UNIVERSAL WATER REGISTRY

UWR Rainwater Offset Unit Standard

(UWR RoU Standard)

Concept & Design: Universal Water Registry

www.uwaterregistry.io

Project Concept Note & Monitoring Report

(PCNMR)

Project Name: Wastewater Recycling and Reuse Project by SRG Apparels Limited

UWR RoU Scope: 5
Monitoring Period: 01/02/2017-31/12/2024
Crediting Period: 2017-2024
UNDP Human Development Indicator:0.644(India)[1]
RoUs Generated During 1st Monitoring Period: 01/02/2017-31/12/2024

[1] https://www.undp.org/

A.1 Location of Project Activity

Address of the Project Activity	S.F.Nos.224/1, 223/1, 225, Veerapandi Village, Ponnan Thottam, Murugampalayam, Iduvampalayam Post, Tirupur, Tamil Nadu 641604.
State	Tamil Nadu
District	Tiruppur
Block Basin/Sub Basin/Watershed	Tamil Nadu is Near by the Palar River basin https://www.annauniv.edu/cccdm/ccis/districtprofiles/ranipet.html
Lat. & Longitude	11°04'12.9"N 77°19'06.3"E
Area Extent	Surface Inflow & Outflow

Fig1: Satellite view of the SRG ETP and its surroundings

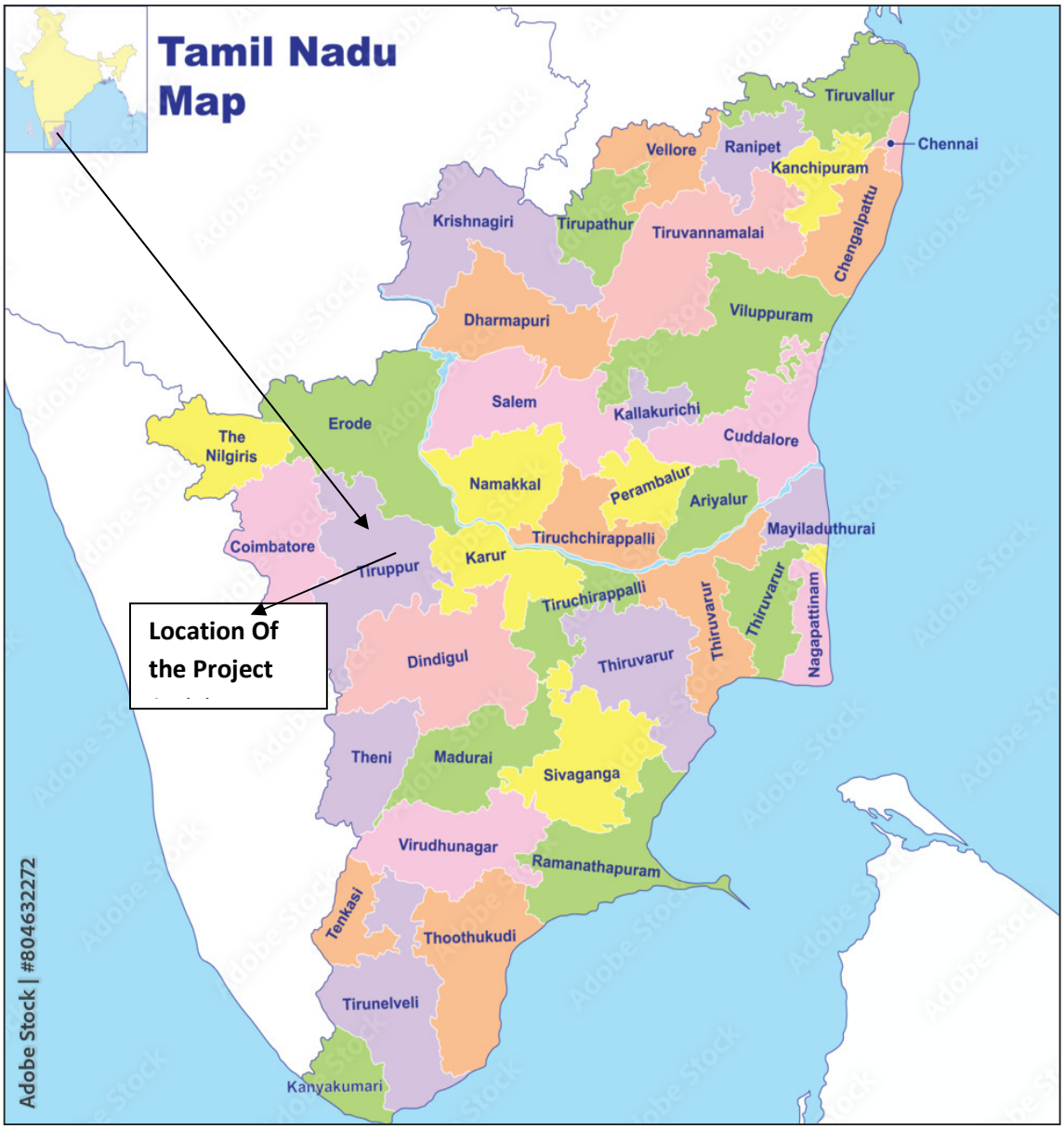

Figure 2: Location of the Project Activity

A.2. Project owner information, key roles and responsibilities

Project Proponent (PP):	SRG Apparels Limited
UCR Project Aggregator	Viviid emission Reduction Universal private limited
Contact Information:	lokesh.jain@viviidgreen.com
Date PCNMR Prepared	21-01-2025

The Project Proponent (PP) affirms that they meet all the requirements outlined in the management plan regarding ownership, legal rights, permits, and cost details for the successful implementation of the project. Specifically.

Water User Rights: The PP holds the necessary water user rights for the area within the project's boundary. These rights are legally secured and ensure that the PP has full entitlement to use the water resources required for the project's operations.

Legal Land Title: The PP holds an uncontested legal land title for the entire project area within the project's boundary. The title is fully documented and free of any disputes, confirming the PP's legal right to utilize the land for project purposes.

Necessary Permits: The PP has obtained all the required permits for the implementation of the project. In cases where certain permits are pending, the PP has already applied for the necessary approvals and is working in full compliance with the relevant regulatory requirements to ensure the timely commencement of the project.

Cost Details: The PP has thoroughly assessed and documented the cost details for project implementation. Capital Cost of project was RS 6 Crores. covering all aspects of project development, including infrastructure, permits, equipment, and operational costs.

By meeting these criteria, the PP ensures that all legal and regulatory requirements for the project are satisfied, enabling the project to proceed without hindrance.

A.2.1 Project RoU Scope

PROJECT NAME	**Wastewater Recycling and Reuse Project by SRG**

	Apparels Limited
UWR Scope:	Scope 5: Conservation measures taken to recycle and/or reuse water, spent wash, wastewater etc. across or within specific industrial processes and systems, including wastewater recycled/ reused in a different process, but within the same site or location of the project activity. Recycled wastewater used in off-site landscaping, gardening or tree plantations/forests activity are also eligible under this Scope.
Date PCNMR Prepared	21-01-2025
RoU Crediting period	1/2/2017 – 31/12/2024
Total RoUs Generated for the crediting Period	**192,45,71 RoUs**

A.3. Land use and Drainage Pattern

Not Applicable.

This project activity involves treating and reusing wastewater. It doesn't include any land-use practices. Also, this is an industrial process designed with technical requirements and following the specified norms of the local pollution control board. Hence, the project activity does not harm any land and Drainage system**.**

A.4. Climate

The project activity does not rely on the climatic conditions of the area as it treats and reuses only the wastewater from the dying & Printing without letting the water be exposed to any climatic condition.

A.5. Rainfall

The project activity is not dependent on the rainfall pattern of the area as it treats and reuses the wastewater from the dying Industry.

A.6. Ground Water

The project activity does not draw water from the ground water reservoirs as it treats and reuses wastewater.

A.7. Alternate methods

TDS in effluent is treated in developed countries and also in some other developing countries by adopting either of the two options:

(1) to combine it with domestic sewerage where it gets diluted for further treatment, or

(2) to discharge the high TDS treated effluent into the sea (marine discharge).

Unfortunately, neither of these options is readily available for the Tamil Nadu. In the first instance, the domestic sewerage from the areas where are concentrated (Veerapandi – Tirupur – belt) is not at all treated.

Secondly, marine discharge option is impractical as the nearest seacoast is at least 250 km from the tirupur district. Accordingly, the treated effluent in Tirupur district is discharged as such into the surface finally reaching the Palar river basin. Though Pallavaram is situated within the limits of Chennai metro, somehow, the ETP has not been offered the choice of either diluting its effluent with city sewerage or marine discharge; so, here surface discharge of treated effluent is resorted to.

Therefore, PP has taken a significant step towards environmental sustainability by installing Zero Liquid Discharge (ZLD) systems in dying industries. ZLD technology offers a viable alternative to traditional wastewater treatment methods, which often result in significant environmental contamination. By implementing ZLD, the PP aims to minimize the discharge of harmful effluents into water bodies, thereby protecting the environment and promoting responsible industrial practices. This proactive measure demonstrates a commitment to sustainable development and a cleaner, healthier future.

The RoU program promotes wastewater treatment and reuse initiatives, thereby offering an alternative to the release of wastewater through surface Discharge which could have an adverse impact on soil Health.

A.8. Design Specifications

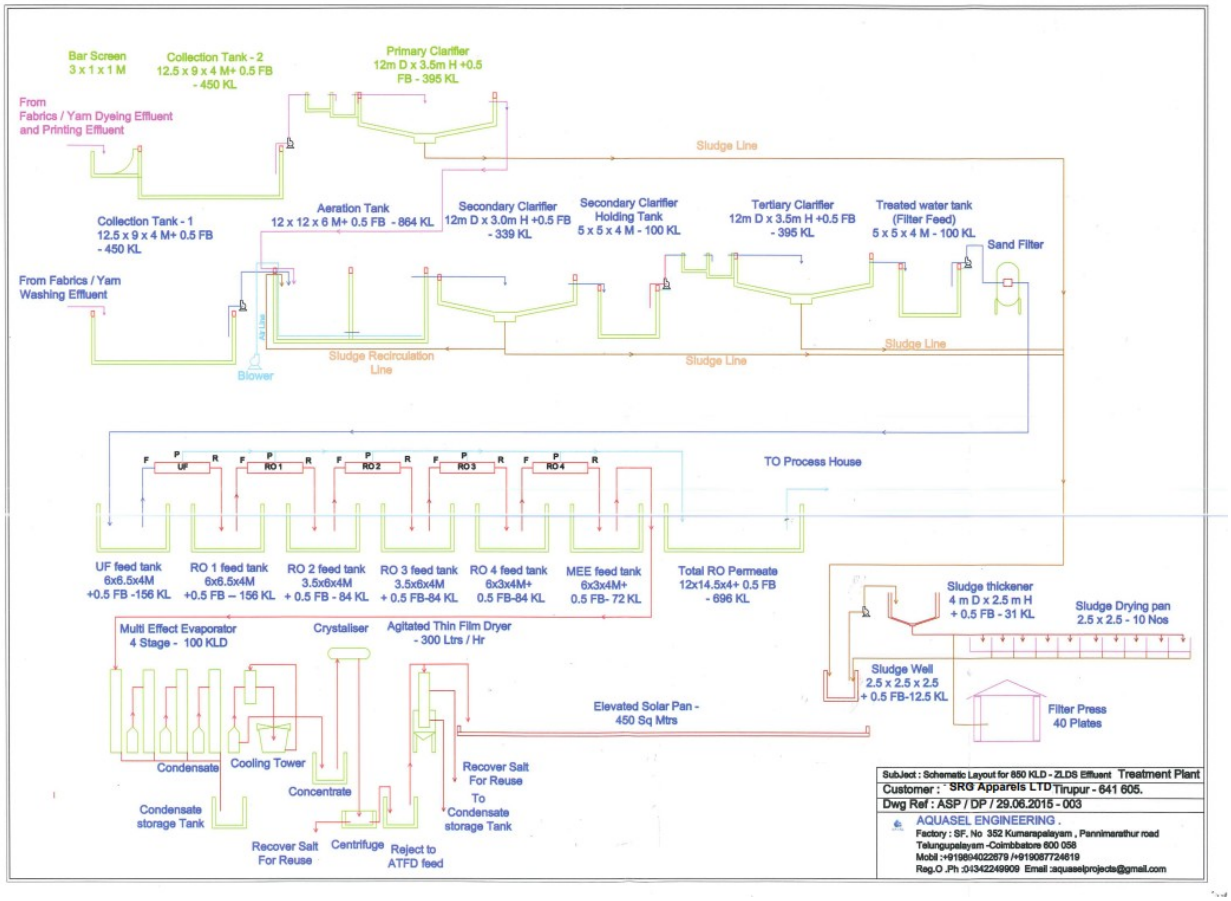

Figure 3: Existing Scheme of the SRG ETP Plant

Treatment process in Dying & printing system

The effluent generated from the different sections is collected in a collection tank through a Bar Screen for removal of fibrous materials & solid particles. The collection tank has 2 compartments each having capacity of 48 hours discharge which will also act as equalization tanks.

The Effluent is sent to primary clarifier to coagulated and settled down in the form of sludge. The settled sludge is diverted to sludge holding tank and further thickening and dewatering using a Filter press. The cleared overflow water from primary clarifier is corrected to PH a level of 7.0 - 8.0 by the addition of Sulphuric acid and then this water is sent to Aeration tank.

Aeration is done using energy efficient diffused aeration system, which results in compact layouts and reduces the power consumption. Air from the blower is diffused through the Diffuser grid. It consists of porous membranes of 12" dia disc type diffusers made of EPDM material. The diffusers are of non-buoyant type, which during shutdown condition contracts to prevent any backflow.

The diffuser is designed to ensure uniform permeability and to produce a flow of fine air bubbles and provides high contact area and increase contact time due to slow rise of bubbles which makes the system very efficient in terms of oxygen transfer thus the blower drive and hence low operational cost.

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Process Details

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Table 2: Design Basis Main Components of ETP

SL No	Components name	Qty.	ETP civil components (mtr)	Capacity in (KL)
1	Bar screen chamber	1no	3.40 X 0.95 X 1.0 + 2.0 FB M	3.23
2	Collection tank	2nos	12.5 X 9.0 X 6.5 + 0.5 FB M	433.125 / each

3	Pre-aeration Tank	1 no	12.5 X 9.0 X 6.5 + 0.5 FB M	433.125
4	Cooling Tower	2 no		75 TR
5	Primary Clarifier Flash mixer	1no	1.5 X 1.5 X 1.0 + 0.5 FB M	2.05
6	Primary Clarifier Flocculator	1no	2.5 X 2.5 X 1.0 + 0.5 FB M	6.25
7	Primary Clarifier	1no	11.8 dia X 3.5 H + 0.5 FB M	382.5
8	Aeration tank	1no	12.5 X 12.5 X 8 + 0.3 FB M	1250
9	Sludge Return Sump	1no	3.5 X 3 X 2.5 + 0.3 FB M	26
10	Secondary Clarifier	1no	12.0 dia X 3.9 H + 0.4 FB M	440
11	Tertiary Clarifier feed tank	1no	5.00 X 5.0 X 4.3 + 0.6 FB M	107.5
12	Tertiary Clarifier Flash mixer	1no	1.65 X 1.65 X 1.0 + 0.5 FB M	2.72
13	Tertiary Clarifier Flocculator	1no	2.5 X 2.5 X 1.0 + 0.5 FB M	6.25
14	Tertiary Clarifier	1no	11.8 dia X 3.5 H + 0.5 FB M	382.5
15	Sludge collection well	1no	5.0 X 2.9 X 3.0 + 1.2 FB M	43.5
16	Thickener Flocculator tank	1no	3.9 X 0.8 X 0.8 + 0.4 FB M	0.576

17	Sludge Thickener	1no	4 DIA X 3.0 H + 0.4 FB M	37.68

Ro Membrane Adequacy Details

Membrane Size	No. of Membrane	Capacity in KLD	Required in KLD	Feed Capacity in KLD	Design Flow Rate	Recovery	Adequate
RO (8"*40") Brackish Water Membrane	12	100	30	5 * 20 Hrs * 1000 Lts = 417	354 Lts./Membrane	85%	Yes

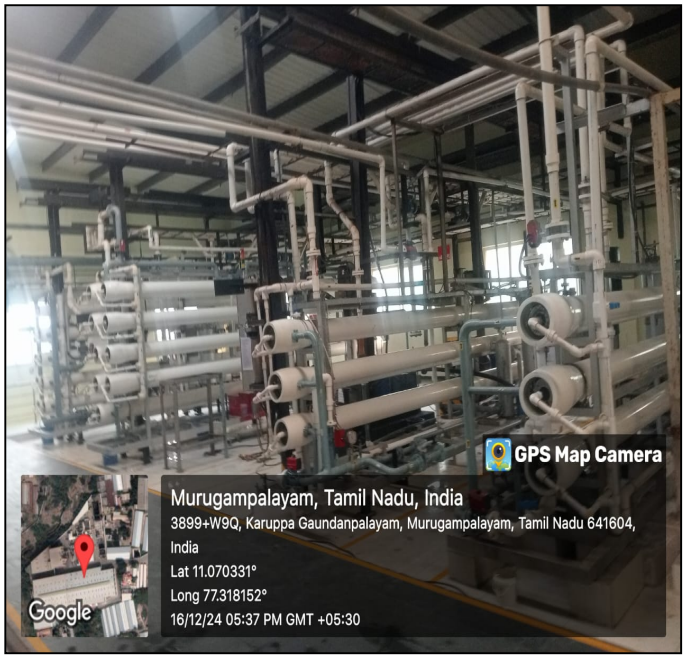
RO Membrane Details

Sl. No.	Stage	Size (Element)	No. of Vessels	No. of Membranes
1	RO I & II	8" * 40" - 6	18	108
2	RO III	8" * 40" - 6	6	36
3	RO IV	8" * 40" - 5	4	18
4	RO V	8" * 40" - 6	2	12

RO Plant equipment details

SL No	Description	Qty	Unit
1	Filter feed pumps, 10 Cu.m/h, 3.5 kg/cm2 pr., 5 HP, horizontal, centrifugal, groundfos make.	2	Nos.
2	Cartridge filter housing in SS-304 to hold 30" Long 10 cartridges, 5 micron, 5 cum/h.	1	Set
3	Antiscalent dosing- 5 lph cap. Diaphragm type Pump & 100 liters tank, Pump	1	No

	make: Milton roy/eqt.		
4	Acid dosing-10 lph cap. Diaphragm type Pump & 100 litres tank, Make: Milton roy/eqt	1	No
5	Membrane housing, 8"dia, 4E L., FRP material for 350 psi rating, UKL make. Membrane housing, 8"dia, 3E L, FRP material for 450 psi rating, UKL make. Membrane housing, 8"dia, 3E L., FRP material for 600 psi rating, UKL make. Membrane housing, 8"dia, 2E L., FRP material for 1000 psi rating, UKL make.	4	Nos
6	Pressure switches (for low & High pressure safety)	2	Nos.
7	Flow meters for feed & product water, 0-10 cu.m/h, Endress + Hauser make.	2	Nos.
8	Pressure gauges for cartridge filter, RO membranes inlet, intermediate & Outlet etc.	8	Nos.
9	Piping and valves (in SS for high pressure lines & UPVC for low pressure lines)	1	Lot
10	Skid in Mild Steel with noncorrosive coat to support various components	1	No
11	Cleaning pump-10 m3/h, 5 bar, SS 316, 5 HP, Ebara	1	No
12	Cleaning tank-in FRP 2000 litres capacity, inlet, outlet etc.	1	No
13	Electrical panel	1	No
14	RO High pressure Pump: 10 Cu.m/h, 300 PSI, 10 HP, CRI make, Vertical stainless steel, multi stage centrifugal type, with interstage booster pump.	1	No
15	RO High pressure booster Pump: 5 Cu.m/h, 300 PSI, 10 HP, CRI make, Vertical stainless steel, multi stage centrifugal type, with interstage booster pump.	1	No
16	RO Membranes, 8040 Brackish water type of Hydranautics, USA make.	12	Nos



RO Plant

MEE Details

The effluent from the RO reject consists of high amount of sodium sulphate and small number of other impurities like calcium, chlorides etc. To treating this effluent, first Evaporation, then Crystallization of Salts and thereafter filtering is done to dewater the salt output from crystallizer. Here the effluent generated from RO rejects quantity we have considered 100KLD, Stream is sodium sulphate and hardness, other impurities level is less than 2%, based on this Input details, we have designed Four stage Evaporator and followed by continuous vacuum crystallizer for recover salt. The effluent containing high amount of sodium sulphate salt is preheated and then it enters the multiple effects falling film evaporator for further concentration. In the evaporation process where the concentration is done to a level close to the saturation point of the salt present. After concentration in the falling film evaporator, final reject fed to the evaporative/ cooling Crystallizer where evaporation / cooling encourages the crystallization process. Finally, the output from the crystallizer filtered and separated the salts from the stream. The salt after dewatering is reused for dyeing process.

MEE Details

No. of Effects	Feed Capacity (M^3/Day)	Required (M^3/Day)	Condensate (M^3/Day)	Loss (M^3/Day)	Reject (M^3/Day)	Adequate
4	110	74.58	55.93	1.86	16.79	Yes

ATFD Details

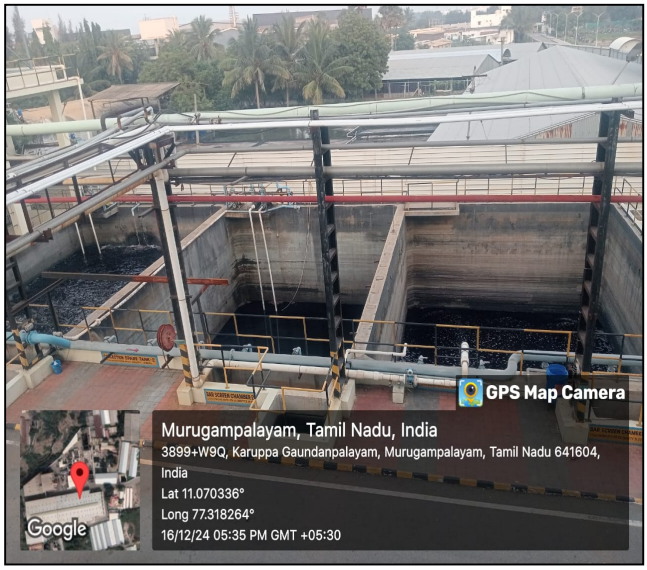
No. of Effects	Feed Capacity (LPH)	Required (LPH)	Condensate (LPH)	Loss (LPH)	Adequate
1	1250	500	425	75	Yes

Zero Liquid Discharge

The ETP has been installed to treat raw textile effluent on a Zero Liquid Discharge basis. The recovered water and salt are returned to the industries for reuse. There will be no liquid wastewater discharge to the outside environment.

ETP ------RO------ Salt Recovery > ZLD

Clarifier



Collection Tank

Table: SRG ETP performance (TNPCB standards)

Parameter	Raw Effluent	Treated Effluent	Unit
Color	Dark	Clear	
pH	12-14	6.5-7.5	
Total Suspended Solids	55 Mg/Liters	1-5	ppm
Turbidity	> 50	1-5	NTU
Total Dissolved Solids	5500	5500	ppm
BOD	300	30	ppm
COD	1200	100	ppm
Heavy Metals	Nil	Nil	ppm
Temperature	> 50	< 35	Deg C

A.9. Implementation Benefits to Water Security

The presence of different dyes like Sulphur, Azoic, indigoids, nitrates, acidic acid, soap, enzymes, complex compounds, heavy metals and certain auxiliary chemicals all make the textile effluent highly toxic. Thus, the effluent from dyeing and printing industries carries many dyes and other additives which are added during the coloring process. Besides the above various processes including finishing operations contribute salts in various loads.

It is noted that the bulk of the sodium chloride emanates from the beam house operations and the Dying operations from semi-processed (EI/Wet blue) to finishing of cloths result in effluent containing TDS, on a lower scale, mostly in the form of sulphates.

The implementation of ETPs has been crucial in safeguarding aquatic ecosystems in Palam River and soil health by effectively treating this harmful effluent.

Recycling wastewater from Industry and returning it to the production process after treatment is a pivotal step toward sustainability. This circular approach significantly reduces the reliance on groundwater, a precious natural resource. By minimizing the demand for fresh water, Industry can contribute to water conservation efforts and alleviate pressure on depleting aquifers.

This project aims to inspire Textile industries, particularly large multinational corporations, to implement sustainable water management practices. By demonstrating effective strategies for reducing captive water consumption and responsibly managing groundwater, the project hopes to foster a broader adoption of environmentally responsible approaches within the industry.

A9.1 Objectives vs Outcomes

The impact assessment or objectives of this project activity can generally be enumerated as follows:

- The project activity highlights the catalytic role that corporate India must play in reducing industrial water consumption as well as water pollution per unit of industrial output.
- The PP has showcased technology that creates safe industrial grade water from an effluent source and has overcome the challenges faced by the alternate methods implemented and/or being proposed for the same.
- The PP has showcased the successful wastewater treatment of industrial effluent, thus saving millions of liters of wastewater to produce Cloths.
- The project activity showcases best-in-class wastewater treatment technology(ZLD) that can replace the equivalent freshwater and industrial demand in different sectors for nonportable purposes while reducing the proportion of untreated wastewater and substantially increasing recycling and safe reuse in India.

A9.2 Interventions by Project Owner / Proponent / Seller

The project activity hence achieves the sustainable management and efficient use of India's natural resources since the PP had the option to install bore wells that would have depleted the local groundwater resources and/or continued to use existing drinking water resources in the surrounding

area. The PP has instead intervened and chosen to treat and reuse ETP effluent voluntarily at significant costs, thus saving millions of liters of safe drinking water for the city.

Increase in population density and improvement in quality of life has resulted in an increase in demand of natural resources like water. Groundwater being the major source of water supply catering to about 85% of rural water supply, the stress on groundwater is ever increasing. It has resulted in over-exploitation of the resources at places. The situation demands a reorientation of the strategy for its development and management.

The intervention of the PP has had a direct impact on the water security of the area. Over-development of the ground water resources results in declining ground water levels, shortage in water supply, intrusion of saline water in coastal areas and increased pumping lifts necessitating deepening of ground water structures and increase in power costs.

A.10. Feasibility Evaluation

The installed CETP and ZLD System by the PP are robust and smoothly adapts to variations in wastewater effluent. Before establishing the project, PP has done the feasibility test as per –

1. Detailed Project Report
2. Accredited Documentation

A.11. Ecological Aspects & Sustainable Development Goals (SDGs):

This project demonstrably achieves sustainable management and efficient utilization of India's natural resources. The project proponent (PP) had the option to install borewells, potentially depleting local groundwater reserves. Alternatively, they could have continued relying on existing, potentially potable, water resources registered with the Universal Water Registry.

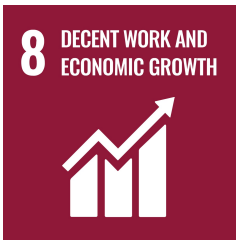
Recognizing the environmental impact, the PP commendably opted for a more sustainable approach. They chose to treat and reuse the effluent generated by the Effluent Treatment Plant (ETP), resulting in significant water savings for the Apparel operations, measured in millions of liters.

This project encourages the industrial sector, particularly large-scale apparel processing facilities, to adopt similar sustainable practices regarding their captive water needs and overall groundwater management.

The ETP effectively treats the apparel effluent, and the use of impervious machinery within the ETP area further safeguards against potential leakage and contamination of surrounding soil.

Ecological Issues addressed by the project activity in terms of	
Inundation of inhabited land	The project does not lead to inundation of residential land.
Creation of water logging and vector disease prevention mitigation	The ETP effluent is zero discharge plant. Impervious flooring is done in ETP area to avoid any type of leakage that can be percolated into the surrounding soil
Deterioration of quality of groundwater	By avoiding the use of borewells the project activity does not deplete aquifers and hence prevents the depletion of groundwater resources.

Sustainable Development Goals Targeted	Most relevant SDG Target/Impact	Indicator (SDG Indicator)
	13.2: Integrate climate change measures into national policies, strategies and planning	Recycling and reusing wastewater is an effective solution for climate change adaptation because it helps mitigate the impacts of droughts, floods, and other extreme weather events that are becoming increasingly common due to climate change due to water scarcity. The quantity of wastewater recycled and reused by the PP is the SDG indicator.
	3.9: By 2030, substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution and contamination	The PP showcases how recycling and reusing wastewater can prevent depletion of natural water reserves and prevent water scarcity during droughts. The hazardous impact of industrial wastewater is now avoided due to this project. The PP conducted Heath checkup booth to provide medical services to the local villagers.

	4.a: Build and upgrade education facilities that are child, disability and gender sensitive and provide safe, non-violent, inclusive and effective learning environments for all.	The PP provides educational opportunities through constructed 3 new Classroom for nearest village school. The PP has Constructed Toilet in Municipal Girls school. The construction of a toilet in the Municipal Girls School is a significant step towards improving sanitation and hygiene within the school environment
	6.3: By 2030, improve water quality by reducing pollution, eliminating dumping and minimizing release of hazardous chemicals and materials, halving the proportion of untreated wastewater and substantially increasing recycling and safe reuse globally	The PP has showcased recycling and safe reuse of 0.8 million liters within the industry during this monitored period, which directly correlates to this indicator 6.3.
	8.5: By 2030, achieve full and productive employment and decent work for all women and men, including for young people and persons with disabilities, and equal pay for work of equal value	This project activity resulted in the creation of jobs and provided training opportunities for a number of individuals in the nearest village.

A.12. Recharge Aspects:

NA

Water Budget Component	Typical Estimated Uncertainty (%)	Description

Surface Inflow	1%	In accordance with the RoU Standard version 7, and considering that the flow meters are calibrated, PP has accounted for a 1% uncertainty factor in both inflow and outflow volumes to maintain a conservative approach. Consequently, an uncertainty factor of 0.98 is applied to all ROUs.
Precipitation	NA	Not available
Surface Outflow	1%	In accordance with the RoU Standard version 7, and considering that the flow meters are calibrated, PP has accounted for a 1% uncertainty factor in both inflow and outflow volumes to maintain a conservative approach. Consequently, an uncertainty factor of 0.98 is applied to all ROUs.
Evapotranspiration	NA	Not available
Deep Percolation	NA	Not available

A.13. Quantification Tools

Baseline scenario

The baseline scenario is the situation where, in the absence of the project activity, the PP would have **one or all** of the below options:

- (a) installed multiple bore wells within the project boundary which would have depleted the local groundwater resources (aquifers); **and/or**
- (b) diverted existing safe drinking water resources from the surrounding residential area; **and/or**
- (c) discharged the ETP effluent without further treatment, recycling and reuse.

Hence the baseline scenario applicable is:

"The net quantity of treated ETP effluent / wastewater that would be discharged directly into the local drain/sewer without further being recycled and/or reused daily post treatment per year"

The net quantity of treated water used is measured via flow meters installed at the site. The primary set of data records are kept at plant level, managed Plant Operation team which is Mentioned in Appendix. Also, for conservative purposes, the working days or operational days have been assumed at 330 days in a year during the 1st monitoring period **(01/02/2017 to 31/12/2024)**. However, the number of days is not an influential parameter on RoUs calculation as RoUs are calculated based on total quantity of treated water being recycled & reused. The Data is taken from Scada system which is in Monthly Basis.

SL.NO	MONTH	Collection To ETP(KL)	Back wash (KL)	Process Feed (KL)	Cooling Return (KL)	Recycled water(KL)	RoUs after applying Uncertainty factor of 0.98	RoUs
1	Feb-17	8205.6	885	7829	0	7829	7672	
2	Mar-17	14158	4455	16459	0	16459	16129	
3	Apr-17	12441	2879	15429	99	15330	15023	
4	May-17	15130	1741	16952	2422	14530	14239	
5	Jun-17	18719	3049	19363	4133	15230	14925	
6	Jul-17	21093	4863	21394	5209	16185	15861	**177312**
7	Aug-17	14460	606	25339	3482	21857	21419	
8	Sep-17	18238	1443	24717	2941	21776	21340	
9	Oct-17	17581	3975	17441	2989	14452	14162	
10	Nov-17	21355	4551	21207	2790	18417	18048	
11	Dec-17	23816	3366	22901	4029	18872	18494	
12	Jan-18	18964	1495	18517	2019	16498	16168	
13	Feb-18	22016	2929	24200	3045	21155	20731	
14	Mar-18	27623	3171	24237	3121	21116	20693	
15	Apr-18	29619	3385	24055	3301	20754	20338	
16	May-18	23634	4445	20429	2693	17736	17381	
17	Jun-18	22728	4327	20816	2866	17950	17591	**221962**
18	Jul-18	23606	4013	23090	2238	20852	20434	
19	Aug-18	21849	2425	23916	2678	21238	20813	
20	Sep-18	22038	3434	22404	1055	21349	20922	
21	Oct-18	19056	2024	16671	658	16013	15692	

22	Nov-18	22443	1783	23775	1279	22496	22046	
23	Dec-18	9671	3329	10233	893	9340	9153	
24	Jan-19	22443	3378	23755	1279	22476	22026	
25	Feb-19	9671	1626	10233	893	9340	9153	
26	Mar-19	19178	2592	23468	1180	22288	21842	
27	Apr-19	21591	3349	25432	1421	24011	23530	
28	May-19	19217	2887	21604	1029	20575	20163	
29	Jun-19	17213	28	23797	948	22849	22392	
30	Jul-19	21365	173	24750	895	23855	23377	**271703**
31	Aug-19	17213	8430	29575	670	28905	28326	
32	Sep-19	17213	0	26986	897	26089	25567	
33	Oct-19	21131	1217	23118	649	22469	22019	
34	Nov-19	18478	0	20951	86	20865	20447	
35	Dec-19	22229	2917	33590	58	33532	32861	
36	Jan-20	29639	5571	37425	28	37397	36649	
37	Feb-20	28423	7288	29450	35	29415	28826	
38	Mar-20	30901	10348	35209	2539	32670	32016	
39	Apr-20	24092	5589	26318	6636	19682	19288	
40	May-20	15079	4424	16382	4787	11595	11363	
41	Jun-20	20925	16102	24751	8037	16714	16379	
42	Jul-20	23998	19882	25250	10241	15009	14708	**218735**
43	Aug-20	27197	11292	23320	10267	13053	12791	
44	Sep-20	26187	5462	23503	10531	12972	12712	
45	Oct-20	27463	7653	22519	9767	12752	12496	
46	Nov-20	23315	7755	17245	6889	10356	10148	
47	Dec-20	27809	9349	21952	10361	11591	11359	
48	Jan-21	28220	8562	19333	7429	11904	11665	
49	Feb-21	26979	8954	19939	8028	11911	11672	
50	Mar-21	31218	8562	24002	10336	13666	13392	
51	Apr-21	23806	3600	21954	9448	12506	12255	
52	May-21	13410	792	13749	6132	7617	7464	
53	Jun-21	14323	1161	12886	3849	9037	8856	**159052**
54	Jul-21	24444	1436	22948	8332	14616	14323	
55	Aug-21	24019	1827	21676	6862	14814	14517	
56	Sep-21	24351	2194	21319	5865	15454	15144	
57	Oct-21	25729	1936	22682	5850	16832	16495	
58	Nov-21	22865	1615	22864	6617	16247	15922	

59	Dec-21	26395	1712	26655	8953	17702	17347	
60	Jan-22	22226	2514	30780	5731	25049	24548	
61	Feb-22	23723	1970	32650	6780	25870	25352	
62	Mar-22	25708	2983	37230	9908	27322	26775	
63	Apr-22	23498	4042	35250	9994	25256	24750	
64	May-22	26067	3236	37620	9925	27695	27141	
65	Jun-22	26622	3452	39530	11982	27548	26997	
66	Jul-22	24128	3124	38460	10880	27580	27028	**316147**
67	Aug-22	22326	1583	35180	10263	24917	24418	
68	Sep-22	25548	2294	43590	12689	30901	30282	
69	Oct-22	23095	2493	41220	13261	27959	27399	
70	Nov-22	24488	2085	44760	18081	26679	26145	
71	Dec-22	26206	2525	45580	19751	25829	25312	
72	Jan-23	23761	1961	43052	16773	26279	25753	
73	Feb-23	22693	1540	43814	18121	25693	25179	
74	Mar-23	24156	1431	43814	19383	24431	23942	
75	Apr-23	27257	2644	47153	20766	26387	25859	
76	May-23	26359	1732	46917	21322	25595	25083	
77	Jun-23	26511	1,963	47174	21337	25837	25320	
78	Jul-23	25,820	1692	44022	18919	25103	24600	**290803**
79	Aug-23	25,887	1451	45241	21832	23409	22940	
80	Sep-23	26,036	1,633	47309	21811	25498	24988	
81	Oct-23	26294	1,757	50271	25183	25088	24586	
82	Nov-23	21970	1,272	40,901	20025	20876	20458	
83	Dec-23	23454	1527	41108	18562	22546	22095	
84	Jan-24	21628	1834	34739	14943	19796	19400	
85	Feb-24	25053	1525	42217	19786	22431	21982	
86	Mar-24	26360	1771	48891	23328	25563	25051	
87	Apr-24	25577	1767	46621	21806	24815	24318	
88	May-24	26438	1784	53697	19897	33800	33124	
89	Jun-24	25222	2119	38390	15406	22984	22524	
90	Jul-24	26776	2306	42461	17189	25272	24766	**292978**
91	Aug-24	26649	1971	42787	17702	25085	24583	
92	Sep-24	26301	1849	44181	19177	25004	24503	
93	Oct-24	25868	2097	43226	17426	25800	25284	
94	Nov-24	23802	2108	38280	14482	23798	23322	
95	Dec-24	25876	2277	38575	13961	24614	24121	

							1948692	**1,948,692**

Quantification

Year	Total ROUs (1000 liters)/yr UCR Cap (1 million RoUs/yr
2017	177312
2018	221962
2019	271703
2020	218735
2021	159052
2022	316147
2023	290803
2024	292978
Total RoUs	**1,948,692**

A.14. UWR Rainwater Offset Do No Net Harm Principles

According to the UCR RoU Standard principles, the project activity accomplishes the following:

- Increases the sustainable water yield in areas where over development has depleted the aquifer

According to the data released by the Central Groundwater Board in 2021, the total amount of groundwater that can be utilised in India in a year is 398 billion cubic meters (BCM), of which, approximately 245 BCM is currently being utilised, which is about 62 per cent of the total. But the level of exploitation of groundwater is very high in States like Punjab, Rajasthan, Haryana, Delhi and Tamil Nadu. This project activity was commissioned in 1995, and the PP has reduced the proportion of untreated wastewater that future generations would need to recycle and has showcased recycling and safe reuse within the industry from unutilized water resources. Revenue from the sale of UCR RoUs will enable scaling up of such project activities.

• Collect unutilized water or rainwater and preserve it for future use
In India, at the district level, in 24 states/UTs, as many as 267 districts had stages of groundwater extraction more than 63 per cent, ranging from 64 per cent to 385 per cent (source: https://www.business-standard.com/article/current-affairs/from-58-to-63-india-pumped more-groundwater-between-2004-and-2017-121122101377_1.html). This project activity serves as an example to recycle and reuse wastewater and encourages companies, especially large and transnational companies in the biotechnology and biopharmaceuticals sector, to adopt similar sustainable practices in regard to captive water requirements and groundwater management.
• Conserve and store excess water for future use
The project activity decreases the dependence on groundwater, thereby preventing excessive depletion. Between 2017 to 2024, the project activity has reused 0.8 million liters of ETP effluent successfully post treatment with gainful end use of the same.

A.15. Scaling Projects-Lessons Learned-Restarting Projects

Surface Water

India is a water rich country with 4% of world's water resources(India-WRIS wiki 2015). The rivers have been the heart and soul of the India's growth as well as culture. Among them, 12 rivers are classified as major river which are catering about 253 mha of catchment area and 46 as medium river with 24.6 mha of catchment area. Many of the river systems with their tributaries are perennial and some of them are seasonal. The Ganga-Brahmaputra-Meghna system is the largest river system in India with 43% of the catchment area of the all major river systems. The other major river systems are Indus, Sabarmati, Mahi, Narmada, Tapi, Brahmani, Mahanadi, Godavari, Krishna, Pennar and Cauvery. Apart from that, there are several other medium rivers systems of which Subernarekha (with 1.9 mha catchment area) is the largest (Dhawan 2017, Central Water Commission 2015).

Other than rivers and canals, other inland water resources include numerous reservoirs, tanks and ponds, beels, oxbow lakes, derelict water and brackish water, which cover almost 7 mha of area. They are unevenly distributed over the country with Orissa, Andhra Pradesh, Gujarat, Karnataka and West Bengal possessing more than 50% of these inland water resources.

Ground Water

Ground water is a replenishable resource. The agriculture, industrial and domestic sectors majorly depend on ground water. Annual utilizable ground water resources in India is assessed as 433 bcm. The main source of ground water is the recharge from monsoon precipitation. About 58% of countries

annual rechargable ground water is contributed by monsoon rainfall. Other sources of recharge viz. seepage from canals, tanks, ponds and other water structures and irrigation account for about 32%. Among the states of India Uttar Pradesh has highest net annual ground water availability (~ 72 bcm) while Delhi has the least (0.29 bcm)(Central Ground Water Board 2014)

Climate Change and its implications on water[2]

Changes in temperature and precipitation due to global warming and related processes have serious impacts on hydrologic processes and regional water resources of India. Climate affects the supply and demand of water as well as its quality, especially in arid and semi-arid areas. IPCC AR5 reports that mean annual temperature is increasing all over Asia and it is projected to increase >20C till the end of 21st century (BAU scenario)(Hijioka 2014). Any shortfall in supply of water will have multi fold impact on social, environmental and economic well being affected areas. As water availability is becoming less predictable, drought situations in some parts of India are more likely in future. Water scarcity not only has immediate effect on agricultural productivity but also has a long term impact on socio-economics of the affected area. IPCC projects an increase in both the mean and extreme precipitation in the Indian summer monsoon. The frequency of heavy precipitation events is also increasing, while light rain events are decreasing. Increase in precipitation intensity within a short period leads to flood events and eventually pollute water points. More floods and droughts are predicted in future due to climate change. Extreme rainfall events are very likely in three major river basins viz. Krishna, Godavari and Ganga by 2100. It has been predicted that the dry season will become drier and wet wetter. The situation will become worse when precipitation decreases in the major food producing regions of India. Uneven distribution of precipitation also affects ground water recharge and eventually available water from this source. Most of the rivers in south peninsular India viz. Cauvery, Narmada and Mahanadi are fed through groundwater recharge and is also supplemented by the monsoon rains. Long term projection shows that increase in monsoon precipitation will increases the possibility of floods in September and water scarcity in summer in these rivers.

Wastewater Management and Reuse:

The PP has established an advanced ETP with a capacity of **0.8 MLD**, which plays a pivotal role in treating and recycling wastewater for captive use. The PP aims to contribute significantly to the region's water security by utilizing approximately **1948692** KLD of recycled wastewater for Reuse in the Vicinity of the project activity.

The treated wastewater is primarily used for Dying and Printing Process, reducing reliance on freshwater sources.

[2] https://www.adriindia.org/adri/india_water_facts

Appendix > Calibration Details

Ser No	Make	Date of Calibration	Due date
14063	Mettler -Toledo	26-12-2024	26-12-2025
13195	Mettler -Toledo	26-12-2024	26-12-2025
14135	Mettler -Toledo	26-12-2024	26-12-2025
14035	Mettler -Toledo	26-12-2024	26-12-2025
13501	Mettler -Toledo	26-12-2024	26-12-2025
13486	Mettler -Toledo	26-12-2024	26-12-2025
14050	Mettler -Toledo	26-12-2024	26-12-2025
14049	Mettler -Toledo	26-12-2024	26-12-2025
13850	Mettler -Toledo	26-12-2024	26-12-2025
13847	Mettler -Toledo	26-12-2024	26-12-2025
13843	Mettler -Toledo	26-12-2024	26-12-2025
13724	Mettler -Toledo	26-12-2024	26-12-2025
24922	Mettler -Toledo	26-12-2024	26-12-2025
15241240	Mettler -Toledo	26-12-2024	26-12-2025
15241239	Mettler -Toledo	26-12-2024	26-12-2025
15241238	Mettler -Toledo	26-12-2024	26-12-2025
15241237	Mettler -Toledo	26-12-2024	26-12-2025
25241237	Mettler -Toledo	26-12-2024	26-12-2025
14103	Mettler -Toledo	26-12-2024	26-12-2025
14102	Mettler -Toledo	26-12-2024	26-12-2025

14101	**Mettler -Toledo**	**26-12-2024**	**26-12-2025**
14100	**Mettler -Toledo**	**26-12-2024**	**26-12-2025**
14096	**Mettler -Toledo**	**26-12-2024**	**26-12-2025**
14035	**Mettler -Toledo**	**26-12-2024**	**26-12-2025**
14034	**Mettler -Toledo**	**26-12-2024**	**26-12-2025**
14095	**Mettler -Toledo**	**26-12-2024**	**26-12-2025**
14093	**Mettler -Toledo**	**26-12-2024**	**26-12-2025**
14036	**Mettler -Toledo**	**26-12-2024**	**26-12-2025**

Appendix> Meter Photos

Inlet EMFM

Outlet EMFM

Greenlink Analytical and Research Laboratory (India) Private Ltd.

S.F. No. 414/1, Tex Park Road, Opp. Good Luck Syndicate, Civil Aerodrome Post, Coimbatore - 641 014. Tamilnadu, INDIA.

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Email : enquiry@greenlinklabs.com, info@greenlink.in

NABL ISO / IEC 17025:2017 ISO 9001:2015

TEST REPORT FOR WASTE WATER ANALYSIS

Report No	TC614424000000239-27	Report Date	12.10.2024

CUSTOMER DETAILS

Name & Address of the Customer/Company	M/s., SRG APPARELS LIMITED (Processing Division), 224/1, Ponnanthottam Murugampalayam, Iduvampalayam Post, Tirupur-641687, Tamilnadu, India.

DETAILS OF SAMPLE

Nature of Sample	Waste Water	Sample Quantity	One Liter
Customer Code	ETP-Inlet	Laboratory Code	GLARL/WW/2024/0239
Sample Collected On	08.10.2024	Sampled By	Team-Greenlink, CBE.
Sample Received On	08.10.2024	Analysis Started Date	08.10.2024
Received Condition	Packed in a Sterile Container	Analysis Completed Date	12.10.2024
Sample Description	Dark Pinkish Turbid Liquid Contains Settleable Solids		

TEST REPORT PARTICULARS

S. No	Characteristic	Test Method	Unit	Result
1	pH @25°C	IS 3025 (Part-11)	-	8.96
2	Total Suspended Solids@ 105°C	IS 3025 (Part-17)	mg/L	248.0
3	Total Dissolved Solids @180°C	IS 3025 (Part-16)	mg/L	4480.0
4	Total Alkalinity as $CaCO_3$	IS 3025 (Part-23)	mg/L	358.0
5	Chloride as Cl	IS 3025 (Part-32)	mg/L	848.0
6	Sulphate as SO_4	IS 3025 (Part-24)	mg/L	966.0
7	Total Iron as Fe	IS 3025 (Part-53)	mg/L	8.1
8	Oil & Grease	IS 3025 (Part-39)	mg/L	58.0
9	Chemical Oxygen Demand	IS 3025 (Part-58)	mg/L	1920.0
10	Biochemical Oxygen Demand at 27 °C for 3 days.	IS 3025 (Part-44)	mg/L	820.0

End of Report

Authorized Signatory
Dr. M. Amsaveni
Technical Manager

Authorized Signatory
V. C. Geetha
Quality Manager

Page 1 of 1

Greenlink Analytical and Research Laboratory (India) Private Ltd.

S.F. No. 414/1, Tex Park Road, Opp. Good Luck Syndicate, Civil Aerodrome Post, Coimbatore - 641 014. Tamilnadu, INDIA.

Tel : +91 422 2901999 | Mob : +91 95245 81999, +91 95249 81999

Email : enquiry@greenlinklabs.com, info@greenlink.in

NABL ISO / IEC 17025:2017 ISO 9001:2015

TEST REPORT FOR WASTE WATER ANALYSIS

Report No	TC614424000000239-28	Report Date	12.10.2024

CUSTOMER DETAILS

Name & Address of the Customer/Company	M/s., SRG APPARELS LIMITED (Processing Division), 224/1, Ponnanthottam Murugampalayam, Iduvampalayam Post, Tirupur-641687, Tamilnadu, India.

DETAILS OF SAMPLE

Nature of Sample	Waste Water	Sample Quantity	One Liter
Customer Code	ETP-Outlet	Laboratory Code	GLARL/WW/2024/0239
Sample Collected On	08.10.2024	Sampled By	Team-Greenlink, CBE.
Sample Received On	08.10.2024	Analysis Started Date	08.10.2024
Received Condition	Packed in a Sterile Container	Analysis Completed Date	12.10.2024
Sample Description	Colorless, Clear, Transparent liquid free from Settle able Solids.		

TEST REPORT PARTICULARS

S. No	Characteristic	Test Method	Unit	Result	Standard As Per CPCB
1	pH @25°C	IS 3025 (Part-11)	-	7.42	5.5-9.0
2	Total Suspended Solids@ 105°C	IS 3025 (Part-17)	mg/L	8.0	100.0
3	Total Dissolved Solids @180°C	IS 3025 (Part-16)	mg/L	1880.0	2100.0
4	Total Alkalinity as $CaCO_3$	IS 3025 (Part-23)	mg/L	122.0	-
5	Chloride as Cl	IS 3025 (Part-32)	mg/L	488.0	1000.0
6	Sulphate as SO_4	IS 3025 (Part-24)	mg/L	395.0	1000.0
7	Total Iron as Fe	IS 3025 (Part-53)	mg/L	0.48	-
8	Oil & Grease	IS 3025 (Part-39)	mg/L	6.0	10.0
9	Chemical Oxygen Demand	IS 3025 (Part-58)	mg/L	144.0	250.0
10	Biochemical Oxygen Demand at 27 °C for 3 days.	IS 3025 (Part-44)	mg/L	28.0	30.0

Remarks: The above tested parameters values are within the standards prescribed by CPCB.

End of Report

Authorized Signatory
Dr. M. Amsaveni
Technical Manager

Authorized Signatory
V. C. Geetha
Quality Manager

Page 1 of 1

Lab test Report for both Inlet and Outlet water (NABL accredited)

NOC for SRG from TPCB dated 29/06/2017

TAMIL NADU POLLUTION CONTROL BOARD

Category of the Industry :

RED

CONSENT ORDER NO. 2005133411234 DATED: 17/11/2020.

PROCEEDINGS NO.T5/TNPCB/F.0334TPN/RL/TPN/W/2020 DATED: 17/11/2020

SUB: Tamil Nadu Pollution Control Board –CONSENT TO OPERATE – DIRECT -M/s. SRG APPARELS LTD , S.F.No. 224/1, 223/1, 225, VEERAPANDI villageTiruppur south Taluk and Tiruppur District - Consent for the operation of the plant and discharge of sewage and/or trade effluent under Section 25 of the Water (Prevention and Control of Pollution) Act, 1974 as amended in 1988 (Central Act 6 of 1974) – Issued- Reg.

Ref: 1.Board Proc.No. T1/TNPCB/F.0334TPN/RL/TPN/W & A/2017 dated: 29.06.2017

2.Unit's CTO Direct Application No. 33411234, dated: 05.08.2020

3.DEE/TPR(N),IR.No : F.0334TPN/RL/AE/TPN/2020 dated 21.10.2020

CONSENT TO OPERATE is hereby granted under Section 25 of the Water (Prevention and Control of Pollution) Act, 1974 as amended in 1988 (Central Act, 6 of 1974) (hereinafter referred to as "The Act") and the rules and orders made there under to

The Director,
M/s . SRG APPARELS LTD
S.F No.224/1, 223/1, 225,
VEERAPANDI Village,
Tiruppur south Taluk,
Tiruppur District.

Authorising the occupier to make discharge of sewage and /or trade effluent.

This is subject to the provisions of the Act, the rules and the orders made there under and the terms and conditions incorporated under the Special and General conditions stipulated in the Consent Order issued earlier and subject to the special conditions annexed.

This CONSENT is valid for the period ending March 31, 2025

For Member Secretary,
Tamil Nadu Pollution Control Board,
Chennai

To
The Director,
M/s.SRG APPARELS LTD,
SRG APPARELS LTD,
S.F.Nos.224/1, 223/1, 225,
Veerapandi Village,
Ponnan Thottam,