

## **120 MLD Water Treatment Plant & 24 MLD Zero Liquid Discharge Plant**

### **1. Name of the Project:**

120 MLD Capacity WTP (Water Treatment Plant) at Sarthana Water Works, Sarthana & ZLD (Zero Liquid Discharge) Plant for 590 MLD Capacity Water Treatment Plant at Sarthana Water Works

**2. Vision:** To provide treated potable water to the citizens under area planned with 24 x 7 network.

### **3. Background:**

In 1898, Varachha Water Works was inaugurated at the cost of Rs.9.89 Lacs. It was then known as Lely Water Works in the name of Mr.Lely, the then Collector of Surat. Water from this water works was also provided to Rander municipal area as one tenth of the total expenditure of water works was shared by them. In the year 1931, chlorination was used in Surat city water supply for the first time. In the year 1950, new Engine House & new overhead tank were started. In the year 1952, city's first surface water treatment plant was commissioned at Varachha.

### **4. Need for WTP:**

The tidal water spread over the water supply head works settles around the Infiltration wells and Radial Collecting Wells as a result of which the yield of infiltration wells and radial collecting wells were found to be reduced considerably, affecting the water supply to the Surat City adversely. The total water supply from installed sources was reduced considerably. To overcome these problems and to rejuvenate the existing sources there was a need of treatment plant to be established and then finally, in year 1959 First WTP of 18 MLD capacity was inaugurated at varachha water works. This can fulfill the water demand of the then present as well as projected population.

After successful implementation and desired out put of Varachha Water treatment plant, Surat presently has 14 nos. of Water treatment plant which can treat more than 1050MLD water which is the present demand of City.The total quantity of Water treated per day from all 14 WTP accounts to 1390MLD out of which East (Varachha) Zone having 660MLD capacity, North (Katargam) Zone having 480MLD capacity, West (Rander) Zone having 250MLD capacity. Apart from this, looking over the expansion of Surat city and increase in Population there are 02 nos. of WTP under construction one at Dindoli having a total capacity of 130 MLD (120MLD WTP +10MLD ZLD). Another one at Sarthana Water works having a total capacity of 144 MLD (120MLD WTP +

24MLD ZLD). Also Surat has proposed 1 WTP at Bhesan water works of 200MLD Capacity.

The project of 120MLD WTP along with 24MLD ZLD is considered under Surat Smart City Development Limited and is being funded by Smart City Mission.

The speciality which makes this project a unique move of Surat is the inclusion of 24MLD ZLD, A Zero Liquid Discharge plant. This plant will have a facility to treat the dirty water from proposed 120MLD WTP along with existing 470MLD WTP plants at Sarthana Water works and the recovered water after treatment shall be further treated in the same proposed 120MLD plant. For this 4% capacity of total treatment plant capacity (590MLD) is considered with turbidity of 100NTU.

Presently Surat is heading to meet the future water demand of 2376.82 MLD in year 2041.

## 5. Sector: Hydraulic Department

## 6. Cost and financing:

▪ SCP Cost	:Rs. 48.00 Cr
▪ DPR Cost	: Gross Rs. 42.61 cr. and Net Rs. 39.78 cr.
▪ Tender Estimated Cost	:Rs. 54.61 cr.
▪ Tender Sanctioned Cost	: Rs.52.68 Cr.
▪ Convergence Scheme/PPP/SMC –	: ABD-1(a) – Amrut Convergence
▪ Convergence /PPP/SMC Costing- Rs. 00.00 Cr	: ABD (1(a) – 30.00 cr

## 7. Current status of the project implementation: -

Construction Work in progress

## 8. Likely completion date of project:-30/03/2019

## 9. Impact/ Envisaged Impact of the project:

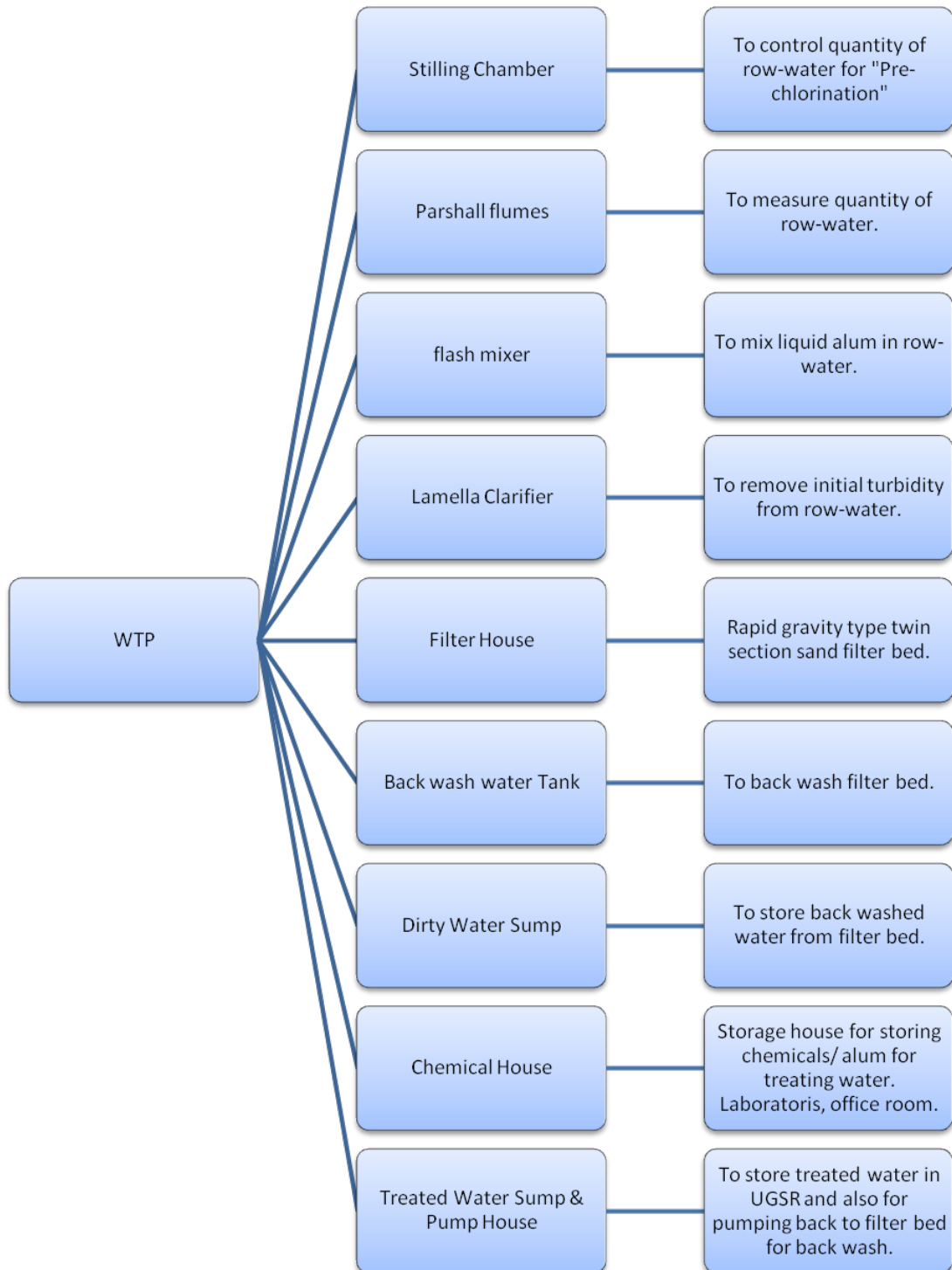
It is proposed to provide an exclusive Water Treatment Plant for the area to be served under the smart city initiative. The New Water Treatment Plant at Sarthana will be used for providing treated water to the areas proposed under the Smart City 24x7 scheme. Any surplus water from the WTP will be diverted to other areas as per requirement. The Water Treatment Plant will be conventional treatment plant with lamella clarifiers and Rapid Gravity Sand Filtration. The plant will be equipped with all necessary instrumentation and SCADA. Water from the Clear Water Sump cum Pump house will be transmitted to Water Distribution Stations.

The SMC has decided to implement of Smart City Projects related to 24 x7 Water Supply in 8.84 sq.km. area of Surat City.

- To meet The Water Demand of 1099 MLD for approximately 55 Lacs population of surat city in Year 2021.
- In zero liquid discharge plant Recycling of back wash water of WTP is done and approximately 24 MLD water can be reused as drinking water.

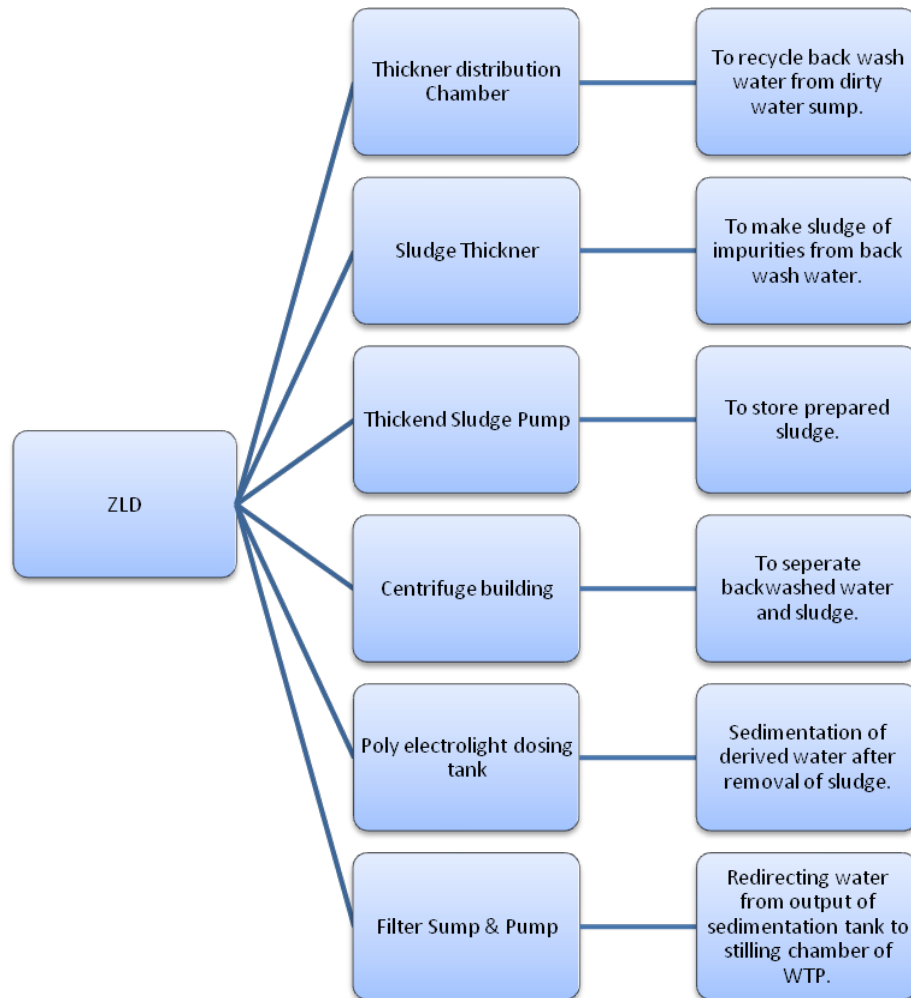
#### **10. Brief Description (Technical Details):-**

**120 + 24 = 144 MLD Capacity WTP  
UNIT**

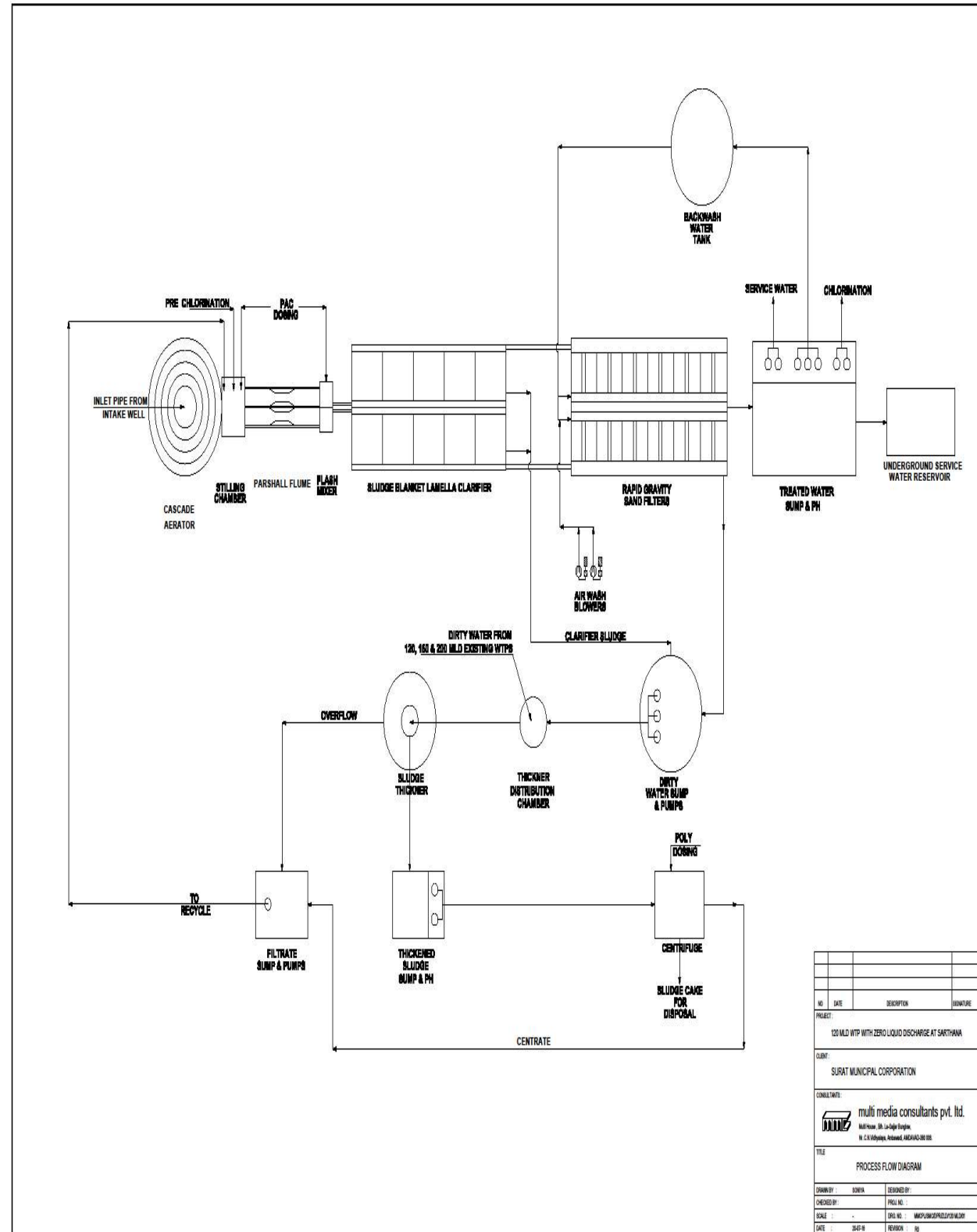


## Zero Liquid Discharge Plant for 590 MLD Capacity WTP

### ZLD UNIT







NO.	DATE	DESCRIPTION	SIGNATURE
PROJECT:			
120 MLD WTP WITH ZERO LIQUID DISCHARGE AT SARTHANA			
CLIENT:			
SURAT MUNICIPAL CORPORATION			
CONSULTANT:			
 <b>multi media consultants pvt. ltd.</b> <small>Multi Media, 20, 1st Floor, Durgam,  W. C. Highway, Ahmedabad, INDIA-380 015</small>			
TITLE:			
PROCESS FLOW DIAGRAM			
DRAWN BY : <b>SONIA</b>		DESIGNED BY :	
CHECKED BY :		PROJ. NO. :	
SCALE :		SPL. NO. : <b>MMPC/2023/02/01/001</b>	
DATE : <b>24-01-24</b>		REVISION : <b>01</b>	

Site Photographs (High Resolution Image of soil testing and site investigation)



Dirty Water Sump (WTP)



Filtrate Sump (ZLD)