

### ABSTRACT

Present Bulletin prepared on ground water scenario of Sikkim state highlighting the findings, status of ground water level in different aquifers and its annual fluctuation during April-2024.

CGWB, Eastern Region Kolkata

## GROUND WATER LEVEL BULLETIN

April 2024

SIKKIM

## 1.0 INTRODUCTION

Groundwater bulletin is prepared by Central Ground Water Board (CGWB) depicting changes in groundwater regime of the country through different seasons. It is an effort to obtain information on groundwater levels through representative monitoring wells. The important attributes of groundwater regime monitoring are groundwater level.

Groundwater levels are being measured by CGWB, ER every month in Sikkim state (through Participatory monitoring since June, 2024).

## 2.0 STUDY AREA

The Eastern Region of Central Ground Water Board has jurisdiction over the State of West Bengal having an area of 88752 km<sup>2</sup>, Andaman & Nicobar Islands (UT) having an area of 8,249 sq. km. (Andaman-6408 sq. km., Nicobar-1841 sq. km.) and Sikkim (7096 sq.km.).

The state of Sikkim is located in the North Eastern part of the Country and lies between 27° 04' - 28° 08' N latitude 88° 00' to 88° 54' E longitudes covering an area of 7096 sq. Km; divided into 06 districts namely, Gangtok and Pakyong (East Districts), Gyalshing and Soreng (West Districts) Mangan (North District), Namchi, (South District). Sikkim with a vertical strip of rugged mountainous terrain of roughly 65 to 100 kms broad and 170 kms deep has the second highest peak of the world, the mountain Kanchendzonga (figure-1). The attitude varies from 300 meters in low areas to 8500 metres in highland. The plain area is very small, limited to the intermontane valley. Two-third of the state consist largely snow clad high hills with deep ravines/gorges. About 30% of the state is forest covered.



Figure- 1: Administrative Map of Sikkim

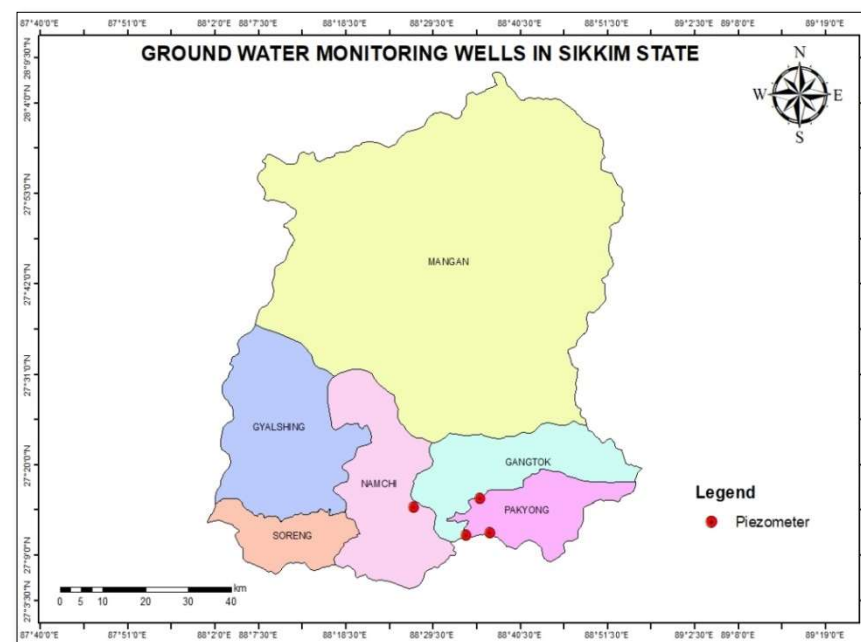
### 3.0 GROUND WATER LEVEL MONITORING

Central Ground Water Board, Eastern Region, has set up 04 Ground Water Monitoring Stations (GWMS) (04 PZ) in Sikkim State as on 31-03-2024 (figure-2).

The district-wise breakup of the water level monitoring stations is given in Table-1.

**Table-1: District-wise distribution of water level monitoring stations in Andaman & Sikkim**

Sl. No	Name of the District	Number of GW Monitoring Stations (April 2024)				
		Dug Well	Piezometer	Handpump	Spring	Total
Sikkim						
1	Namchi	0	1	0	0	1
2	Pakyong	0	3	0	0	3
	Total	0	4	0	0	4



**Figure-2: Map showing locations of monitoring wells (GWMS) in**

#### 4.0 GROUND WATER LEVEL SCENARIO (APRIL 2024) for SIKKIM

During April-2023, 04 nos. of Piezometers (PZ) has been established for monitoring purpose in Sikkim State for the first time. In the year 2023, the water level has been monitored for Pre & Post-Monsoon 2023. The wells have been taken for participatory monitoring every month since June, 2024 for strengthening of monitoring Network in the State.

During Pre-monsoon 2024, the maximum WL was reported at Daring block of Namchi district (20.35 m bgl) and minimum WL found at Pakyong Block of Pakyong district (3.33 m bgl).

##### **Annual Fluctuation of Piezometric Level in confined Aquifer (April 2023 to April 2024)**

Out of 04 wells analyzed 1 well showed fall in 0-2m fluctuation category and 1 well shows fall of >4m while 1 well showed rise in 0-2m fluctuation and 1 well shows rise of >4m.

#### 5.0 SUMMARY

As a component of the National Ground Water Monitoring Programme, CGWB, ER, Kolkata conducts ground water monitoring every month in Sikkim (through Participatory monitoring since June,2024).

As on March 2024, the Eastern Region, Kolkata has 04 monitoring stations in the state of Sikkim.

In the state of Sikkim only 4 wells are being monitored with depth to water level ranging from 3.33 to 20.35 m bgl.

#### 6.0 RECOMMENDATIONS

Sikkim's water supply predominantly relies on spring-based systems, which are highly sensitive to seasonal variations and climate change.

The establishment of ground water monitoring stations since April 2023 in the State provides valuable data for assessing water levels and quality. However, the limited duration of this data collection restricts the ability to identify long-term trends or anomalies.



## **CONSERVE WATER FOR FUTURE**

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