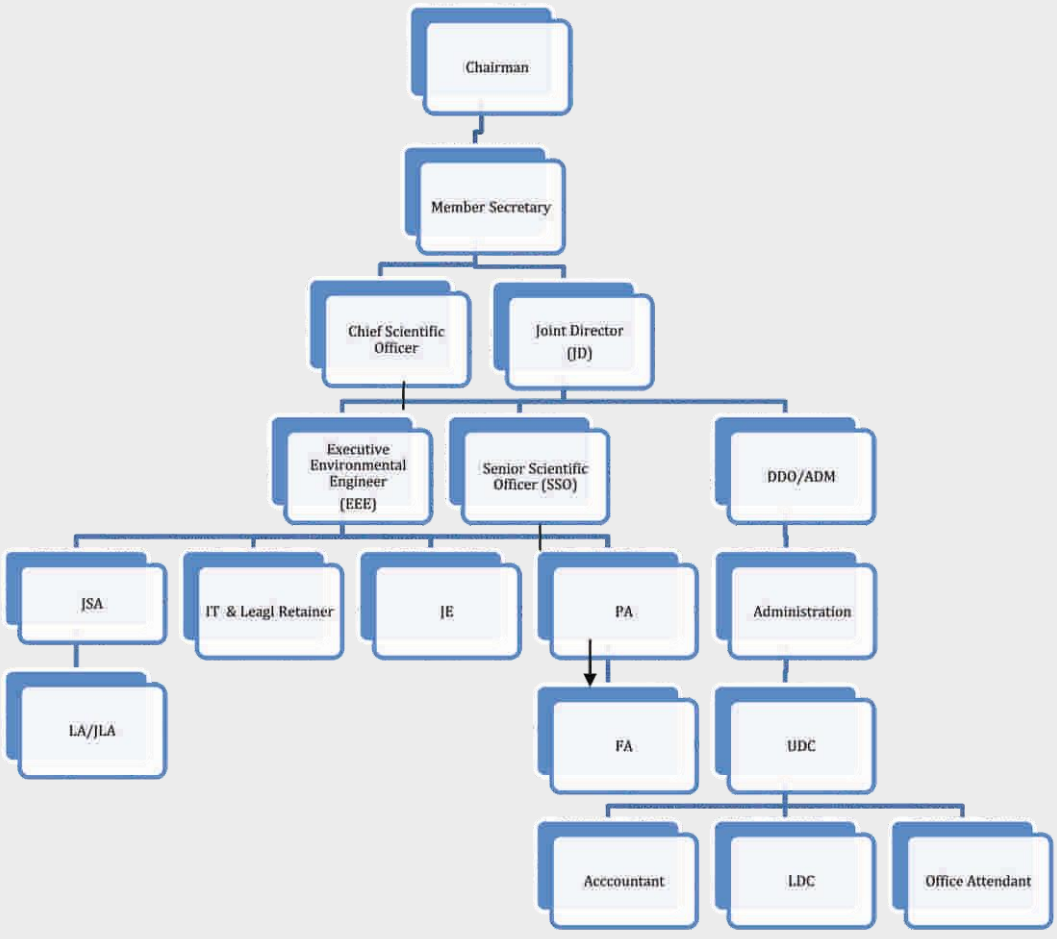
- Dr.ThomasChandy-Chairman
- Secretary,ForestandEnvironmentDepartment-Member
- Secretary,UrbanDevelopmentDepartment-Member
- PCE-cum-Secretary,PublicHealthEngineeringDepartment-Member
- Secretary,TransportDepartment-Member
- DeputyMayor,GangtokMunicipalCorporation-Member
- Up-Adhakshyas-Gangtok,Pakyong,Mangan,Soreng,Geyzing,NamchiDistricts (Additional member as special invitee)-Member
- PrincipalDirector,HealthandFamilyWelfareDepartment-ExpertMember.
- Sh.T.TashiBhutia,Technocrat-ExpertMember.
- Dr.M.P.Thapa,Academician-ExpertMember.

ManpowerdeploymentunderSPCB-Sikkimduring2022-2023

- ChiefScientificOfficer(CSO) – 01
- JointDirector(JD) – 01
- SeniorScientificOfficer(SSO) - 01
- ExecutiveEnvironmentalEngineer(EEE) - 01
- DrawingandDisbursingOfficer(D&DO) - 01
- JuniorScientificAssistant (JSA) - 05
- LaboratoryAssistant(LA) - 05
- ProjectAssistant(PA) - 09
- FieldAssistant(FA) - 20
- JuniorEngineer(JE) - 01
- SeniorAccountant - 01
- LegalRetainer - 01
- Administrativestaff - 19

ORGANIZATIONALCHART(2022-2023)

StatePollutionControlBoard-Sikkim



CHAPTER03

MEETINGS OFTHEBOARD

15th BOARDMEETING

The15thBoardmeetingoftheStatePollutionControlBoard-Sikkimwasheldon17.12.2021at theconferencehallofSPCB-Sikkim,Deorali,GangtokwhereintheBoardmembersconfirmed theminutesof14thBoardmeetingandthedeliberationswerecarriedoutregardingthe installation of continuous ambient air quality monitoring system (CAAQMS) at Zero Point and all agreed for trial run of the system before its formal inauguration by the Hon'ble Chief Minister of Sikkim at a suitable time. The Board also discussed about the COVID waste management by incinerationanditsdisposalbyHealthCareFacilities.TheChairmanalsoapprisedtheBoard members regarding survey of single use plastic in the State through online kobo collect app. The currentstatusofwastemanagementintheStatewasdiscussedintheBoardandinputswere obtainedforimprovisation.Theadministrativeagendasincludingcontractualappointmentof Project Assistants and Field Assistants through walk in interview to strengthen the functioningofBoardwerediscussed.Thetechnicalagendaswerealsodiscussed.Theaccounts and expenditurestatementwasalsoprovidedtotheBoardmembersforinformationanditsapproval.

16th BOARDMEETING

The 16thBoard meeting was conducted on 29.04.2022 at SPCB-Sikkim conference hall, Deorali, Gangtok. The Board members were apprised that CAAQMS was virtually inaugurated by the Hon'ble Chief Minister of Sikkim on 5thMarch 2022 at Samman Bhawan, Gangtok and the systemisfunctioningproperly.TheMemberSecretaryalsoinformedthemembersregarding environmentalauditbeingconductedbySPCB-Sikkimwithrespecttopharmaceutical industries in the State. The Board members were also informed about the reportregarding gaps onpollutioncontrolmeasureswithafocusonimplementationofwastemanagementrulesand

itslackthereofbythevariousgovernmentdepartmentsoftheState.TheBoard deliberated on agendas under technical, administrative and accounts sections. It was agreed upon that major thrust shall be given for mass awareness programme on single use plasticsandbanonidentifiedsingleuseplasticitems.Itwasalsoproposedtocarryout monitoring of water quality of high altitude lakesand to procure mobile laboratory van to assistinmonitoringandsurveillanceworksofSPCB-Sikkimregardingpollutioncontrol. TheBoardmemberswerealsoapprisedaboutnecessityofobtainingaccreditationfrom National Accreditation Board for Testing and Calibration Laboratories (NABL) and the immediateprocedureofconductingproficiencytest(PT)inStateAirandWater Laboratory,calibratingallinstrumentsbeingusedforanalysisandprocurementof certifiedreferencematerialforPT.TheBoardmembersconfirmedtheminutesof 15th Board meeting. The minutes of 15th Board Meeting was confirmed by the Hon'ble Board Members.

17th BOARDMEETING

The17thBoardmeetingwasconductedon13.09.2022atSPCBconferencehall,Parivesh Bhawan wherein the agendas regarding appointment of 02 Junior Scientific Assistants, 01 LaboratoryAssistant,03ProjectAssistants,11FieldAssistantsonconsolidatedpaywas deliberated upon including other technical and accounts agendas. The proposal of establishmentofairmonitoringstationsalongwithattachedlaboratoryunderNational AmbientAirMonitoringProgrammeinnewDistrictswasplacedbeforetheBoardandit wasdecidedtoforwardthesaidproposaltoCentralPollutionControlBoardfor consideration. It was also decided to issue directions to pharmaceutical units to install reverse osmosis and multi effect evaporator system to ensure zero liquid discharge in their premises.TheBoardmembersconfirmedtheminutesof16th Boardmeeting.

The Hon'ble Up-Adhakshyas (East/North/ South/ West) of four districts were given farewellbytheBoardoncompletionoftheirtenureasHon'bleZillamembers.

PHOTO01:17thBoardMeeting

PHOTO 02 : FAREWELL PROGRAMME OF HON'BLE UP-ADHAKSHYAS

CHAPTER04

FINANCIAL STATEMENT 2022-2023

Budget Allocation and Expenditure for the year 2022-23

Sl. No.	Budget Head	Allocation (in Rupees)	Expenditure (in Rupees)
1	Training lab Staffs	300000.00	48275.00
2	Procurement of Mobile Lab Van	2500000.00	2145793.00
3	Construction of CAAQMC at Zero point	2034360.00	937983.00
4	Monitoring of Air Quality	700000.00	398779.00
5	NWMP LAB Expenses	2000000.00	333554.00
6	Salaries of New Project staffs		1473113.00
7	Water quality analysis of water bodies	500000.00	72150.00
8	Procurement of machine under NAMP	6300000.00	6300000.00
9	Miscellaneous	3500000.00	3173381.00
10	NAMP LAB Expenses	1500000.00	721422.00
11	Awareness programme	2500000.00	2300854.00
12	Office Expenses	2000000.00	1979466.00
13	HSD, POL and Vehicle	2000000.00	1400721.00
14	Single Use Plastic	5000000.00	268849.00
15	Honorarium allowance of Staff	400000.00	372000.00
16	Online consent –Salary of System Engineer	360000.00	360000.00
17	Salary of PA & FA	3400000.00	3286452.00
18	Salary of JSA & LA	2500000.00	2179913.00
19	Salary of Member Secretary	1300000.00	1278216.00
20	Salary of Chairman	1100000.00	525000.00
		Gross Total	29555921.00

CHAPTER05

ENVIRONMENTAL MONITORINGDATA

SPCB-Sikkim primarily conducts environmental monitoring of air and water quality under National Ambient Air Monitoring Programme (NAMP) and National Water Quality Monitoring Programme (NWMP) respectively at designated air/water stations established in different locationsoftheStateundertheaegisofCentralPollutionControlBoard,Ministryof Environment,ForestandClimateChange(MoEF&CC),GovernmentofIndia,NewDelhi.

ENVIRONMENTAL MONITORING DATA UNDER NATIONALAMBIENTAIRQUALITYMONITORING PROGRAMMEFORTHEPERIOD2022-2023

The air quality monitoring was conducted throughout the year in all the eight stations of the state and asperthefindingsthelevelofairpollutantsremainedsignificantlylowinalllocations.

AirQualityIndex(AQI)showninFigure1hasbeencalculatedaspertheCPCBguidelinestaking intoaccountfourcriteriapollutantsintheStateviz.PM10,NO_2,SO_2andPM2.5.Asperthefindings,the air quality at all location remain less affected by the pollution as it hovered between "good" and " satisfactory"levelduringallseasonalvariations.ThestationwiseAQIrangeswereasfollowsviz. a.Gangtok(AQI:25-77)b.Rangpo(AQI:38-87)c.Singtam(AQI:51-70)d.Namchi(AQI:27-38) e.Pelling(AQI:14-46)f.Mangan(AQI:10-47)g.Chungthang(AQI:16-41).

AQI	0-50	51-100	101-200	201-300	301-400	401-500
Remarks	Good	Satisfactory	Moderate	Poor	VeryPoor	Severe

Figure1:AirQualityIndex

In accordance to the standard prescribed by the MoEF&CC, Govt. of India, the SPCB-Sikkim carried out minimum of 104 sampling at each station across the state. The overall status of airqualityduringthemonitoringperiodhasbeenshowninFigure2comprising816 sampling in eight stations between April 2022 to March 2023, which demonstrates that mostofthetimetheairqualitywasfoundtobe"good"andremainingonethirdofthetime it was "satisfactory". In no occasion, it breached the satisfactory level and not a single case of "Moderate" level was recorded.

Station wise depiction of the AQI is given in Figure 2 which also highlights the AQI vacillatingbetween"Good"and"Satisfactory"levelthroughouttheyear.

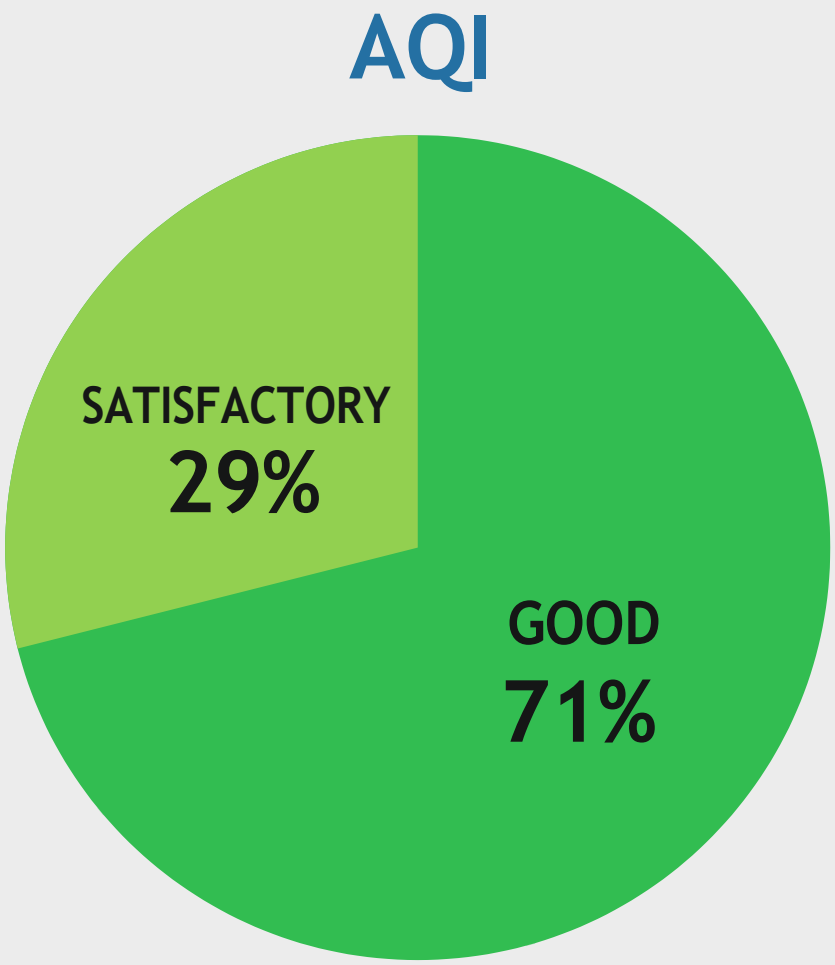


Figure 2. Percentage of monitoring days showing "Good" & "Satisfactory" level of AQI out of816samplingin08stationsduring2022-23.

Table1:StationWiseambientAirQualityMonitoringData(AnnualAverage)for theYear2022-2023.

Sl No.	STATION CODE	LATITUDE/ LONGITUDE	STATION NAME	TYPE	RSPM ($\mu g/m^3$)	SO2 ($\mu g/m^3$)	NO2 ($\mu g/m^3$)
1.	521	I.27.3183'N ii.88.6063'E	Gangtok	Residential	48.41	4.96	10.04
2.	896	I.27.1736'N ii.88.5305'E	Rangpo	Residential	65.05	5.21	9.92
3.	897	I.27.5144'N ii.88.5305'E	Singtam	Residential	61.02	6.62	10.03
4.	898	I.27.3028'N ii.88.2344'E	Pelling	Residential	30.12	5.14	2.88
5.	899	I.27.3075'N ii.88.363'E	Ravangla	Residential	21.19	3.77	3.36
6.	900	I.27.17'Nii 88.35'E	Namchi	Residential	33.41	4.33	5.61
7.	901	I.27.6033'N ii.88.6469'E	Chungthang	Residential	25.43	3.37	2.85
8.	902	I.27.5025'N ii.88.5358'E	Mangan	Residential	27.90	3.16	5.22

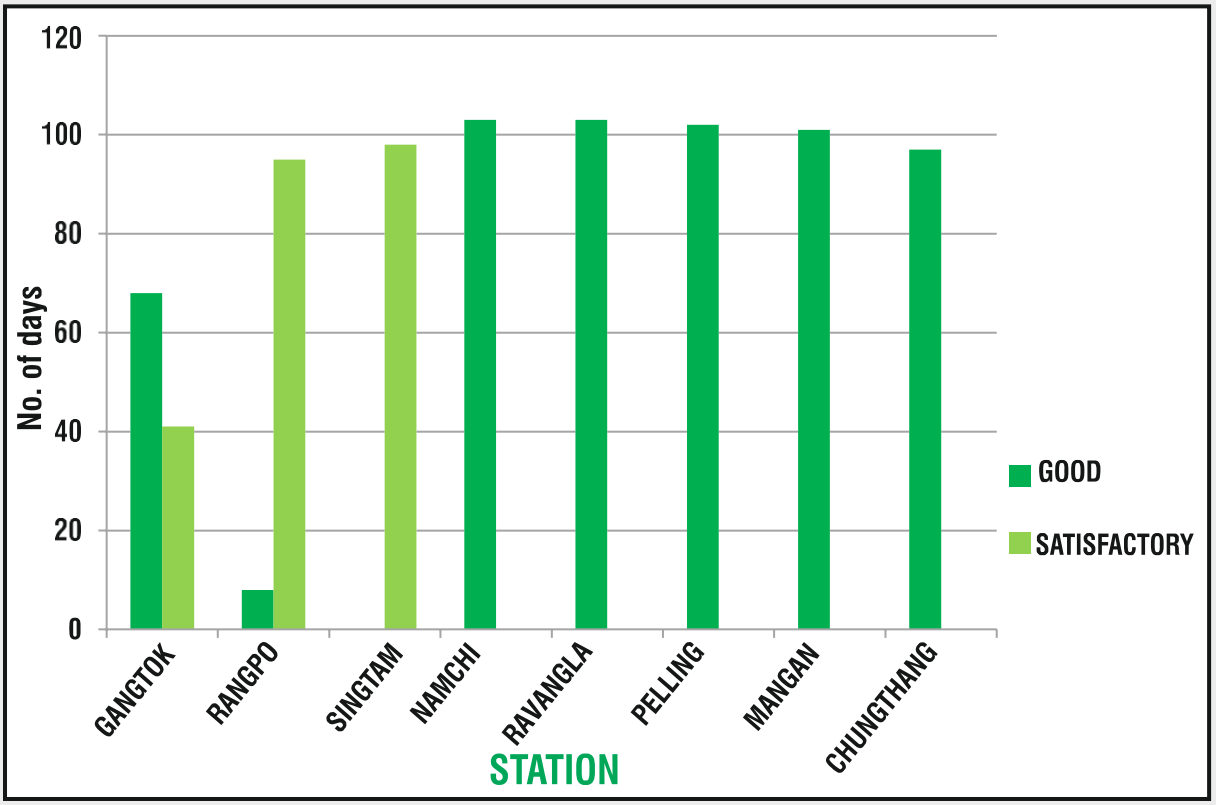


Figure3. StationwisedepictionsoftheAQI

Table2: AQIof8StationsforthePeriodofApril2022-March2023.

MONTH	GANGTOK	RANGPO	SINGTAM	NAMCHI	RAVANGLA	PELLING	MANGAN	CHUNGTHANG
Apr-22	60	72	58	35	24	37	33	28
May-22	54	77	56	35	21	35	29	28
Jun-22	39	69	58	34	22	29	22	24
Jul-22	41	67	61	33	20	25	24	22
Aug-22	38	62	60	33	19	23	24	21
Sep-22	34	54	59	31	17	18	20	22
Oct-22	43	60	64	35	16	26	17	20
Nov-22	50	58	59	31	20	33	29	25
Dec-22	57	59	63	33	24	29	26	33
Jan-23	66	73	62	32	23	31	32	25
Feb-23	50	72	67	35	25	40	37	29
Mar-23	50	58	66	34	24	34	40	31

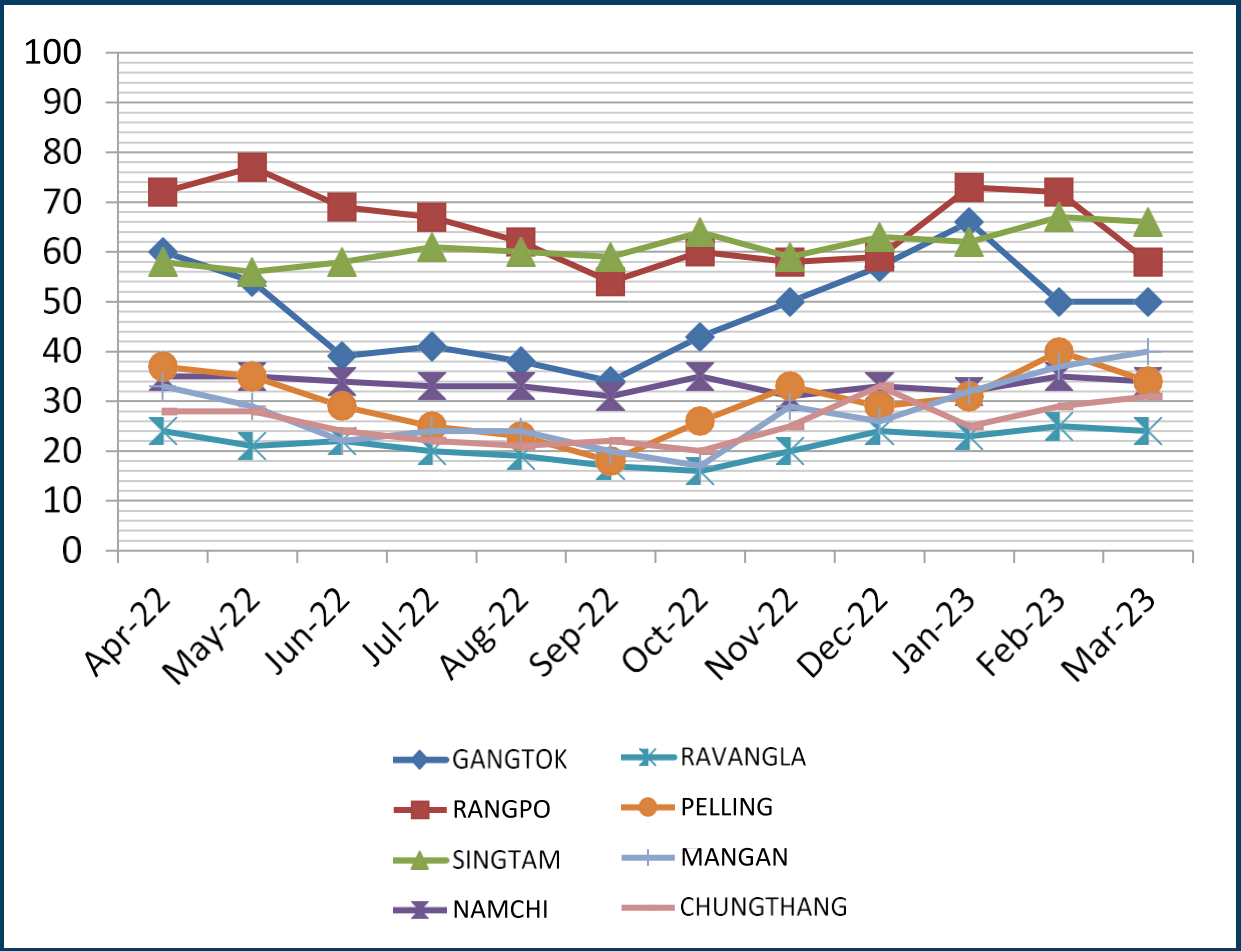


Figure4. StationwisedepictionsofthemonthlyAQI

Table3: AnnualAverageValuesOfPM10(µg/m^3)ForTheYear2022-2023

AIRSTATIONS	PM10VALUES
GANGTOK	48.41
RANGPO	65.05
SINGTAM	61.02
PELLING	30.12
RAVANGLA	21.19
NAMCHI	33.41
CHUNGTHANG	25.43
MANGAN	27.9

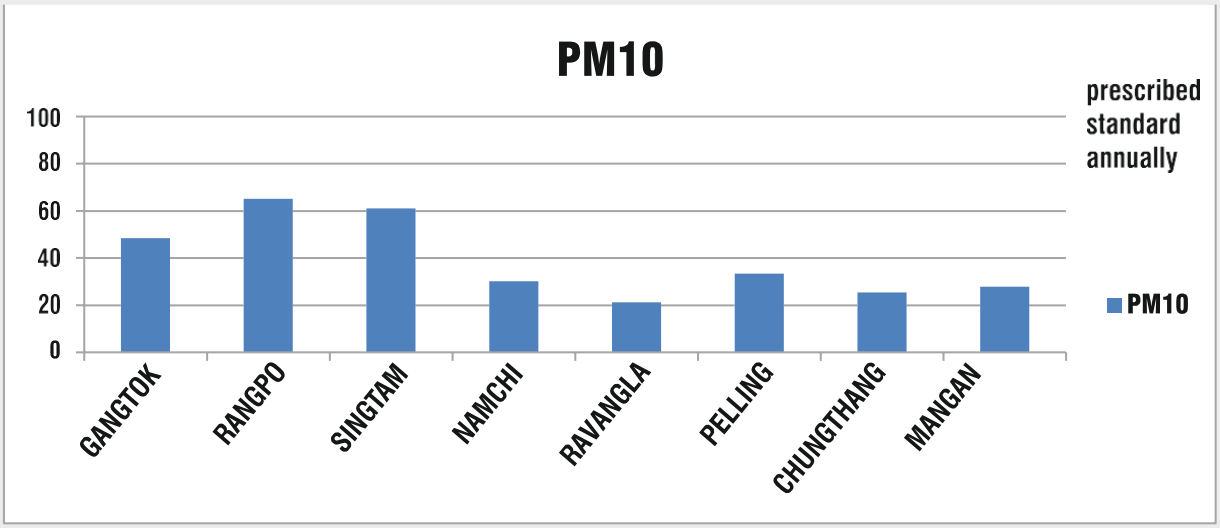


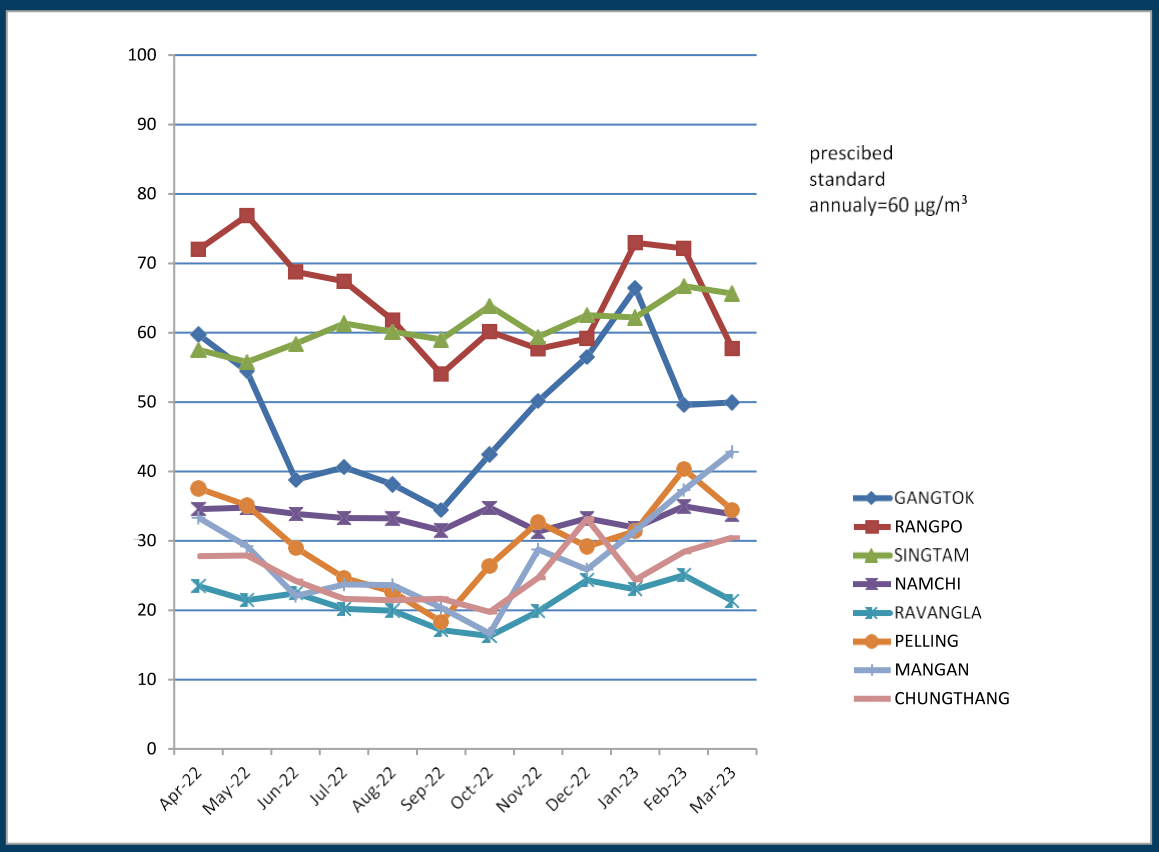
Figure5. Annualaveragevaluesof PM10 (µg/m^3) stationwisefortheyear2022-2023.

Table 4: Monthly Average Values Of Pm10 (µg/m^3) Station Wise For The Year 2022-2023

MONTH	GANGTOK	RANGPO	SINGTAM	NAMCHI	RAVANGLA	PELLING	MANGAN	CHUNGTHANG
Apr-22	59.71	72.01	57.5	34.56	23.47	37.52	33.3	27.77
May-22	54.42	76.87	55.75	34.74	21.44	35.1	29.2	27.87
Jun-22	38.78	68.75	58.39	33.87	22.44	29	22.04	24.18
Jul-22	40.58	67.41	61.31	33.25	20.18	24.62	23.7	21.62
Aug-22	38.14	61.82	60.13	33.24	19.93	22.63	23.59	21.42
Sep-22	34.44	54.03	58.99	31.47	17.13	18.31	20.35	21.63
Oct-22	42.45	60.15	63.83	34.74	16.27	26.41	16.62	19.73
Nov-22	50.11	57.66	59.39	31.32	19.83	32.67	28.73	24.67
Dec-22	56.5	59.15	62.51	33.19	24.33	29.17	25.83	33.15
Jan-23	66.38	72.97	62.17	31.88	23	31.37	31.41	24.36
Feb-23	49.55	72.15	66.69	34.96	25.03	40.3	37.29	28.41
Mar-23	49.96	57.71	65.6	33.78	21.33	34.42	42.8	30.44

Photo03:Changingoffilterpaper forPM10(µg/m^3)atRavanglaAir monitoringstation

Prescribedstandard 24 hourly=100 µg/m^3



Prescribedstandard24hourly=100µg/m^3

Figure6.MonthlyaveragevaluesofPM10(µg/m^3)stationwisefortheyear2022-2023.

Table5:Annual AverageValuesofSO2(µg/m^3)StationWisefortheYear 2022-2023

AirStations	SO2VALUES
GANGTOK	4.96
RANGPO	5.21
SINGTAM	6.62
PELLING	5.14
RAVANGLA	3.77
NAMCHI	4.33
CHUNGTHANG	3.37
MANGAN	3.16

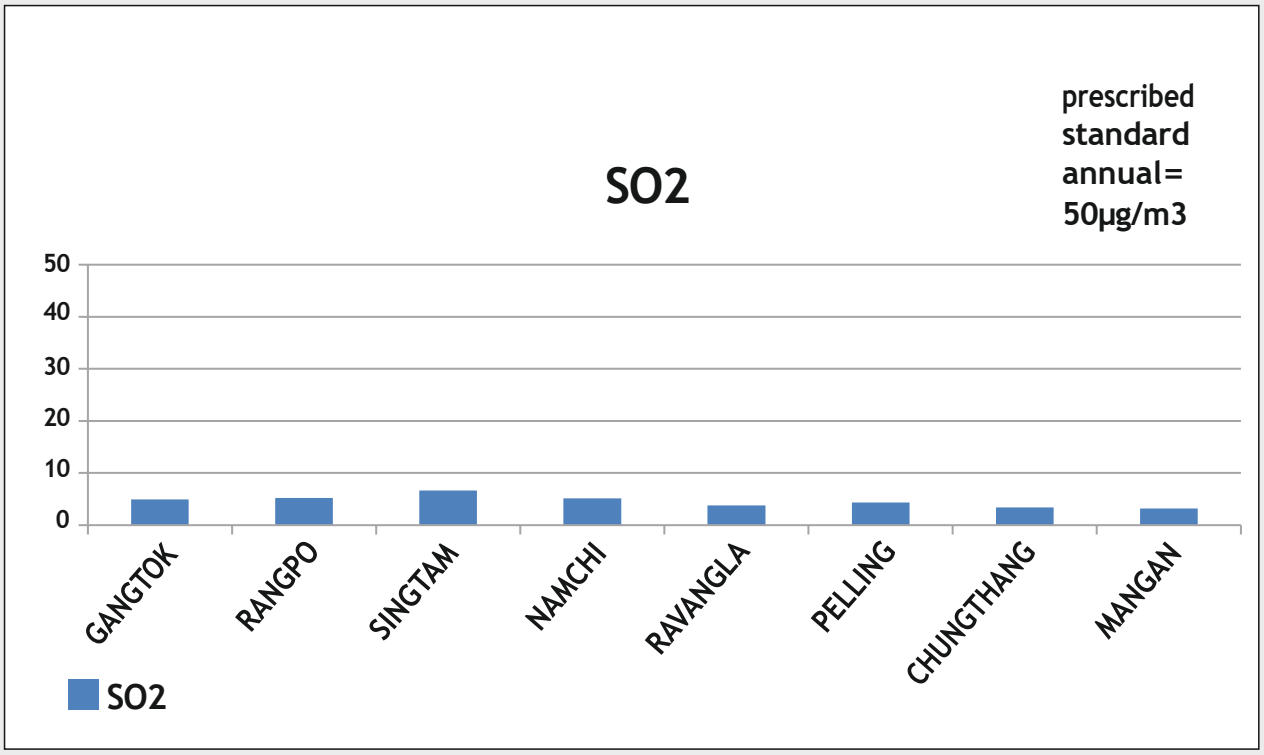


Figure7.AnnualaveragevaluesofSO2(µg/m^3)stationwisefortheyear2022-2023

Table6: Monthly Average Values of SO2 (µg/m^3) Station Wise for the Year 2022-2023

MONTH	GANGTOK	RANGPO	SINGTAM	NAMCHI	RAVANGLA	PELLING	MANGAN	CHUNGTHANG
Apr-22	3.2	5.4	8.64	5.78	3.06	3.69	1.99	3.22
May-22	4.6	6.62	8.12	4.33	3.63	5.42	2.1	3.12
Jun-22	4.85	4.88	7.12	4.08	2.81	6.07	1.94	4.48
Jul-22	5.83	5.56	6.76	3.51	3.97	5.47	2.08	6.57
Aug-22	4.18	5.21	6.7	4.45	4.22	6.11		
Sep-22	4.4	5.29	6.75	4.11	3.64	5.15		
Oct-22	8.34	5.23	6.3	4.76	3.11	5.25	3.92	
Nov-22	5.17	6.72	6.39	4.67	3.72	4.84	3.91	
Dec-22	5.92	6.03	6.37	4.56	4.66	5.36	3.14	2.02
Jan-23	5.51	5.49	6.04	3.51	4.03	4.62	4.27	2.29
Feb-23	4.13	3.75	5.36	4.02	4.51	4.79	4.18	2.72
Mar-23	3.45	2.42	4.98	4.26	3.9	4.91	4.13	2.54

Photo 04: SO2 (µg/m^3) analysis of airsample at Bagheykholalab for Rangpo air monitoring station

Prescribed standard 24hourly=80µg/m^3

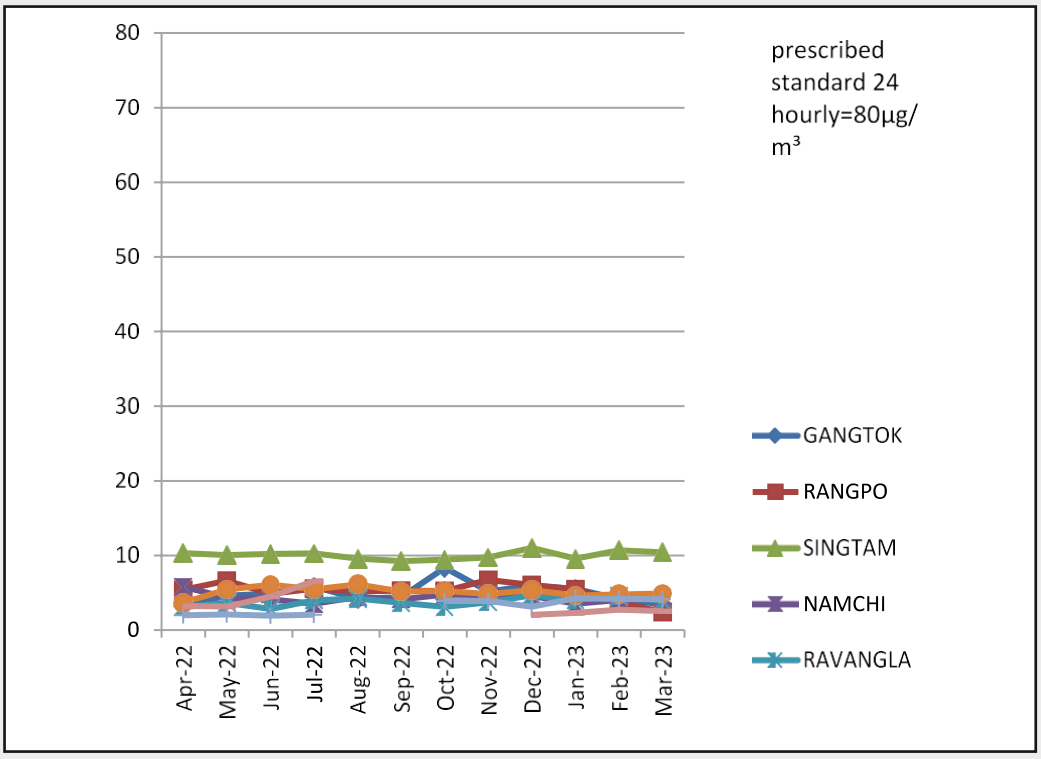


Figure8.MonthlyaveragevaluesofSO2(µg/m³)stationwisefortheyear2022-2023

Photo 05: SO2 (µg/m³)analysis of air sampleatBagheykholalabfor Rangpoairmonitoringstation.

Prescribed standard 24hourly=80µg/m³

Table7: AnnualAverageValuesofNO2(µg/m^3)StationWisefortheyear 2022-2023

AIRSTATIONS	NO2VALUES
GANGTOK	10.04
RANGPO	9.92
SINGTAM	10.03
PELLING	2.88
RAVANGLA	3.36
NAMCHI	5.61
CHUNGTHANG	2.85
MANGAN	5.22

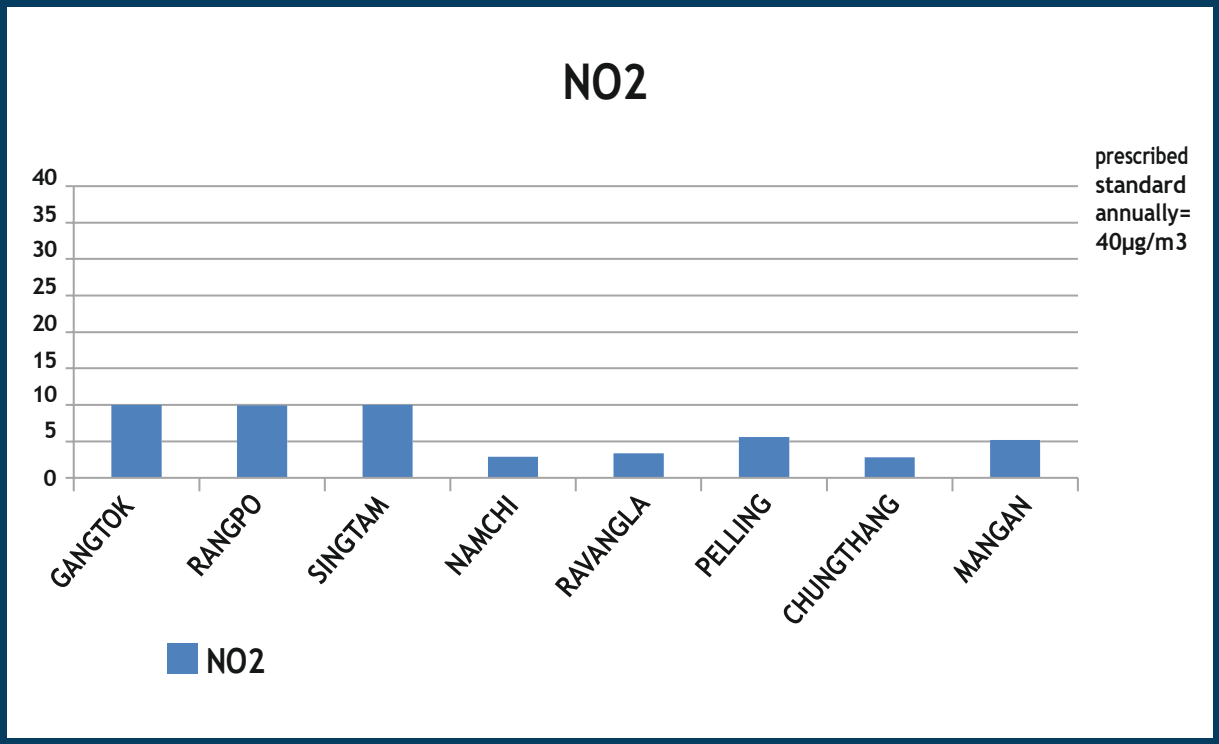


Figure9.AnnualaveragevaluesofNO2(µg/m^3)stationwisefortheyear2022-2023.

Table 8: Monthly Average Values of NO2 ($\mu g/m^3$) Station Wise for the period of 2022-2023.

MONTH	GANGTOK	RANGPO	SINGTAM	NAMCHI	RAVANGLA	PELLING	MANGAN	CHUNGTHANG
Apr-22	10.04	10.17	10.31	7.11	2.33	3.96	5.82	5.34
May-22	11.04	11.89	10.03	5.64	2.49	2.41	6.15	4.9
Jun-22	10	13.59	10.2	5.22	3.27	3.55	5.88	3.02
Jul-22	10	9.52	10.26	5.58	3.5	2.84	5.99	4.07
Aug-22	9.81	10.17	9.58	4.92	4.38	2.73		
Sep-22	8.34	10.69	9.23	4.95	3.26	2.28		
Oct-22	11.36	8.56	9.42	5.79	3.06	2.41	5.81	
Nov-22	10.89	11.21	9.73	6.24	3.64	2.28	5.46	
Dec-22	10.16	8	11	6.19	3.69	2	5.18	1.24
Jan-23	9.46	8.43	9.57	4.59	3.49	2.98	4.34	1.27
Feb-23	9.44	9.21	10.67	5.38	3.52	3.6	4.01	1.53
Mar-23	10.01	7.71	10.43	5.77	3.74	3.62	3.6	1.5

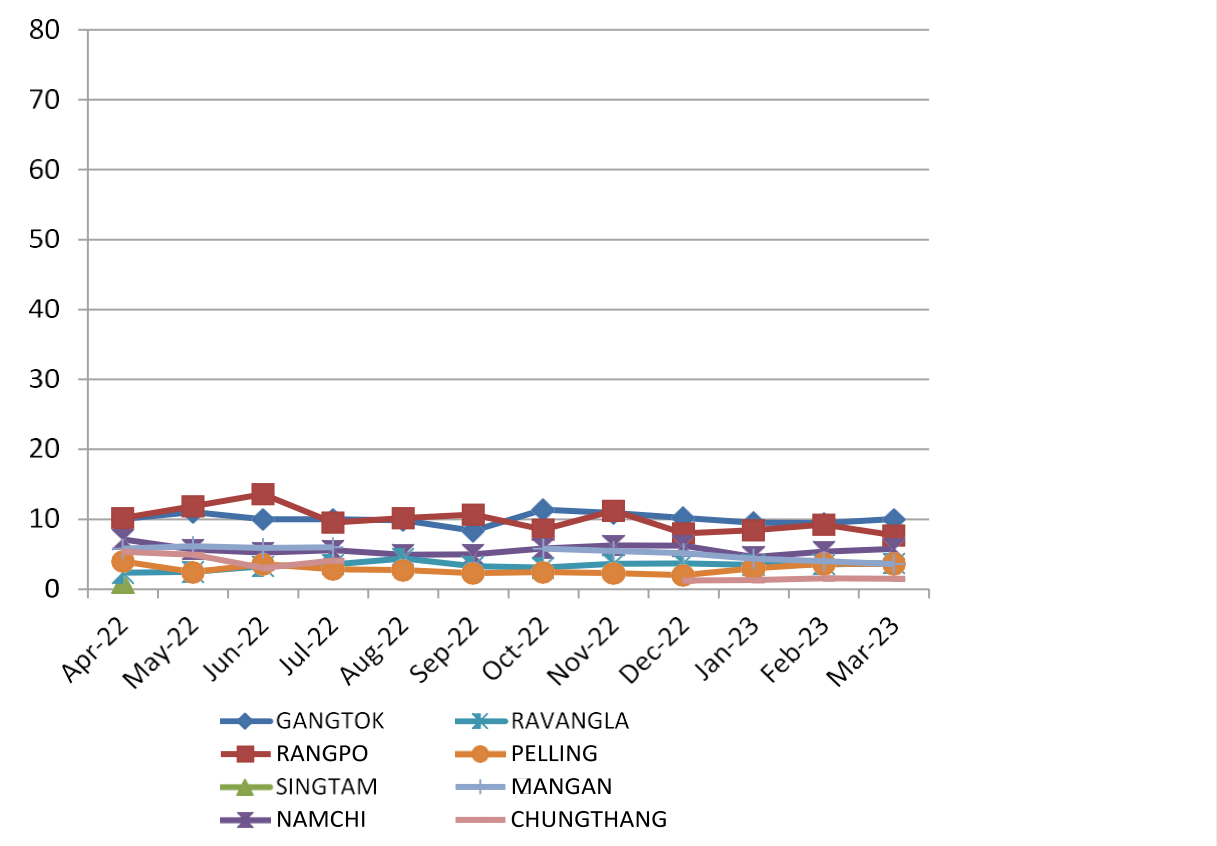


Figure10.MonthlyaveragevaluesofNO2($\mu g/m^3$)stationwisefortheyear2022-2023.

Photo 06: SO2 (µg/m^3) and No2(µg/m^3) analysis of air sample at Pelling AirMonitoringStation.

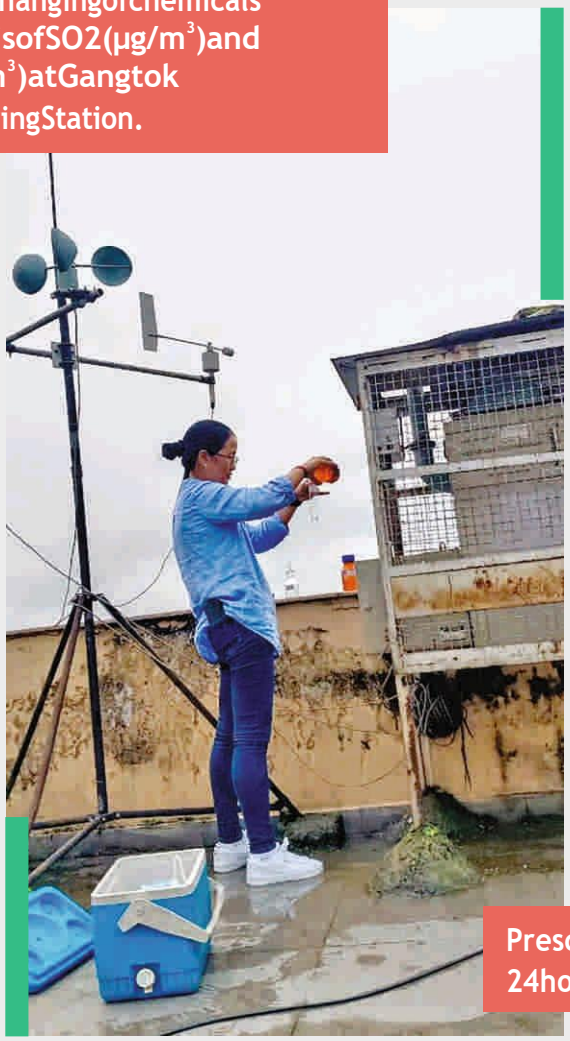
Prescribed standard 24hourly=80µg/m^3

Photo07:NO2(µg/m^3)analysisof airsampleatGangtok AirMonitoringStation.

Prescribed standard 24hourly=80µg/m^3

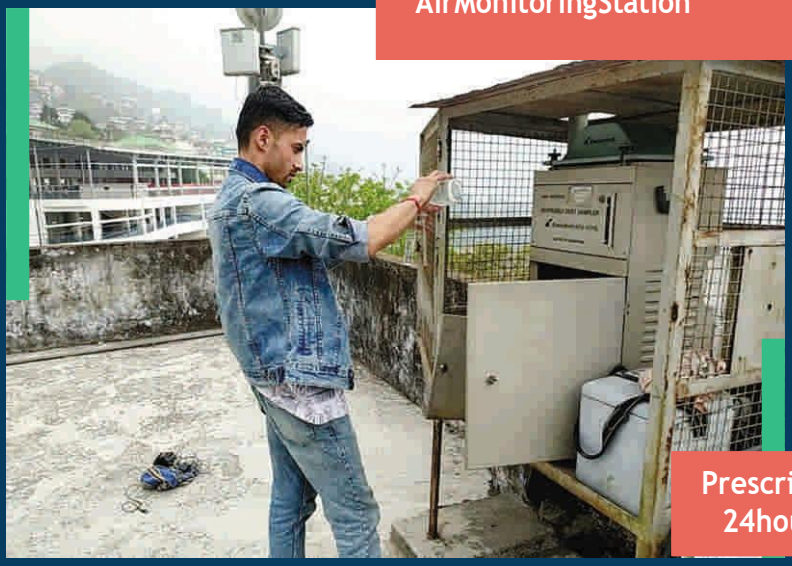
Photo08:Preparationofdistilled water at Bagheykhola labforanalysis.

Photo09:Changingofchemicals foranalysisofSO2(µg/m^3)and NO2(µg/m^3)atGangtok AirMonitoringStation.



Prescribed standard 24hourly=80µg/m^3

Photo 10: SO2 (µg/m^3) and NO2(µg/m^3) analysis of air sample at Pelling AirMonitoringStation



Prescribed standard 24hourly=80µg/m^3

Photo11:NO2(µg/m^3)analysisof airsampleatGangtok AirMonitoringStation

Prescribed standard 24hourly=80µg/m^3

II. ENVIRONMENTAL MONITORING DATA UNDER NATIONAL WATER QUALITY MONITORING PROGRAMME (NWMP) FOR THE PERIOD 2022-2023.

The Central Pollution Control Board (CPCB) in collaboration with State Pollution Control Boards (SPCBs) in the States and Pollution Control Committees (PCCs) in Union Territories has established a National Water Quality Monitoring Network (NWMP) in order to assess the status of water quality of water resources and to facilitate for prevention and control of pollution in water bodies. Water quality monitoring network under NWMP comprises 4484 stations on surface and groundwater in 28 States and 8 Union Territories. Monitoring is carried out with a frequency in monthly, quarterly, half yearly and yearly basis.

The State Pollution Control Board-Sikkim has been executing the National Water Quality Monitoring Programme (MINARS have been merged under NWMP) in the state of Sikkim with multiple objective like assessment of the extent of pollution control needed, evaluate effectiveness of pollution control measures that are already in existence, evaluate water quality trend for a period of time, to understand environment fate of different pollutants. The SPCB-Sikkim has over 25 monitoring stations in Teesta basin (Ranikhola, Rongnichu/Rolepchu, Teesta, Rangit, Maneykhola) in different location starting from Chungthang in North Sikkim to Treveni (after confluence of Teesta and Rangit river) in South Sikkim including Higher Altitude lakes like Tsomgo and Menmoitso which attract significant number of tourists, devotees and also high military movements are observed. All these interferences have tendency to alter the sheer nature of the water bodies. Out of 25 NWMP Isl stations 11 are new. The monitoring is carried out on monthly basis and the data obtained is subsequently uploaded in Environmental Water Quality Data Entry System (EWQDES) in CPCB website and SPCB website.

As per the Guidelines on Water Quality Monitoring, 2017 the following parameters are analyzed in the SPCB-Sikkim Laboratory:

A. During monsoon (June & July)

a) General - Colour, Odour, Temperature, pH, Conductivity, Dissolved Oxygen, Total Dissolved Solids, Total Suspended Solid and Turbidity.

b) Nutrients-Nitrate (NO_3-N), nitrite (NO_2-N) and Total Phosphate (P)

c) Demand Parameters-Biochemical Oxygen Demand (BOD)

d) Major Ions-Calcium (Ca^{++}), Magnesium (Mg^{++}) Sulphate (SO_4^{--})

e) Other inorganic-Fluoride (F)

f) Microbiological-Total Coliform & Fecal Coliform.

B. Restoftheyear

Parameters - Colour, Odour, Temperature, pH, Dissolved Oxygen, Total Dissolved Solids, NO 3 - , BOD,TotalColiform,FaecalColiform,TotalDissolvedSolidandTotalSuspendedSolid.

Photo12:Riverwatersampling for analysis.

Table 9: Details of NWMP Stations with GPS coordinates

Sl. No.	Name of Monitoring Station and code	Monitoring Agency	District	Type of Water Body	Name of Water Body	Frequency	Latitude (North)	Longitude (East)
1	1801-River Teesta After Confluencs of Rivers Lachenchu And Lachungchu at Chungthang	SPCB-Sikkim	Mangan	River	Teesta	Monthly	27.601903	88.646449
2	1802-River Dikchu Before Confluencs With River Teesta Near Nhpc Hydroelectric Power Project Dikchu	SPCB-Sikkim	Gangtok	River	Dikchu	Monthly	27.402553	88.519402
3	1803-River Maney Khola At Burtuk Near Army Base Camp,4KmU/s Of Gangtok	SPCB-Sikkim	Gangtok	River	Maney Khola	Monthly	27.35	88.61
4	1804-River Maney Khola After Confluencs With Ray Khola at Adampool After Meeting Waste of Stp,Gangtok	SPCB-Sikkim	Gangtok	River	Maney Khola	Monthly	27.309928	88.583236
5	1805-River After Confluence Of Ranichu and Rorachu At Ranipool	SPCB-Sikkim	Gangtok	River	Ranichu	Monthly	27.292886	88.590303
6	1806-River Ranichu Before Confluence With Teesta At Singtam, Sikkim	SPCB-Sikkim	Gangtok	River	Ranichu	Monthly	27.22	88.49

Sl. No.	NameofMonitoring Stationandcode	MonitoringAgency	District	Type of WaterBody	Name of WaterBody	Frequency	Latitude (North)	Longitude (East)
7	1807-RiverTeestaAfter Confluencs With Ranichu At Singtam	SPCB-Sikkim	Gangtok	River	Teesta	Monthly	27.11	88.45
8	1808-RiverTeestaAfter Confluencs With Rongpochu After MeetingTheIndustrial EffluentsFromThe Town Rangpo	SPCB-Sikkim	Pakyong	River	Teesta	Monthly	27.17	88.52
9	1809-RiverTeestaAt Melli Downstream Melli	SPCB-Sikkim	Namchi	River	Teesta	Monthly	27.08	88.45
10	2034-River Rangit At Dam Site (nhpc)	SPCB-Sikkim	Namchi	River	Rangit	Monthly	27.294106	88.291658
11	2035-River Rangit At Legship	SPCB-Sikkim	Geyzing	River	Rangit	Monthly	27.280047	88.2753
12	2036-River Rangit At Reshi	SPCB-Sikkim	Geyzing	River	Rangit	Monthly	27.221878	88.307144
13	2037-River Rangit At Jorethang	SPCB-Sikkim	Namchi	River	Rangit	Monthly	27.13	88.27
14	2038-River Rangit At Triveni Melli	SPCB-Sikkim	Namchi	River	Rangit	Monthly	27.080686	88.430872
15	5281-River Rangpo U/s Dam Site	SPCB-Sikkim	Pakyong	River	Rangpo	Monthly	27.23851667	88.70992778
16	5282-River Rangpo D/s Dam Site	SPCB-Sikkim	Pakyong	River	Rangpo	Monthly	27.23409444	88.70868333
17	5283-RiverRongli U/s Dam Site	SPCB-Sikkim	Pakyong	River	Rongli	Monthly	27.20429722	88.71290278

Sl. No.	NameofMonitoring Stationandcode	MonitoringAgency	District	Type of WaterBody	Name of WaterBody	Frequency	Latitude (North)	Longitude (East)
18	5284-RiverRongli D/s Dam Site	SPCB-Sikkim	Pakyong	River	Rongli	Monthly	27.20663056	88.68505556
19	5285-River Rangpo At PowerHouseD/sOf GatiInfrastructure Pvt. Ltd.	SPCB-Sikkim	Pakyong	River	Rangpo	Monthly	27.20902778	88.66553056
20	5286-RiverRangpo AtU/sOfRorathang Bazar (above Swiss Garnier)	SPCB-Sikkim	Pakyong	River	Rangpo	Monthly	27.19732778	88.63284444
21	5287-RiverRangpo AtD/sOfRorathang Bridge	SPCB-Sikkim	Pakyong	River	Rangpo	Monthly	27.19555278	88.60791944
22	5288-River Rangpo At D/sOfPharmaPlant Kumrek	SPCB-Sikkim	Pakyong	River	Rangpo	Monthly	27.18167222	88.540525
23	5289-RiverRangpoAt D/sOfPowerHouseOf Madhya Bharat	SPCB-Sikkim	Pakyong	River	Rangpo	Monthly	27.17841944	88.533425
24	5290-MenmoitsoLake	SPCB-Sikkim	Gangtok	Lake	Menmoitso	Monthly	24.32893056	88.849225
25	5291-ChanguLake	SPCB-Sikkim	Gangtok	Lake	Changu	Monthly	27.37663889	88.76565833

Photo13:Riverwatersampling for analysis

Table10:AnnualAverageofBOD(mg/l)fortheyear2022-23

Month Station Code	April	May	Jun	July	Aug	Sep	Oct	Nov	Dec	Jan	Feb	March	Average
1801	2.1	2.0	2.0	2.1	2.2	2.1	2.0	1.9	2.4	2.1	2.2	2.0	2.1
1802	2.2	2.3	2.3	2.3	2.3	2.4	2.3	2.0	2.5	2.2	2.1	2.3	2.3
1803	2.5	2.2	2.2	2.3	2.1	2.5	2.4	2.2	2.7	2.4	2.5	2.5	2.4
1804	2.3	2.3	2.3	2.3	2.4	2.7	2.2	2.1	2.3	2.2	2.5	2.6	2.3
1805	2.6	2.3	2.3	2.3	2.4	2.6	2.6	2.4	2.0	2.5	2.3	2.6	2.4
1806	1.9	2.0	2.0	2.5	2.1	2.4	2.3	2.1	2.5	2.0	2.2	2.1	2.1
1807	2.6	2.6	2.6	2.6	2.5	2.3	2.5	2.4	2.4	2.1	2.4	2.0	2.4
1808	1.9	1.9	1.9	2.5	2.0	2.1	2.3	2.3	2.7	1.8	1.6	1.8	2.0
1809	2.3	2.2	2.2	2.4	2.3	2.4	2.5	2.3	2.3	2.2	2.0	2.4	2.3
2034	2.5	2.4	2.4	2.3	2.5	2.1	2.2	2.3	2.6	2.0	1.9	1.7	2.2
2035	1.7	1.9	1.9	2.4	1.9	2.1	2.3	1.9	2.5	2.0	1.7	1.5	2.0
2036	2.0	2.1	2.1	2.3	2.3	2.1	2.2	2.1	2.7	2.0	2.1	2.3	2.2
2037	1.9	2.5	2.5	2.2	2.7	2.6	2.3	2.3	2.5	2.4	2.3	2.2	2.4
2038	2.0	2.1	2.1	2.3	2.5	2.6	2.6	1.9	2.2	2.4	2.5	2.0	2.3
5281	1.1	2.1	2.1	2.4	2.2	2.1	2.3	1.9	2.0	2.0	1.9		2.0
5282	1.4	1.9	1.9	2.3	2.0	2.1	2.2	2.0	2.1	2.0	2.3		2.0
5283	1.4	1.9	1.9	2.0	2.0	2.1	2.3	2.3	2.1	2.0	2.1	2.2	2.0
5284	1.6	1.8	1.8	2.3	2.1	2.3	2.2	2.3	2.1	2.3	2.2	2.1	2.1
5285	1.7	1.9	1.9	2.1	1.9	1.7	2.2	2.1	2.3	1.7	1.9	2.0	2.0
5286	1.5	2.1	2.1	2.4	2.3	1.5	2.0	2.0	2.2	1.5	1.5	1.8	1.9
5287	1.5	2.4	2.4	2.5	2.5	1.5	2.3	2.3	2.5	1.6	1.6	1.6	2.0
5288	2.6	2.5	2.5	2.2	2.4	2.6	2.6	2.3	2.5	2.0	2.3	2.1	2.4
5289	2.7	2.5	2.5	2.3	2.4	2.7	2.3	2.1	2.3	2.5	2.0	2.0	2.3
5290		1.9	1.9	2.0	2.5	2.4	2.2	2.0	2.3	Samplingwasnotcarried out because Station remainedinaccessible due to snowfall.			2.1
5291		1.8	1.8	2.2	1.8	1.9	2.5	2.1	2.2				2.0

Photo14:Riverwatersampling for analysis.

Photo15:Riverwatersampling for analysis.

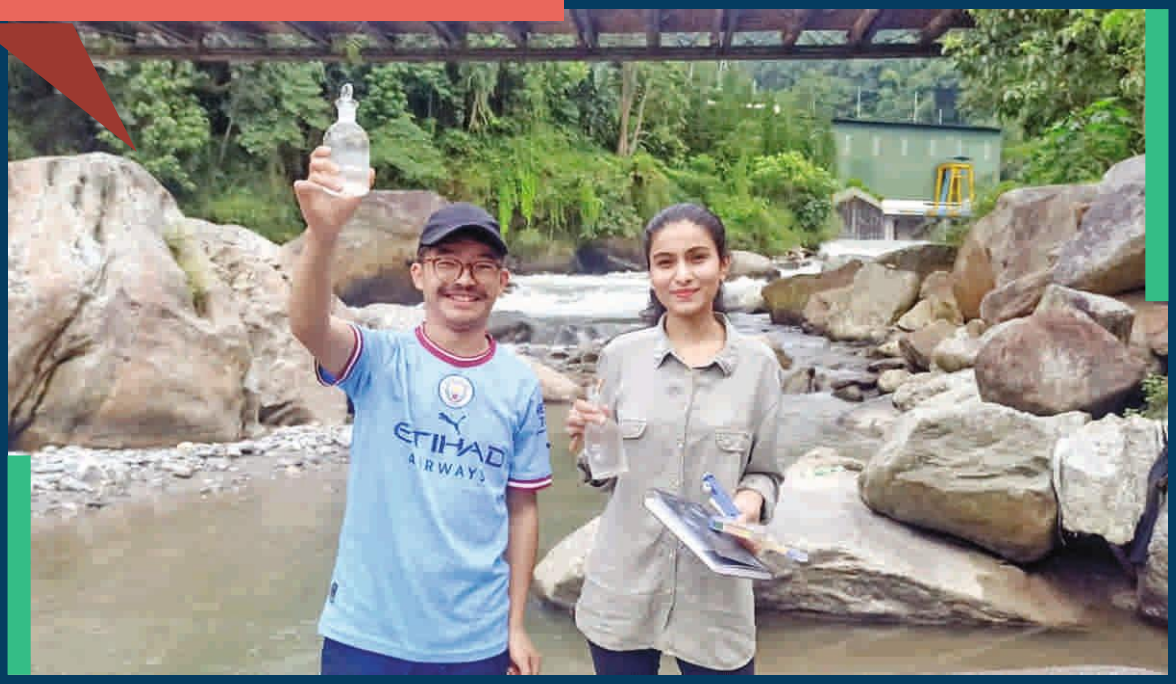


Table11:AnnualAverageofFaecalcoliform(MPN/100ml)fortheyear2022-23

Month Station Code	April	May	Jun	July	Aug	Sep	Oct	Nov	Dec	Jan	Feb	March	Average
1801	65	60	55	61	62	66	85	70	73	61	28	24	59.1
1802	90	70	55	59	72	76	70	72	77	76	31	36	65.3
1803	110	100	75	78	96	97	90	93	95	97	41	32	83.7
1804	110	95	85	85	96	87	89	85	86	87	90	93	90.7
1805	125	120	100	105	112	100	108	94	95	69	34	39	91.8
1806	85	100	90	92	105	97	104	100	101	77	52	34	86.4
1807	115	110	75	77	120	118	105	98	95	85	41	49	90.7
1808	85	120	70	76	103	105	109	103	97	105	32	29	86.1
1809	105	108	75	81	106	107	110	101	100	100	70	53	93.0
2034	65	69	50	62	77	70	79	89	87	70	52	71	70.1
2035	75	80	60	63	85	87	98	95	97	87	72	66	75.0
2036	70	79	55	59	80	82	86	100	105	82	33	31	72.0
2037	85	95	50	55	98	99	89	97	96	99	65	76	84
2038	100	105	50	56	110	100	104	100	107	100	78	39	87.4
5281	55	59	60	62	60	62	75	89	93	62	32		64.4
5282	105	100	95	83	104	100	85	95	90	100	60		92.4
5283	100	90	95	90	100	103	90	97	94	102	61	70	91.0
5284	90	95	100	101	95	85	91	95	94	85	75	74	90.0
5285	65	75	80	82	79	70	81	90	91	72	71	62	76.5
5286	115	110	115	108	120	105	100	103	100	105	52	46	90.0
5287	90	95	100	103	97	95	90	91	90	95	56	54	88.0
5288	125	99	105	99	98	100	95	96	90	98	42	41	91.0
5289	100	95	100	104	100	85	85	99	95	87	85	71	92.1
5290		30	45	55	76	77	65	75	74	Samplingwasnotcarried out because Station remainedinaccessible due to snowfall.			62.1

Photo16:Fixingofwatersamples for further analysis.

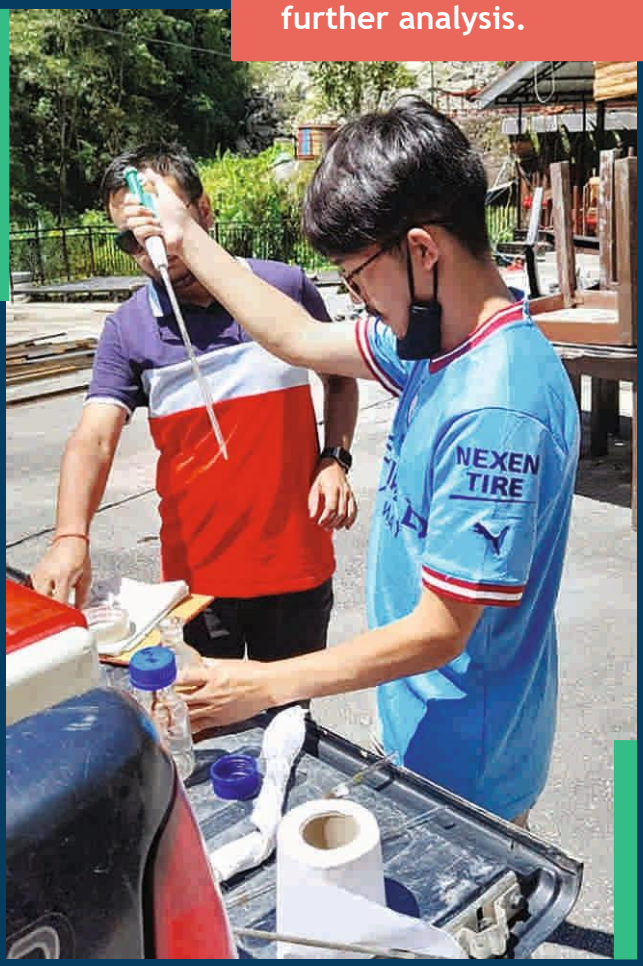
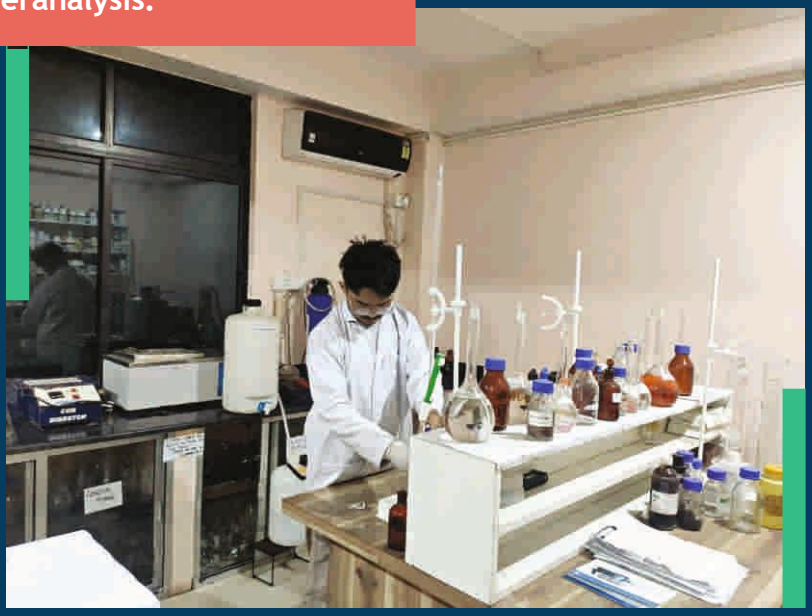


Photo16:Fixingofwatersamples forfurtheranalysis.



NOISELEVELDATAFORTHEPERIODOF APRIL2022-MARCH2023

Categoryof Area/zone	LimitsindB(A)Leq*	
	DayTime	NightTime
Commercialarea	65	55
Residentialarea	55	45

Noise Pollution is a growing concern in urban and rural areas, affecting the quality of life andhealthofresidents.Toaddressthis,SPCB-Sikkimisconductingthenoiselevel monitoring in four districts of the state as per the guidelines of Central Pollution Control Board (CPCB) The objective was to measure and evaluate the noise levels, ensuring they remainwithintheacceptablestandardssetbyregulatorybodies.

NationalStandardfordifferentareas:

Note:1.Daytimeshallmeanfrom6amto10pm.
2.Nighttimeshallmeanfrom10pmto6am.

The following table presents the average noise levels recorded in each district from April 2022toMarch2024.

DATE	CATEGORYOFAREA	GANGTOK	NAMCHI	GYALSHING	MANGAN
APRIL2022-MARCH2023	CommercialArea	60.03	63.75	55.46	63.50

Theaveragenoiselevelinallthefourdistrictswerefoundtobewithintheprescribed limits. The data indicates that all the districts have successfully maintained noise levels withintheprescribedlimits.

MeasurestoReduceNoisePollution

1. Electronicdevices can often create background noise that may be distracting or stressful, especiallyina homeorofficesetting.Turningthemoff when not in use helps to maintain a quieter, morepeacefulenvironment.
2. Shuttingthe door after we turn on dishwashers or washing machines for room where it is kept or we can turn them on before leaving the house so that overlapping of exposure to loud noises can bereduced.
3. Usingearplugs or earmuffs is an effective way to protect your hearing and reduce the impact of loudnoises,whetherinanoisyenvironment,whileusingloudappliances,orinsituationslike constructionsites,concerts,orotherhigh-noiseareas.
4. Bymakingahabitofkeepingthevolumelowwhenlisteningthroughheadphonesorspeakers, you not only protect your hearing but also create a more pleasant and peaceful environment for bothyourselfandthosearoundyou.
5. Noise-producingindustries, airports, and high-traffic vehicles should ideally be located far from residential areas to protect public health, particularly the most vulnerable populations such as infantsandseniorcitizens.
6. Regulating theuseofloudspeakers,outdoorparties,andpoliticalpublicannouncements through community laws is essential to maintain peace, protect public health, and respect the rightsofallcitizens.
7. Establishingsilent zones and regulating noise levels near schools, hospitals, and other sensitive areas is a vital step in protecting public health, improving the quality of life, and ensuring peacefulenvironmentsforall.
8. Plantingmore trees is a simple yet highly effective strategy for reducing noise pollution and improvingthequalityoflifeinurbanareas.Treesnotonlyabsorbanddiffusesound,buttheyalso contribute to better air quality, promote mental well-being, and create more pleasant, livable spaces.
9. Byincorporating soothing sounds such as music, birdsong, water, and nature-inspired noise, we can counteract the negative effects of unwanted noise and create spaces that are more peaceful, productive,andrelaxing.
10. Byusing vibration isolation pads, acoustic materials, vibration dampening mounts, and regular maintenance,wecaneffectivelyreducetheimpactofmachinerynoise.
11. Properlubrication and maintenance are essential for reducing noise pollution and improving the performance of machinery. By ensuring that moving parts operate smoothly with minimal friction, lubrication helps reduce noise, prevent excessive vibration, and increase the longevityofequipment.
12. Byusing sound measurement tools, analyzing data, and implementing noise control measures, companies can reduce noise exposure, improve worker health, and comply with regulatory requirements. Additionally, fostering a culture of noise awareness and promoting good practices amongworkerscancontributetomaintainingasafer,quieter,andmoreproductiveworkplace.
13. Notifyinggovernmentagenciesaboutnoisepollutionviolationsisanessentialstepinensuring thatregulationsarefollowedandpublichealthisprotected.
14. Anyaggrieved party may lodge a complaint through Public Grievance RedressalforumavailableonSPCB-Sikkimwebsitewww.spcb.sikkim.gov.in

CHAPTER06

COMPLIANCE AND ENFORCEMENT

I. SOLIDWASTEMANAGEMENTRULES,2016.

a. StatusofsolidwastegenerationanddisposalinState:

Totalwastegeneration(TonnesperdayorTPD)	:	68.9
Quantityofmunicipalsolidwaste(MSW)collected (TPD)	:	68.9
QuantityofMSWtreated(TPD)	:	23.782
QuantityofMSWdisposedinsecuredlandfillsite(TPD)	:	45.2

b. Solidwastemanagementfacilities:

i. 50TPDcapacitycompostplantatMartamlandfillsitedamagedbylandslidewhich after repair is running at a capacity of 1TPD.

ii. 01TPDcapacityorganicwasteconverteratLalBazarvegetablemarket,Gangtok.

iii. 80kgorganicwasteconverteratManganvegetablemarket.

iv. Communitycompostpitforbiodegradablewasteinruralareaswhereverfeasible.

v. Resourcerecoverycentresfornon-biodegradablewastein32ruralblocks.

vi. PlasticwastemanagementunitatRhenockblock.

Theabovefacilitiesarebeingaugmentedwithnewmaterialrecoverycentres,solidwaste processingfacility,plasticwastemanagementunits.LocalNGOs/SHGsarebeingengagedfor collection of segregated solid waste and sensitization of waste generators.

PHOTO 18 & 19: GLIMPSES OFPUBLIC HEARING FOR ESTABLISHMENT OF SOLIDWASTEPROCESSINGFACILITYATMANGAN.

PHOTO 20: GLIMPSES OFPUBLIC HEARING FORESTABLISHMENTOFSOLIDWASTE PROCESSINGFACILITYATMANGAN.

II. PLASTICWASTEMANAGEMENTRULES,2016.

a. Statusofplasticwastegenerationanddisposalin State:

Totalplasticwastecollected(TonnesperannumorTPA)	:	88.64
Totalplasticwastechannelizedforrecycling(TPA)	:	75.14
Totalplasticwastechannelizedforuse(TPA)	:	0.80
Totalplasticwastedisposedinsecuredlandfillsite(TPA)	:	12.70

b. Plasticwastemanagementfacilities:

Material Recovery Facilities in urban areas and Resource Recovery Centres in rural areas augmentedwithplasticwastemanagementunitscomprisingofbalingandshredding facilities.

III. HAZARDOUS&OTHERWASTES (MANAGEMENT&TRANSBOUNDARY MOVEMENT)RULES,2016ANDITSAMENDMENTS.

a. Statusofhazardouswastegenerationanddisposal:

During 2022-2023, there were 49nos. of hazardous waste generating industries in the Stateout of which 08nos. have been established in Gangtok District, 20nos. have been established in Pakyong District and 21nos. have been established in Namchi District. These 49units generated incinerablehazardouswastetothetuneof1786.63MTandrecyclablehazardouswastetothe tuneof30.378MTduring2022-2023.

These hazardous wastes were disposed at common incinerator in West Bengal (391.975MT); recycled by Schedule IV recyclers in West Bengal (27.741MT); utilized for co-processing at cementplantsinAssam(1000.99MT)andMeghalaya(396.6MT).Theabovequantityof hazardouswastestransportedfordisposal,recyclingandco-processingisinclusiveoftheend oftheyearstoragefortheyear2021-2022.

IV. BIO-MEDICAL WASTE MANAGEMENT RULES, 2016 AND ITS AMENDMENTS.

a. Statusofbio-medicalwastegenerationanddisposal:

Quantityofbio-medicalwastegenerationperdayfrombeddedhospital.	:441kg
Quantityofbio-medicalwastegenerationperdayfromnon-beddedhospital.	:42kg
Quantityofbio-medicalwastegenerationperdayfromnon-bedded occupationalhealthcarehospitalwithinindustrialunits.	:79kg
TotalquantityofbioMedicalwastegenerationperdayintheState.	:562kg
Total quantity of waste treated and disposed by captive treatment facilitiesperday	:562kg

V. E-WASTE (MANAGEMENT) RULES, 2016 ANDITSAMENDMENTS.

a. StatusofE-wastegeneration:

ThetotalE-wastegenerationduring2022-2023is-25336.43kgand18,870nos.

Table No. 12: Status of E-waste generation:

Sl. No	Name	Categories/ Quantity							
		Information technology and tele-communi-cation equipment	Consumer electrical and electro-nics	Large and Small Electrical and Electronic Equipment	Electrical and Electronic Tools (With the exception of large-Scale Stationary Industrial Tools)	Toys, Leisure and Sports Equipment	Medical Devices (With the Exception of All Implanted and Infected Products)	Laboratory Instruments	Total
a.	Collection centers								
1.	Mangan Nagar Panchayat, Mangan, North Sikkim	7	3	nil	nil	nil	nil	nil	10 nos
2.	Gangtok Municipal Corporation, Gangtok, East Sikkim	5500 kg				nil	nil	nil	5500kg
3.	Namchi Municipal Council, Namchi, South Sikkim	nil	nil	nil	nil	nil	nil	nil	nil

Sl.No	Name	Categories/Quantity							
		Information technology and tele-communi-cation equipment	Consumer electrical and electro-nics	Largeand Small Electrical and Electronic Equipment	Electrical and Electronic Tools (Withthe exception of large-Scale Stationary Industrial Tools)	Toys, Leisure and Sports Equipment	Medical Devices (Withthe Exception of All Implanted and Infected Products)	Laboratory Instruments	Total
a.	Collectioncenters								
4.	Singtam Nagar Panchayat, Singtam,EastSikkim	nil	nil	nil	nil	nil	nil	nil	nil
5.	Rangpo Nagar Panchayat, Rangpo,EastSikkim	nil	nil	nil	nil	nil	nil	nil	nil
6.	Nayabazar-JorethangNagar Panchayat,SouthSikkim	nil	nil	nil	nil	nil	nil	nil	nil
7.	GyalshingNagarPanchayat, West Sikkim	nil	nil	nil	nil	nil	nil	nil	nil
B.	BulkConsumers								
1.	ZuventusHealthcareLtd.	21kg	nil	nil	nil	nil	nil	21kg	
2.	SwissGarnierGenexiaaSciences Unit II	8kg	10kg	nil	nil	nil	nil	nil	18kg
3.	ShigaEnergyHEP	-	40kg	nil	nil	nil	nil	nil	40kg
4.	AristoPharmaceuticalsPvt.Ltd.,	169.6kg	11.8kg	nil	nil	nil	nil	nil	181.14kg
5.	MacleodsPharmaceuticlas	2860kg	nil	nil	nil	nil	nil	2860kg	

6.	IPCALaboratoriesLtd.I	4200kg	500kg	nil	nil	nil	nil	nil	4700kg
7.	IPCALaboratoriesLtd.II	1507kg	313 kg	nil	nil	nil	nil	nil	1820kg
8.	GoldenCrossPharmaLtd.	17nos.	5nos.	nil	nil	nil	nil	nil	22nos.
9.	MankindPharmaLtd	150.68kg	nil	nil	nil	nil	nil	150.68kg	
10.	ShangrilaindustriesLtd.	13kg	nil	nil	nil	nil	nil	13kg	
11.	DansEnergyHEP	0	45kg	nil	nil	nil	nil	nil	45kg
12.	CiplaI	466 kg	nil	nil	nil	nil	nil	466 kg	
13.	LupinLtd.	83.9kg	33.8kg	nil	nil	nil	nil	nil	117.7kg
14.	IndchemieHealthSpecialtiesI	280 kg	nil	nil	nil	nil	nil	nil	280 kg
15	IndchemieHealthSpecialties II	390kg	nil	nil	nil	nil	nil	nil	390 kg
16.	SunPharmaLaboratoriesI	112.23kg	nil	nil	nil	nil	nil	nil	112.23kg
17.	SnehaKineticPowerProject	142nos.	6nos.	8nos.	nil	nil	nil	nil	156nos.
18.	CiplaII	3097kg	93.1kg	nil	nil	nil	nil	nil	3190kg
19.	ZydusWellnessProductsI	300 kg	47kg	nil	nil	nil	nil	nil	347 kg
20.	ZydusWellnessProductsII	180 kg	25kg	nil	nil	nil	nil	nil	205 kg
21.	TorrentpharmaceuticalsIII	nil	30kg	nil	nil	nil	nil	nil	30kg
22.	IntasPharmaceuticalsI	51.83kg	17kg	nil	nil	nil	nil	nil	68.83kg
23.	GlenmarkPharmaceuticals	175 kg	nil	nil	nil	nil	nil	175 kg	
24.	TorrentpharmaceuticalsI	458 kg	19.054kg	nil	nil	nil	nil	nil	477.054kg
25.	TorrentpharmaceuticalsII	nil	1.696kg	nil	nil	nil	nil	nil	1.696kg
26.	V-guardIndustriesII	1237nos.	nil	nil	nil	nil	nil	nil	1237nos.
27.	V-guardIndustriesIII	17445nos	nil	nil	nil	nil	nil	nil	17445nos.
28.	IntasPharmaceuticalsII	261nos.	626nos.	nil	2	nil	nil	nil	135.102kg
29.	ICICIbank,Gangtok	3106kg	nil	nil	nil	nil	nil	nil	3106kg
30.	AlembicPharmaceuticals	776 kg	110 kg	nil	nil	nil	nil	nil	886 kg

Note: Informationisbasedonthedataprovidedbythebulkconsumersand ULBs.

VI. BATTERIES (MANAGEMENT &HANDLING) RULES, 2000 AND ITS AMENDMENTS.

Thetotalquantityofbatteriessoldduring2022-2023was108358.52kg.

The new battery waste management rules were notified on August 24, 2022 by the Ministry of Environment,ForestsandClimateChange,GovernmentofIndia.ThenewBatteryWaste Management Rules, 2022, have superseded the Batteries (Management and Handling) Rules, 2001. The new rules introduce a more comprehensive framework for battery waste management, including the extended producer responsibility (EPR) regime, which mandates producers to ensurethecollectionandrecyclingofusedbatteries.

StatePollutionControlBoardshavelimitedroleunderthenewrulesstipulatedunderRule12 i.e. registering of refurbishing and recycling units through the online portal, compilation ofquarterly reports submitted by entities involved in refurbishing or recycling of waste batteries to CPCB and preparation of annual report.

VII. CONSTRUCTIONANDDEMOLITIONWASTE MANAGEMENT.

UrbanDevelopmentDepartment,GovernmentofSikkimhavenotifiedtheSikkimState Construction&DemolitionWasteManagementPolicyvideGazetteNo.23dated28.01.2023.

PHOTO21:InaugurationofEVChargingStationat HotelTajVivanta,Pakyong.

TableNol13:ComplianceStatusOfEffluentTreatmentPlant

Sl. No.	District	Name of the industry	Address of the industry	Category of the industry	Type of the industry	Opera-tional Status	Name of the river basin where unit is located *	Status of ETP *	Designed capacity of ETP (MLD)	Daily Average volume of Effluent Gene-ration (MLD) *	Daily average volume of treated effluent (MLD)	Industry com-plying with environ-mental stand-ards	Inspec-tion date
1.	Gangtok	Aristo Pharma-ceuticals	Bhagey khola	Orange	Pharma-ceutical	Opera-tional	Brahma-putra	Opera-tional	0.16	0.05	0.05	Yes	11/8/22
2.	Namchi	Alkem Health Science I	Samar-dung , South Sikkim	Orange	Pharma-ceutical	Opera-tional	Brahma-putra	Opera-tional	0.20 (common for unit I and unit II)	0.07	0.07	yes	12/7/22
3.	Namchi	Alkem Health Science II	Samar-dung South Sikkim	Orange	Pharma-ceutical	Opera-tional	Brahma-putra	Opera-tional	0.20 (common for unit I and unit II)	0.07	0.07	yes	12/7/22
4.	Namchi	Alkem Health Science III	Samar-dung South Sikkim	Orange	Pharma-ceutical	Opera-tional	Brahma-putra	Opera-tional	0.10	0.05	0.05	yes	12/7/22
5.	Namchi	Alkem Labora-tories V,	Samar-dung	Orange	Pharma-ceutical	Opera-tional	Brahma-putra	Opera-tional	0.03	0.003	0.003	yes	12/7/22
6.	Pakyong	Alkem Labora-tories Ltd.	Kumrek East Sikkim	Orange	Pharma-	Opera-	Brahma-	Opera-	0.2	0.1	0.1	yes	21/9/22

Sl. No.	District	Nameof the industry	Address of the industry	Category of the industry	Type of the industry	Opera-tional Status	Nameof theriver basin where unit is located*	Status ofETP*	Designed capacity of ETP (MLD)	Daily Average volume ofEffluent Gene-ration (MLD) *	Daily average volume of treated effluent (MLD)	Industry com-plying with environ-mental stand-ards	Inspec-tion date
7.	Namchi	Aish-warya Health-care	Samar dung South Sikkim	Orange	Pharma-ceutical	Opera-tional	Brahma-putra	Opera-tional	0.025	0.025	0.025	yes	22/7/22
.8.	Namchi	Auro-chem Labora-tories	Manpur South Sikkim	Orange	Pharma-ceutical	Opera-tional	Brahma-putra	Opera-tional	0.030	0.005	0.005	yes	24/11/22
9.	Namchi	Alembic pharma-ceutical, Sikkim	Samar-dung, South	Orange	Pharma-ceutical	Opera-tional	Brahma-putra	Opera-tional	0.2	0.07	0.07	yes	22/7/22
10.	Pakyong	CiplaLtd. Unit I, Sikkim	Kumrek, East	Orange	Pharma-ceutical	Opera-tional	Brahma-putra	Opera-tional	0.1	0.1	0.1	yes	21/9/22
11.	Pakyong	CiplaLtd. Unit II	Rora-thang East Sikkim	Orange	Pharma-ceutical	Opera-tional	Brahma-putra	Opera-tional	0.16	0.16	0.16	yes	04/05/22
12.	Pakyong	C.G. Foods	Mining, Rangpo East Sikkim	Orange	Pharma-ceutical	Opera-tional	Brahma-putra	Opera-tional	0.015	0.015	0.015	yes	11/02/23 and 04/03/23

Sl. No.	District	Nameof the industry	Address of the industry	Category of the industry	Typeof the industry	Opera-tional Status	Nameof theriver basin where unit is located*	Status ofETP*	Designed capacity of ETP (MLD)	Daily Average volume ofEffluent Gene-ration (MLD) *	Daily average volume of treated effluent (MLD)	Industry com-plying with environ-mental stand-ards	Inspec-tion date
13.	Namchi	Curetec Pharma-ceuticals,	Daring block, South Sikkim	Orange	Pharma-ceutical	Non Opera-tional	Brahma-putra	Non-Opera-tional	-	-	-	yes	27/7/22
14.Pa	yong	Denzong Albrew,	Mulukey, East Sikkim	Red	Brewery	Opera-tional	Brahma-putra	Opera-tional	0.35	0.1	0.1	yes	17/03/23
15.	Pakyong	Golden Cross Pharma Pvt.Ltd.	Tarpin Block, Rora-thang East Sikkim	Orange	Pharma-ceutical	Opera-tional	Brahma-putra	Opera-tional	0.1	0.1	0.1	yes	04/05/22
16.	Namchi	Godrej Consumer Pvt.Ltd.	Mamring South Sikkim	Orange	Frag-rances	Opera-tional	Brahma-putra	Opera-tional	0.013	0.013	0.013	yes	22/7/22
17.	Gangtok	Glenmark Pharma-ceutical Ltd.	Samlik Marchak East Sikkim	Orange	Pharma-ceutical	Opera-tional	Brahma-putra	Opera-tional	0.05	0.045	0.045	yes	
18.	Gangtok	HeBa Pharma-ceuticals,	Marchak East Sikkim	Orange	Pharma-ceutical	Opera-tional	Brahma-putra	Opera-tional	0.025	0.01	0.01	yes	6/07/22

Sl. No.	District	Nameof the industry	Address of the industry	Category of the industry	Type of the industry	Opera-tional Status	Nameof theriver basin where unit is located*	Status ofETP*	Designed capacity of ETP (MLD)	Daily Average volume ofEffluent Gene-ration (MLD) *	Daily average volume of treated effluent (MLD)	Industry com-plying with environ-mental stand-ards	Inspec-tion date
19.	Pakyong	Intas Pharma-ceutical Ltd.UnitI	Bhagey khola East Sikkim	Orange	Pharma-ceutical	Opera-tional	Brahma-putra	Opera-tional	0.03	0.003	0.003	yes	11/8/22
20.	Namchi	Intas Pharma-ceutical Ltd.UnitII	Samar dung South Sikkim	Orange	Pharma-ceutical	Opera-tional	Brahma-putra	Opera-tional	0.075	0.01	0.01	yes	22/7/22
21.	Namchi	IPCA Labora-tories Unit I	Bhari khola, South Sikkim	Orange	Pharma-ceutical	Opera-tional	Brahma-putra	Opera-tional	0.25 (common for unit I andunitII)	0.05	0.05	yes	24/11/22
22.	Namchi	IPCA Labora-tories Unit II	Bhari khola	Orange	Pharma-ceutical	Opera-tional	Brahma-putra	Opera-tional	0.25 (common for unit I andunitII)	0.07	0.07	yes	24/11/22
23.	Pakyong	Ideal Cures,	Pachey-khani, East Sikkim	Orange	Pharma-ceutical	Opera-tional	Brahma-putra	Opera-tional	0.01	0.004	0.004	yes	04/05/22
24.	Pakyong	Inddchemie Health Special-ities I	Kumrek, East Sikkim	Orange	Pharma-ceutical	Opera-tional	Brahma-putra	Opera-tional	0.03	0.004	0.005	yes	25/05/22

Sl. No.	District	Nameof the industry	Address of the industry	Category of the industry	Typeof the industry	Opera-tional Status	Nameof theriver basin where unit is located*	Status ofETP*	Designed capacity of ETP (MLD)	Daily Average volume ofEffluent Gene-ration (MLD) *	Daily average volume of treated effluent (MLD)	Industry com-plying with environ-mental stand-ards	Inspec-tion date
25.	Pakyong	Indchemie Health Special-ities II	Kumrek, East Sikkim	Orange	Pharma-ceutical	Opera-tional	Brahma-putra	Opera-tional	0.01	0.005	0.005	yes	25/05/22
26.	Namchi	Kanchen-dzonga Distilleries	Manpur, South Sikkim	Orange	Alcohol blending and bottling	Opera-tional	Brahma-putra	Opera-tional	0.01	0.001	0.001	yes	
27.	Pakyong	Lupin Ltd	4thmile Bhasmey, East Sikkim	Orange	Pharma-ceutical	Opera-tional	Brahma-putra	Opera-tional	0.12	0.096	0.096	yes	25/05/22
28.	Namchi	LAHAG Spirits (bottling)	Manpur, South Sikkim	Red	Distillery	Non-Operat-ional	Brahma-putra	Non-opera-tional	0.3	0.01	0.01	Closure direction issued byCPCB due to non-compli-ance.	22/04/22
29.	Namchi	Lividus Pharma-ceuticals	Samar dung, South Sikkim	Orange	Pharma ceutical	Establis-hment completed	Brahma-putra	Establis-hment completed	0.02	Nil	Nil	Operation not started	11/02/23

Sl. No.	District	Nameof the industry	Address of the industry	Category of the industry	Type of the industry	Opera-tional Status	Nameof theriver basin where unit is located*	Status ofETP*	Designed capacity of ETP (MLD)	Daily Average volume ofEffluent Gene-ration (MLD) *	Daily average volume of treated effluent (MLD)	Industry com-plying with environ-mental stand-ards	Inspec-tion date
30	Namchi	Mankind Pharma-ceutical Ltd.	Daring block, Bermiok South Sikkim	Orange Orange	Pharma-ceutical Pharma-	Opera-tional Opera-	Brahma-putra Brahma-	Opera-tional Opera-	0.225 0.1	0.075 0.052	0.075 0.052	yes yes	27/7/22
31	Namchi	Micro Labs Ltd.	Mamring, South Sikkim		ceutical	tional	putra	tional					
32	Namchi	Marc Life Sciences	Samar-dung South Sikkim	Orange	Pharma-ceutical	Opera-tional	Brahma-putra	Opera-tional	0.014	0.010	0.010	yes	22/7/22
33	Pakyong	Macleods	Aho-Yangtam East Sikkim	Orange	Pharma-ceutical	Opera-tional	Brahma-putra	Opera-tional	0.125	0.09	0.09	yes	21/06/22
34	Pakyong	Mount Distilleries,	Majhitar, East Sikkim	Orange	Alcohol blending and bottling	Opera-tional	Brahma-putra	Opera-tional	0.04	0.02	0.02	yes	21/9/22
35	Pakyong	Mayell& Fraser	Majhitar, East Sikkim	Orange	Alcohol blending and bottling	Opera-tional	Brahma-putra	Opera-tional	0.005	0.001	0.001	yes	12/7/22

Sl. No.	District	Nameof the industry	Address of the industry	Category of the industry	Typeof the industry	Opera-tional Status	Nameof theriver basin where unit is located*	Status ofETP*	Designed capacity of ETP (MLD)	Daily Average volume ofEffluent Gene-ration (MLD) *	Daily average volume of treated effluent (MLD)	Industry com-plying with environ-mental stand-ards	Inspec-tion date
36	Gangtok	PTS Packers and Providers	Sang khola, East Sikkim	Orange	Pharma-ceutical	Opera-tional	Brahma-putra	Opera-tional	0.004	0.002	0.002	yes	6/07/22
37	Pakyong	Regal Healthcare	Bhasmey, East Sikkim	Orange	Pharma-ceutical	Opera-tional	Brahma-putra	Opera-tional	0.008	0.005	0.005	yes	25/05/22
38	Gangtok	STP Pharma-ceutical Pvt.Ltd.	Sang-khola, East Sikkim	Orange	Pharma-ceutical	Opera-tional	Brahma-putra	Opera-tional	0.004	0.001	0.001	yes	6/07/22
39	Namchi	Swiss Garnier Genexiaa Science Pvt.Ltd Unit I	Mamring South Sikkim	Orange	Pharma-ceutical	Opera-tional	Brahma-putra	Opera-tional	0.05	0.03	0.03	yes	3/09/22
40.	Pakyong	Swiss Garnier Genexiaa Science Pvt.Ltd Unit II	Tarpin Block, East Sikkim	Orange	Pharma-ceutical	Opera-tional	Brahma-putra	Opera-tional	0.1	0.02	0.02	yes	04/05/22

Sl. No.	District	Nameof the industry	Address of the industry	Category of the industry	Type of the industry	Opera-tional Status	Nameof theriver basin where unit is located*	Status ofETP*	Designed capacity of ETP (MLD)	Daily Average volume ofEffluent Gene-ration (MLD) *	Daily average volume of treated effluent (MLD)	Industry com-plying with environ-mental stand-ards	Inspec-tion date
41	Pakyong	Savi Health Sciences	Majhitar, East Sikkim	Orange	Pharma-ceutical	Opera-tional	Brahma putra	Opera-tional	0.015	0.004	0.004	yes	1/12/22
42	Namchi	Salas Pharma,	Samar-dung, South Sikkim	Orange	Pharma-ceutical	Opera-tional	Brahma putra	Opera-tional	0.008	0.002	0.002	yes	22/7/22
43	Pakyong	SBL Pvt. Ltd.	Majhitar, East Sikkim	Orange	Pharma-ceutical	Opera-tional	Brahma putra	Opera-tional	0.03	0.003	0.003	yes	28/01/23 and 24/03/23
44	Gangtok	Sun Pharma, Unit I	Setipool, East Sikkim	Orange	Pharma-ceutical	Opera-tional	Brahma putra	Opera-tional	0.1	0.06	0.06	yes	21/06/22
45	Gangtok	Sun Pharma Labora-toriesLtd., Unit II	Namli Block, Gidang Marchak East Sikkim	Orange	Pharma-ceutical	Opera-tional	Brahma putra	Opera-tional	0.2	0.19	0.19	yes	21/06/22

Sl. No.	District	Nameof the industry	Address of the industry	Category of the industry	Typeof the industry	Opera-tional Status	Nameof theriver basin where unit is located*	Status ofETP*	Designed capacity of ETP (MLD)	Daily Average volume ofEffluent Gene-ration (MLD) *	Daily average volume of treated effluent (MLD)	Industry com-plying with environ-mental stand-ards	Inspec-tion date
46	Pakyong	Sikkim Distilleries,	Rangpo, East Sikkim	Orange	Alcohol blending and bottling	Opera-tional	Brahma putra	Opera-tional	0.015	0.1	0.1	yes	17/03/23
47	Pakyong	Shangrila Industries	Mining, Rangpo East Sikkim	Orange	Pharma-ceutical	Opera-tional	Brahma-putra	Opera-tional	0.02	0.001	0.001	yes	21/9/22
48	Gangtok	Torrent Pharma-ceutical Ltd.Unit-I Middle camp	Middle camp	Orange	Pharma-ceutical	Opera-tional	Brahma-putra	Opera-tional	0.230 (commor forunit-I andunit II)	0.22	0.22	yes	6/07/22
49	Gangtok	Torrent Pharma-ceutical Ltd. Unit-II	32mile Middle camp, East Sikkim	Orange	Pharma-ceutical	Opera-tional	Brahma-putra	Operat-ionalfor unit-I and unitII)	0.230 (commor	0.05	0.05	yes	6/07/22

Sl. No.	District	Nameof the industry	Address of the industry	Category of the industry	Type of the industry	Opera-tional Status	Nameof theriver basin where unit is located*	Status ofETP*	Designed capacity of ETP (MLD)	Daily Average volume ofEffluent Gene-ration (MLD) *	Daily average volume of treated effluent (MLD)	Industry com-plying with environ-mental stand-ards	Inspec-tion date
50	Pakyong	Torrent Pharma-ceutical Ltd. Unit-III	Bhagey khola, Majhitar East Sikkim	Orange	Pharma-ceutical	Opera-tional	Brahma-putra	Opera-ional	0.015	0.015	0.015	yes	22/06/22
51	Namchi	Trophic Wellness ceutical Pvt.Ltd.	Manpur, South Majhitar Sikkim	Orange	Nutra-ceutical	Opera-tional	Brahma-putra	Opera-ional	0.005	0.003	0.003	yes	
52	Namchi	Transasia Biomedical	Samar-dung, South Sikkim	Orange	Medical equipments assembling unit	Opera-tional	Brahma-putra	Opera-tional	0.01	0.005	0.005	yes	22/7/22
53	Namchi	Yuksom Breweries Ltd.	Melli South Sikkim	Red	Brewery	Opera-tional	Brahma-putra	Opera-tional	0.85	0.27	0.27	yes	
54	Pakyong	Zydus Health careLtd. Unit II	Kumrek East Sikkim	Orange	Pharma-ceutical	Opera-tional	Brahma-putra	Opera-tional	0.1	0.1	0.1	yes	28/01/23

Sl. No.	District	Nameof the industry	Address of the industry	Category of the industry	Type of the industry	Opera-tional Status	Name of theriver basin where unit is located*	Status ofETP*	Designed capacity of ETP (MLD)	Daily Average volume ofEffluent Gene-ration (MLD) *	Daily average volume of treated effluent (MLD)	Industry com-plying with environ-mental stand-ards	Inspec-tion date
55	Pakyong	Zydus Health careLtd. Unit I	Bhagey-khola East Sikkim	Orange	Pharma-ceutical	Opera-tional	Brahma-putra	Opera-tional	0.05	0.05	0.05	yes	28/01/23
56	Pakyong	Zuventus Health CareLtd.	Bhasmey East Sikkim	Orange	Pharma-ceutical	Opera-tional	Brahma-putra	Opera-tional	0.079	0.052	0.052	yes	8/11/22
57	Namchi	Zydus wellness Products Pvt.Ltd.	Mamring South Sikkim	Orange	Pharma-ceutical	Opera-tional	Brahma-putra	Opera-tional	0.06 (common forunitI andunit II)	0.06	0.06	yes	28/01/23
58	Namchi	Zydus wellness Products Pvt.Ltd. Unit II	Mamring South Sikkim	Orange	Pharma-ceutical	Opera-tional	Brahma-putra	Opera-tional	0.06 (common forunitI andunit II)	0.06	0.06	yes	28/01/23

PHOTOGALLERY

INSPECTION OF PHARMACEUTICAL UNITS FORENVIRONMENTAL COMPLIANCES

PHOTO22:AtGlenmarkPharmaceutical Unit, Marchak

PHOTO23:AtMankindPharmaceutical Unit,DaringBlock

PHOTO24:AtMcleodpharmaceuticalunit, Aho-Yangtam

PHOTO 25: At Lividus pharmaceutical unit, Jholungey

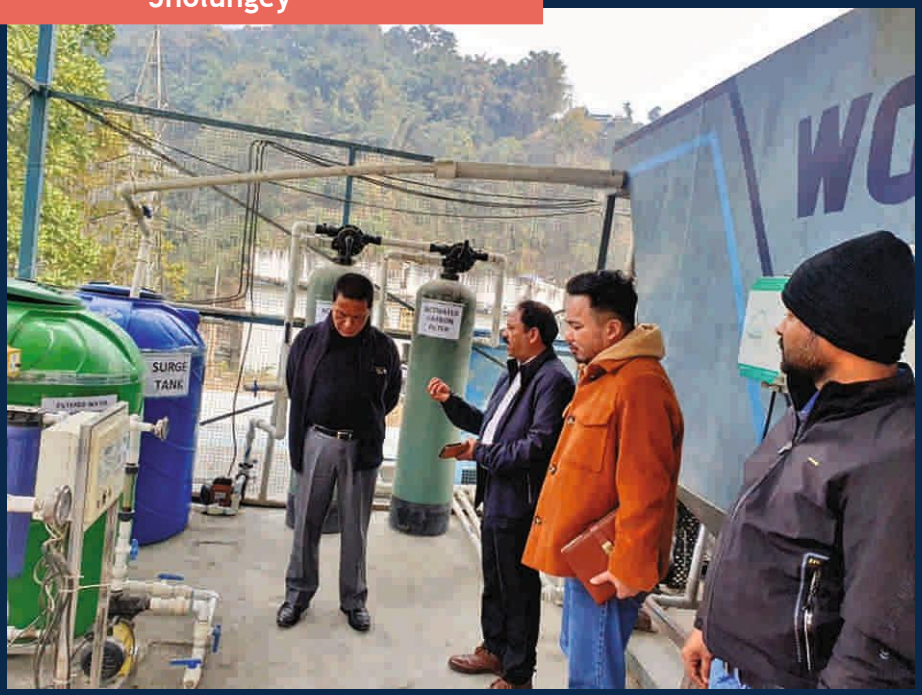


PHOTO26:AtIPCApharmaceuticalunit, Bharikhola

PHOTO27:Samplingofeffluentforanalysis atSunpharmaunit-I,Setipool

PHOTO28:AtZydusHealthcare-II pharmaunit,Kumrek

PHOTO 29: At Torrent pharma unit-III, Bagheykhola

PHOTO30:AtSunpharmaunit-I,Setipool

INSPECTION OF HYDRO ELECTRIC PROJECTSFOR ENVIRONMENTAL COMPLIANCE

PHOTO31:AtGATIHEP,RongliDam

PHOTO32:AtGATIHEP,RongliDam

PHOTO33:InspectionofOilDepotat PakyongAirport.

PHOTO34:Inspectionofunderconstruction ETPatthemodernabattoirMelli.

PHOTO35:Inspectionof powerhousesiteofMBPCL.

PHOTO36:InspectionofDental careunitatPakyong.

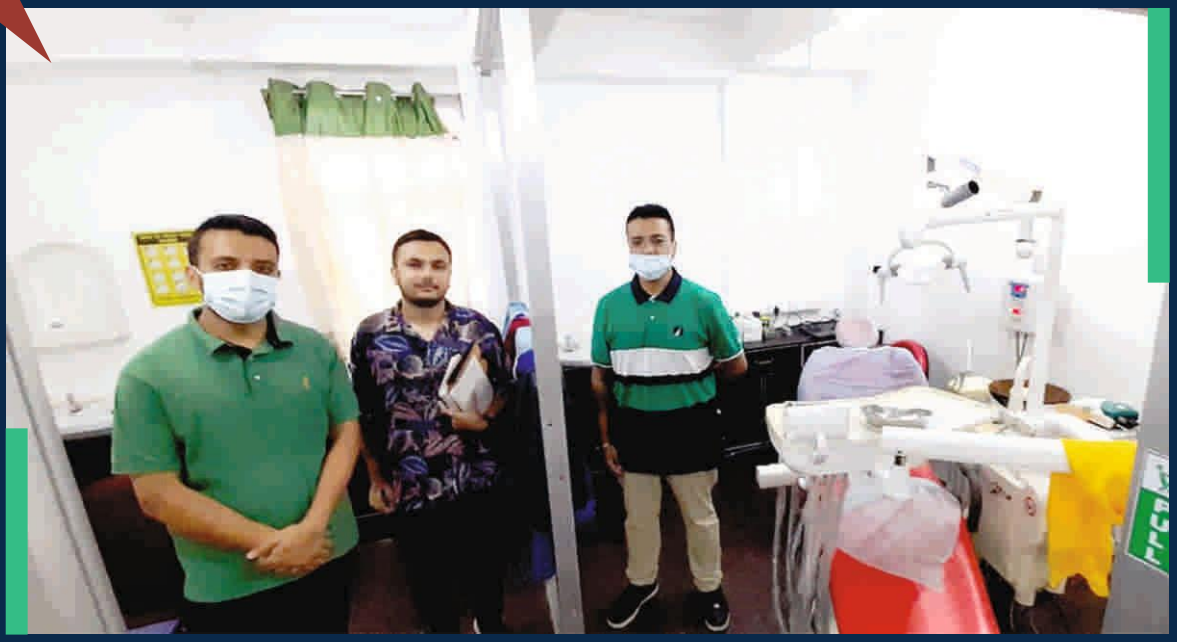


PHOTO37:Inspectionofunderconstruction craftbeverageatReshithangGangtok.

PHOTO38:Inspectionof StoneCrushingunit.

PHOTOS39-44:InspectionofvariousHealthCareestablishments.

PHOTO45:Inspectionofused oil storage room.

PHOTO46:Inspectionofpharmaceuticalunit.

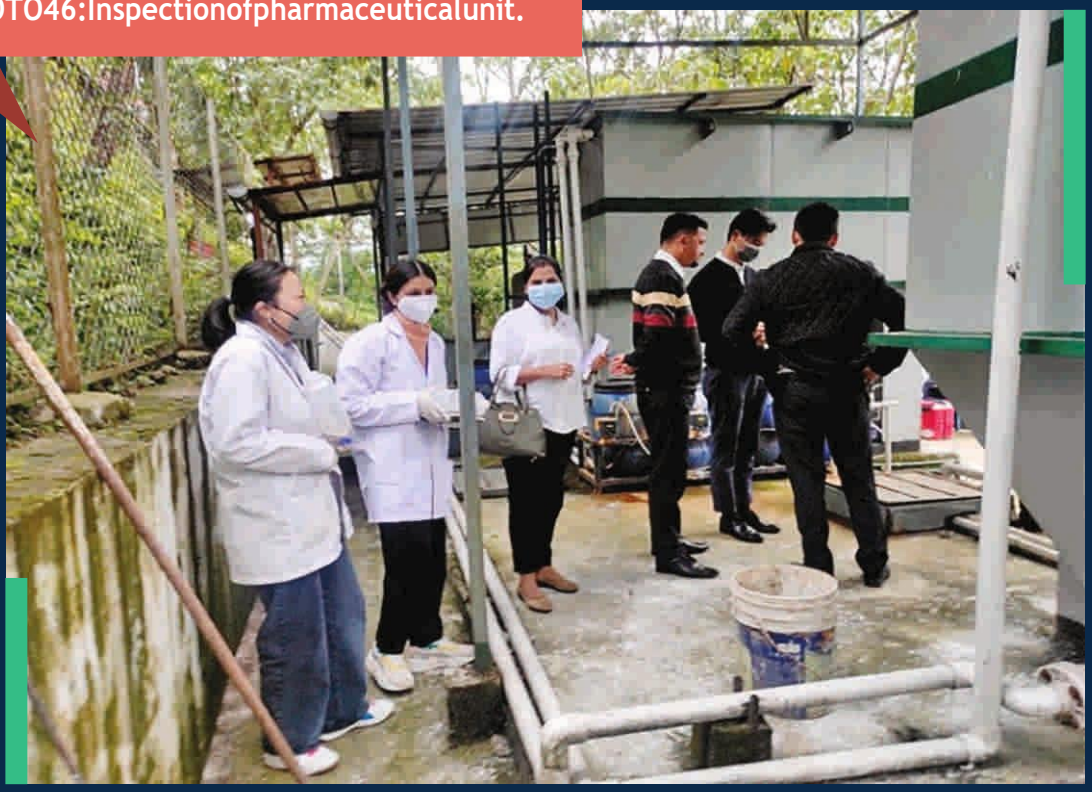


PHOTO47:Inspectionofpetrolpump.

APPENDICES-A

EXCERPT FROM ENVIRONMENT IMPACT ASSESSMENTNOTIFICATION,2006SCHEDULE

8. BUILDING OR CONSTRUCTION PROJECTS OR AREA DEVELOPMENT PROJECTS ANDTOWNSHIPS AS WELL AS FOR INDUSTRIAL SHEDS, EDUCATIONAL INSTITUTIONS, HOSPITALS AND HOSTELS FOR EDUCATIONAL INSTITUTIONS REQUIRINGPRIOR ENVIRONMENTALCLEARANCE.

1[8	Projector Activity	Categorywiththresholdlimit		Conditions,ifany
		A	B	
8(a)	Building or Construction projects		>20000sq.mtrs. and <1,50,000sq.mtrs. ofbuiltuparea	The term "built up area" for the purpose of the notification the built up or coveredareaonallfloorsputtogether, including its basement and other serviceareas,whichareproposedin thebuildingorconstructionprojects. **Note1.-**Theprojectsoractivitiesshall notincludeindustrialshed,school, college,hostelforeducational institution,butsuchbuildingsshall ensuresustainableenvironmental management, solid and liquid waste management, rain water harvesting andmayuserecycledmaterialssuch **asflyashbricks.** **Note2.-**"GeneralConditions"shallnot apply.
8(b)	Townshipsand Area Development Projects		Coveringanarea of>50haandor built up area >1,50,000sq.mtrs.	A project ofTownships and Area DevelopmentProjectscoveredunder this item shall require an Environmental AssessmentReportandbeappraised asCategory'B1'Project. **Note.-**GeneralConditionsshall notapply.

2[8	Projector Activity	Categorywiththresholdlimit		Conditions,ifany
		A	B	
8(a)	BUILDING OR CONSTRUCTION PROJECTS OR AREA DEVELOPMENT PROJECTS AND TOWNSHIPS AS WELL AS FOR INDUSTRIAL SHEDS, EDUCATIONAL INSTITUTIONS, HOSPITALS AND HOSTELS FOR EDUCATIONAL INSTITUTIONS REQUIRING PRIOR ENVIRONMENTALCLEARANCE.			
8(a)	Building or Construction projects		≥50000sq.mtrs. and <1,50,000sq.mtrs. ofbuiltuparea	**Note 1.-** Theterm"builtuparea"for the purpose of the notification the built uporcoveredareaonallfloorsput together, including its basement and otherserviceareas, whichare proposedinthebuildingor constructionprojects. Note2.-Theprojectsoractivities shall not include industrial shed, school,college,hostelforeducational institutions.Note3.-"General Conditions"shallnotapply.
8(b)	Townshipsand Area Development Projects as well as industrialshed, educational institutions, hospitals and hostels for educational institutions		≥1,50,000sq.mtrs. and <3,00,000sq.mtrs. ofbuiltup area or coveringan area≥50ha.	A project of Townships and Area Development Projects covered under thisitemshallrequirean Environmental Assessment Report andbeappraisedasCategory'B1' Project. Note.- General Conditions shall not apply.

Requirements of prior Environmental Clearance(EC)

Project Category in the Schedule	ConcernedRegulatory Authority	Screening	Scoping (Need for Environment Impact Assessment &Environmen t Management Report)	Public Consultation required
Category A	Central Government in the MinistryofEnvironment and Forests	NA	Yes	Yes
Category B1	StateEnvironmentImpact Assessment Authority (SEIAA)	YES	Yes	Yeswithfew exceptions
Category B2	District Environment Impact Assessment Authority (DEIAA)	YES	NA	NA

APPENDICES-B

MonthlyWeatherMonitoringSystemAverage of Gangtok Station for the year 2022

Month	RH(%)	WS(Km/Hr)	WD(Deg)	Temp(DegC)
May	76.95	1.57	224.05	21.36
June	83.7	1.35	239.58	21.6
July	76.34	1.7	208.71	24.31
August	80.01	1.4	190	23.29
September	81.63	1.2	200.98	21.81
October	66	0.92	208.07	20.04
November	65.91	0.98	211.25	18.06
December	83.65	0.66	199.96	15.44

RH - Relative Humidity in %
WD-WindDirectioninDegrees
WS-WindSpeedinKm/hr.
Temp.-TemperatureindegreeCelsius

AnnualWeatherMonitoringSystemAverageof ManganStationfortheyear2022

MONTH	Winddirection (Deg)	Temperature (Deg C)	RelativeHumidity (%)	Speed (Km/Hr)
MAY	153.43	10.92	86.56	1.31
JUNE	145.7	11.37	99.7	1.06
JULY	217.82	13.5	94.07	0.95
AUGUST	277.75	13.99	93	0.91
SEPTEMBER	224.19	11.52	98.16	0.82
OCTOBER	216.77	12.08	92.08	0.97
NOVEMBER	275.77	7.45	78.88	0.55
DECEMBER	290.85	5.38	77.84	0.54
ANNUALAVERAGE	225.285	10.77625	90.03625	0.88875