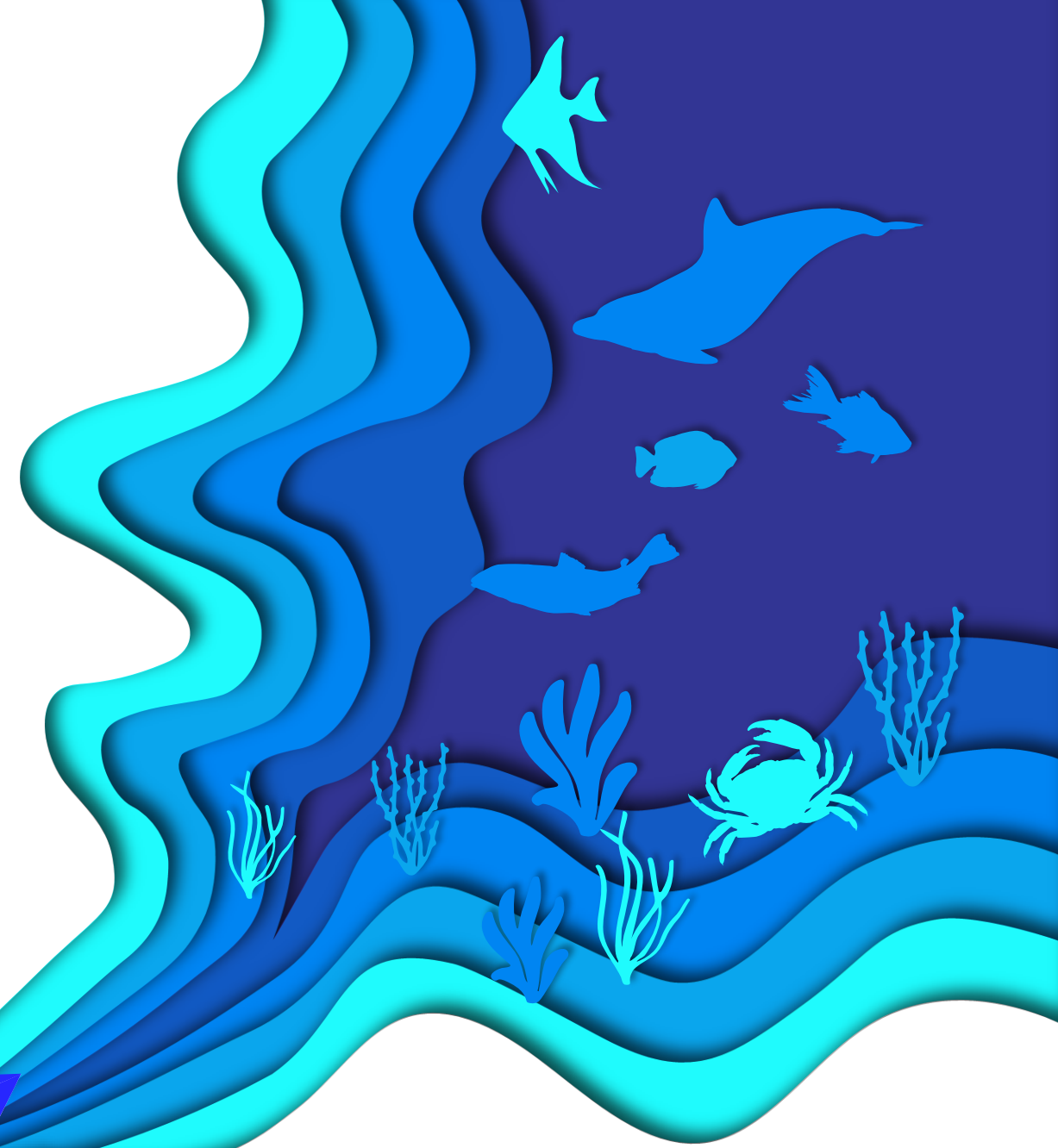
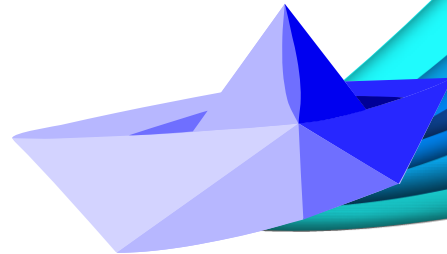




सुगम पर्यावरण विकल्प

700 KLD STP based on SBT system @Shuklatirth, Bharuch, Gujarat



700 KLD SBT system installed



@ Shuklatirth-Bharuch



Grey Water Management

Grey Water: Wastewater that is generated from activities such as bathing, washing clothes, and cooking

Necessity: Many rural communities in India still lack access to adequate sanitation facilities, leading to a range of health and environmental problems. One of the key challenges facing these communities is the management of grey water. For this such technology is required which can be easily managed by Panchayat.

To address this challenge, the Gujarat Water Supply and Sewerage Board (GWSSB) has implemented a pioneering project in Shuklatirth village that aims to treat and reuse grey water using Soil Bio Technology (SBT) and is expected to bring about significant benefits for the community.

This report includes an overview of the Shuklatirth GWTP, its design and implementation, the impact it has had on the community, data on the water quality before and after treatment.



Benefits of Grey **Water** Management



Provides a sustainable and cost-effective solution



Reduces risk of water-borne diseases



Promotes sustainable agriculture practices



Reduces stress on natural water resources

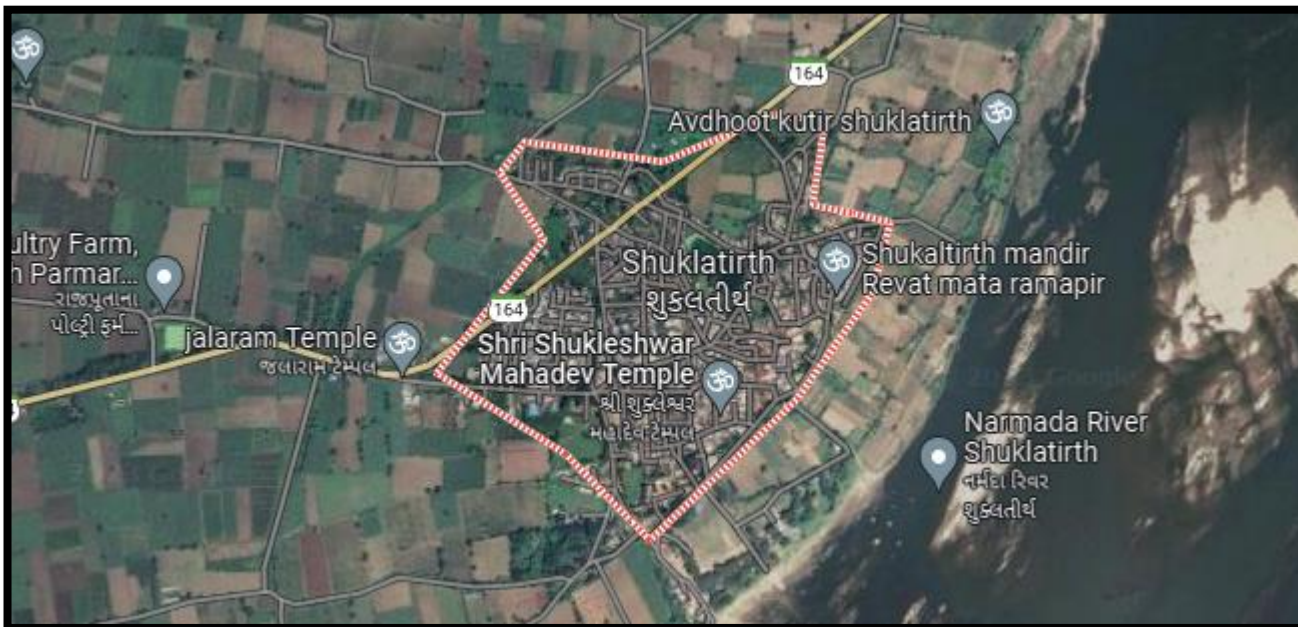


Improves quality of life



Shuklatirth **Village** Profile

Shuklatirth is a small village located in the Bharuch district of Gujarat near the bank of the Narmada River and known for its religious significance and natural beauty. Town host auspicious shuklatirth mahostav every year.



Village Overview

Gram Panchayat	: Shuklatirth
Tehsil & District	: Bharuch
State	: Gujarat
Area	: 1657.48 hectares
Population	: 7520
Households	: 1582
Primary Occupation	: Agriculture
Literacy Rate	: 69.62 %
Nearest Town	: Bharuch (17 km)

Grey Water Scenario in Shuklatirth

Drinking Water Availability

Huge discrepancies lie in drinking water facilities. The villagers either rely on water tanks, borewells, RO Plants or other sources for drinking purposes.

Water Availability for Domestic Use

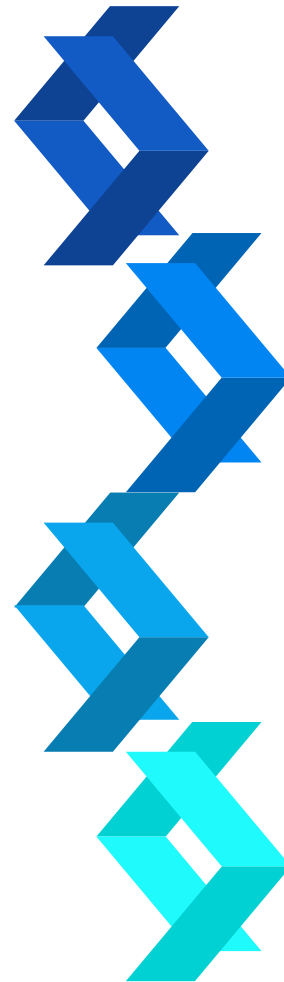
Overhead water tanks are insufficient or just enough to meet the water requirements of the villages.

Bore well Availability and Use

All the villages have bore wells though the water is salty and hard. The water is not fit for drinking purposes but can be used for domestic usages like cleaning and washing.

Ground Water Status

The extraction of groundwater is non-economical as the water table is very low. However, some households in villages have excess groundwater pumping.



Open Defecation

Village is comparatively free from open defecation.

Sanitation Facility

Although, most of the households have access to toilets but low to medium open defecation is noticed in all villages, possibly due to the floating population.

Grey Water Management

village have open gutters, some having conditions resulting in sanitation-related health risks.

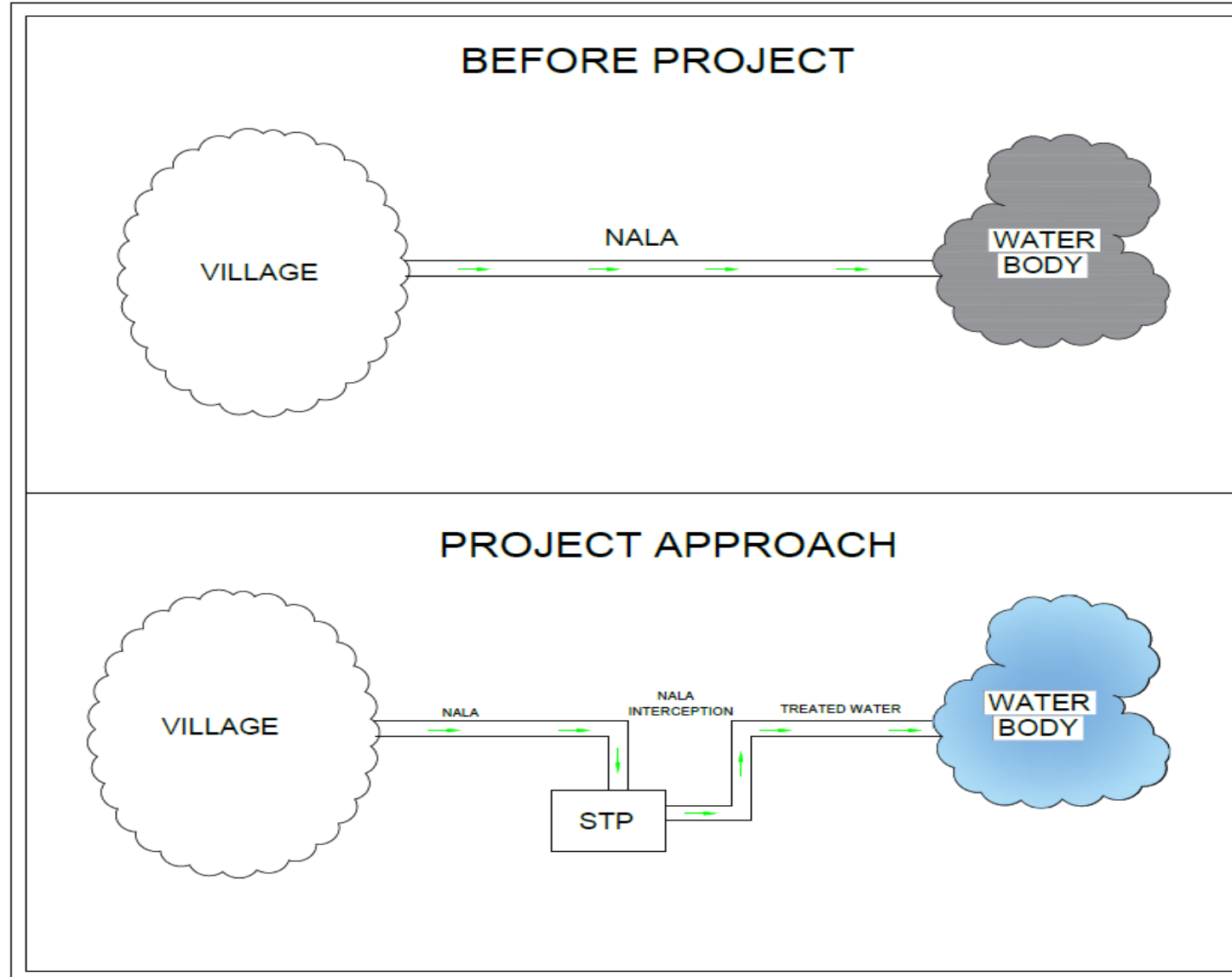
Rain Water Harvesting

There is good scope of RWH, as the geology comprises mostly of clay, shale and sandstone. Scanty and low rainfall is the only issue.

Call for Action



Engineering Intervention to Problem



Why SBT for Shuklatirth ?

1. Shuklatirth is one of the sacred place in Gujarat.
2. Hence, no compromise will be made for technology selection.
3. it has to be the best.
4. Krishna construction with IIT Bombay took this challenge.
5. SBT / Soil biotechnology is indigenous technology by IIT Bombay and truly qualifies atmanirbhar bharat mission of GOI.
7. This technology has roots in traditional Indian knowledge that water is sacred.
8. SBT ensures the treated sewage water quality is sacred / tirth before it discharge to river.
9. It physically removes suspended and dissolved impurities from water.
10. SBT does not limit itself to discharge norms of pollution control board. In fact, it supersedes the norms given by Pollution Control Board
11. It tries to impart sanctity to the treated sewage water and make it like river water.
12. SBT mimic the traditional Indian knowledge that impurities cant be processed in water and has to be removed by non-aquatic system like geological media.
13. So, approach and performance of SBT is unmatched in world.

Technology Adopted for the Treatment

Soil Bio Technology (SBT)

It is a low-cost, eco-friendly, and sustainable technology that uses a combination of physical, chemical, and biological processes to treat grey water.



An affordable and energy-efficient



Natural and sustainable approach



Can remove a wide range of pollutants



Requires minimal maintenance



Aesthetically pleasing and can provide habitat for wildlife

Renowned Acknowledgments of SBT !!!!!!!!!!!



Acknowledged by UN
Climate Tech Centre



Empanelled in
Ministry of Defense



Acknowledged by
NITI AAYOG



Ministry Of External
Affairs, GOI



Swacch Bharat
Mission, GOI



Empanelled with
Namami Gange under
NMCG, GOI



Acknowledged by Jal
Shakti Ministry, GOI



Empanelled in
Ministry of
Defense, GOI

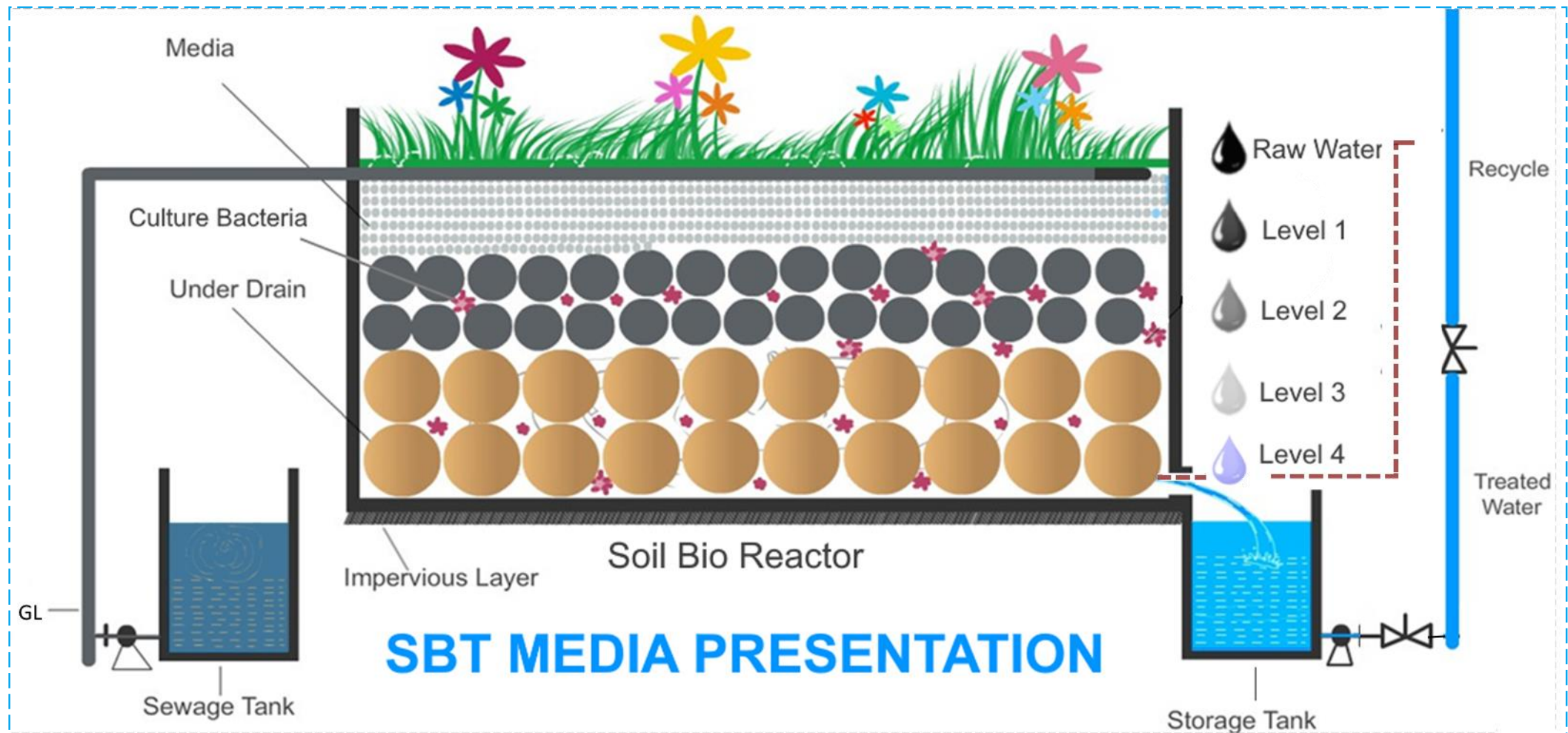


Working with Gujarat
Water Supply &
Sewage Board



Working with
Maharashtra Jeevan
Pradhikaran

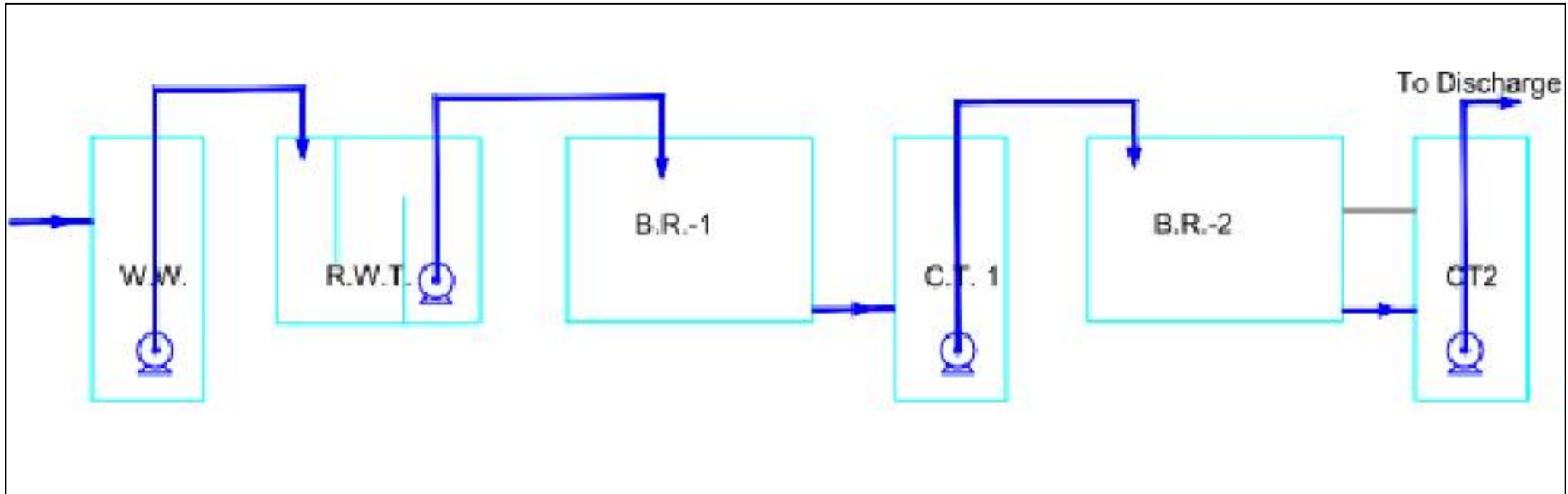
Soil Biotechnology (SBT)



- Designed after careful review of nature's disposal mechanism in comparison with traditional and conventional sewage treatment techniques.
- Wastewater is pumped over the bioreactor, trickles through it & treated water collects in filtrate tank.

Process Description

The process is a batch processes in which wastewater is pumped and applied onto the top surface of the Bioreactor as shown in the figure.



Raw sewage is collected in Raw Water Tank (RWT) after initial screening and settling. The raw sewage is pumped on the top of a SBT Bio Reactor where it percolates through a geological media. The treated water from BR-1 is collected and again treated to attain reuse quality and then collected at the bottom of the Bio-Reactor (BR-2) and stored in a Treated Water Tank (TWT).

Project Description

Board Bethak: Board 269th TPC No. 2

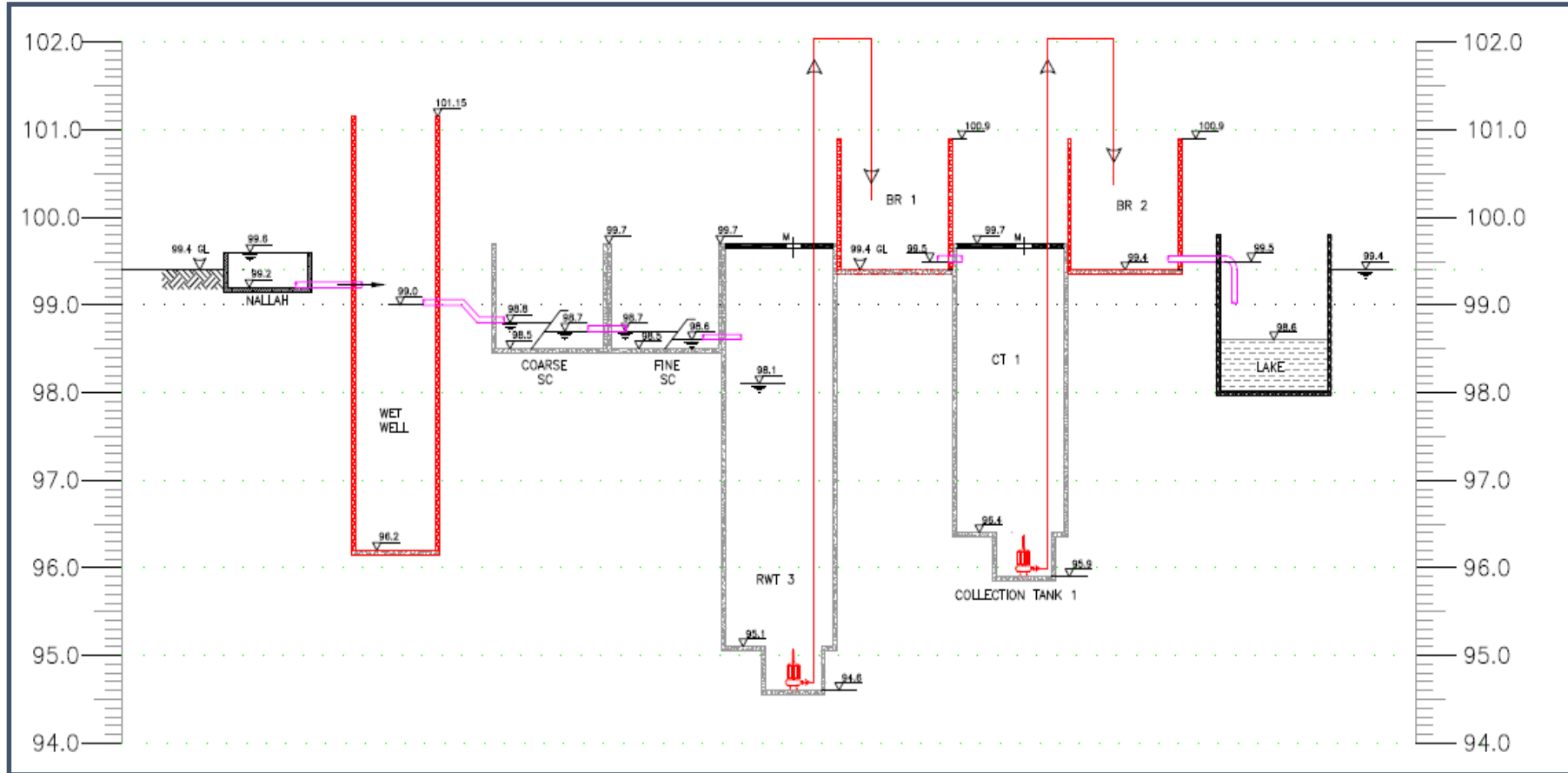
LOI: PB/Zone-6/Bharuch/1396 Dt. 10/08/2022

Flow Details

Sr. No.	Descriptions	Value	Unit
1	Average Intermediate Flow	0.70	MLD
		700.00	M ³ /Day
		29.16	M ³ /Hr
		0.0081	M ³ /Sec
2	Peak Factor	3.00	
3	Grey Water Quantity in Litres		
	Present Stage (2023)	4,44,570	Litres
	Ultimate Stage 30 Years (2052)	6,66,855	Litres

Sr. No.	Components	Dimensions
1	Pipe Line	225 mm dia. DWC Gravity Main 2130 Meters
2	Primary Sedimentation Tank	3.0 mt. x 5.9 mt.
3	Bio Reactor - 01	25.6 mt. x 15.5 mt.
4	Bio Reactor - 02	11.2 mt. x 18.7 mt.
5	Collection Tank	3.1 mt. x 5.9 mt.
6	Wet Well	3 mt. Ø, 6.3 mt. depth

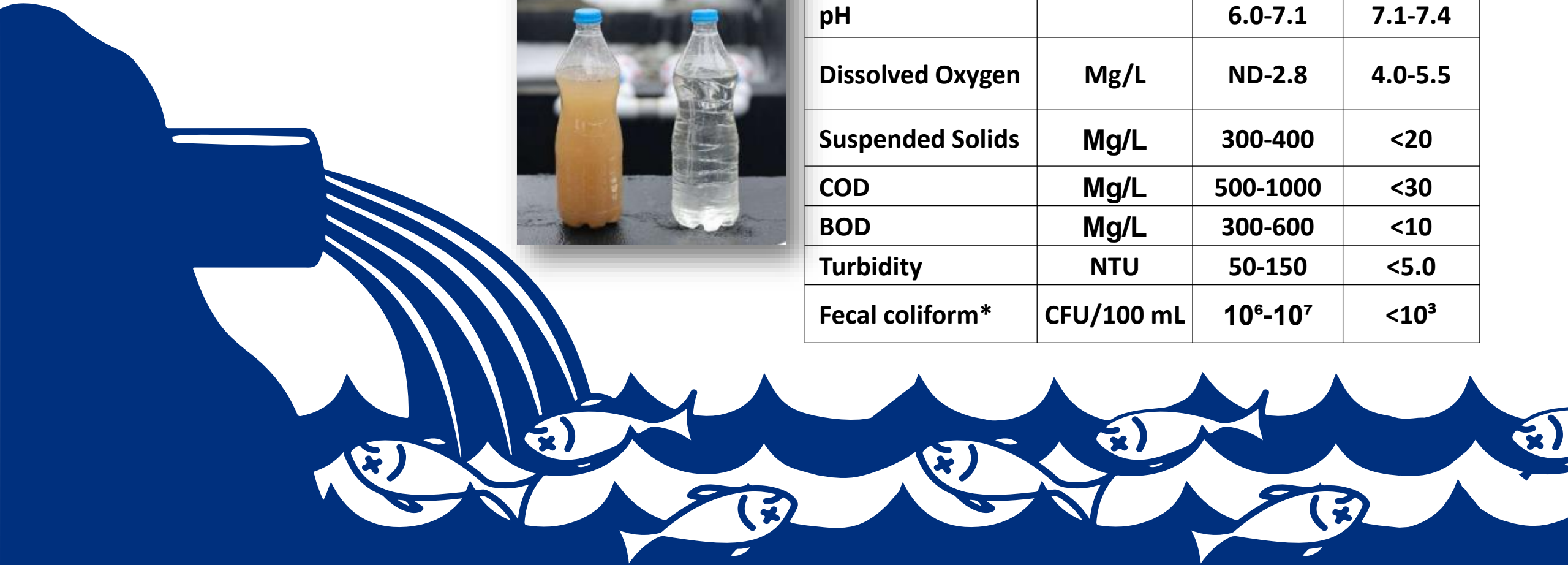
PFD of SBT Plant @ Shuklatirth



SBT treated water in harmony with River **Water** Quality



Parameters	Unit	Input	Output
pH		6.0-7.1	7.1-7.4
Dissolved Oxygen	Mg/L	ND-2.8	4.0-5.5
Suspended Solids	Mg/L	300-400	<20
COD	Mg/L	500-1000	<30
BOD	Mg/L	300-600	<10
Turbidity	NTU	50-150	<5.0
Fecal coliform*	CFU/100 mL	10^6 - 10^7	$<10^3$



Construction Highlights



Plant Photos



Contact Us

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