UWR Rainwater Offset Unit Standard
(UWR RoU Standard)

Concept & Design: Universal Water Registry

www.uwaterregistry.io

Project Concept Note & Monitoring Report
(PCNMR)

Project Name : 1.76 MLD Wastewater Recycling by DCW Limited in Tamil Nadu

UWR RoU Scope: Scope 5

Monitoring Period: 1/09/2023-31/07/2024

Crediting Period: 2023-2032(9 years)

UNDP Human Development Indicator: 0.644(INDIA)

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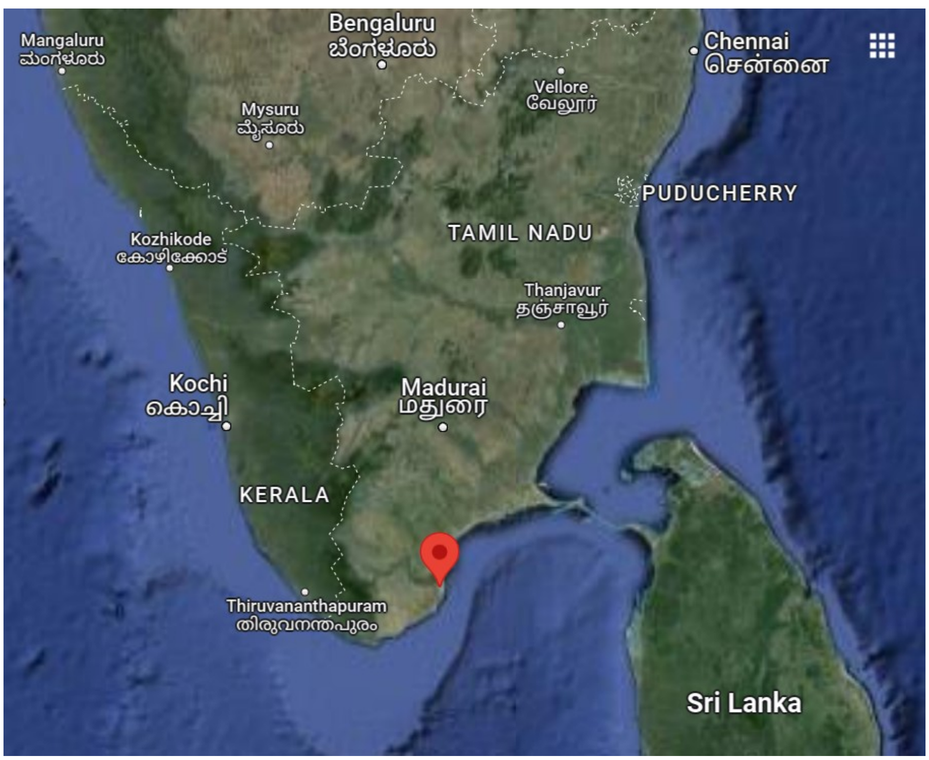
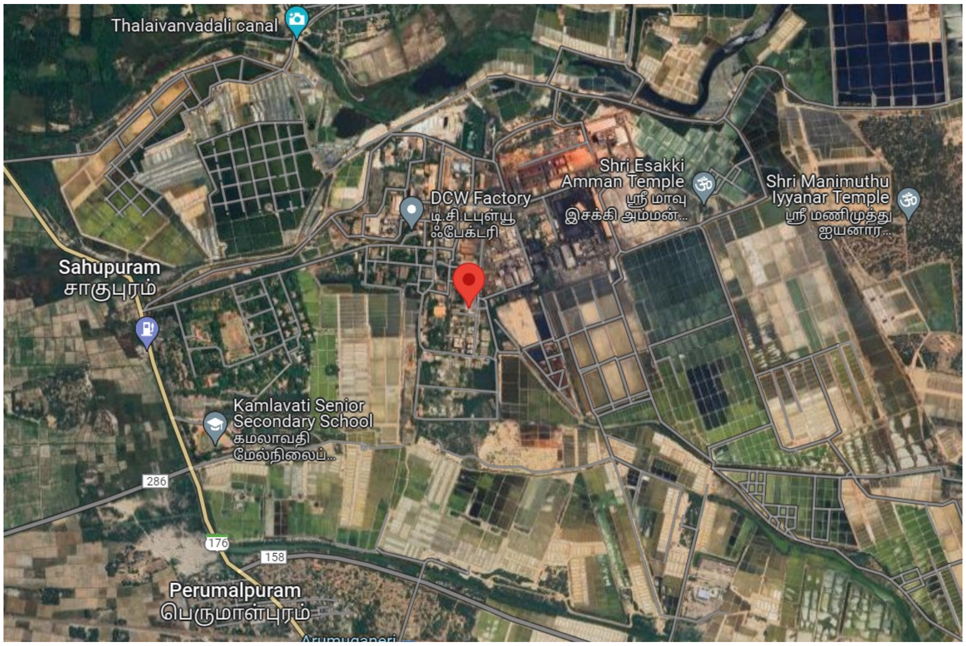
A.1 Location of Project Activity

State	Tamilnadu
District	Sahupuram
Block Basin/Sub Basin/Watershed	Please refer to http://cgwb.gov.in/watershed/basinsindia.html
Lat. & Longitude	Latitude - 8°35'28.2"N Longitude - 78°05'39.3"E
Area Extent	
No. of Villages/Towns	1





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

DCW Limited (Dharangadhra Chemical Works Limited) is a prominent chemical manufacturer located in India. Established in 1925, DCW Limited has a strong presence in the chemical industry with manufacturing facilities in Sahupuram, Tamil Nadu, and Dhrangadhra, Gujarat. These strategic locations enable the company to meet market demands efficiently.

Key Roles and Responsibilities of DCW Limited

Environmental Sustainability

- Implement and maintain a zero-liquid discharge (ZLD) system to treat and recycle all wastewater, preventing pollution of local water bodies and conserving water resources.
- Utilize advanced technologies and energy-efficient equipment to minimize environmental impact and reduce energy consumption.
- Continuously seek innovative measures for sustainable operations, reflecting a commitment to environmental stewardship.

Health and Safety

- Follow strict safety protocols to ensure the well-being of employees and local communities.
- Conduct regular training programs to maintain a safe working environment.

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- Implement rigorous safety measures and procedures to prevent workplace accidents and hazards.

Community Engagement and Development

- Engage in community development initiatives as part of corporate social responsibility (CSR) efforts.
- Aim to improve the quality of life in surrounding areas through various community projects and support.
- Foster positive relationships with local communities and stakeholders.

Economic Growth and Innovation

- Maintain and expand manufacturing facilities in strategic locations to efficiently meet market demands.
- Focus on innovation and modernization of production processes to enhance efficiency and productivity.
- Balance economic growth with social responsibility, demonstrating how traditional industries can adapt and succeed in the modern world.

A.2.1 Project RoU Scope

PROJECT NAME	**1.76 MLD Wastewater Recycling by DCW, Sahupuram**
UWR Scope:	**Scope 5**
Date PCNMR Prepared	

Purpose of this project activity:

The DCW plant in Sahupuram is a busy chemical complex that makes various products like caustic soda, soda ash, and PVC resins. These processes create a lot of wastewater. This wastewater contains harmful chemicals, heavy metals, and other pollutants that could harm the environment if not treated.

To tackle this issue, DCW Limited has set up an advanced Effluent Treatment Plant (ETP). This ETP is crucial because it cleans the wastewater before it leaves the plant. Without the ETP, this wastewater might end up in nearby water bodies or on land, causing serious problems:

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1. Water Pollution: Untreated wastewater can pollute rivers, streams, and groundwater with chemicals that are harmful to fish and plants. It could also make water unsafe for drinking or farming.
2. Soil Pollution: If wastewater is dumped on land without treatment, it can contaminate the soil. This contamination can affect crops and wildlife, making the area less healthy for plants and animals.
3. Health Risks: Pollutants in the water and soil can also pose risks to people's health. They might get sick from drinking polluted water or being exposed to toxic substances.

By using the ETP to treat wastewater effectively, DCW Limited reduces its impact on the environment. This helps them operate more sustainably, protecting water resources and ensuring the surrounding area stays safe and healthy for everyone.

A.3. Land use and Drainage Pattern

The Land Use and Drainage Pattern section is typically not applicable for Effluent Treatment Plant (ETP) projects. ETPs are typically located within industrial facilities or designated treatment zones, and their land use is solely dedicated to wastewater treatment. Drainage patterns within an ETP are designed specifically to manage the treated wastewater and ensure it meets discharge regulations. Therefore, a detailed analysis of the surrounding land use and natural drainage patterns is not relevant for this project.

A.4. Climate

The climate section is not essential for a typical ETP project concept report. ETPs are enclosed industrial facilities with controlled environments.

A.5. Rainfall

While rainfall data is an important consideration for many projects, it has minimal impact on the design and operation of an Effluent Treatment Plant (ETP). ETPs receive wastewater from industrial processes, not relying on rainwater as a source. Therefore, detailed historical rainfall data is not essential for this project.

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A.6. Ground Water

The focus of an ETP project lies in treating industrial wastewater. Groundwater, on the other hand, is a separate resource located underground. Since ETPs are designed to handle wastewater streams and not interact with groundwater, the local groundwater table or its characteristics are not directly relevant to this project.

A.7. Alternate methods

DCW Limited's multi-stage Effluent Treatment Plant (ETP) in Sahupuram is a well-considered solution for managing industrial wastewater. This approach offers several advantages that align with DCW's environmental and water management goals.

The multi-stage treatment process likely incorporates a combination of methods, potentially including physico-chemical treatment and advanced filtration techniques like Reverse Osmosis (RO). This ensures comprehensive removal of pollutants, resulting in high-quality treated effluent that meets or surpasses regulatory requirements. Furthermore, physico-chemical treatment, a core component of many ETPs, is versatile and adaptable to various industrial wastewater compositions, making it suitable for DCW's specific needs.

Importantly, the multi-stage treatment also presents significant water reuse potential. The treated effluent can be utilized for various purposes within the DCW facility, such as cooling towers or process water. This approach reduces their reliance on freshwater resources, a crucial factor in regions facing water scarcity. By promoting water reuse, DCW demonstrates its commitment to responsible environmental practices and sustainable water management.

In conclusion, the design of DCW's ETP project prioritizes effective treatment, adaptability, and resource conservation. This well-suited solution aligns with their commitment to environmental responsibility and sustainable water management practices.

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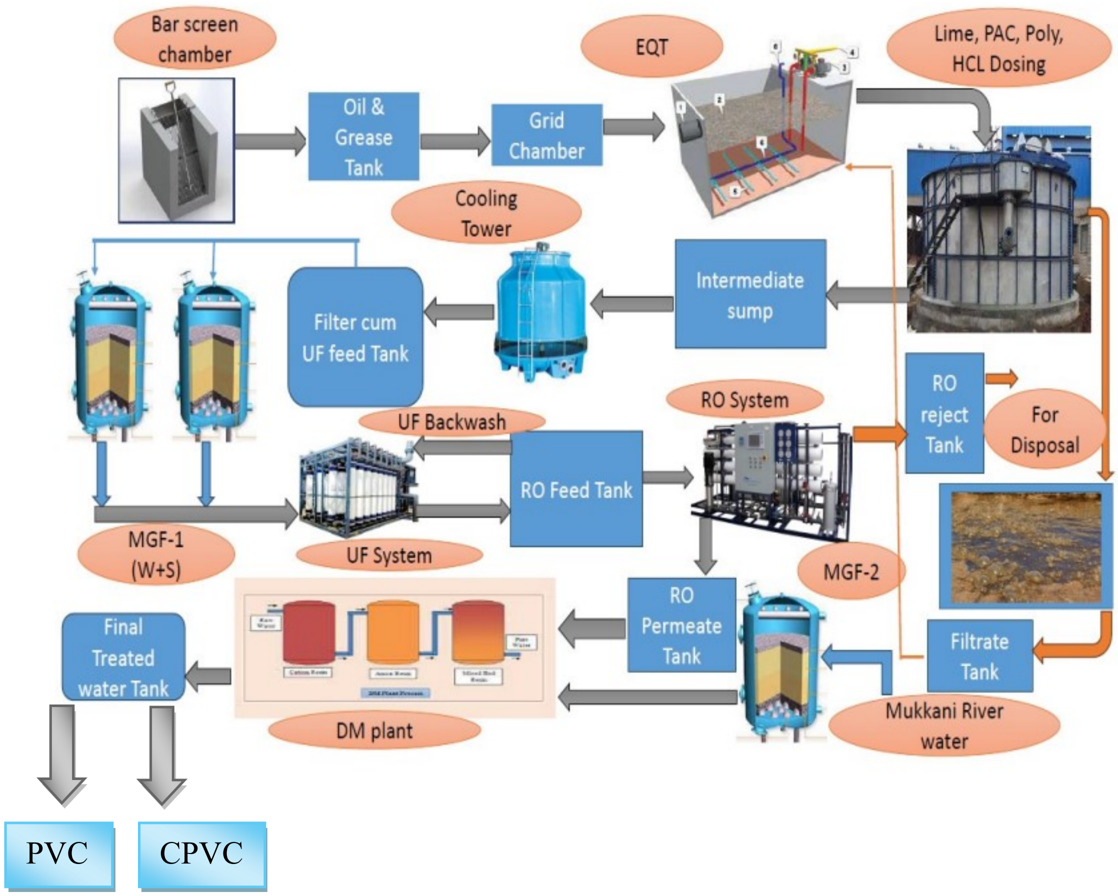
A.8. Design Specifications



Effluent Treatment Process

Effluent Collection and Initial Screening: Effluent water is first collected and pumped to the Equalization tank. In this tank, a bar screen isolates and removes any large foreign materials and floating debris. This initial screening is crucial for preventing damage to downstream equipment and ensuring the efficiency of subsequent treatment processes.

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Chemical Dosing: Once screened, the effluents are treated with a series of chemicals including lime, PAC (polyaluminium chloride), Poly (polymer coagulant), and HCL acid. These chemicals help in adjusting the pH, coagulating suspended particles, and enhancing the overall treatability of the wastewater. The precise dosing of these chemicals ensures optimal conditions for the next treatment stage.

Diffused Air Flotation System: The chemically treated effluents are then introduced into a Diffused Air Flotation (DAF) system. In this system, fine air bubbles are diffused into the water, attaching to suspended solids and causing them to float to the surface. These floating solids are then skimmed off, resulting in clarified water. This step is essential for removing a significant portion of the suspended solids and other impurities.

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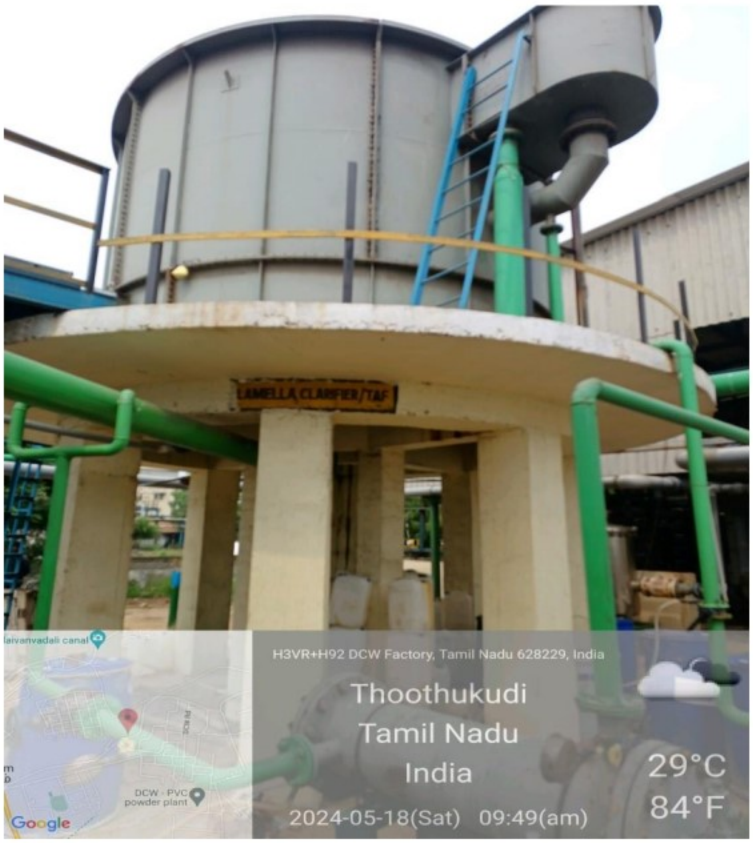

Clarifier (DAF)

Intermediate Storage and Cooling: The clarified water from the DAF system is pumped to an Intermediate tank. From here, it is directed to cooling towers. The cooling towers play a vital role in regulating and minimizing the temperature of the water, ensuring that it is suitable for further filtration and treatment processes.

Filtration: After cooling, the water passes through a multi-grade filter and a sand filter. These filters are designed to remove finer particulate matter that escaped earlier treatment stages. Multi-grade filters typically consist of multiple layers of media with varying sizes, while sand filters provide a high level of filtration for small particles.

Ultrafiltration (UF) Treatment: The filtered water is then subjected to Ultrafiltration (UF) treatment. UF membranes have very fine pores that effectively remove bacteria, viruses, and colloidal particles from the water. The permeate (filtered water) from the UF system is of high

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quality and is pumped back into the PVC process unit for reuse, promoting a sustainable recycling approach.

Reverse Osmosis (RO) Treatment: The reject stream from the UF treatment, which contains concentrated impurities, is further treated in a three-stage Reverse Osmosis (RO) system. RO membranes remove dissolved salts and other impurities, producing permeate water that is also reused in the process. This stage maximizes water recovery and minimizes waste.

(Ultra-Filter & RO Plant)

Final Utilization of Reject Water: The final reject water from the RO system, which contains the highest concentration of impurities, is sent to the Ilminate plant. In this plant, the reject water is used for product washing, ensuring that even this waste stream is utilized efficiently.

This comprehensive effluent treatment process not only ensures compliance with environmental regulations but also promotes water reuse and sustainability within the PVC manufacturing process.

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CONSOLIDATED STATEMENT OF REPORT OF ANALYSIS OF RO REJECTS OF PVC DIVISION ETP SAMPLES COLLECTED AND TESTED BY TNPC BOARD

S. No	Parameters	VRS/10/318	VRS/11/401	VRS/12/446	VRS/03/931	VRS/83/1061
		12/10/2023	02/11/2023	01/12/2023	30.01.2024	28/02/2024
1	pH	6.98	7.57	8.30	8.18	7.30
2	Total Suspended Solids	2	2	2	2	2
3	Total Suspended Solids	440	780	570	730	730
4	Chloride (as CL)	180	324	228	332	342
5	Sulphate	82	24	76	75	31
6	BOD	2.35	2.62	2.16	2.62	2.85
7	COD	48	88	88	96	104

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TEST REPORT

Test Report No & Date	**CTL/CH/N-20586/2024-25 & 26.04.2024**
Sample Number	**N-20586/24-25**
Name of the Customer	**M/s. DCW LIMITED,**
Address	SAHUPURAM P.O., THOOTHUKUDI - 628 229.
Sample Drawn by	Laboratory
Sample Name	Water
Sample Description	**PVC ETP RO Reject Water**
Sampling Location	NA
Sample Drawn on	20.04.2024
Sampling Plan & Procedure	Grab Sample & CTL/QSP/09
Sample Quantity	2 Litres
Sample Condition	Good & Received in Plastic Container
Environmental Conditions	Temperature- 33.8°C and Humidity- 54.6%
Equipment used for Sampling	NA
Sample Received on	22.04.2024
Analysis Started on	22.04.2024
Analysis Completed on	26.04.2024

Test Results:

The above sample tested as received, and results are as follows:

S.NO	PARAMETERS	METHOD	UNITS	RESULTS
1	pH @ 25°C	IS 3025 (Part 11)-1983 (RA.2017)	-	8.1
2	Total Dissolved Solids (TDS)	IS 3025 (Part 16)-1984 (RA.2017)	mg/l	910
3	Total Suspended Solids (TSS)	IS 3025 (Part 17)-1984 (RA.2021)	mg/l	8
4	Biochemical Oxygen Demand (BOD) 3 days at 27°C	IS 3025 (Part 44) -1993 (RA.2019)	mg/l	3
5	Chemical Oxygen Demand (COD)	IS 3025 (Part 58)-2006 (RA.2017)	mg/l	20
6	Chloride as Cl	IS 3025 (Part 32)-1988 (RA.2019)	mg/l	538
7	Sulphate as SO_4	IS 3025 (Part 24/sec -1) - 2022	mg/l	5.1
8	Oil & Grease	IS 3025 (Part 39) - 2021	mg/l	< 2

END OF REPORT

For Chennai Testing Laboratory Pvt ltd

Verified by

Authorised Signatory
A. RAJKUMAR
Head - Water & Soil Division
(CHEMICAL)

Page 1 of 1

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Report of Analysis of Reject Sample Showing Performance of the Effluent Treatment Plant
For the month of April 2024

Sample Collected On : 07th ,12th ,19th ,26th

Sample Tested on : 07th ,12th ,19th ,26th

By the Laboratories : DCW LIMITED (PVC - QC & Lab)

Sl. No.	Polluting Parameters as mentioned in the conditions imposed under Consent granted under	UOM	Maximum Permissible Limits of ranges allowed as per consent condition	Concentration of range of parameters as per Report
1	PH	-	5.5 - 9.0	7.3-7.7
2	Temperature (° C)	° C	40°C	37-39
3	TDS	mg/l	-	735-790
4	TSS		100	14-18
5	Chlorides (as Cl^-)		-	350-410
6	Sulphates (as $SO4^{2-}$)		-	4.9-5.3
7	BOD (3 days at 27° C)		30	2.5-2.8
8	COD		250	28-36
9	Oil and Grease		10	BDL
10	Residual Chlorine		1	BDL

Encl : Original Analysis Report of Laboratory

Signature :

Date :

Name : S.SURESH
VICE PRESIDENT(Mfg)

Address : DCW Limited
SAHUPURAM 628 229
Thoothukudi Dist.
Tamil Nadu

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DCW Limited (PVC Division)

SAHUPURAM P.O. 628 229, THOOTHUKUDI DISTRICT (TAMIL NADU)

EFFLUENT TREATMENT PLANT - ANALYTICAL REPORT

LAB/PVC/ETP REV NO: 03 REV DATE: 01.04.2024

S.No.	Characteristics	UOM	SAMPLING AT PVC ETP RO REJECT				Maximum Permissible Limit	Remarks
			07.04.2024	12.04.2024	19.04.2024	26.04.2024		
1	pH	-	7.4	7.6	7.3	7.7	**5.5 - 9.0**	-
2	TDS	mg/l	790	740	780	735	-	-
3	Total Suspended Matter	mg/l	18	16	14	15	**100**	-
4	Chloride (as Cl^-)	mg/l	410	360	380	350	-	-
5	Temperature	°C	38	39	39	37	**40**	-
6	Sulphates (as SO_4^{2-})	mg/l	5.2	4.9	5.0	5.3	-	-
7	BOD (3 days at 27°C)	mg/l	2.8	2.6	2.7	2.5	**30**	-
8	COD	mg/l	32	36	30	28	**250**	-
9	Oil and Grease	mg/l	BDL	BDL	BDL	BDL	**10**	-
10	Residual Chlorine	mg/l	BDL	BDL	BDL	BDL	**1**	-

Sr.Engr (PVC LAB) **DGM (QC & LAB)**

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A.9. Implementation Benefits to Water Security

The implementation of DCW Limited's Effluent Treatment Plant (ETP) in Sahupuram, Tamil Nadu, significantly enhances the region's water security by addressing key challenges related to pollution, resource management, and sustainability. By effectively treating industrial wastewater, the ETP prevents the release of harmful pollutants, safeguarding both public health and aquatic ecosystems. This commitment to pollution mitigation ensures that local water bodies remain within acceptable regulatory standards, maintaining water quality. Additionally, the ETP's focus on water reuse reduces reliance on freshwater extraction, which is crucial in areas facing water scarcity. The plant's pursuit of "zero liquid discharge" further underscores DCW's dedication to sustainable water management, promoting long-term water security by minimizing its overall water footprint. Through these efforts, DCW not only protects current water resources but also contributes to a secure and sustainable water future for the Sahupuram region.

SDGs	Name	Application to the ETP Plant for DCW Limited
	Responsible Consumption and Production	The ETP (Effluent Treatment Plant) ensures that industrial wastewater is treated and recycled, promoting sustainable management and efficient use of natural resources, thereby reducing the ecological footprint of production processes.
	Climate Action	By treating and recycling wastewater, the ETP reduces the release of pollutants into the environment, contributing to climate action by minimizing the adverse effects on ecosystems and reducing greenhouse gas emissions associated with untreated waste.

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6 CLEAN WATER AND SANITATION	Clean Water and Sanitation	The ETP plays a critical role in ensuring the availability and sustainable management of water and sanitation by treating wastewater and making it safe for reuse, thus supporting water conservation efforts and reducing water scarcity.
8 DECENT WORK AND ECONOMIC GROWTH	Decent Work and Economic Growth	The establishment and operation of the ETP create job opportunities and contribute to economic growth. Moreover, by ensuring sustainable practices, the ETP supports long-term industrial productivity and environmental sustainability.

A9.1 Objectives vs Outcomes

The primary objective of this project in Sahupuram is to establish a sustainable and environmentally responsible system for managing industrial wastewater. This objective encompasses several key aspects. Firstly, the ETP aims to achieve comprehensive removal of pollutants from the wastewater generated by DCW's chemical manufacturing processes. This ensures compliance with stringent environmental regulations for wastewater discharge, safeguarding local water bodies from contamination.

Another crucial objective is to maximize the reuse of treated effluent within the DCW facility. This recycled water can be utilized for various purposes such as cooling towers or process water, significantly reducing their dependence on extracting freshwater resources. By promoting water reuse and minimizing discharge, the ETP project strives to achieve a more sustainable water management approach for DCW's operations. This contributes to the overall water security of the region, particularly in areas facing water scarcity.

Project Outcomes:

The successful implementation of the ETP project is expected to yield several positive outcomes. By effectively treating industrial wastewater, the ETP will significantly reduce the environmental impact of DCW's operations. This protects nearby water bodies from pollution, safeguarding public health and aquatic ecosystems. Additionally, the multi-stage treatment process employed by the ETP will result in high-quality treated effluent.

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The project's focus on water reuse allows DCW to significantly decrease its freshwater extraction needs. This not only benefits the company by lowering water usage costs but also contributes to the region's water security by reducing pressure on limited freshwater resources. Furthermore, the ETP project promotes a closed-loop system for water management within the DCW facility. This minimizes the overall water footprint of their operations and fosters a more responsible approach to water resource utilization.

Justification for the Project:

The growing emphasis on environmental responsibility and sustainable practices in industrial operations makes the ETP project a crucial undertaking for DCW. Stricter environmental regulations regarding wastewater discharge necessitate effective treatment solutions. Additionally, water scarcity in many regions necessitates maximizing water reuse opportunities.

A9.2 Interventions by Project Owner / Proponent / Seller

To achieve the desired outcomes of environmental protection, regulatory compliance, water conservation, and sustainable water management, a series of strategic interventions have been implemented for this Effluent Treatment Plant (ETP) project.

The project employs a multi-stage treatment process specifically designed to address the chemical manufacturing processes' unique composition of the industrial wastewater. This process incorporates a combination of physico-chemical treatment, biological treatment, and membrane filtration techniques. The physicochemical treatment involves the addition of coagulants, flocculants, and precipitants to remove pollutants through coagulation, sedimentation, and precipitation, effectively eliminating a wide range of contaminants commonly found in industrial wastewater. The biological treatment stage utilizes microorganisms to break down organic pollutants, which is particularly effective for the organic contaminants produced by the chemical manufacturing process. Advanced filtration techniques, such as Reverse Osmosis (RO) or other membrane filtration processes, are employed to remove dissolved salts and bacteria, resulting in high-quality treated effluent.

To ensure the effectiveness of the ETP, a robust monitoring and control system has been implemented. This system ensures continuous monitoring of influent and effluent parameters,

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including the quality of wastewater entering and exiting the ETP. Key parameters such as pH, and chemical oxygen demand (COD) are tracked and compared against regulatory standards. The ETP equipment undergoes regular maintenance to ensure optimal performance and prevent malfunctions. Additionally, the collected monitoring data is analyzed to identify areas for improvement in the treatment process. Based on this analysis, adjustments to chemical dosages, treatment parameters, and overall system optimization are made to ensure efficient and effective wastewater treatment.

A water reuse strategy has been integrated into the ETP operations to promote water conservation and sustainability. The high-quality treated effluent is utilized within the facility for non-critical industrial applications. By replacing a portion of the freshwater traditionally used in industrial process with treated effluent, the reliance on freshwater resources is significantly reduced.

As an ambitious long-term goal, the project proponent (PP) aims to achieve "zero liquid discharge" (ZLD). This approach seeks to minimize or eliminate the release of treated effluent outside the facility. Water reuse is maximized by exploring additional opportunities for utilizing treated effluent within the facility, further reducing the amount of effluent requiring discharge.

A.10. Feasibility Evaluation

The multi-stage treatment process, water reuse strategy, and potential for "zero liquid discharge" all contribute to the high feasibility of the Project

A.11. Ecological Aspects :

The project activity achieves sustainable management and efficient use of India’s natural resources as the project proponent (PP) had the option to install bore wells that would have depleted local groundwater resources and/or continue to use existing drinking water resources in the surrounding area. Instead, the PP has chosen to treat and reuse the ETP effluent, thereby saving millions of liters of safe drinking water.

This project activity also sets a benchmark for companies, especially large and transnational corporations in the chemical manufacturing sector, to adopt similar sustainable practices regarding captive water requirements and groundwater management. By demonstrating the feasibility and benefits of treating and reusing industrial wastewater, the project encourages

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other industries to follow suit, contributing to the broader goals of environmental sustainability and resource conservation.

Ecological Issue	Project Activity Impact	Explanation
Inundation of Habituated Land	No Impact	The project focuses on wastewater treatment and reuse, not water management for flooding or drainage.
Creation of Water Logging and Vector Disease Prevention Mitigation	Potential Indirect Benefit	By effectively treating wastewater and preventing the release of stagnant water, the project might help reduce mosquito breeding grounds and the spread of vector-borne diseases. However, it wouldn't directly address existing waterlogging issues.
Deterioration of Quality of Groundwater	Significant Positive Impact	Untreated wastewater can pollute groundwater. The ETP's treatment process removes pollutants, resulting in high-quality effluent and preventing groundwater contamination.

A.12. Recharge Aspects :

In the context of the DCW Effluent Treatment Plant (ETP) project, "Recharge Aspects" are not applicable because the treated water is reused within industrial processes. This means that the effluent is not released into the environment for groundwater recharge but is instead integrated back into the facility's operations, ensuring efficient water use and minimizing discharge.

A.12.1 Solving for Recharge

Water Budget Component	Typical Estimated Uncertainty (%)	Description
Surface Inflow	NA	Not applicable as the plant operates without relying on surface water sources. Instead, it focuses solely on treating and reusing wastewater generated from industrial processes.
Precipitation	NA	Not Applicable
Surface Outflow	NA	Not Applicable

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Evapotranspiration	NA	Not Applicable
Deep Percolation	NA	Not Applicable

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. For conservative purposes, the working days or operational days have been assumed at **330 days.**

Months	Inlet (Total water in Equalisation tank)	Total water treated	Total Water Recycled(KL)		Total Water Rejected	RoUs
			PVC	CPVC	RO Reject	
Oct'23	25800	24222	13572	4076	6574	17648
Nov'23	24500	23722	14392	3783	5547	18175
Dec'23	20200	19282	11358	3093	4831	14451
Jan'24	21500	20448	10850	3550	6048	14400
Feb'24	17350	16085	9030	3931	3124	12961
Mar'24	22741	20693	10135	3988	6570	14123

Apr'24	17130	14874	5872	4636	4366	10508
May'24	22205	20633	10165	4211	6257	14376
June'24	24405	22398	11968	3822	6608	15790
July'24	25355	23787	12648	3737	7402	16385
Total						**148,817**

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

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

Increase the sustainable water yield in areas where over-development has depleted the aquifer
According to the Central Groundwater Board's 2021 data, India has the capacity to use 398 billion cubic meters (BCM) of groundwater annually, with around 245 BCM, or 62%, currently in use. States like Punjab, Rajasthan, Haryana, Delhi, and Tamil Nadu face particularly high levels of groundwater exploitation. This project, which began in 1995, has significantly decreased the amount of untreated wastewater future generations will need to recycle. It has also demonstrated the effective recycling and safe reuse of previously untapped water resources within the industry. The revenue from selling UCR RoUs will help expand similar projects.
Collect unutilized water or rainwater from going into storm drains or sewers
In India, at the district level, 267 districts across 24 states and UTs had groundwater extraction levels exceeding 63%, with rates ranging from 64% to 385% (source: Business Standard). This project demonstrates the effective recycling and reuse of wastewater and serves as a model for companies, particularly large and multinational firms in the biotechnology and biopharmaceutical sectors, to adopt similar sustainable practices for their water needs and groundwater management.
Conserve and store excess water for future use
The project activity significantly reduces dependence on groundwater, thereby preventing its excessive depletion. By focusing on conserving and storing excess water for future use, this project ensures a sustainable water management approach. This method not only helps in maintaining groundwater levels but also provides a reliable water source for future needs, contributing to long-term environmental conservation and resource sustainability.

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

In India's rapidly evolving landscape, where urbanization and economic growth are placing unprecedented demands on freshwater resources, scaling effluent treatment projects has become essential. The ETP in Tamil Nadu serves as a critical example of how strategic scaling can address the growing water crisis. Revenue from water credits (RoUs) plays a pivotal role in driving the voluntary treatment and reuse of effluents across industries, offering a financial incentive that encourages the adoption of these vital practices. The ability to scale these projects efficiently is crucial to meet the urgent demands posed by climate change and water scarcity.

Key lessons from scaling projects like the ETP emphasize the importance of thorough feasibility studies and proactive stakeholder engagement. Comprehensive assessments help identify challenges early on, ensuring that projects are designed to withstand regulatory, environmental, and economic pressures. The success of these projects hinges on regular communication with local communities, regulatory bodies, and internal teams to ensure alignment and smooth progression. The financial support from RoUs not only bolsters the economic viability of these initiatives but also highlights the need for robust infrastructure, advanced treatment technologies, and an informed public to maintain and enhance the sustainability of water resources.

Restarting projects, particularly after a pause, requires a careful reevaluation of the project's previous status and objectives. For the ETP in Tamil Nadu, this involves reassessing initial assumptions and adapting to any changes in the regulatory, environmental, or economic landscape. Ensuring that the project remains relevant and capable of achieving its intended goals is crucial for long-term success. With the additional motivation provided by RoUs, industries are more likely to reinvest in wastewater treatment and reuse, ensuring that these projects continue to contribute to environmental sustainability and economic growth in the face of climate challenges.

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