



Hon'ble Minister Forest Shri Karma Loday Bhutia chairs meeting on Covid-19 bio-medical waste disposal



A meeting on Covid-19 waste disposal was held on 1.8.2020 at Sidkeong Tulku Conference Hall of Forest Secretariat under the Chairmanship of Shr. Karma L. Bhutia the Hon'ble Minister of Forest and Environment. Other attendees included Shri Jacob Khaling, Political Secretary to the Hon'ble Chief Minister, Mr. Shakti Singh, Mayor of Gangtok Municipal Corporation (GMC), Dr. Thomas Chandy, Chairman State Pollution Control Board, Ms. Sarala Rai, Secretary Urban Development Department (UDD), Shri YP Gurung CCF, Shri Nima Wangdi CCF, Mrs. D. Lhanzey, Dy. Mayor of GMC, Dr. Gopal Pradhan, Member Secretary SPCB and senior officers of Health, Forest and UDD departments. The meeting deliberated on the site requirement for Covid-19 waste disposal and prospective sites were discussed. The gaps in hospital infrastructure for biomedical waste disposal were also discussed in detail with steps to solve the problems. Short term and long term solutions were also highlighted.



Highlights



Management and disposal of Covid-19 bio-medical waste in compliance to Bio-Medical Waste Management Rules, 2016



Awareness through workshops for frontline covid warriors, media and virtual meet with Industrial Units of the State



Status of Ambient Air and River Water Quality across the State



Board meeting on consensus to propose setting up of Refuse Derived Fuel Plant at waste processing facilities of Sikkim



Management and disposal of Covid-19 bio-medical waste in compliance to Bio-Medical Waste Management Rules, 2016

The Hon'ble NGT in O.A No. 72/2020 passed various orders for scientific disposal of bio-medical waste arising out of Covid-19 waste treatment and management in compliance with Bio-Medical Waste Management Rules, 2016. This was to ensure protection of environment and public health in view of potential of such infectious waste to affect public health, concerned frontline workers and professionals if not properly disposed.

In compliance with the NGT directive, the Central Pollution Control Board (CPCB) issued Guidelines for handling, treatment and disposal of waste generated during treatment, diagnosis, quarantine of Covid-19 patients so that all wastes are disposed scientifically. Acting promptly according to the guideline, the State Pollution Control Board (SPCB) Sikkim has been vigilant on scientific management of Covid-19 related liquid and solid wastes both at the institution and individual level so

that the disposal of used PPEs, used bags, gloves, goggles, safety kits or any form of covid wastes in a manner as to not cause contamination. SPCB Sikkim has been adhering to strict compliance of the Bio-medical Waste Management Rules, 2016 followed by online reporting on a daily basis, creating awareness by conducting special workshops, organizing training to the stake holders, providing adequate protective gears to the Covid-waste handlers and coordination with the concerned regulatory authorities in the State and Central Government. SPCB Sikkim has authorized Sir Thutob Namgyal Memorial (STNM) Hospital, Central Referral Hospital (CRH) and four District Hospitals for disposal of covid waste in their Captive Treatment Plant (CTP) in absence of Common Bio-Medical Waste Treatment Plant (CBMWTP).

In compliance with NGT orders, SPCB Sikkim inspected all quarantine centers and district hospitals where

the Covid- waste was authorized to be incinerated/ treated. Adequate sensitization programme were conducted for the in-charges of quarantine centers, CMOs, Doctors and Nurses, officials of Health Department including frontline workers and incinerator operators regarding handling and safe disposal of Covid-waste. District Collectors and other district officials were also briefed about the guidelines on the handling, treatment and disposal of bio-medical waste including covid waste for compliance.

The officers of SPCB Sikkim inspected Covid-19 treatment facilities, all Districts quarantine centers and COVID waste disposal facilities. Awareness programs were conducted on appropriate method of waste collection, transportation and disposal for frontline workers of the health department, Gangtok Municipal Corporation (GMC), in-charges of quarantine centers in compliance to the CPCB guidelines.



Hands-on training was imparted to municipal waste handlers on 07/05/2020 in coordination with Health and Family Welfare Department and GMC. Prior to imparting training to bio-medical waste handlers, SPCB Sikkim had already initiated collection of information on covid-waste generated and disposed from different quarantine centers since 07/04/2020 on weekly basis. For efficient data management and analysis on covid-waste, CPCB then developed an online application on Covid-19 related biomedical waste management after which data is being updated on daily basis. For this nodal officers representing SPCB from each State and UT were appointed. To make the App effective, SPCB Sikkim has directed registered covid waste generators for uploading data on real-time basis and also monitors the same.



Media and Awareness Activities relating to COVID Waste Management



To create awareness amongst the public, SPCB Sikkim in coordination with IPR department prepared a video on COVID waste management and interacted with media. SPCB Sikkim has been constantly coordinating with concerned regulatory authorities, stakeholders and line departments of the State under guidance of CPCB.



SPCB Sikkim conducted a series of meetings with health department and GMC on Covid-waste management as follows:

- 04/05/2020 at conference hall, SPCB-Sikkim, Deorali.
- 06/05/2020 at conference hall, SPCB-Sikkim, Deorali.
- 27/05/2020 at conference hall, SPCB-Sikkim, Deorali.
- 04/09/2020 at conference hall, SPCB-Sikkim, Deorali.

SPCB Sikkim holds meeting with PHE Department



A team of officials from the PHE Department headed by its Secretary, Shri B. Prasad, had a meeting with the SPCB in the Conference room of SPCB on 9.6.2020. The status of all the Sewage Treatment Plants (STPs) of the State under the PHED was reviewed. It was stated that due to the lockdown the progress of construction of new STPs at Syari, Rangpo and Chanmari. It was expected that the Rangpo and Syari STPs would be commissioned by December 2020. It was informed that the Sikkim Sewage and Sanitation disposal Act, 1986 was under revision to make violations more stringent and ensure that all households are connected to the sewage system. It was apprised to PHED that as directed by NGT PHED would have to take up bioremediation of those areas where proper sewage treatment was not being done presently as an interim measure, but eventually, by March 2021 all households were to be covered with scientific sewage treatment.

SPCB holds meeting with Urban Development Department (UDD)

A meeting with UDD was held in the Conference room of SPCB on 4.7.2020 to discuss issues pertaining to the management of Solid, Plastic and Electronic wastes in the State. It was apprised that these issues were mainly being pursued under the O.A. 606 of 2018 in the NGT as well.



The status of segregation of solid wastes at the household level was reviewed and it was stated that while for GMC this was satisfactory the same could not be said about the other ULBs. It was also revealed that the existing facilities at Martam and Sipsu are under pressure due to it being used by rural towns as well. Recycling by rag pickers at source and at the Martam site was going on but due to the large amount of unsegregated wastes reaching the two landfill sites it was difficult to process the same on a day to day basis and this was leading to rapid filling of the landfill. The lack of processing of solid wastes at Sipsu site was also pointed out by SPCB officials. The Municipal Executive Officers were also present in the meeting and they apprised SPCB about the status of waste management in their districts. Issues relating to plastic and electronic waste management and the gaps in proper mechanism for their collection and disposal were also pointed out to the Secretary and accompanying officials.

Board meeting on consensus to propose setting up of Refuse Derived Fuel Plant at waste processing facilities of Sikkim | September 18, 2020



A Board meeting of SPCB was held in Sidkeong Tulku Conference Hall of the Forest Secretariat on 18.09.2020 under the chairmanship of Dr. Thomas Chandy, Chairman SPCB Sikkim. Various agendas on administrative, accounts and technical issues were deliberated upon. The main highlights of the Board meeting were putting up proposal for consideration of the Government for setting up of Refuse Derived Fuel plant at Martam and Sipsu waste processing facilities to lessen the load on landfill and increasing the life of these two facilities. It was also decided to propose the phasing out of Polypropylene bags and popularize the use of cloth bags. COVID-19 waste management was also discussed. The Board also agreed upon setting up of central server for real time information for overall monitoring of water pollution parameters of point sources. Environmental Compensation realized so far and its utilization was also discussed in the meeting.

Virtual meet with Industrial Units of the State on the occasion of International Day for Preservation of Ozone Layer

September 16, 2020



SPCB Sikkim under the chairmanship of Dr. Thomas Chandy organized a virtual interactive meet with pharmaceutical formulation units of the state to celebrate 35 years of Ozone layer protection with the UNEP designated theme "Ozone for Life". The Chairman, SPCB Sikkim deliberated upon the importance of the occasion and emphasized adopting responsible lifestyle, managing cooling system in units properly, preferring ozone friendly production process etc. He also encouraged them to adopt renewable source of energy like solar power system so that use of DG sets are minimized gradually for effective greener response.

Virtual Meet: 6th Central Monitoring Committee Meeting with Ministry of Jal Shakti



SPCB Sikkim along with senior officers of the State Government headed by the Chief Secretary and Principal Secretary Forest attended the 6th Central Monitoring Committee Meeting with Ministry of Jal Shakti on 30/09/2020 to review the progress made by States on the Action Plans with regard to solid waste and industrial waste management, adoption of model river stretch by the State for pollution abatement, re-use of treated water and submission of the monthly progress report as per the prescribed format.



Other Interactive Meetings, Orientations through video conferencing for Stakeholder partnership for bio-medical waste and solid waste management in Sikkim



SPCB Sikkim attended an interactive meeting on covid-19 Bio-Medical waste management and tracking application on 24/09/2020 organized by Central Pollution Control Board (CPCB). The uses, status and issues of the application were discussed at length.



Coordination meeting was conducted by Central Pollution Control Board (CPCB) with all State Pollution Control Boards under the chairmanship of Sh. Shiv Das Meena, Chairman, CPCB on 25/09/2020.



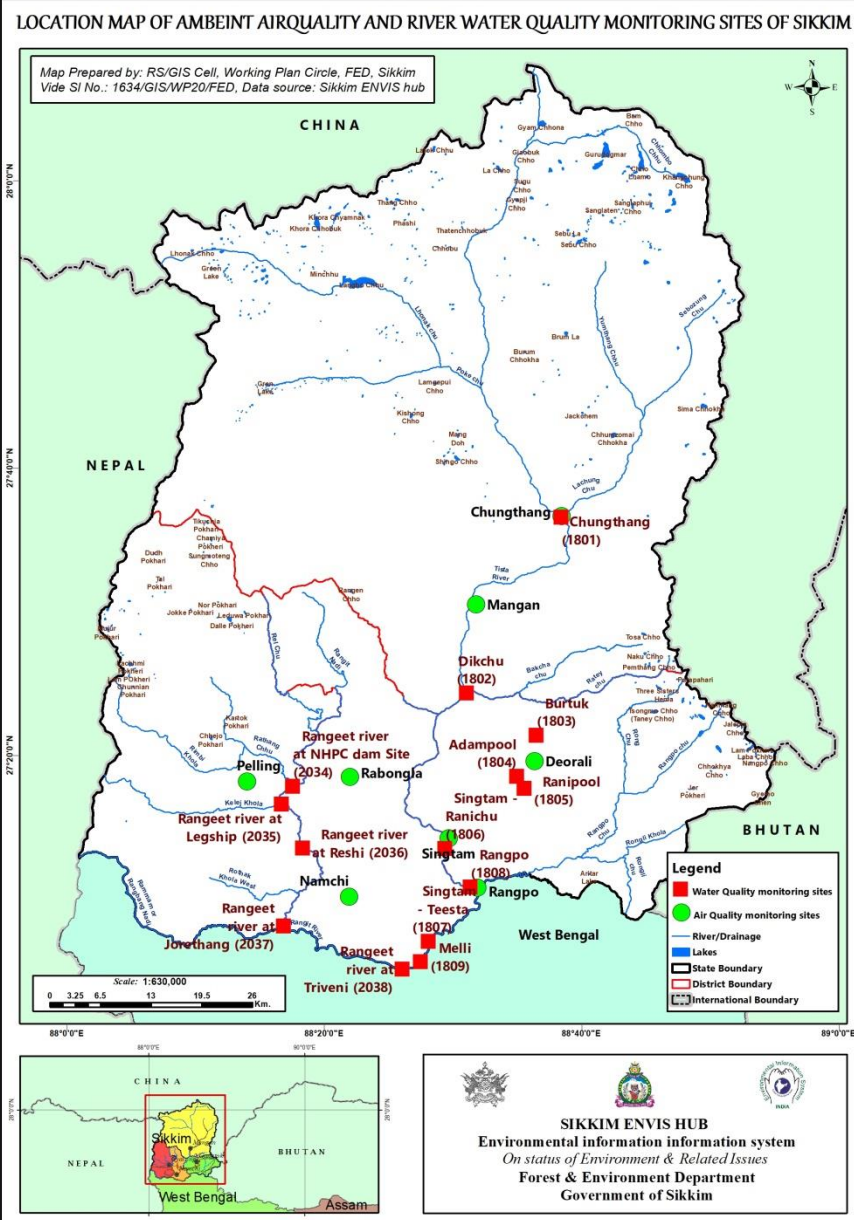
Sanitization of SPCB Sikkim office.

National Air Quality Monitoring Programme (NAMP)

To prevent, control and abate air pollution in the country, the Government of India enacted Central legislation called the Air (Prevention & Control of Pollution) Act, 1981 (referred to as the Air Act, 1981). Every polluting industry must obtain consent from the State Pollution Control Board for the discharge of air pollutants in any form through chimney or otherwise. The State Board may lay down suitable conditions while giving consent to discharge air pollutants in the light of emission standards developed by the Central Board, subsequently notified through the rules framed under the Environment (Protection) Act, 1986 Rules.

The air quality surveillance and monitoring is undertaken to detect any deterioration in air quality arising from industrial, vehicular, residential and natural sources of pollution, as there are large seasonal variations in the concentration of various air pollutants. Air quality monitoring is the measurement of various pollutants to study the pattern and movement of air masses and deterioration of air quality. Monitoring programme helps in estimating the dynamic concentration levels of various pollutants from time to time, based on dispersal mode of original concentration at sources and at receptor end.

With a number of industrial units in the state mostly the pharmaceuticals and ancillary units, SPCB Sikkim under the National Air Monitoring Programme (NAMP) has established nine (09) nos. of Air Quality Monitoring (AQM) stations in order to monitor the air quality in the state. The state of Sikkim has been declared as the Air Pollution Control Area under Gazette notification no. 506 dated 08/09/2011.



The details of the monitoring stations are as under:

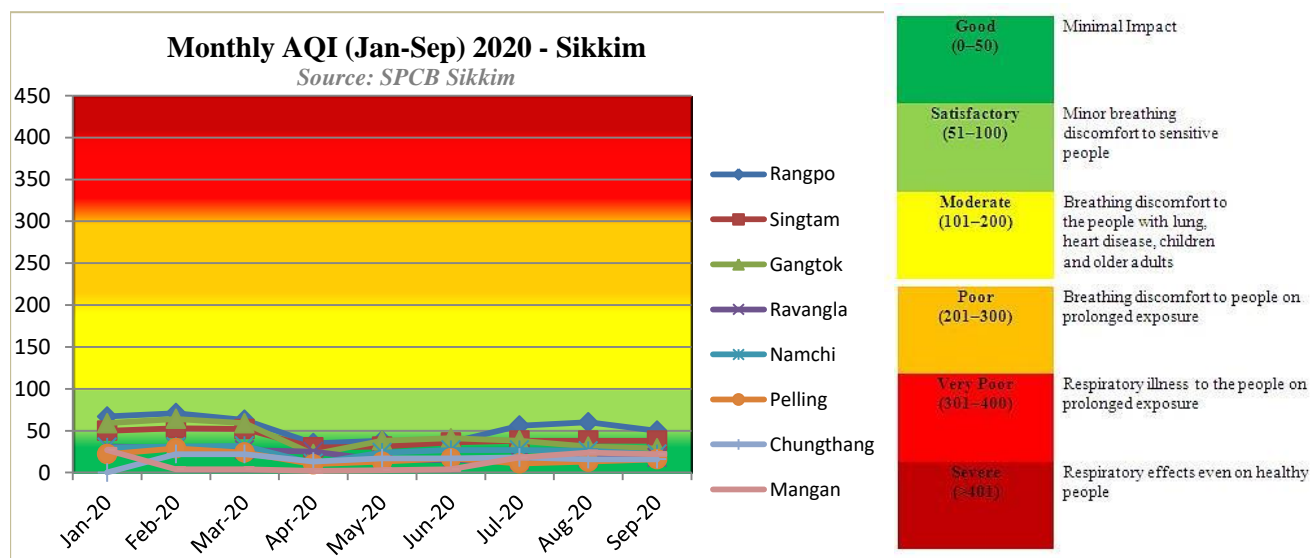
SN	Name of monitoring station	Latitude ° N	Longitude ° E
1.	RANGPO	27.1736	88.5305
2.	SINGTAM	27.5144	88.4969
3.	DEORALI	27.3183	88.6063
4.	RAVANGLA	27.3075	88.363
5.	NAMCHI	27.17	88.35
6.	PELLING	27.3028	88.2344
7.	CHUNGTHANG	27.6033	88.6469
8.	MANGAN	27.5025	88.5358

*The 9th station located at Tashi View point, Gangtok has been damaged due to landslide and currently not in operation.

Monthly AQI of Sikkim Recorded from Eight Air Quality Monitoring Stations of Sikkim: January – September 2020

State Pollution Control Board Sikkim has been conducting ambient air quality monitoring under the National Ambient Air Monitoring Programme in eight stations in the state. As per the comparative analysis of the data generated for the average air quality index from January to September 2020, Sikkim State is well within the permissible limits and have been mostly under 'Good' category of AQI health index.

SN	Name of Station	Monthly AQI for the Year 2020								
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	Rangpo, East Sikkim	67	71	63	35	38	36	56	60	50
2	Singtam, East Sikkim	50	53	52	30	31	36	38	38	38
3	Deorali, East Sikkim	59	64	59	22	38	41	38	31	29
4	Ravangla, South Sikkim	31	30	27	25	15	15	14	17	18
5	Namchi, South Sikkim	30	31	32	11	24	27	27	26	22
6	Pelling, West Sikkim	22	29	24	10	13	17	11	13	16
7	Mangan, North Sikkim	27	4	4	2	3	4	18	24	22
8	Chungthang, North Sikkim	0	22	22	13	17	17	18	16	16



National Water Quality Monitoring Programme

SPCB Sikkim has been implementing the National Water Quality Monitoring Programme (NWMP) to continuously monitor/ analyse the water quality as per scientific methodologies to derive information on the nature and extent of water quality degradations and the existing quality of water in the water bodies. The national programme is also termed as Monitoring of Indian National Aquatic Resources (MINARS). Under the MINARS programme the State Pollution Control Board Sikkim collects water samples from 14 identified sites of River Teesta and River Rangit. Monthly data on river water quality from 14 sample sites across the State can be accessed from websites of SPCB Sikkim (www.spcb.sikkim.gov.in) and Sikkim ENVIS Hub (www.sikenvis.nic.in).

SPCB Sikkim has been continuously monitoring the industrial activities by ensuring continuous operation of Effluent Treatment Plant (ETP). Further, SPCB Sikkim has made Zero Liquid Discharge (ZLD) mandatory so that the treated water meeting the prescribed standard is recycled and reused for gardening, flushing, cleaning and cooling purposes.

Designated Best Use Water Quality Criteria:

Designated-Best Use	Class of water	Criteria
Outdoor bathing (Organized)	B	Total Coliforms: MPN/100ml shall be 500 or less. pH: between 6.5 and 8.5 Dissolved Oxygen: 5mg/l or more. Biochemical Oxygen Demand: 5 days 20C 3mg/l or less

Source: Central Pollution Control Board (CPCB), Delhi.

River Water Quality Data for the Month of September, 2020

Station Code	pH	Cond. μ mhos/cm	NO ₃ -N mg/l	D.O mg/l	B.O.D mg/l	T. Coliform MPN/100ml	Faecal Coliform 100/ml
1801	7.5	260	1.2	10.5	2.1	100	40
1802	7.0	240	2.0	09.5	2.0	130	55
1803	6.5	210	2.2	08.5	2.5	160	60
1804	6.5	200	2.2	07.5	2.2	230	110
1805	6.5	190	2.5	09.0	2.3	210	105
1806	6.5	180	2.3	09.5	2.2	190	80
1807	6.7	190	2.2	10.0	2.0	185	85
1808	6.7	200	2.1	09.0	2.0	170	75
1809	6.6	210	2.2	10.0	2.4	180	75
2034	7.0	260	2.0	10.0	2.2	110	55
2035	7.0	220	2.1	09.5	2.0	120	55
2036	6.5	210	2.2	09.0	2.4	120	50
2037	6.5	220	2.0	09.5	2.2	120	60
2038	7.0	250	2.1	10.0	2.4	160	65

The details of the monitoring stations are as under:

SN	Station Code	Name of Station	Latitude ° N	Longitude ° E
1.	1801	River Teesta after confluence of Rivers Lachenchu and Lachungchu, CHUNGTHANG, North Sikkim.	27.602	88.649
2.	1802	River Dikchu before confluence with River Teesta near NHPC hydro-electric power project, DIKCHU, East Sikkim.	27.40	88.52
3.	1803	River MANEY KHOLA AT BURTUK near Army Base Camp 4 km U/s of Gangtok, East Sikkim	27.35	88.61
4.	1804	River Maney Khola after confluence with Ray khola at ADAMPOOL AFTER MEETING TREATED WASTE WATER of STP, Gangtok, East Sikkim	27.30	88.58
5.	1805	After confluence of Rani Chu and Rorachu at RANIPOL, East Sikkim	27.29	88.59
6.	1806	Ranichu before confluence with River Teesta at SINGTAM, East Sikkim	27.22	88.49
7.	1807	River Teesta after confluence with River Ranichu at SINGTAM, East Sikkim	27.11	88.45
8.	1808	River Teesta after confluence with Rongpochu after meeting the industrial effluents from the town RANGPO, East Sikkim.	27.17	88.52
9.	1809	River Teesta at Melli Downstream, MELLI, South Sikkim	27.08	88.45
10.	2034	River Rangit at dam site (NHPC), South Sikkim	27.29	88.29
11.	2035	River Rangit at Legship, West Sikkim	27.27	88.27
12.	2036	River Rangit at Reshi, West Sikkim	27.22	88.30
13.	2037	River Rangit at Jorethang, South Sikkim	27.13	88.27
14.	2038	River Rangit at Treveni, Melli, South Sikkim	27.08	88.41

Disclaimer

Efforts have been made to make the data and information provided in this newsletter as accurate as possible. The use of data and information published by SPCB Sikkim should be duly cited.

Establishment Changes

Mrs. Sashi Chettri, LDC working in SPCB Sikkim for last 27 years (since 1993) has been transferred to Ranka BAC and is replaced by Mrs. Manuka Giri, OA.

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