



# Water Consumption and Conservation Practices at SRHU

# Water Consumption

- Main source of water in SRHU are tube wells and municipal supply. The percentage of municipal supply is very low. The dependability for fresh water is mainly on tube wells
- SRHU has 3 tube wells all equipped with telemetry flow meters as per CGWA guidelines
- Two piezometers with telemetry are installed for monitoring ground water level as per CGWA guidelines
- Water level (can be viewed at <https://iosense.io.overview>)
  - 2022-23 – 69.79 mt
  - 2023-24 – 68.05 mt
  - 2024-25 – 68.45 mt
- Water quality is tested quarterly from NABL accredited laboratories and found potable as per BIS 10500 standards



# DELHI ANALYTICAL RESEARCH LABORATORY

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(A GOVERNMENT APPROVED & ISO 9001 : 2015, ISO 45001:2018 Certified Testing Laboratory)

## TEST REPORT

Form No. DARLQF/ISO

Report Issue to: Swami Rama Himalayan University Swami Rama Nagar Dorwala Dehradun Uttarakhand - 248140	U/LR No.: TCK1432K00000673F Report No.: 820250402WT002 Sample Receipt Date: 02/04/2025 Test Started On: 02/04/2025 Date of Completion: 09/04/2025 Issue Date: 09/04/2025
Name of Sample: Borewell water 01	
Brand Name: N.S.	Date of Sampling: N.S.
Sample Quantity: 2 lit	Batch/Lot No.: N.S.
Sample Submitted by: By Party	Manufacturing Date: Not Specified
Sampling Method: N.S.	Expiry Date: Not Specified
Sample Description: Borewell water 01	

### TEST RESULTS

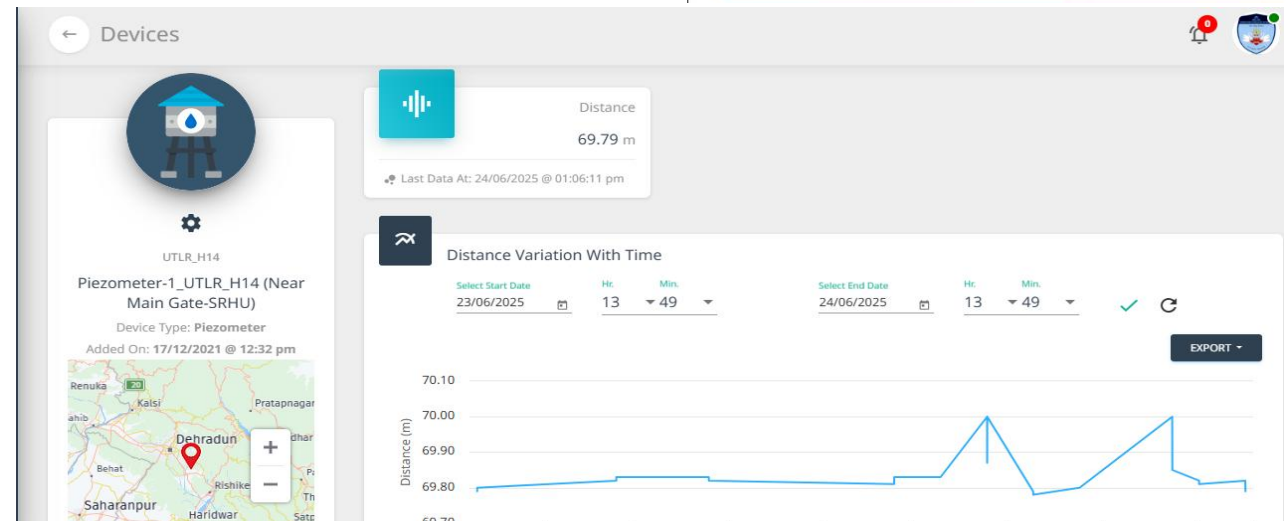
Group Name: Water

Discipline: Chemical and Biological

S.No.	Test Parameters	Units	Results	Desirable Limit	Permissible Limit	Test Method
Physical & Chemical Parameters						
1	Colour	In Hazen unit	Less than 1	5	May be extended upto 15	IS 3025 (P-4) 2012 Clause No. 4
2	Odour	—	Agreeable	Agreeable	—	IS 3025 (P-5) 2012 Clause No. 4.1
3	Turbidity	NTU	Less than 1	1	May be extended upto 5	IS 3025 (P-13) 2023 Clause no. 7.2
4	Total dissolved solid	mg/l	198.0	500	2000	IS 3025 (P-18) 2023 Clause no. 7
5	pH value	—	8.54	6.5 to 8.5	No Relaxation	IS 3025 (P-11) 2022 Clause no. 9
6	Chloride (Cl)	mg/l	18.7	250	May be extended up to 1000	IS 3025 (P-32) 1995 Clause no. 2
7	Iron (As Fe)	mg/l	SLQ(S-1)	1.0	No Relaxation	IS 3025 (P-53) 2023 Clause no. 6.5.4
8	Magnesium (As Mg)	mg/l	11.3	30	May be extended up to 100	IS 3025 (P-46) 2023 Clause no. 5

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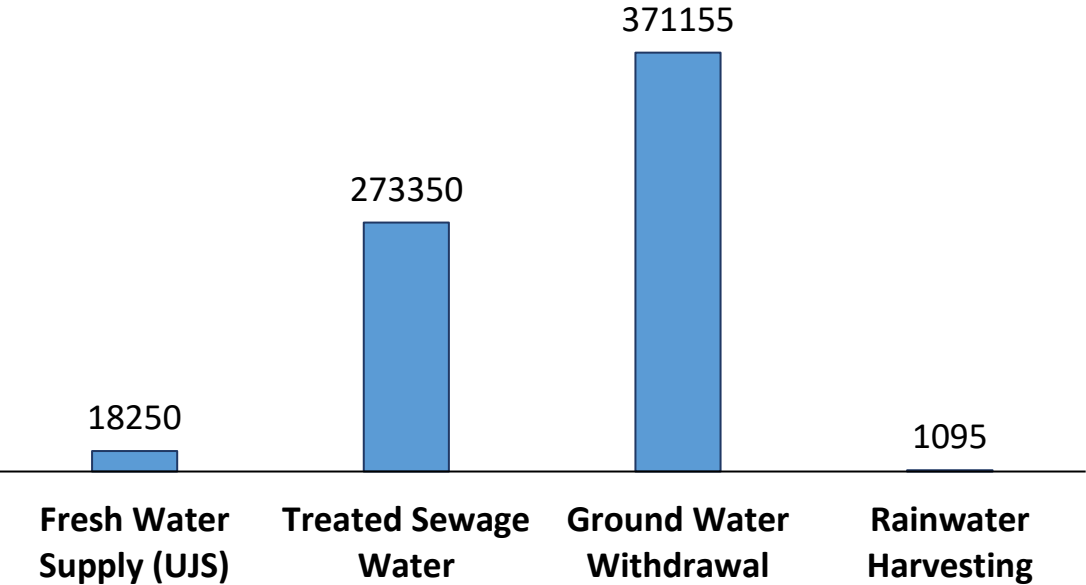
Note: 1. The results are related to the test items only. 2. Sample will be destroyed after one month from the date of issue of test report.  
 3. This report is not to be reproduced wholly or in part and cannot as an evidence in the court of law and should not be used in any advertisement material without written consent. 4. Laboratory is not responsible for customer provided personal data. 5. Where report is without NABL Symbol & URL, it implies that these products & tests are not covered under NABL accredited scope.



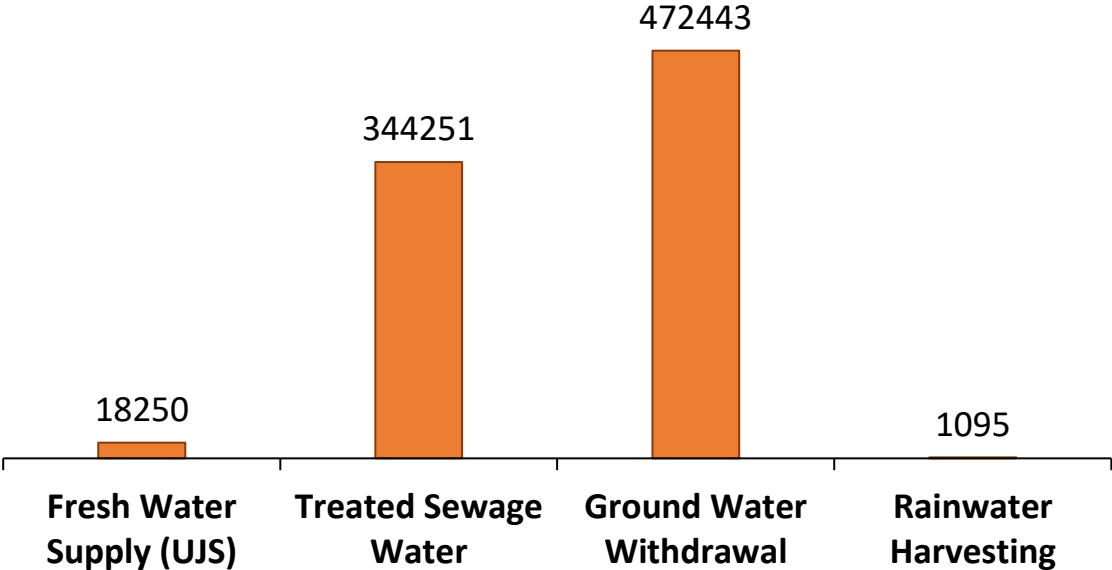
# Total Water Intake

Source of Water	Annual Water Intake in m3 (2023-24)	Annual Water Intake in m3 (2024-25)
Fresh Water Supply (UJS)	18250	18250
Ground Water Withdrawal	371155	472443
Treated Sewage Water	273350	344251
Rainwater Harvesting	1095	1095

Annual Water Intake in m3 (2023-24)



Annual Water Intake in m3 (2024-25)



# Total Water Consumption

Year	Annual Water consumption		Serving Population
(April - March)	Quantity (m³)	Source of Water	
	Industrial / Drinking/ Domestic use		
2022 – 23	375669	Tube well & municipal supply	Residential – 1835, Hospital Beds - 1200, OPD – 1100, Staff - 2150, Day Scholar- 2900 (Total - 9185)
2023 – 24	390500 (3.9%+)		Residential – 2075, Hospital Beds - 1200, OPD – 1350, Staff - 2200, Day Scholar- 2900 (Total - 9725, 5.87%)
2024 – 25	491788 (25%+)		Residential – 3250, Hospital Beds - 1250, OPD – 2250, Staff - 2845, Day Scholar- 4100 (Total - 13695, 28%)

# Wastewater generation and Discharge details Annually

Year (April-March)	Quantity generated (m <sup>3</sup> )	Quantity recycled (m <sup>3</sup> )		Quantity discharged (m <sup>3</sup> )	
		(m <sup>3</sup> )	%	(m <sup>3</sup> )	%
2022 – 23	262968	262968	100	262968	100
2023 – 24	273350	273350	100	273350	100
2024 – 25	344251	344251	100	344251	100

# Water Conservation Practices

## Rainwater Harvesting & Ground Water Recharging

- SRHU receives an annual rainfall of 2073.3 mm. (www.dehradun.nic.in)
- The rainwater poured over different surface of the SRHU is as follows:-
  - Roof top –  $73381.12 \times 2.0733 \times 0.85 = 1,29,319.9$  cum
  - Road / paved area –  $107711 \times 2.0733 \times 0.75 = 1,67,487.9$  cum
  - Open area –  $83425 \times 2.0733 \times 0.2 = 34,593$  cum
  - Green belt –  $160800 \times 2.0733 \times 0.15 = 50,007.9$  cum
- **Total volume available annually for rain water harvesting (2024-2025) is 3,81,408.7 cum**
- 16 Recharge pits & 2 Borewell recharge constructed (constructed 3 more recharge pit during year )



## 365 days Roof Top Rainwater Harvesting Storage (Patented)

- Innovative 150 KL Rooftop rainwater harvesting underground tank with advance filtration unit based on Rainfall.
- Tank size designed for consumption of 3000 litre per day for Medical College & University Admin Building.
- Being used in 119 toilets & 138 bathroom taps of Nursing College & Medical College.
- **9.45 L litre water being used in toilets and 1.57 Cr. litres for ground water recharging.**



**UNDER GROUND WATER TANK  
150 KL capacity**

- 9.45 Lakh liter of rain water will be consumed in a year in all the toilets & taps for flushing, washing and cleaning
- 157.56 Lakh liters of water will go to recharge pit as overflow from underground tank for ground water recharge

# Design of RWH based on Monthly Rainfall

For 26 days in a month @3000 ltr/day =  $3000 \times 26 = 78000$  say 78 KL

S.N.	Month	Incoming Water	Balance water at the storage tank after use	Total water available (KL)	Consumption @3000 ltr/day Capacity (KL)	Total water remaining	To ground recharge/ overflow (KL)
1	September	2382.9	150	2532.9	78	2454.9	2304.9
2.	October	293.5	150	443.5	81	362.5	212.5
3.	November	37.3	150	187.3	78	109.3	0.0
4.	December	132.7	109.3	242.0	81	161.0	11.0
5.	January	331.0	150	481.0	78	403	253.0
6.	February	505.2	150	655.0	72	583.2	433.2
7.	March	398.3	150	548.3	81	467.3	317.3
8.	April	262.0	150	412.0	78	334.0	184.0
9.	May	351.9	150	501.9	81	420.9	270.9
10.	June	1608.3	150	1758.3	78	1680.3	1530.3
11.	July	4909.8	150	5059.8	81	4978.8	4828.8
12.	August	5338.5	150	5488.5	78	5410.5	5410.5
	<b>Total</b>	<b>16551.3</b>			<b>945</b>		<b>15756.3</b>

The capacity of underground Rainwater harvesting tank is 150 KL

# Water Conservation Practices at SRHU

## Sewage Treatment Plant/ ETP

- Capacity of STP is 1 MLD and ETP of 90 KLD
- 9,43,153 litre water is used for irrigation of green belt of 1,60,800 sqm area, construction, vehicle washing.
- The manure produced through STP is utilized in green belt
- The STP inlet and outlet water is tested every six months from NABL accredited laboratory and found within norms.

**DELHI ANALYTICAL RESEARCH LABORATORY**  
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**TEST REPORT** Format No. DARL/QF/50

Report Issue to: Swami Rama Himalayan University  
Swami Rama Nagar Doiwala Dehradun Uttarakhand - 248140.

Report No.: TC51632400019981F  
Sample Receipt Date: 25/12/2024  
Test Started On: 25/12/2024  
Date of Completion: 30/12/2024  
Issue Date: 30/12/2024

Name of Sample: STP Inlet (1 MLD)  
Brand Name: N.S.  
Sample Quantity: 1 Ltr  
Sample Collected by: Our Lab Representative Mr. Rajan  
Sampling Method: N.S.  
Sample Description: STP Inlet (1 MLD)

Date of Sampling: 25/12/2024  
Batch/Lot No.: N.S.  
Manufacturing Date: Not Specified  
Expiry Date: Not Specified

Group Name	Water	Discipline	Chemical	Test Method
1	pH			IS : 3025(P-11):2002 Clause no. 9
2	Total suspended solids(TSS)	mg/L	380.0	IS : 3025(P-17):2002 Clause no. 9.1
3	Biochemical oxygen demand (BOD) at 20°C for 3 days	mg/L	141.9	IS : 3025(P-44):2003 Clause no. 9
4	Chemical oxygen demand (COD)	mg/L	709.5	IS : 3025(P-58):2003 Clause no. 9
5	Oil and grease	mg/L	Less than 4	IS 3025(P-39):2001 Clause no. 5.5
6	Microbiological Parameter			
7	Faecal coliform	MPN/100ml	70	IS :1622-1981 Clause no. 3.3.3

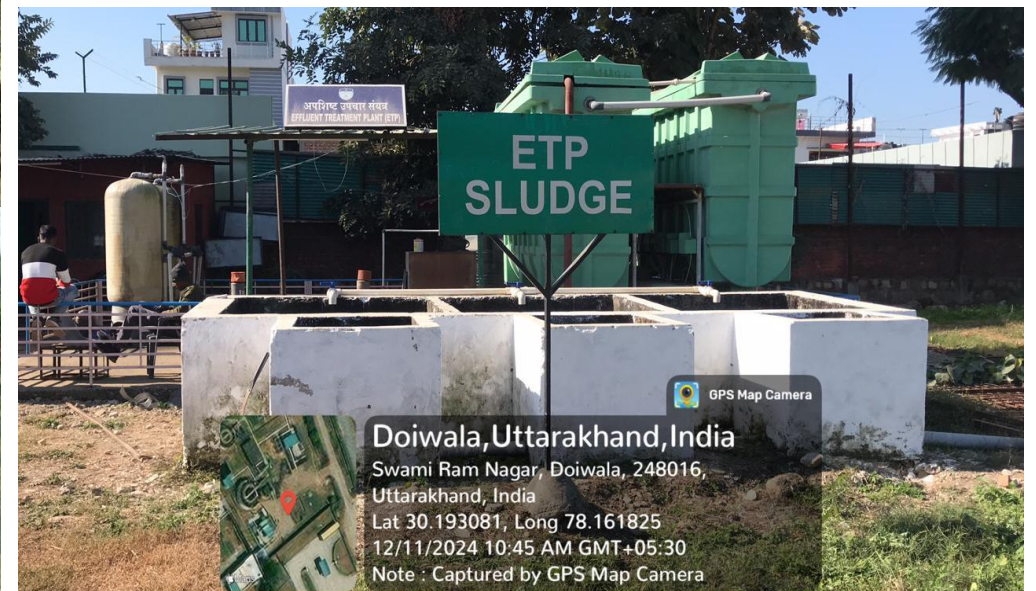
Remarks : The Party asked for above test only.

\*\*\*End of Report\*\*\*

Authorized Signatory  
Mr. Rajan  
Authorised Signatory (Chemical)

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## Cont. - Water Conservation Practices at SRHU

### Waterless urinals

- **250 waterless urinals** are installed in SRHU to save precious ground water
- One waterless urinal saves 1,51,000 litre of water annually
- SRHU saves **3.75 Cr. litre** water annually

### Sand Bottle in Cisterns

- 1 litre sand bottles placed in cisterns
- 10 litre water saving assuming 10 flushes per day
- **45.11 Lakh Litre water** saved annually @ **1236 toilets** x 10 time flush in a day

### Condensed water of AC units

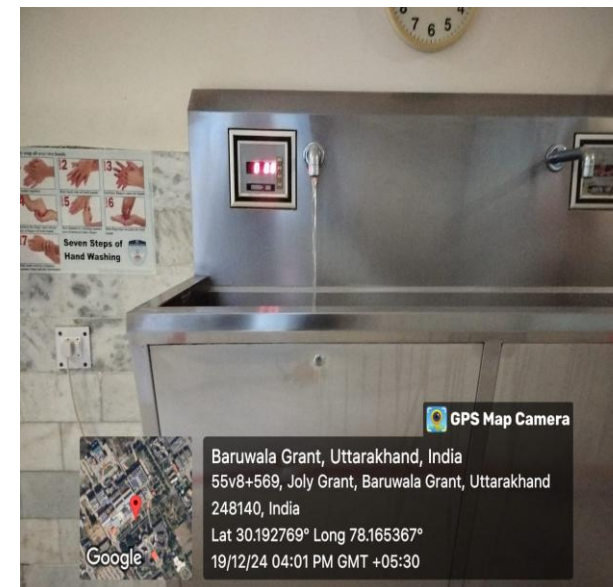
- **1.20 Lakh litre** water saved annually from AC

### RO reject water being used in toilet and laundry

- **32.85 Lakh litre** water saved annually

### Sensor based Scrub Station inside OTs

- Approx. **5 Lac litre** water saved annually



# Water Conservation Practices by SRHU

## Social Behavioural Change Communication

- Awareness campaign & Pamphlets distribution
- Drive Prevent Leakage campaign
- Celebration of Water day & Swachhta Pakhwada

