



Government of India
Ministry of Jal Shakti
DoWR, RD & GR
Central Water Commission



Indus Basin Rivers Water Quality Laboratory

जल गुणवत्ता बुलेटिन रिपोर्ट अगस्त 2025



Indus Basin Organization
Chenab Division, Jammu
August 2025

Table of Contents

SN	Contents	Page No.
1	Introduction	3
2	Organization set-up	5
3	River System in Indus basin	5
4	WQ Sites of CWC in Indus Basin	7
5	WQ parameters, standards, sample collection and methodology	10
	(i) Water Quality parameters and their importance	10
	(ii) Water Quality standards	11-13
	(iii) Water Quality sample collection and Methodology	13
	(iv) Methodology	14
6	Results	14-23
7	Observations	24
8	Conclusion	24

1. Introduction

Water quality refers to the chemical, physical, biological, and radiological characteristics of water. Monitoring river water quality is essential for protecting human health, supporting ecosystems, sustaining economic activities, and ensuring the long-term sustainability of water resources. It enables informed decision making, proactive management, and timely responses to environmental threats, contributing to the overall well-being of society and the environment.



Image: Sampling location at HO Site Akhnoor on River Chenab

A Water Quality bulletin serves a crucial role in environment management by providing accessible and understandable information about the condition of river water. It consolidates data on various parameters into a concise report that informs stakeholders and the public about water quality trends and potential concerns. The objective of publishing this water quality bulletin is to promote transparency, accountability, and effective management of water resources by providing regular updates on water quality conditions, trends, and relevant information to stakeholders and the public.

CWC follows a three-tier laboratory system which consists of Level I, II and III types of laboratories for providing facilities for the analysis of river water samples collected from water quality monitoring stations covering all the important river basins of India.

The three-tier laboratory system consists of:

1. Level I Laboratories: CWC has 427 level I laboratories located at field water quality

monitoring stations on various rivers of India for monitoring of following six in-situ parameters:

Colour, Odour, Temperature, pH, Electrical Conductivity and Dissolved Oxygen.

2. **Level II Laboratories:** CWC has 18 level II laboratories located at division offices which analyze 25 physio-chemical and bacteriological parameters of river water. Indus Basin River Water Quality Laboratory is the only Level II laboratory under Indus Basin Organization.
3. **Level III Laboratories:** CWC has 5 Level III laboratories located at New Delhi, Varanasi, Hyderabad, Coimbatore and Guwahati which analyze 41 parameters including trace & toxic metals and pesticides.

Indus Basin River Water Quality Laboratory (IBRWQL)

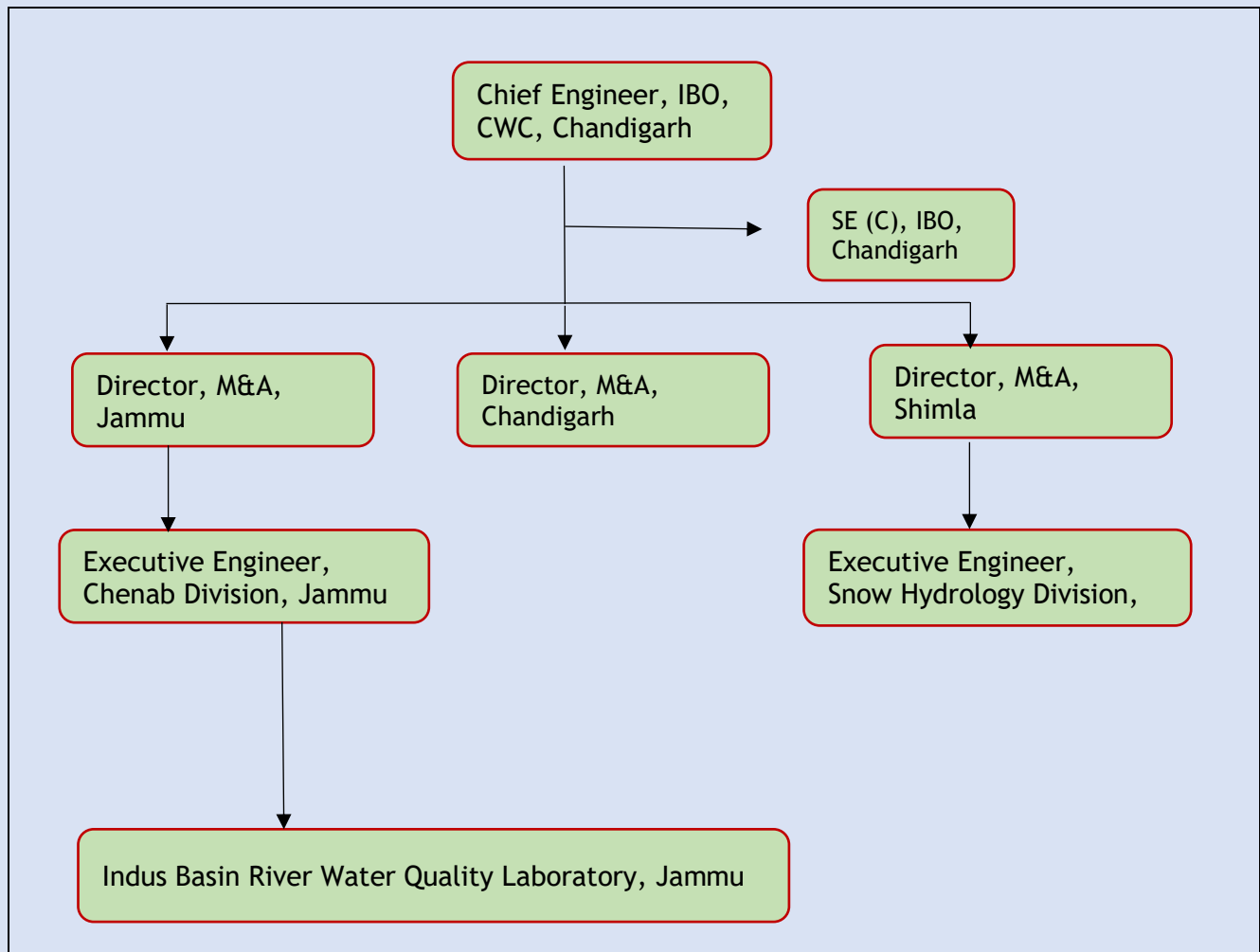
Indus Basin River Water Quality Laboratory (IBRWQL) is a Level II Water Quality Laboratory under Chenab Division, CWC Jammu located within the premises of CWC Jammu. The laboratory is accredited in the chemical disciplines according to ISO/IEC 17025:2017. The laboratory offers a wide range of services covering the entire process of assessing and managing water quality.



Image: Indus Basin River Water Quality Laboratory Jammu

2. Organization Set-up:

The organization structure of the Indus Basin Organization is as follows,



River System in the Indus basin

Indus Basin in India is spread across six Sub-basins viz. Indus, Jhelum, Chenab, Ravi, Beas and Sutlej Subbasins. CWC has its Water Quality Sites only in Chenab and Jhelum Sub-basins.

Chenab Sub-basin

Chenab Sub-basin in India is spread over Himachal Pradesh and Jammu & Kashmir which comprises the extreme western sector of the Himalayas. Upper catchment lies in the Lahaul-Spiti and Chamba districts of Himachal Pradesh. This region is roughly rectangular in shape with main Himalayas in the north, mid Himalayas in the south and the connecting lines of heights in east and west. These hills rise to a mean elevation of about 5480 Mts. The Chenab basin in Jammu & Kashmir lies in its southern part covering the districts of Kishtwar, Doda, Ramban, Reasi, Rajouri, Udhampur, Jammu and Samba. This region of the state is called Jammu region. The drainage basin covers the area partly between the Outer and Central Himalayas and partly between Shivalik and Outer Himalayas. The

total catchment area of the basin within India is about 29,050 sq. km., out of which about 21,206 sq. km. lies in Jammu & Kashmir and about 7844 sq. km. lies in Himachal Pradesh. Around 10,130 sq. km. of the catchment area remains under permanent snow cover.

Rivers in Chenab Sub-basin:

River Chenab

River Chenab in India is spread in Himachal Pradesh and Jammu & Kashmir. It is also the largest flowing river in the state of Jammu & Kashmir. River Chenab or Chandrabhaga is formed after the confluence of two streams, Chandra and Bhaga near Tandi about 6 km south of Keylong, the district headquarters of Lahaul and Spiti (H.P.). River Chandra Originates at an elevation of around 5412 m from the north face of Baralachha pass in Lahaul Spiti valley. It initially flows southeast for about 88 km, sweeps round the base of mid-Himalayas and joins River Bhaga near Tandi. Total length of River Chandra up to confluence with Bhaga is 125 Km. River Chenab joins River Indus in Pakistan.

River Tawi:

River Tawi is a tributary of River Chenab and joins River Chenab in Pakistan. The course of the stream is steep in upper reach and normal in lower reach. It has a major city Jammu on its bank, which is also known as the city of temples. It is an industrial city, but it has no major industry on its banks, whose waste may enter the stream.

River Manawar Tawi:

River Manawar Tawi is a tributary of River Chenab and joins River Chenab in Pakistan. Its catchment area up to the WQ Monitoring Site Bardoh is about 3881.0 sq. kms. It has no major industry at its banks, whose waste may enter the stream. Its nearest district headquarter town is Jammu, which is the capital city of Jammu & Kashmir.

Jhelum Sub-basin

Jhelum Sub-basin in India is spread in Jammu & Kashmir. Total catchment area of Jhelum Sub-basin up to Indo-Pakistan border is about 34775 sq. km with total length of 402 kms. Out of 402 km, length of Jhelum in India up to Line of Control (LoC) is about 165 km with a catchment area of about 17622 sq. km and lies between 32° 58' 42" to 35° 08' 02" N and 73° 23' 32" E to 75° 35' 57" E. The Sub-basin is confined mainly within the Kashmir valley of Jammu & Kashmir.

Rivers in Jhelum Sub-basin

River Jhelum:

River Jhelum is one of five major tributaries namely Sutlej, Ravi, Beas, Chenab and Jhelum of River Indus and joins River Indus in Pakistan. Jhelum River originates from a magnificent spring called "Chashma Verinag". It flows along the foothills accommodating Banihal pass in the southeastern

corner of the Kashmir valley and flows towards west through the Kashmir valley. Srinagar, the capital city of UT of J&K, is situated on its banks.

River Sindh Nallah:

River Sindh Nallah is a tributary of river Jhelum, which merges with river Jhelum in Shadipura. Its nearest district headquarter town is Srinagar. It has no major industry at its banks, whose waste may enter the stream.

Rivers in Beas Sub-basin

River Beas:

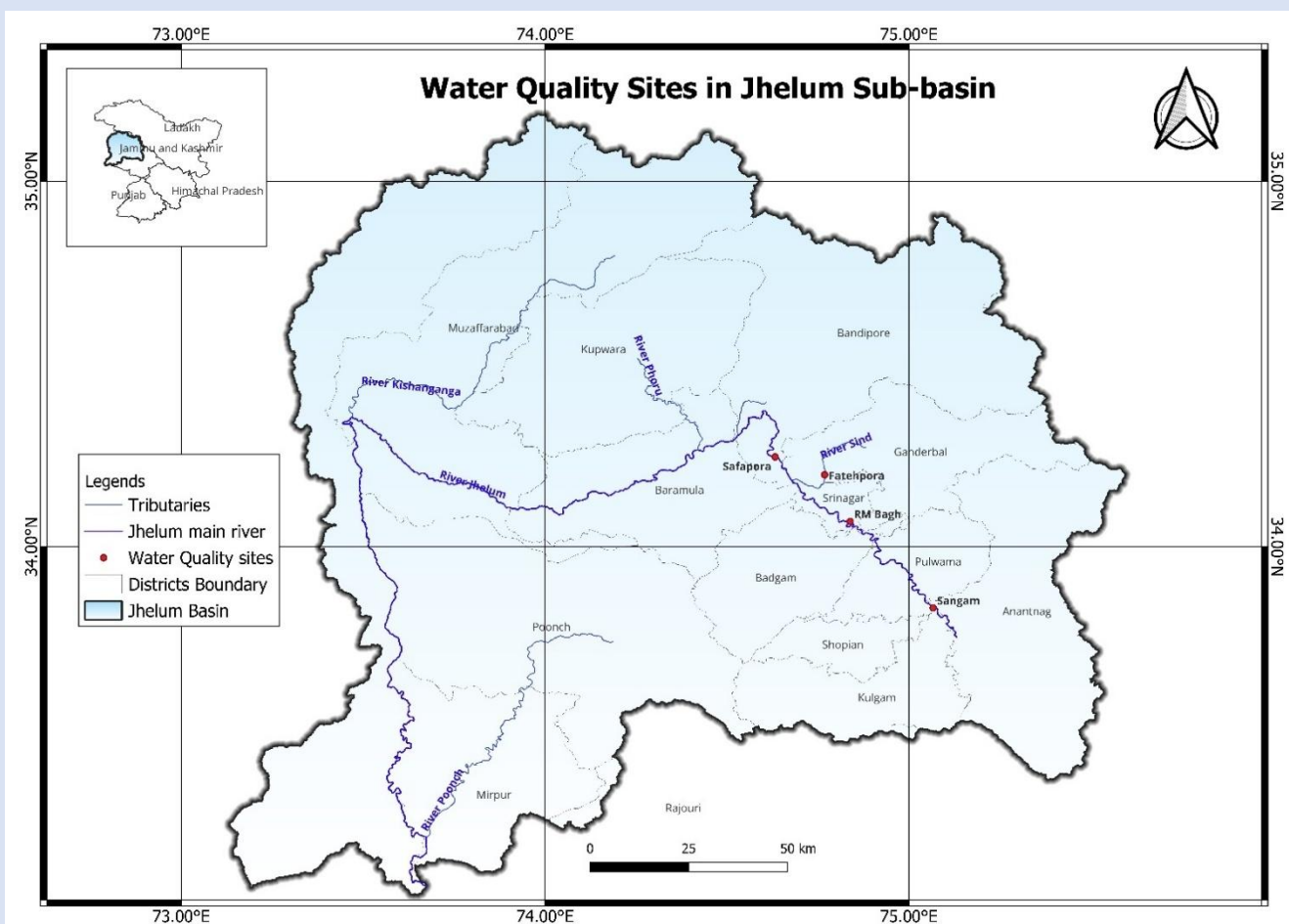
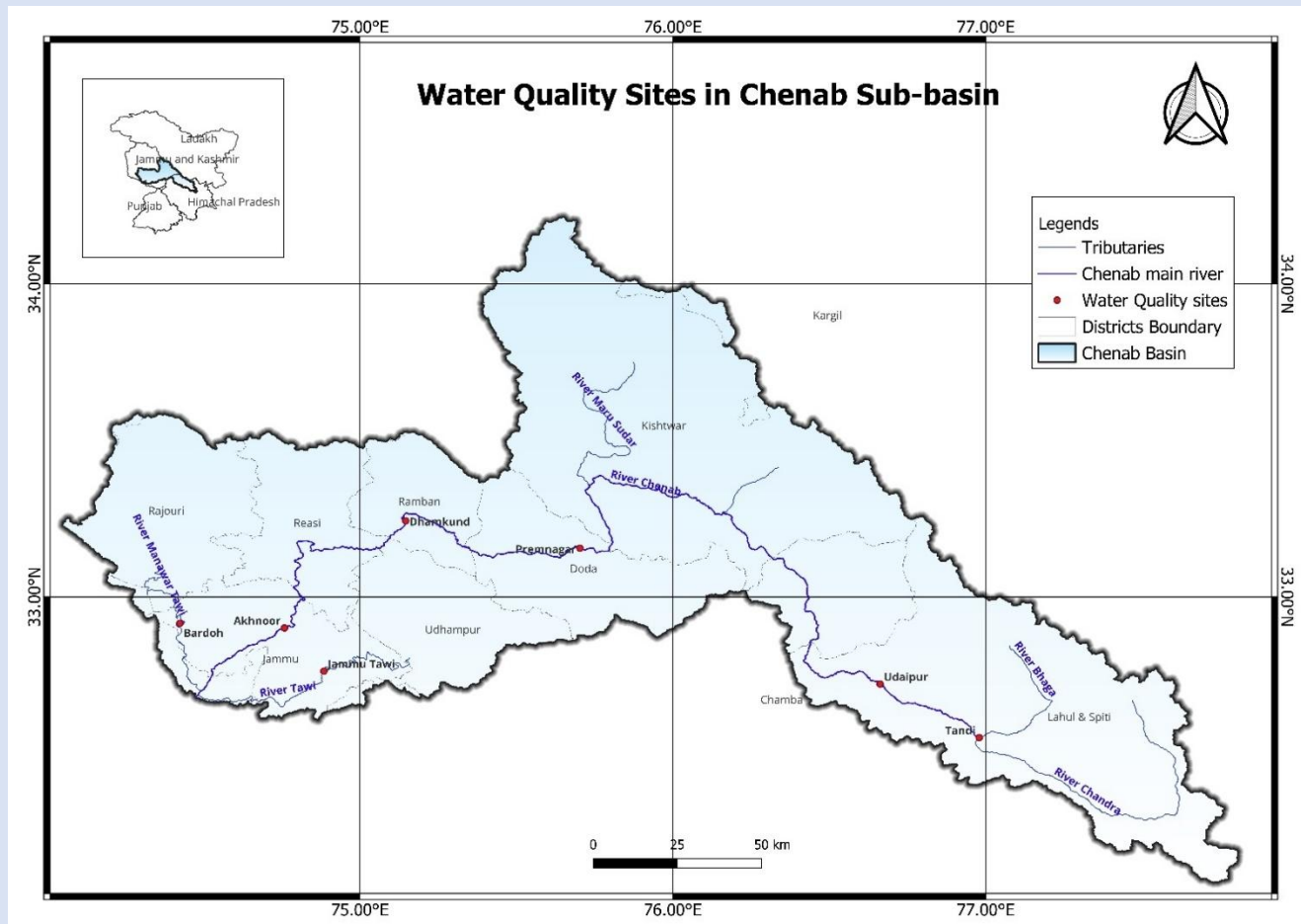
River Beas originates from Beas Kund, near Rohtang Pass. It flows through the states of Himachal Pradesh and Punjab and merges with the River Sutlej.

3. WQ Sites of CWC in Indus Basin

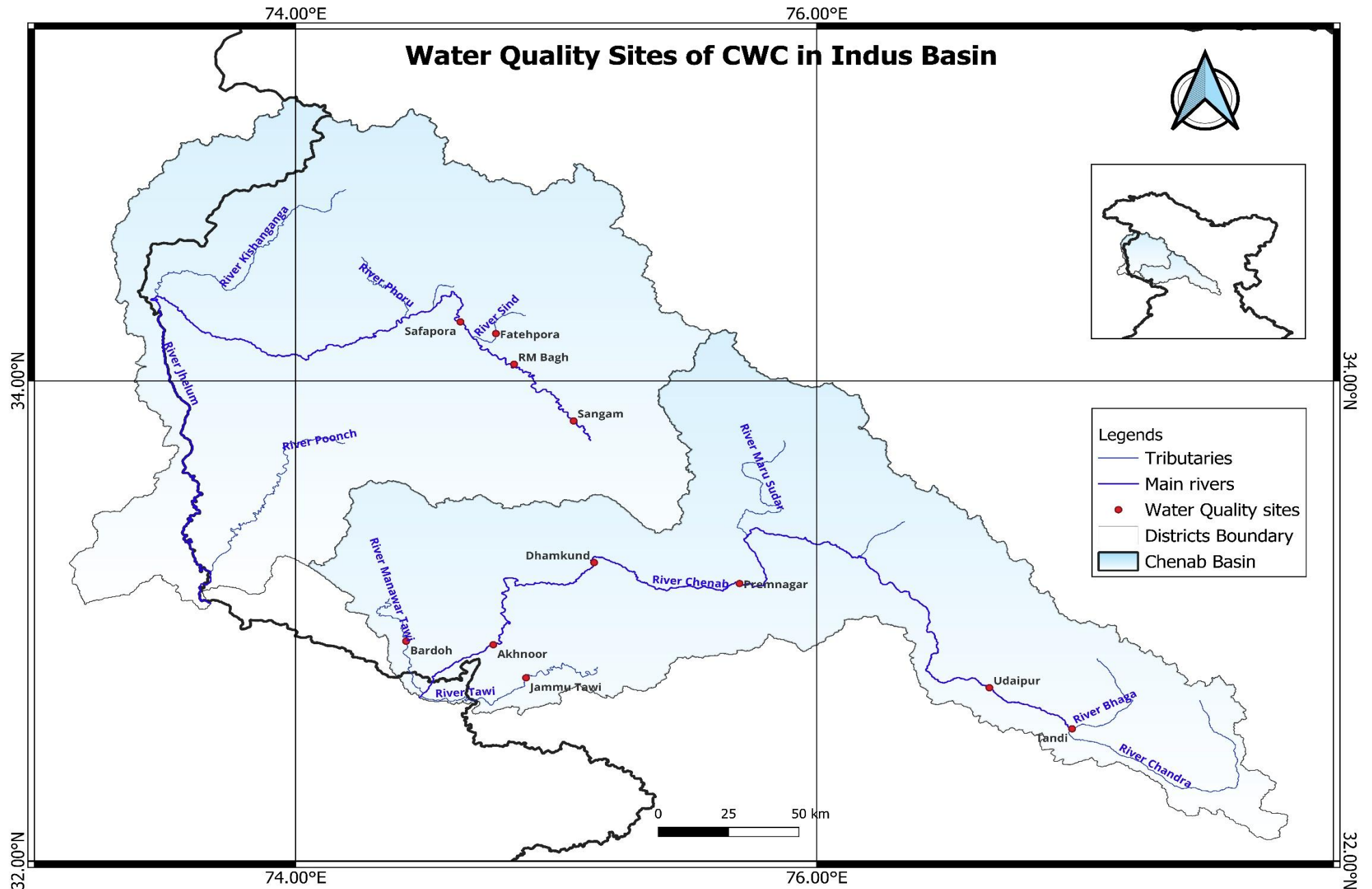
This bulletin contains the Water Quality data of a total of Twelve Water Quality Monitoring Stations out of which seven stations are in Chenab Sub-basin, four stations are in Jhelum Sub-basin and one in Beas Sub-basin. The details of these stations are presented in the table below,

Table 1: Water Quality Sites under IBO

SN	Name of Site	River/ Tributary	State/ UT	District
Chenab Sub-basin				
1.	Tandi	Chenab	HP	Lahaul & Spiti
2.	Udaipur	Chenab	HP	Lahaul & Spiti
3.	Premnagar	Chenab	J&K	Doda
4.	Dhamkund	Chenab	J&K	Ramban
5.	Akhnoor	Chenab	J&K	Jammu
6.	Jammu Tawi	Tawi	J&K	Jammu
7.	Bardoh	Manawar Tawi	J&K	Jammu
Jhelum Sub-basin				
8.	Sangam	Jhelum	J&K	Anantnag
9.	Rammunshi Bagh	Jhelum	J&K	Srinagar
10.	Safapora	Jhelum	J&K	Bandipora
11.	Fatehpura	Sindh Nallah	J&K	Ganderbal
Beas Sub-basin				
12.	Bajaura	Beas	HP	Kullu



Water Quality Sites of CWC in Indus Basin



4. WQ Parameters, Standards, Sample collection and Methodology

Water quality parameters refer to specific characteristics or properties of water that are used to assess its suitability for various purposes, including drinking, recreation, agriculture, and industrial uses. These parameters are crucial indicators of the health and safety of water bodies and play a significant role in environmental management and public health. The number of parameters monitored in river water quality assessments varies depending on the specific objectives, regulatory requirements, and environmental conditions of the river system. However, typically, multiple parameters are measured to comprehensively evaluate water quality. These parameters can be broadly categorized into physical, chemical, and biological indicators.

Water Quality Parameters and their importance

pH (Potential of Hydrogen):

pH indicates the acidity or alkalinity of water. It affects aquatic life and the ability of substances to dissolve in water.

Electrical Conductivity (EC):

EC measures the ability of water to conduct electricity, which correlates with the total dissolved solids (TDS). It indicates the overall mineral content and salinity of water.

Fluoride (F⁻):

Fluoride levels are crucial for dental health. Prolonged exposure to high levels of fluoride can be harmful to teeth and bones (known as fluorosis), which includes causing discoloration, spots, or damage to teeth and bone fractures.

Ammonia as N (NH₃-N):

Ammonia levels indicate organic pollution or the breakdown of organic matter in water. High levels can be toxic to aquatic organisms.

Nitrate as N (NO₃--N):

Nitrate levels in water are important for human health (drinking water quality) and indicate potential contamination from agricultural runoff or wastewater.

Chloride (Cl⁻):

Chloride levels are monitored for their impact on taste, corrosion of pipes, and as an indicator of potential contamination sources (sewage or industrial discharges).

Sodium (Na⁺): Sodium is an important electrolyte found in many types of drinking water. While water contributes a small amount to overall sodium intake, consuming too much sodium can raise blood pressure.

Potassium (K^+): Potassium is also found in natural waters. Potassium is an essential nutrient for human health and helps regulate blood pressure.

A proper balance of sodium and potassium is important for overall health, and a high sodium-to-potassium ratio is linked to an increased risk of cardiovascular disease.

Total Hardness (TH):

Total hardness measures the concentration of calcium and magnesium salts in water. It affects the taste of water, scale formation in pipes, and the effectiveness of detergents.

Boron (B):

Boron levels are important for agricultural water quality, as high concentrations can be toxic to plants and aquatic organisms.

Dissolved Oxygen (DO):

DO is vital for aquatic life as it supports respiration. Low DO levels can lead to fish kills and indicate poor water quality.

Biochemical Oxygen Demand (BOD):

BOD measures the amount of oxygen consumed by microorganisms during the decomposition of organic matter. High BOD indicates pollution and can deplete DO levels.

Sulphate (SO_4):

Sulphur is an essential plant nutrient. Aquatic organisms utilize sulfur, and their concentrations have a detrimental effect on algal growth.

Total Dissolved Solids (TDS):

It is approximately equal to the total content of dissolved substances in a water sample. Surface evaporation in arid climates and agricultural return waters increase the TDS considerably

Water Quality Standards

Assessment of water quality parameters pH, Electrical Conductivity (EC), Ammonia as N (NH_3 -N), Boron (B), Sodium Adsorption Ratio (SAR), Dissolved Oxygen (DO), Biochemical Oxygen Demand (BOD) and Total Coliform (TC) is done based on Class B, D & E of *Designated best uses of Water* by Central Pollution Control Board (CPCB).

Further, hotspots identification in Indian Rivers w.r.t. water quality parameters Chloride, Fluoride, Nitrate as N (NO_3 -N), Ammonia as N (NH_3 -N), Boron (B), Sulphate, Total Hardness, Calcium, Magnesium, Total Alkalinity, Total Dissolved Solid and Turbidity parameters has been done based on BIS (Bureau of Indian Standards) IS 10500: 2012 for drinking water.

Table-2 Central Pollution Control Board (CPCB) Standards for Water

Designated Best Uses of Water By CPCB			
Class	Designated Best Use	Criteria	
A	Drinking Water Source without conventional treatment but after disinfection	pH Dissolved Oxygen (DO) Biochemical Oxygen Demand(BOD) Total Coliform	6.5 to 8.5 6 mg/l or more 2 mg/l or less 50 MPN/100 ml or less
B	Outdoor bathing (Organized)	pH Dissolved Oxygen (DO) Biochemical Oxygen Demand(BOD) Total Coliform	6.5 to 8.5 5 mg/l or more 3 mg/l or less 500 MPN/100 ml or less
C	Drinking Water Source with Conventional treatment followed by disinfection	pH Dissolved Oxygen (DO) Biochemical Oxygen Demand(BOD) Total Coliform	6.0 to 9.0 4 mg/l or more 3 mg/l or less 5000 MPN/100 ml or less
D	Propagation of wildlife and fisheries	pH Dissolved Oxygen (DO) Free Ammonia	6.5 to 8.5 4 mg/l or more 1.2 mg/l or less
E	Irrigation, industrial cooling and controlled waste disposal	pH Electrical Conductivity (EC) Sodium absorption ratio (SAR) Boron (B)	6.5 to 8.5 2250 μ S/cm at 25°C max 26max 2 mg/l max

Table 3: BIS 10500:2012 Standards for Drinking Water

SN	Parameters	Drinking Water IS 10500:2012	
		Acceptable Limit (Requirement)	Permissible Limit (In the absence of alternate source)
1.	Total Dissolved Solids, mg/L, Max	500	2000
2.	Turbidity, NTU, Max	1	5
3.	Calcium, mg/L, Max	75	200
4.	Magnesium, mg/L, Max	30	100
5.	Chlorides, mg/L, Max	250	1000
6.	Sulphate, mg/L, Max	200	400
7.	Fluoride, mg/L, Max	1	1.5
8.	Total hardness (CaCO ₃), mg/L, Max	200	600
9.	Total Alkalinity (as CaCO ₃), mg/L, Max	200	600
10.	Nitrate (as NO ₃), mg/L, Max	45	No relaxation

11.	Ammonia as N (NH ₃ -N), mg/L, Max	0.5	No relaxation
12.	Boron (as B), mg/L, Max	0.5	1.0

*- Permissible limit of Sodium and Potassium has not been specified by CPCB/ BIS 10500:2012.

Note: The permissible limits have been adopted from BIS 10500:2012 in absence of specific river water quality standards.

Water Quality Sample Collection and Methodology

Samples are collected from the well mixed section of the river approximately 20-30 cm below the river water surface. If the water depth is less than 40 cm, the sample is collected from a depth half of the actual water depth. The requirement for bottles for sample collection for different parameters is as below,

Parameters	Type of bottle used
Physio-chemical parameters	1-liter Polypropylene bottles
Biochemical Oxygen Demand (BOD) and dissolved oxygen (DO)	300 ml DO bottles



Image: - Water Quality Sample collection at River

Methodology

The analysis is done using the standards mentioned in the publication, *Standard methods for examination of Water and Wastewater (24th edition, APHA, 2023)*. Parameters such as pH, electrical conductivity, color, odor and dissolved oxygen were measured in-situ, immediately after the sample collection. The samples are kept in ice boxes with cool ice packs and transported to the laboratory within 24 hours of sample collection.

5. Results

This bulletin presents the results of water quality analysis for samples collected during August 2025, specifically on August 1st, 11th and 21st. The data has been summarized by averaging the results obtained for each parameter for the samples received on 1st, 11th and 21st day of the month.

Table- 4: Summary of Results River-wise (U/S to D/S) for August- 2025

S.No	Water Quality Site	River	State	pH	EC	TDS	Turbidity	Ca ⁺²	Mg ⁺²	Na ⁺	K ⁺	T.H	T.A	NO3-N	NH3-N	Cl ⁻¹	SO ₄ ⁻²	F ⁻¹	B	DO	BOD
					µS/cm	mg/L	NTU	mg/L													
Agency				Class B of	Class E of	BIS: 10500-	BIS: 10500-	BIS: 10500-	BIS: 10500-	BIS: 10500-	BIS: 10500-	BIS: 10500-	BIS: 10500-	BIS: 10500-	BIS: 10500-	BIS: 10500-	BIS: 10500-	BIS: 10500-	BIS: 10500-	Class B of	Class B of
				CPCB	CPCB	2012	2012	2012	2012	2012	2012	2012	2012	2012	2012	2012	2012	2012	2012	CPCB	CPCB
Regulatory Standard Limit				6.5 - 8.5	≤ 2250	≤ 2000	≤ 5	≤ 200	≤ 100	-	-	≤ 600	≤ 600	≤ 10.17	≤ 0.5	≤ 1000	≤ 400	≤ 1.5	≤ 1.0	≥ 5	≤ 3
Chenab River																					
1	Tandi	Chenab	HP	8.02	169	113	5.0	24.86	4.21	5.98	2.05	79.72	37.80	2.43	0.005	8.65	37.87	0.033	0.005	6.73	1.32
2	Udaipur	Chenab	HP	8.01	171	97	17.9	26.09	3.33	4.01	2.43	79.10	32.01	3.25	0.004	5.68	36.51	0.031	0.007	7.45	1.90
3	Premnagar	Chenab	J&K	7.23	220	131	12.8	26.58	11.74	3.40	2.44	115.41	89.76	3.09	0.010	5.18	25.46	0.041	0.018	6.60	1.89
4	Dhamkund	Chenab	J&K	7.74	158	114	9.8	22.30	6.48	2.89	2.36	82.78	45.77	2.64	0.007	5.37	31.81	0.039	0.011	6.40	1.08
5	Akhnoor	Chenab	J&K	8.25	261	64	11.0	14.86	22.45	6.33	3.43	130.76	116.43	3.29	0.005	8.56	15.25	0.034	0.006	6.10	0.40
Tawi																					
6	Jammu Tawi	Tawi	J&K	8.11	203	123	13.1	19.23	15.72	4.48	2.61	113.63	73.95	3.28	0.010	8.33	21.53	0.024	0.011	6.53	0.83
Manawer Tawi																					
7	Bardoh	Manawar Tawi	J&K	8.00	196	159	22.00	29.08	6.31	3.66	2.46	99.02	67.34	5.06	0.013	5.18	20.70	0.035	0.018	6.64	0.52
Jhelum River																					
8	Sangam	Jhelum	J&K	7.74	197	164	1.13	30.74	7.63	4.72	3.28	108.66	96.08	4.36	0.016	7.14	4.92	0.019	0.017	6.07	0.62
9	Ram Munshi Bagh	Jhelum	J&K	7.79	181	114	5.23	35.33	6.69	5.71	2.31	116.21	94.97	5.04	0.014	8.26	4.46	0.021	0.012	5.27	1.12
10	Safapora	Jhelum	J&K	7.66	229	168	0.10	27.40	14.21	6.63	2.28	127.78	113.36	5.13	0.022	10.01	2.84	0.025	0.023	5.98	0.94
Sindh Nallah																					
11	Fatehpura	Sindh Nallah	J&K	7.70	235	151	0.17	20.75	18.94	6.36	1.35	130.86	114.91	6.02	0.020	9.12	2.71	0.025	0.021	5.99	1.46
Beas																					
12	Bajaura	Beas	HP	7.82	103	121	8.2	17.88	6.95	3.25	2.89	73.70	37.98	4.11	0.010	4.43	18.30	0.016	0.007	6.33	1.70

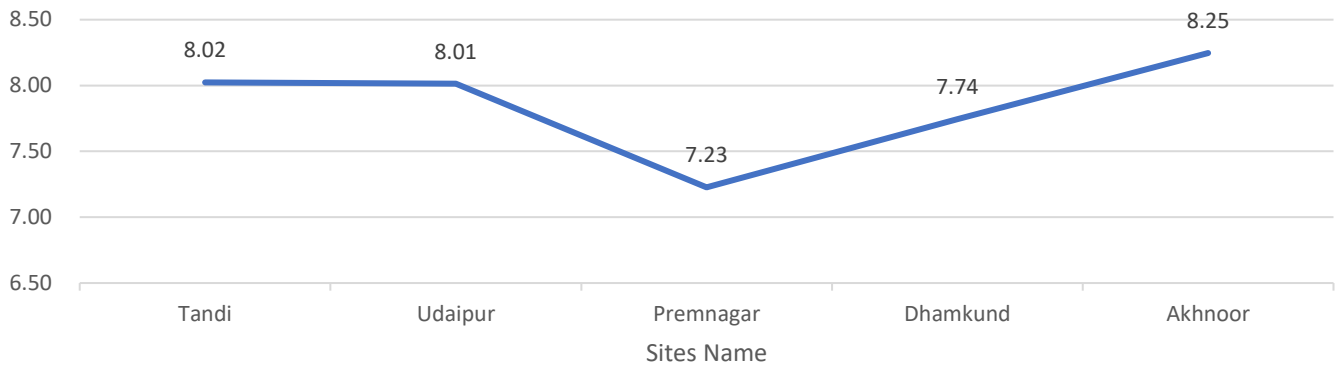
Table- 5: Summary of Results State-wise for August - 2025

S.No	Water Quality Site	River	State	pH	EC	TDS	Turbidity	Ca ⁺²	Mg ⁺²	Na+	K+	T.H	T.A	NO3-N	NH3-N	Cl ⁻¹	SO ₄ ⁻²	F ⁻¹	B	DO	BOD	
					µS/cm	mg/L	NTU	mg/L														
Agency				Class B of	Class E of	BIS: 10500-2012	BIS: 10500-2012	BIS: 10500-2012	BIS: 10500-2012	BIS: 10500-2012	BIS: 10500-2012	BIS: 10500-2012	BIS: 10500-2012	BIS: 10500-2012	BIS: 10500-2012	BIS: 10500-2012	BIS: 10500-2012	BIS: 10500-2012	BIS: 10500-2012	Class B of	Class B of	
				CPCB	CPCB	2012	2012	2012	2012	2012	2012	2012	2012	2012	2012	2012	2012	2012	2012	2012	CPCB	CPCB
Regulatory Standard Limit				6.5 - 8.5	≤ 2250	≤ 2000	≤ 5	≤200	≤ 100	-	-	≤ 600	≤ 600	≤10.17	≤ 0.5	≤ 1000	≤ 400	≤ 1.5	≤ 1.0	≥ 5	≤ 3	
Himachal Pradesh																						
1	Tandi	Chenab	HP	8.02	169	113	5.00	24.86	4.21	5.98	2.05	79.72	37.80	2.43	0.005	8.65	37.87	0.033	0.005	6.73	1.32	
2	Udaipur	Chenab	HP	8.01	171	97	17.93	26.09	3.33	4.01	2.43	79.10	32.01	3.25	0.004	5.68	36.51	0.031	0.007	7.45	1.90	
3	Bajaura	Beas	HP	7.82	103	121	8.20	17.88	6.95	3.25	2.89	73.70	37.98	4.11	0.010	4.43	18.30	0.016	0.007	6.33	1.70	
Jammu & Kashmir																						
4	Premnagar	Chenab	J&K	7.23	220	131	12.83	26.58	11.74	3.40	2.44	115.41	89.76	3.09	0.010	5.18	25.46	0.041	0.018	6.60	1.89	
5	Dhamkund	Chenab	J&K	7.74	158	114	9.77	22.30	6.48	2.89	2.36	82.78	45.77	2.64	0.007	5.37	31.81	0.039	0.011	6.40	1.08	
6	Akhnoor	Chenab	J&K	8.25	261	64	10.97	14.86	22.45	6.33	3.43	130.76	116.43	3.29	0.005	8.56	15.25	0.034	0.006	6.10	0.40	
7	Jammu Tawi	Tawi	J&K	8.11	203	123	13.10	19.23	15.72	4.48	2.61	113.63	73.95	3.28	0.000	8.33	21.53	0.024	0.000	6.53	0.83	
8	Bardoh	Manawar Tawi	J&K	8.00	196	159	22.00	29.08	6.31	4.48	2.61	99.02	67.34	5.06	0.010	5.18	20.70	0.035	0.011	6.64	0.52	
9	Sangam	Jhelum	J&K	7.74	197	164	1.13	30.74	7.63	4.72	3.28	108.66	96.08	4.36	0.000	7.14	4.92	0.019	0.000	6.07	0.62	
10	Ram Munshi Bagh	Jhelum	J&K	7.79	181	114	5.23	35.33	6.69	5.71	2.31	116.21	94.97	5.04	0.013	8.26	4.46	0.021	0.018	5.27	1.12	
11	Safapora	Jhelum	J&K	7.66	229	168	0.10	27.40	14.21	6.63	2.28	127.78	113.36	5.13	0.000	10.01	2.84	0.025	0.000	5.98	0.94	
12	Fatehpora	Sindh Nallah	J&K	7.70	235	151	0.17	20.75	18.94	6.36	1.35	130.86	114.91	6.02	0.016	9.12	2.71	0.025	0.017	5.99	1.46	

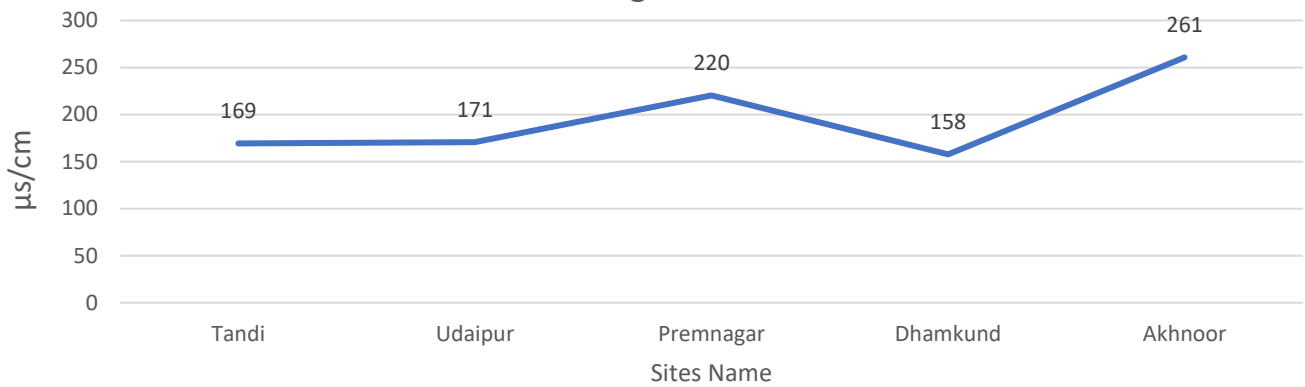
Graphical Representation of WQ Parameters

Chenab River and its Tributaries (U/S to D/S)

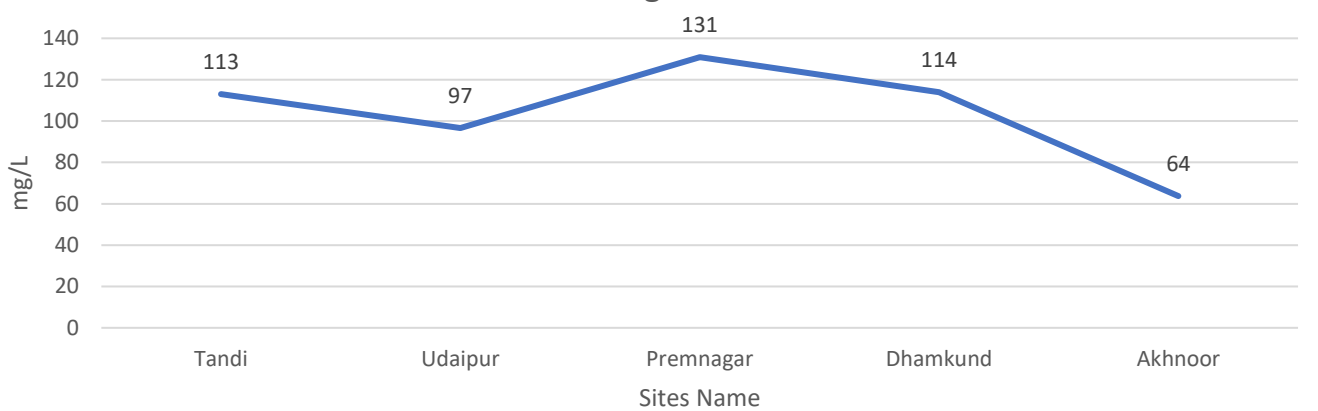
pH



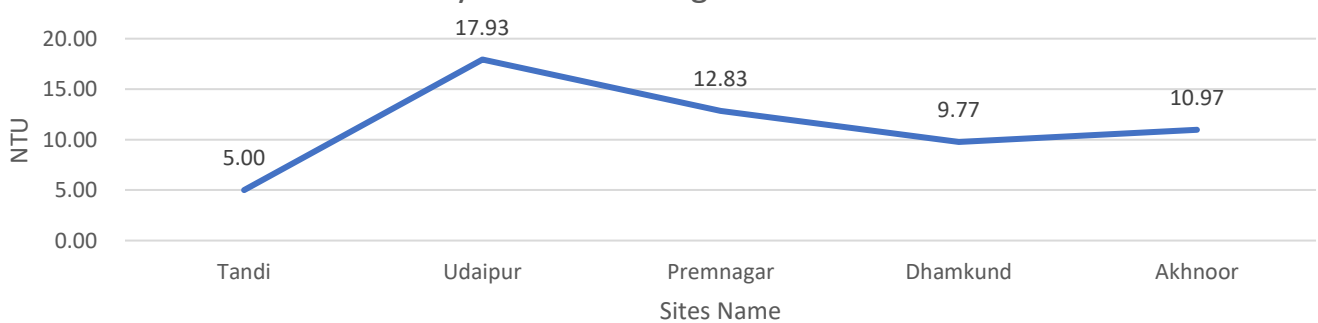
EC Variation along the Chenab River

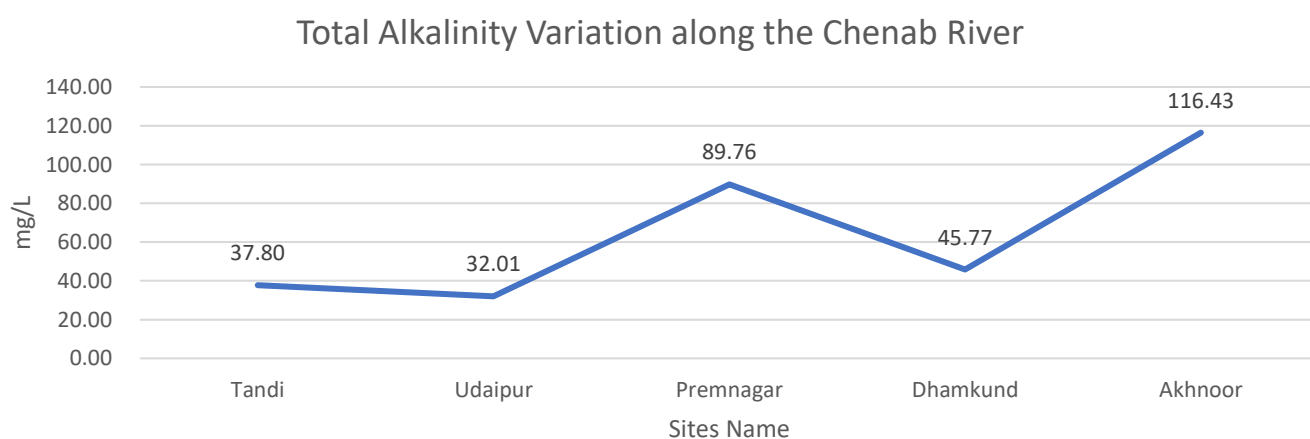
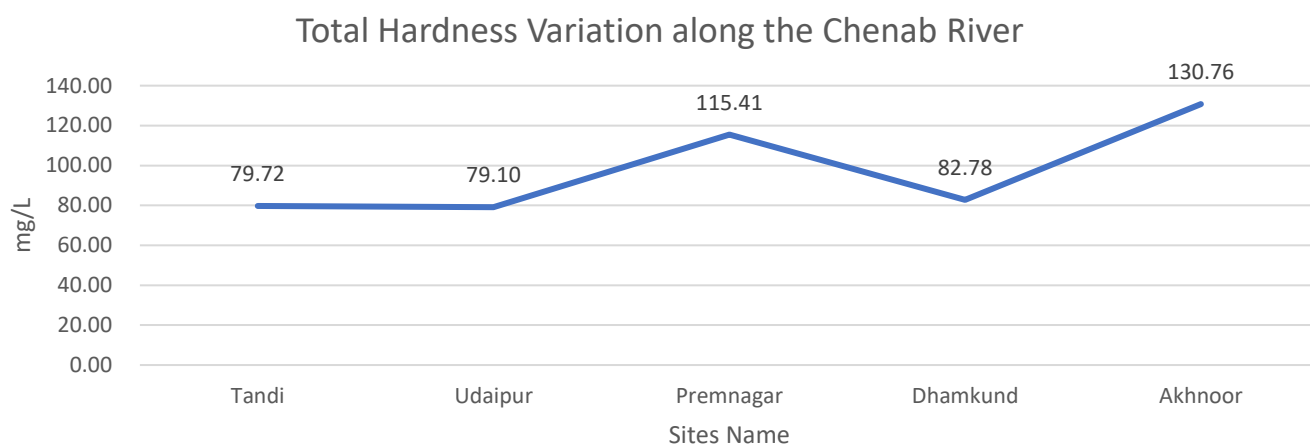
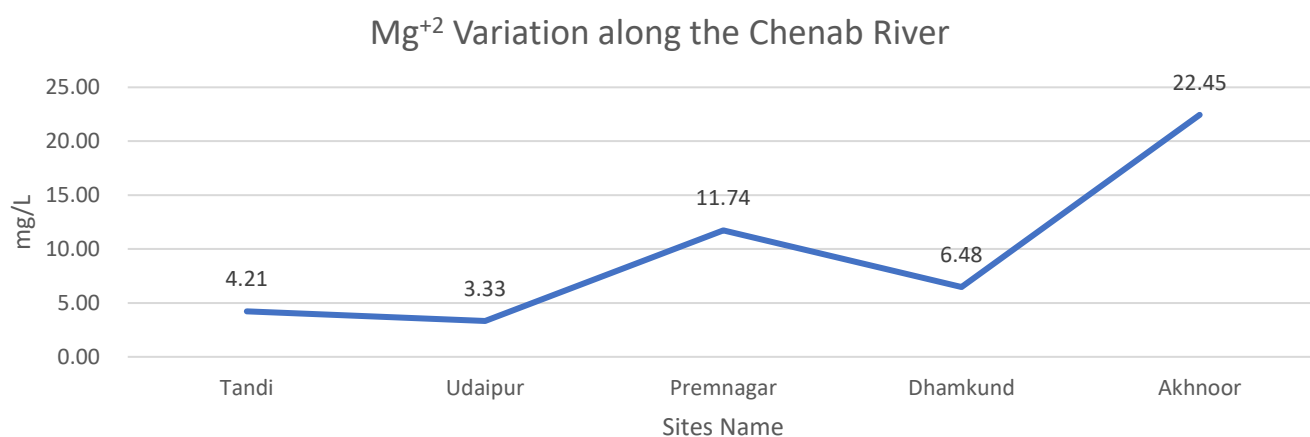
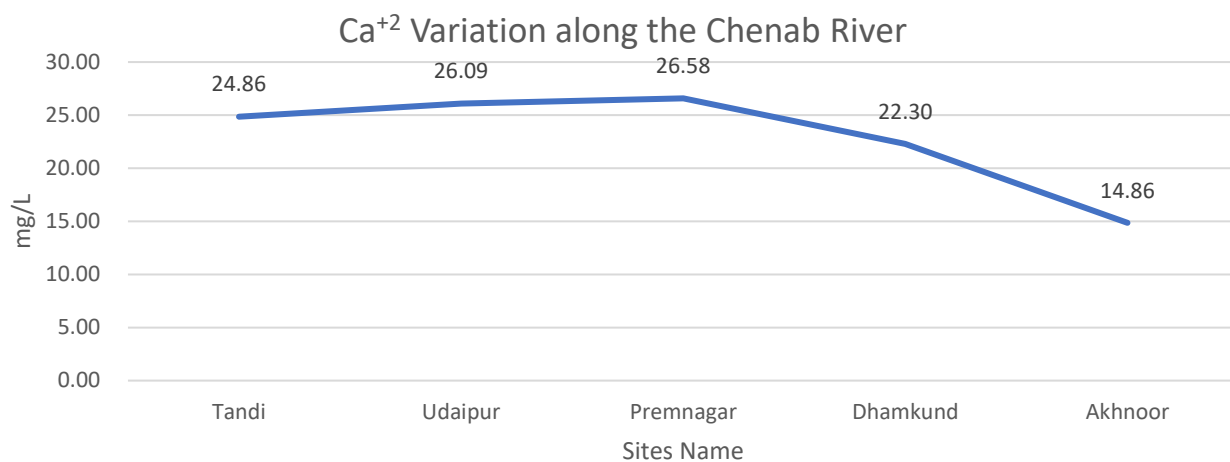


TDS Variation along the Chenab River

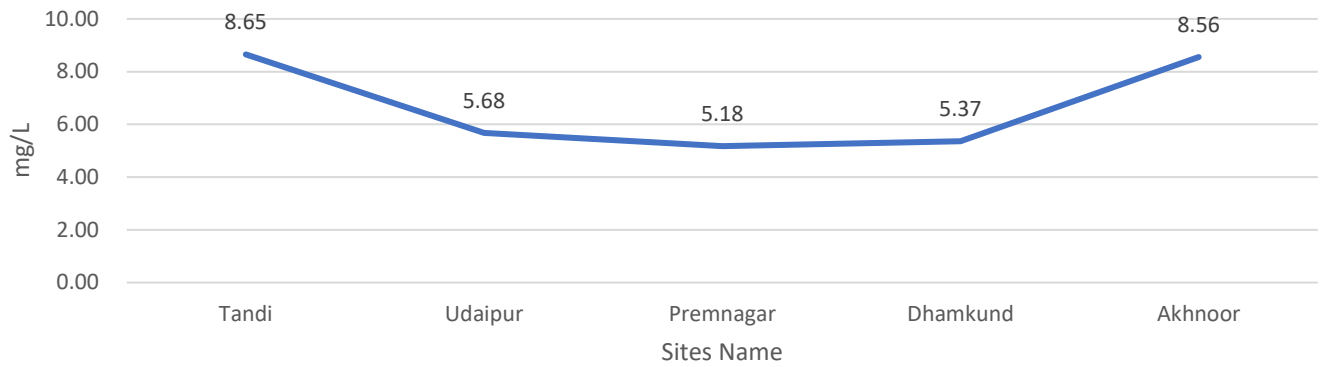


Turbidity Variation along the Chenab River

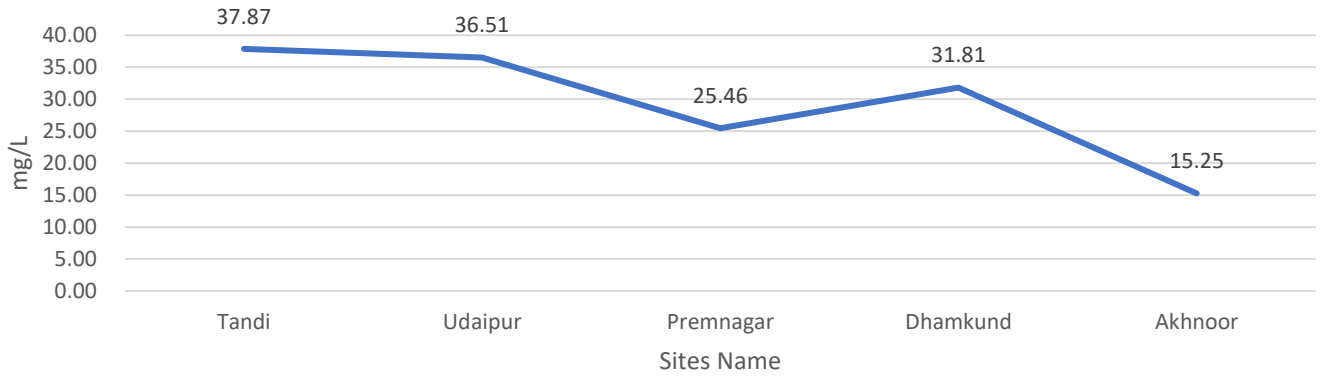




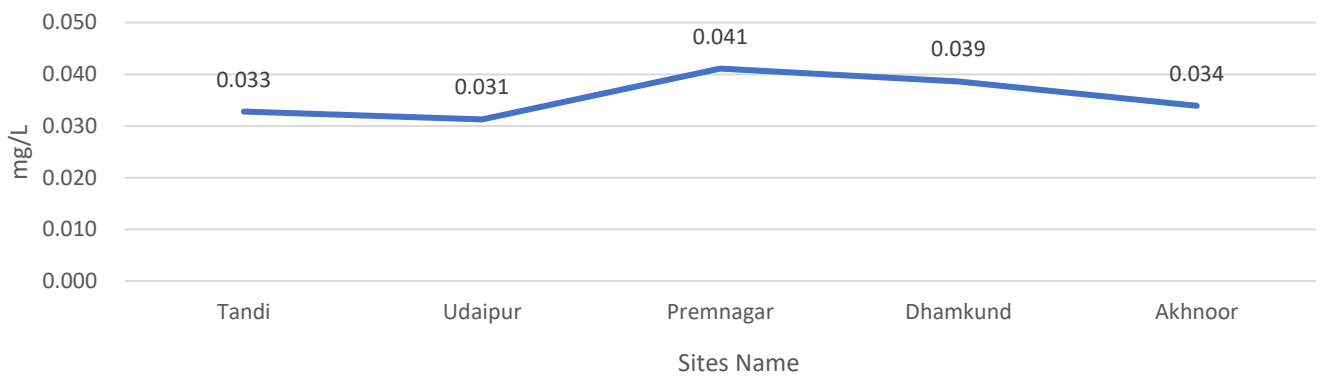
Cl⁻ Variation along the Chenab River



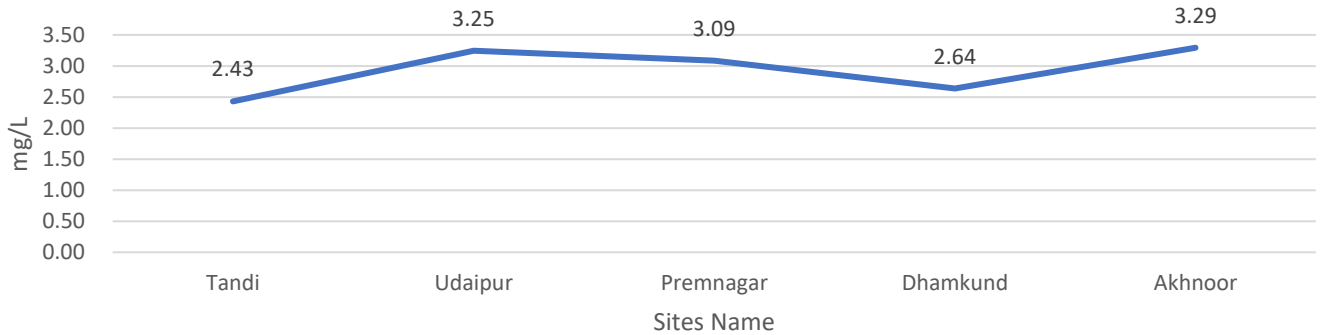
SO₄⁻² Variation along the Chenab River



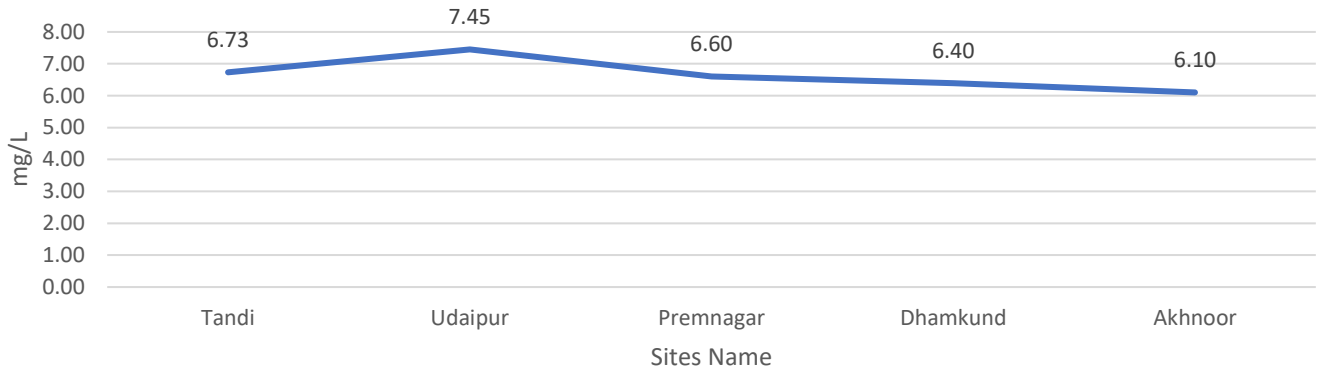
F⁻ Variation along the Chenab River



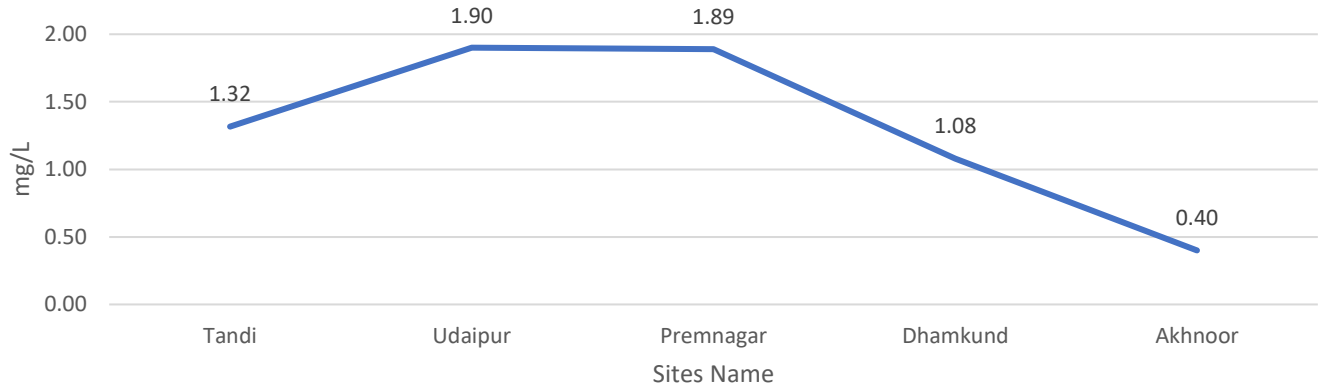
NO₃-N Variation along the Chenab River



DO Variation along the Chenab River



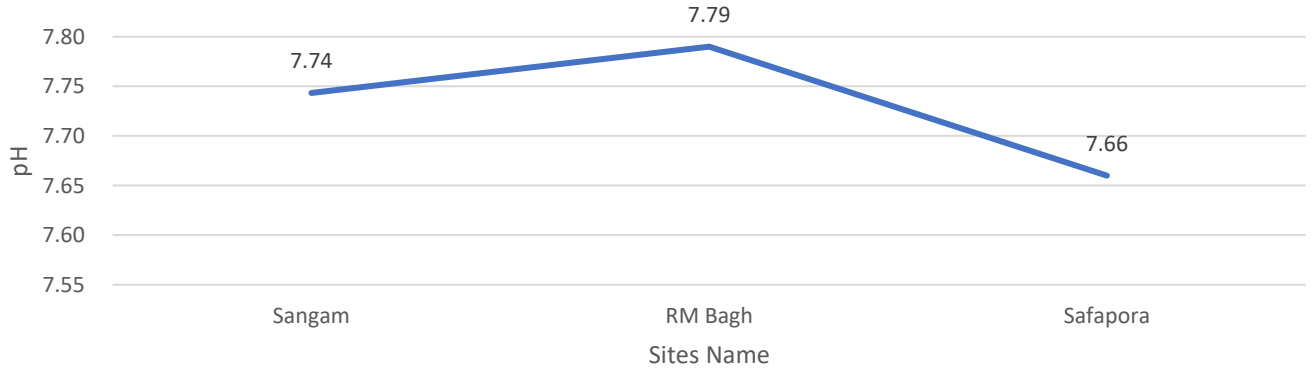
BOD Variation along the Chenab River



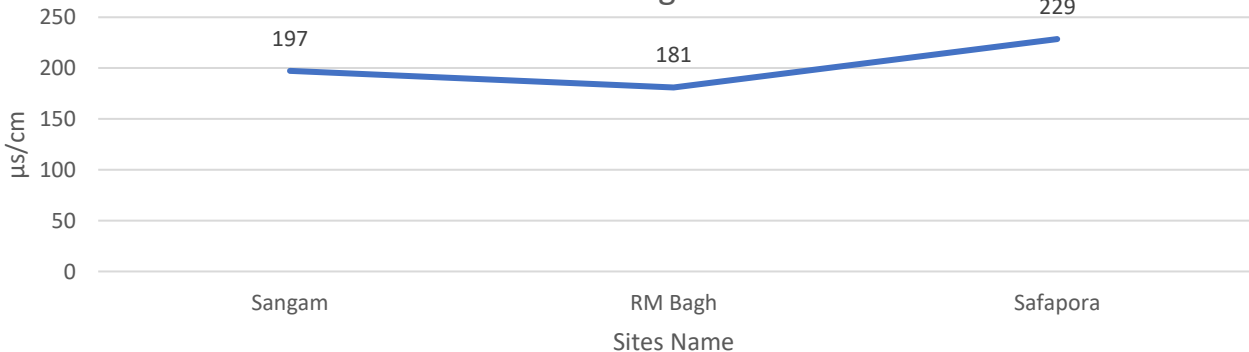
Graphical Representation of WQ Parameters

Jhelum River and its Tributaries (U/S to D/S)

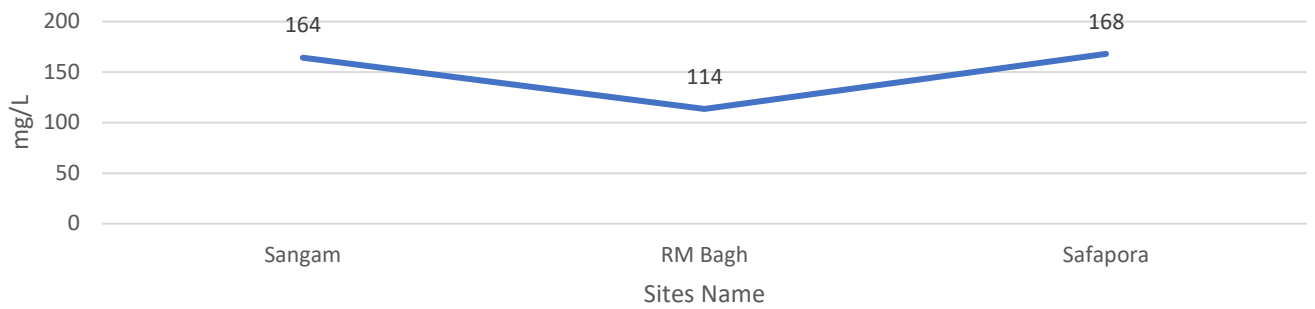
pH Variation along the Jhelum River



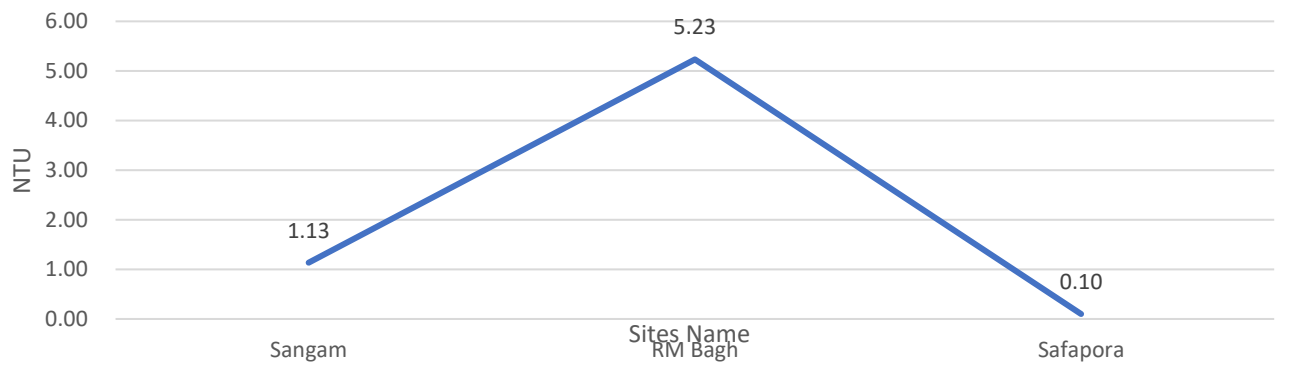
EC Variation along the Jhelum River



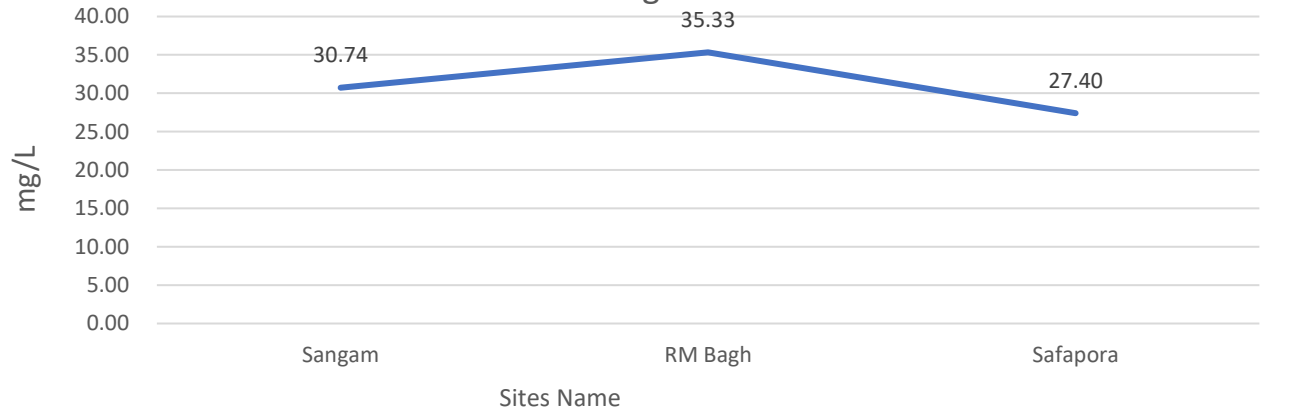
TDS Variation along the Jhelum River



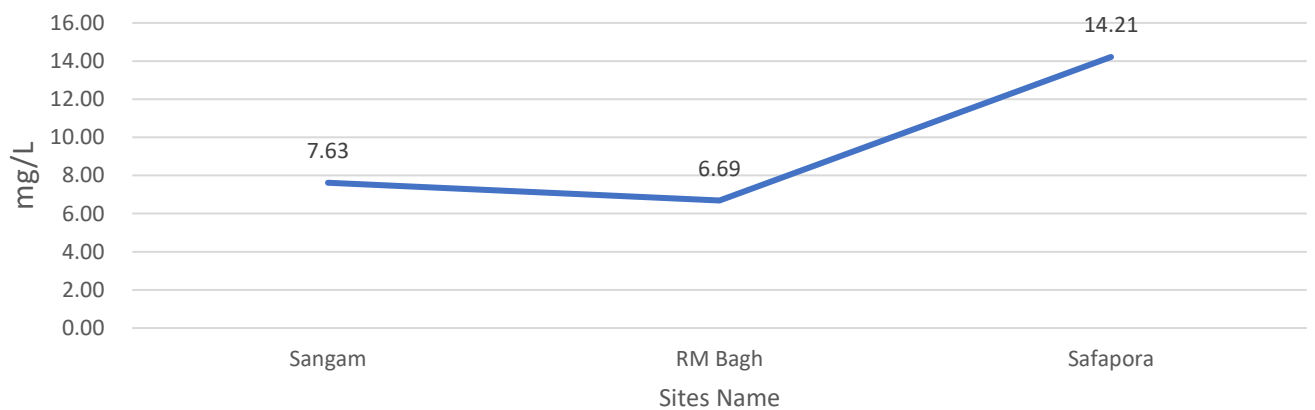
Turbidity Variation along the Jhelum River



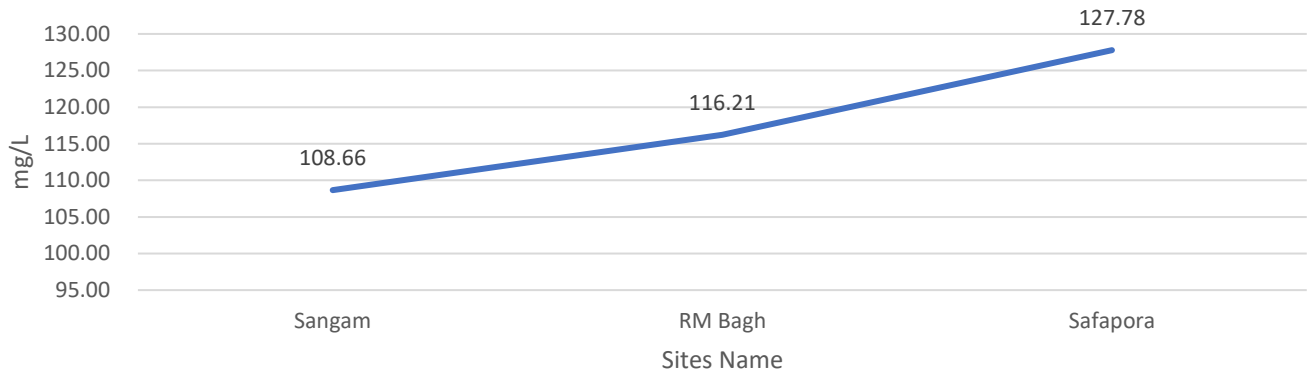
Ca²⁺ Variation along the Jhelum River



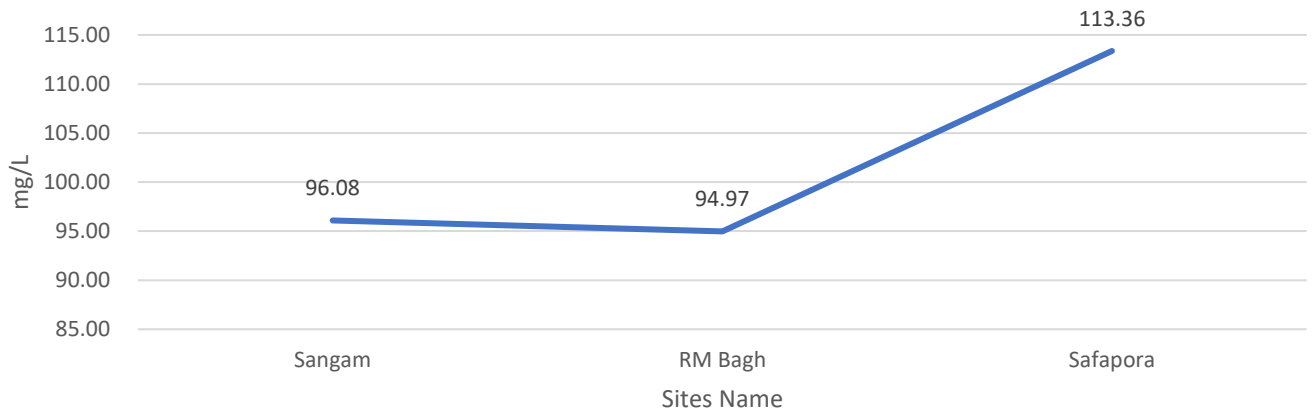
Mg²⁺ Variation along the Jhelum River



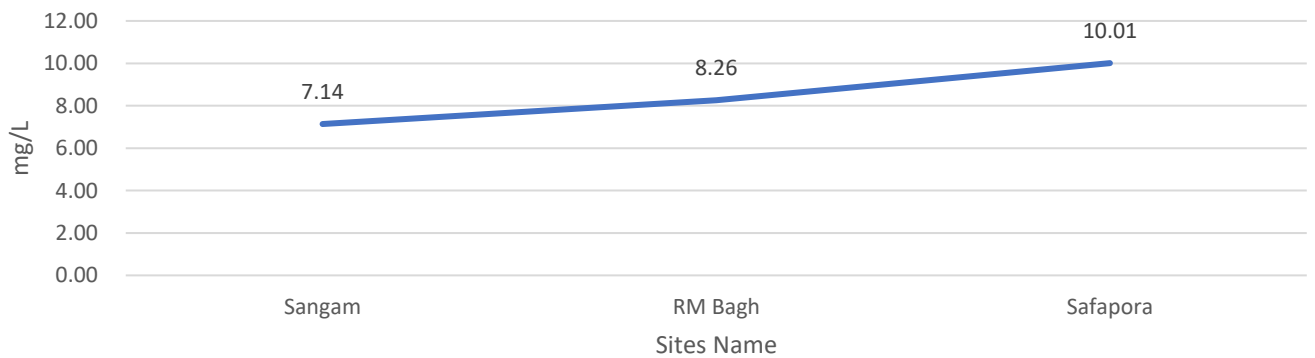
Total Hardness variation along the Jhelum River



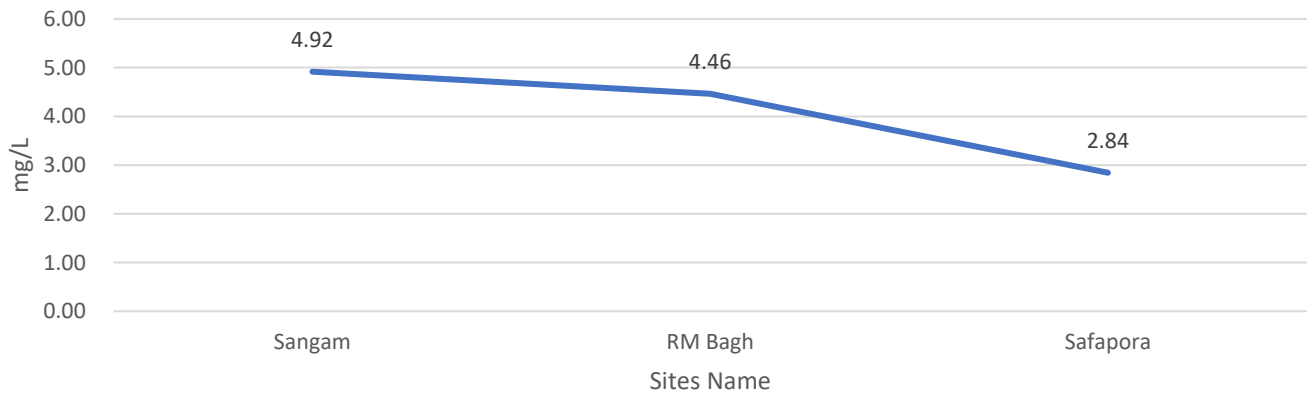
Total Alkalinity variation along the Jhelum River



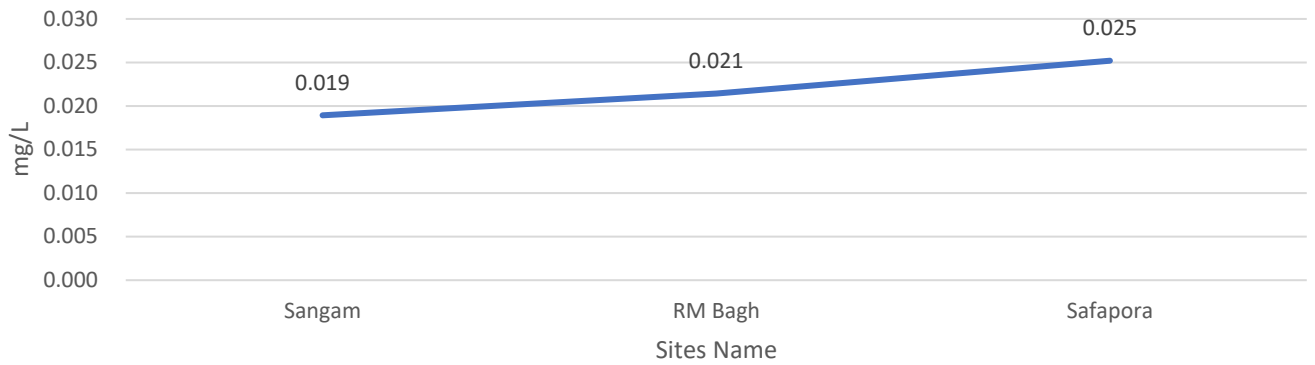
Cl⁻ Variation along the Jhelum River



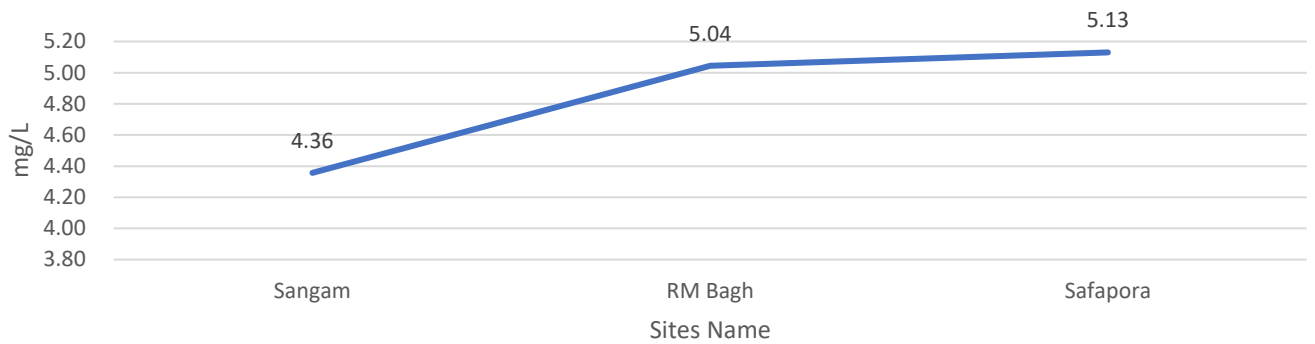
SO₄⁻² Variation along the Jhelum River



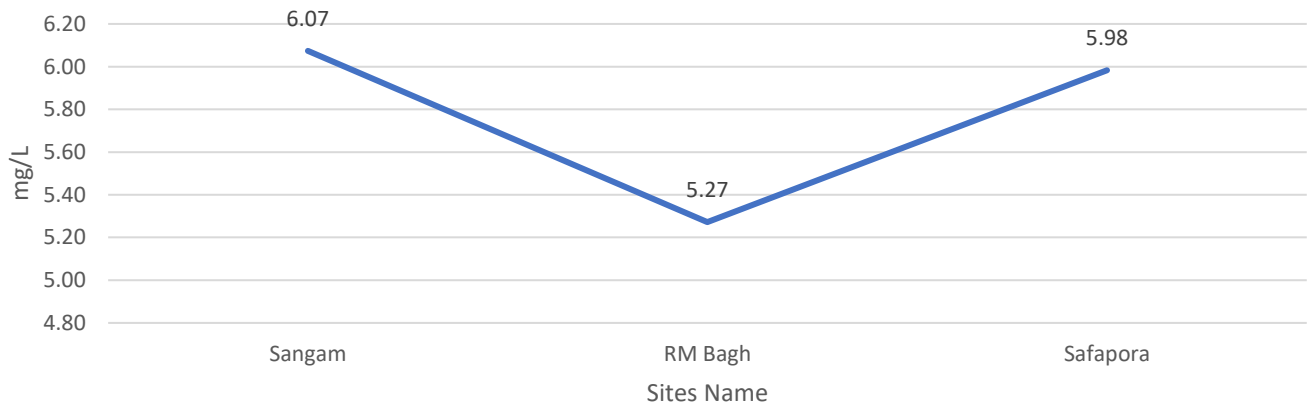
F⁻ Variation along the Jhelum River



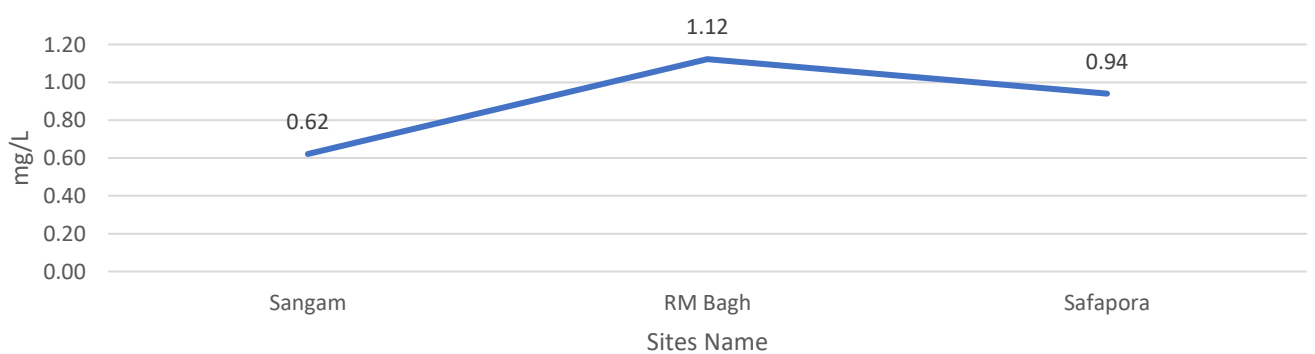
NO₃-N Variation along the Jhelum River



DO Variation along the Jhelum River



BOD Variation along the Jhelum River



6. Observations:

In August 2025, 18 water quality parameters for samples collected from 12 Water Quality Sites were analyzed. The observations made regarding the results are as below,

- The value of Turbidity at sites Udaipur, Premnagar, Dhamkund, Akhnoor, Jammu Tawi, Bardoh, Ram Munshi bagh and Bajaura are above permissible limit of 5.0 NTU categorized by BIS 10500: 2012. This high value of Turbidity may be due to sedimentation or erosion, agricultural runoffs and algal bloom in flood season.

7. Conclusion:

- The values of Water Quality parameters of all sites are within the permissible limit as per BIS: 10500-2012 standards and Class B of CPCB classification except values of Turbidity at few HO sites.
- The water quality of Rivers Chenab and Jhelum is acceptable with reference to the Physico-chemical parameters. However, due to increased industrial and human activities along its bank, a constant monitoring of the water quality of the rivers is necessary to maintain the river water quality.



CHENAB DIVISION, CENTRAL WATER COMMISSION, JAL AYOG BHAWAN, JAMMU