



## Verification Report for

Project : Rainwater Harvesting Project by SIPL, Pune, India.  
UCR Project ID : 346

Name of Verifier	SQAC Certification Pvt. Ltd.
Date of Issue	August 28, 2023
Project Proponent	M/s Serum Institute of India Pvt Ltd. (SIPL), Pune, Maharashtra.
UCR Project Aggregator	Egis India Consulting Engineers Pvt Ltd.
Work carried by	Mr. Santosh Nair & Ms. Sheetal Wader
Work reviewed by	Mr. Praful Shinganapurkar

### **Summary:**

SQAC Certification Pvt. Ltd. has performed verification of the “Rainwater Harvesting Project by SIPL, Pune, India”. The project activity by the Project Proponent is the installation and operation of rooftop rainwater and ground surface runoff harvesting and storage systems that help conserve unutilized water (rainwater) for future requirements.

The project activity meets the following UN SDG’s:



Verification for the period: **15/03/2017 to 31/12/2022.**

In our opinion, the total RoU’s over the crediting / verification period stated in the Project Concept Note and Monitoring Report, PCNMR submitted to SQAC are found to be correct and in line with the UCR guidelines.

The verification was done onsite by way of site visit, interviews, document verification and submission through emails.

Accredited by 5 Jupiter House, Callera Park, Aldermaston, Reading Berkshire RG7 8NN, United Kingdom (UK).

India Office: Off. No. 4, Fifth Floor, Buildmore Business Park, New Canca Bypass Road, Khorlim, Mapusa, Goa – 403 507

Web: [www.sqac.in](http://www.sqac.in)

Email: [info@sqac.in](mailto:info@sqac.in) Tel: 7219716786 / 87





SQAC is able to certify that the RoU's from the Rainwater Harvesting Project by SIPL, Pune, India, (UCR ID – 346) for the period 15/03/2017 to 31/12/2022 amounts to **14,10,331** RoUs

**Detailed Verification Report:**

The project activity is pre-approved under the UCR RoU program for the following scope:

- Scope 2 (Measures for conservation and storage of unutilized water for future requirements.)

**Purpose:**

The project, Rainwater Harvesting Project by SIPL, Pune India, is located at Village Manjri, District Pune, State Maharashtra, Country India. The project activity is the installation and operation of rooftop rainwater and ground surface runoff harvesting measures involving the collection and storage of the collected runoff in three (3) water storage tanks of 2000 m<sup>3</sup> capacity each with runoff storage overflow from the tanks being diverted to raw water holding tanks. Hence the total installed capacity of the project activity is six (6) MLD. In the absence of the project activity, the PP would have installed bore wells that would have depleted the local groundwater resources and/or continued to use existing drinking water resources in the surrounding area.

The Project Proponent's daily water requirement is as follows:

Activity	Water Requirement (KL/d)
Potable water (for further purification)	2000
Cooling Tower	1800
Boiler	500
Domestic Use (washrooms, canteen, drinking)	150
Gardening	600
Total	5050 KL/d (~5MLD)

The harvested rainwater runoff is further purified through Ultrafiltration + Reverse Osmosis + UV to generate safe drinking water. This potable water complies with all national and international standards like USEPA/WHO/BIS-10500.

The project activity achieves the following key water and sanitation related Sustainable Development Goals under the United Nation (UN-SDGDs):

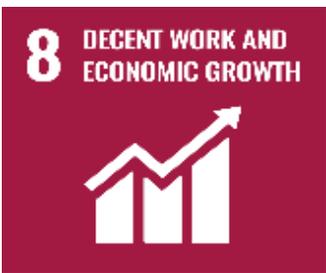
- ensures universal and equitable access to safe and affordable drinking water for all by 2030,
- ensures halving the proportion of untreated wastewater and substantially increasing recycling and safe reuse globally by 2030,
- substantially increases water-use efficiency across all sectors and ensures sustainable



withdrawals and supply of freshwater to address water scarcity and substantially reduce the number of people suffering from water scarcity by 2030, and;

- expands capacity-building support within India in water and sanitation-related activities and programs, including water efficiency, wastewater treatment, recycling and reuse technologies by 2030.

Sustainable Development Goals Targeted	Most relevant SDG Target/Impact	Indicator (SDG Indicator)
 <p>13 Climate Action (mandatory)</p>	<p>13.2: Integrate climate change measures into national policies, strategies and planning.</p>	<p>Rainwater harvesting 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. The quantity of rainwater being harvested and reused by the PP is the SDG indicator.</p>
 <p>1 - End poverty in all its forms everywhere</p>	<p>1.4: By 2030, ensure that all men and women, in particular the poor and the vulnerable, have equal rights to economic resources, as well as access to basic services, ownership and control over land and <u>other forms of property, inheritance, natural resources</u>, appropriate new technology and financial services, including microfinance.</p>	<p>The PP prevents unequal distribution of natural groundwater resources -which <u>prevents poverty of natural economic resources</u> (groundwater). The PP ensures that the citizens of Pune get a chance to preserve their natural groundwater resources for future generations since PP is harvesting rainwater runoff which is currently unutilized by the local industry. The PP could have alternately dug fresh borewells or used existing drinking water sources for their captive water requirements.</p>

 <p>3 – Ensure healthy lives and promote well-being for all at all ages.</p>	<p>3.9: By 2030, substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution and contamination.</p>	<p>The PP showcases how rainwater harvesting can prevent depletion of natural water reserves and prevent water scarcity during droughts. The PP ensures water availability in water-scarce zones that help promotes healthy lives and well-being.</p>
 <p>6 - Ensure access to water and sanitation for all.</p>	<p>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.</p>	<p>The PP has showcased harvesting and safe reuse of <u>1410 million liters</u> within the industry of rainwater runoff during this monitored period.</p>
 <p>8 – Promote inclusive and sustainable economic growth, employment and decent work for all.</p>	<p>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.</p> <p>8.6 By 2020, substantially reduce the proportion of youth not in employment, education or training.</p>	<p>Number of jobs created.</p> <p>Number of people trained.</p>

<p><b>17 PARTNERSHIPS FOR THE GOALS</b></p> 	<p>17.7: Promote the development, transfer, dissemination and diffusion of environmentally sound technologies to developing countries on favourable terms including concessional and preferential terms, as mutually agreed.</p>	<p>PP will monetize the water credits via the virtual water footprint market internationally.</p>
<p>17 – Strengthen the means of implementation and revitalize the global partnership for sustainable development</p>		



**2000 m3 Rainwater Collection Tanks**

**Scope:**

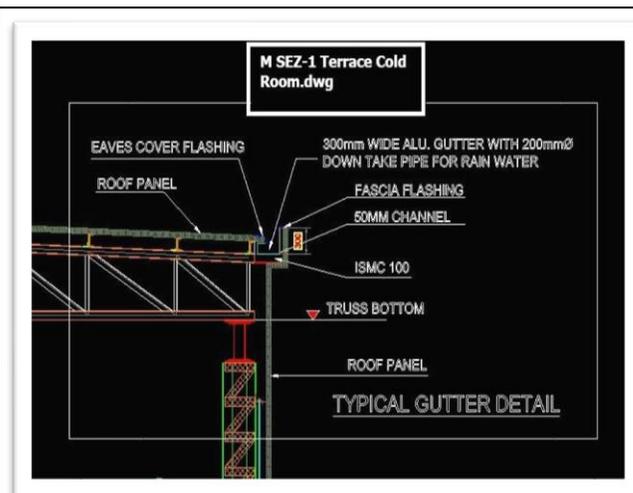
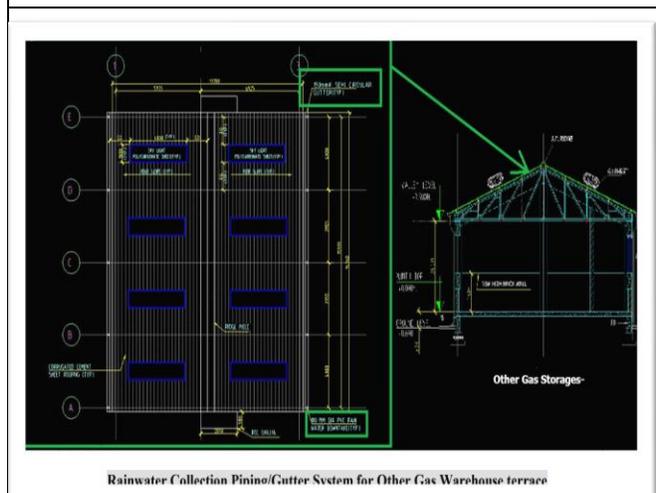
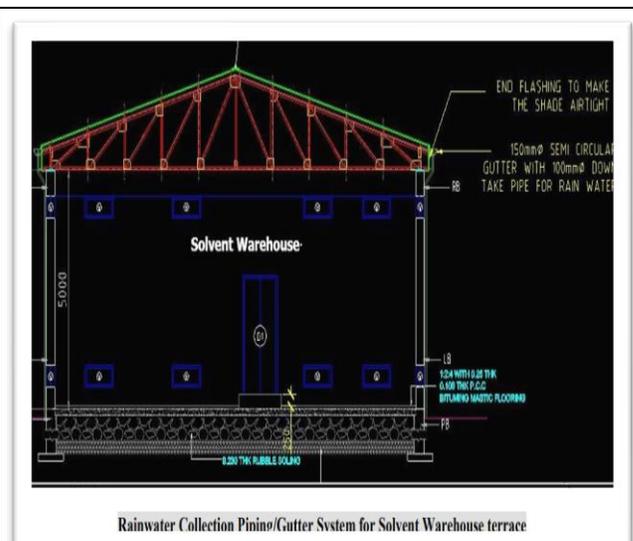
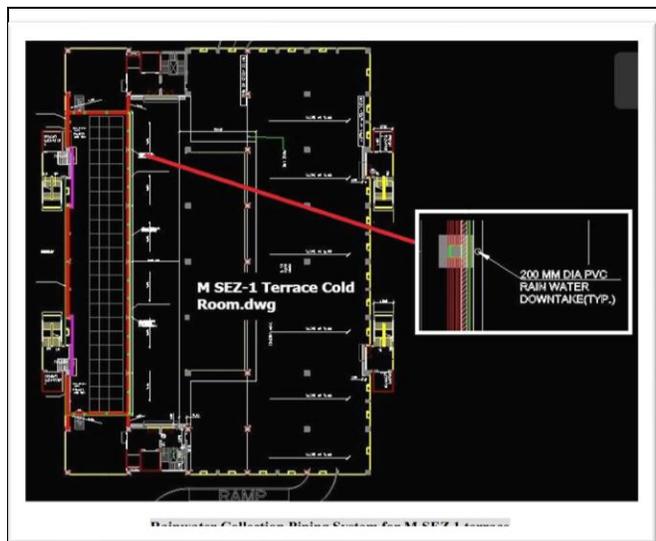
The scope covers verification of RoUs from the project - Rainwater Harvesting Project by SIPL, Pune, India, (UCR ID – 346)

**Criteria:**

Verification criteria is as per the requirements of UCR RoU program for the scope – 2.

**Description of project:**

The details of the rooftop piping, allied harvesting systems and project activity system flow is as below:

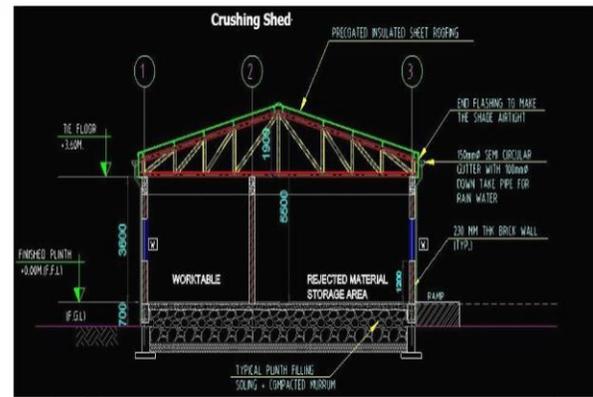


Rainwater Collection Pinna/Gutter System for Other Gas Warehouse terrace

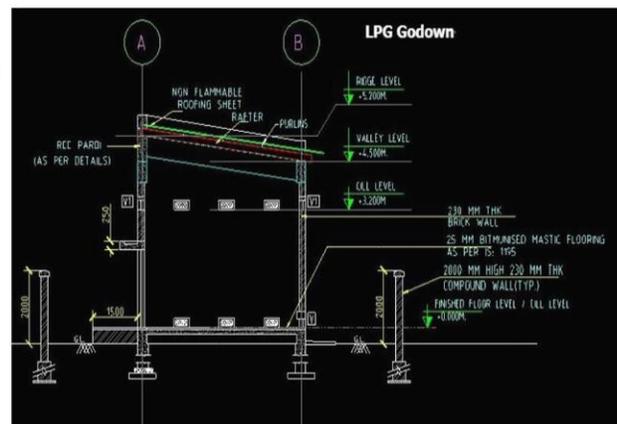
Rainwater Collection Pinna/Gutter System for M SEZ-1 terrace



Rainwater Collection Piping/Gutter System for M SEZ-1 terrace



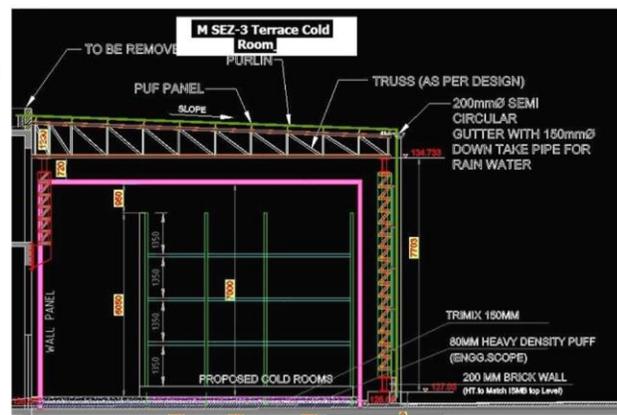
Rainwater Collection Piping/Gutter System for M SEZ-1 terrace



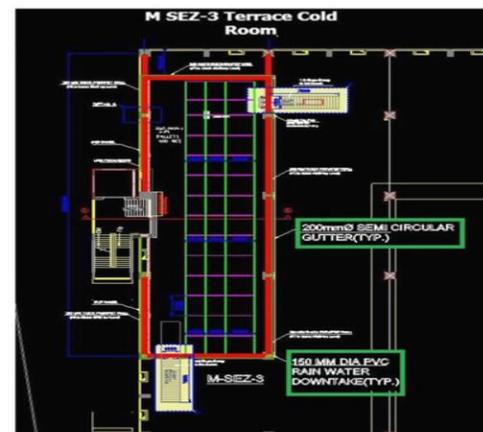
Rainwater Collection Sloping Roof LPG Godown



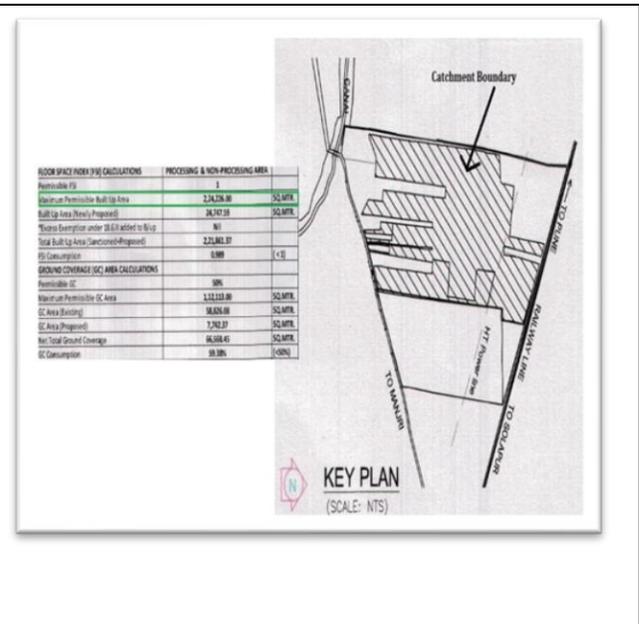
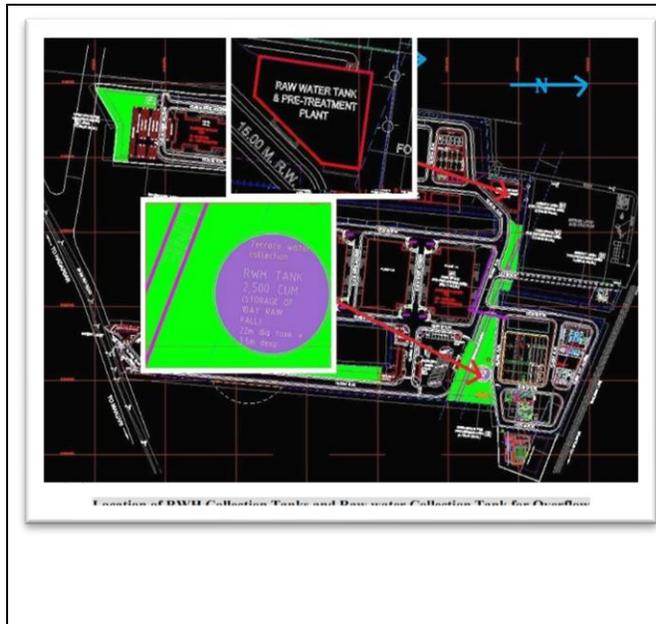
Rainwater Collection Piping/Gutter System for M SEZ-4 terrace



Rainwater Collection Piping/Gutter System for M SEZ-3 Cold Room terrace



Rainwater Collection Piping/Gutter System for M SEZ-3 Cold Room terrace



## Treatment Process

The quality of the treated rainwater is checked regularly by in-house labs. This rainwater run off is further purified through a combination of ultrafiltration, reverse osmosis and UV light to create safe drinking water that complies with all national and international standards such a like USEPA/WHO/BIS-10500.



TUV NORD GROUP  
**TUV INDIA PRIVATE LIMITED**  
 TUV India House,  
 Survey No. 42, 3/1 & 3/2,  
 Sas, Tal. Mubhi,  
 Dist. Pune - 411 021  
 CIN : U74140MH1989PTC052930  
 Tel. : 020 - 67002000 / 01  
 Toll free : 1800-209-5902  
 Email : pune@tuv-nord.com  
 Website : www.tuv-nord.com/in

### TEST REPORT

Report No : TUV(I)/3732/22-23/0062202054  
 Date : 27 Jun 2022

Name & Address of Customer : SEZ Biotech Services Pvt Ltd  
 Cyrus Poonwalla Group Manjari Bk., Tal. Haveli, Pune  
 Pin Code: 412207  
 Reg No. : 3732/22-23  
 CA No. : 0062202054  
 Date of sample receipt : 09 Jun 2022  
 Date(s) of analysis : 15 Jun 2022 - 27 Jun 2022  
 Sample Drawn by : TUV Representative Mr.Nilesh G.Shinde (SOP No. TUV/04/SOP/017)

SINo	Test Name	Results	Unit	LOQ	Test Method
Sample Name : RAW WATER		CA No : 0062202054			
Sampling Location: DMF Feed (Phase II), Sampling Date : 09.06.2022					
Discipline : Chemical & Biological		Product Category : Water			
<b>Non Accredited Tests</b>					
<b>Food Chemical</b>					
1	Carbonate Alkalinity	82.6	mg/l	-	IS 3025 Part 23
2	Carbonate as CO <sub>3</sub>	82.6	mg/l	-	In house methode
3	Bicarbonates	103.1	mg/l	-	APHA 23rd Edition
4	Free CO <sub>2</sub>	6.0	mg/l	-	IS 3025 Part 61 (RA 2008)
5	Total nitrogen by Kjeldahl method	< 0.1	mg/l	-	TUV/02/SOP/002
<b>Heavy Metals</b>					
6	Silica	25.68	mg/L	0.01	AS PER APHA 3125.23 RD EDITION
7	Strontium	0.13	mg/L	0.01	AS PER APHA 3125.23 RD EDITION
<b>Minerals</b>					
8	Phosphate	6.30	mg/L	0.01	AS PER APHA 3125.23 RD EDITION
<b>Water Analysis</b>					
9	Temperature	26.0	deg .cel	-	IS 3025 Part 9
10	Reactive Silica	6.0	mg/l	-	IS 3025 Part 35
11	Total organic carbon (TOC) **	Nil	%	0.00010	HS/NABL/WA/13
12	Colloidal Silica	19.7	mg/l	-	IS 3025 PART 35
13	COD	<10	mg/l	-	IS 3025 Part 58 (2006)
14	BOD	< 10	mg/l	-	IS 3025 Part 44 (2003)

*Mhande*

*Mhande*



PROJECT NAME : Rainwater Harvesting Project by SIIPL, Pune India.

UCR Scope : RoU Scope 2: Measures for conservation and storage of unutilized water for future requirements.

PCNMR Prepared on : 12/06/2023.

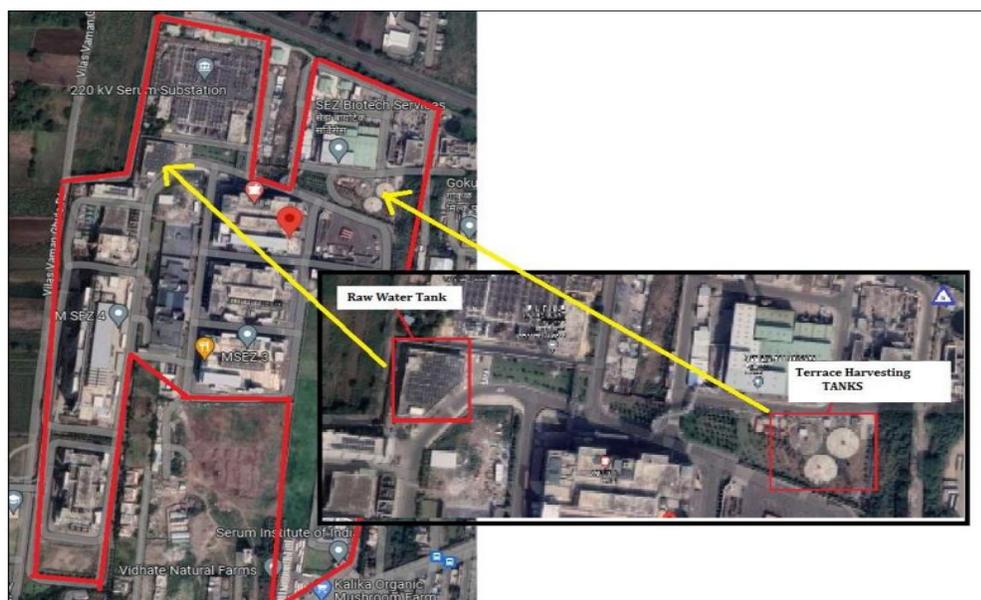
Geo Tag : 18.514260, 73.960375

Latitude : 18°30'51.336"N

Longitude : 73° 57'37.35"E

Project Commissioning Date : 15/03/2017

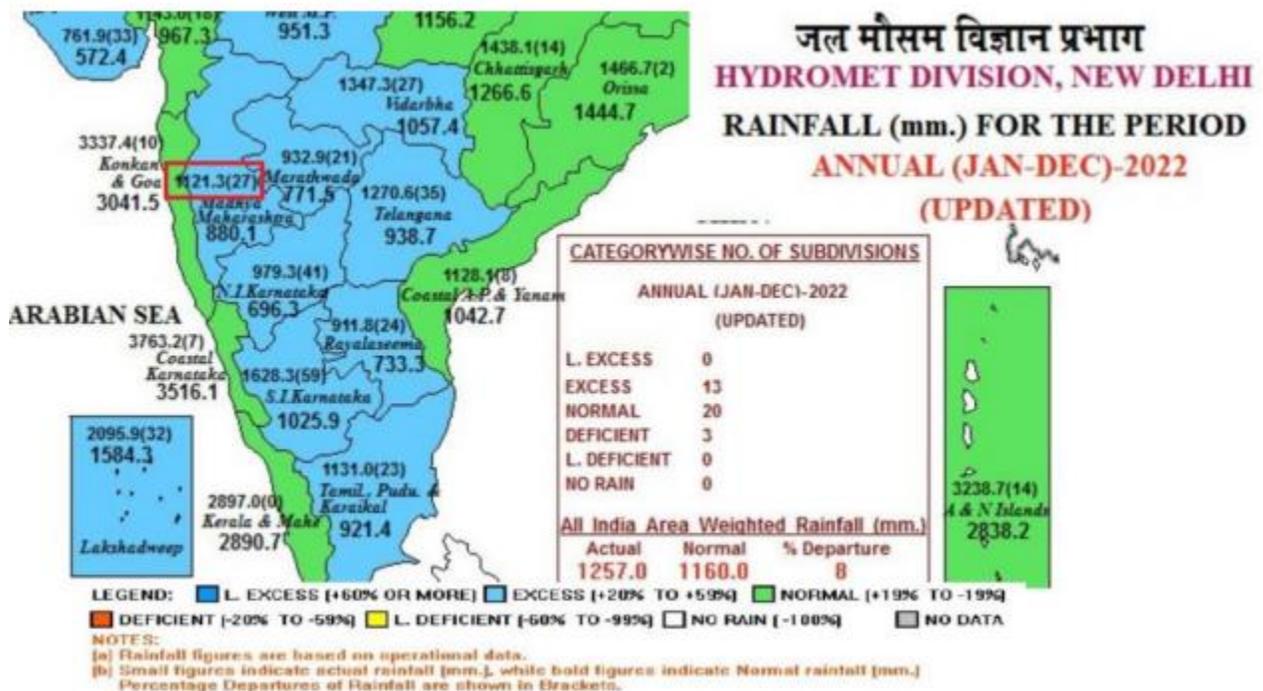
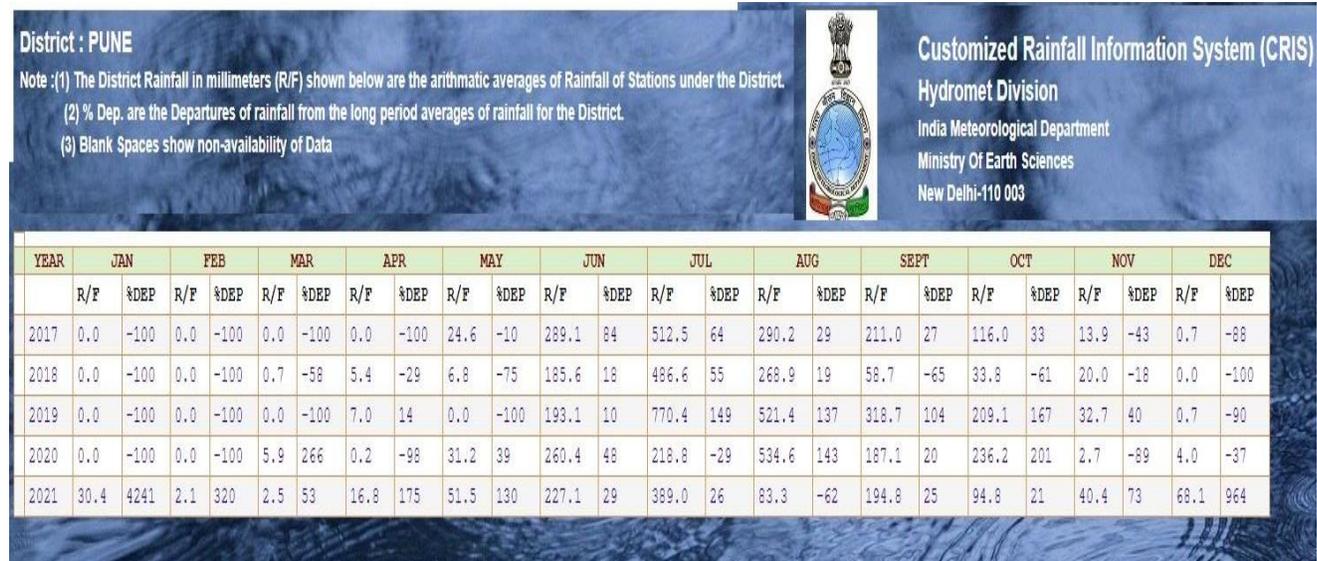
<b>Project Capacity (MLD / Cubic Meter)</b>	06 MLD (02 MLD or 2000 m <sup>3</sup> each)
<b>Name of Tank (Commissioning Date)</b>	Rainwater Harvesting Tank-1 (15/03/2017), Rainwater Harvesting Tank-2 (15/03/2017), Rainwater Harvesting Tank-3 (15/05/2021),
<b>Catchment Area / Roof Top Locations</b>	Crushing Shed Roof, LPG Godown Roof, M SEZ 1 Cold Room Roof, M SEZ 3 Cold Room Roof, M SEZ 4 Roof, Other Gas Storage Shed Roof, Solvent Warehouse Roof and Ground Roof.





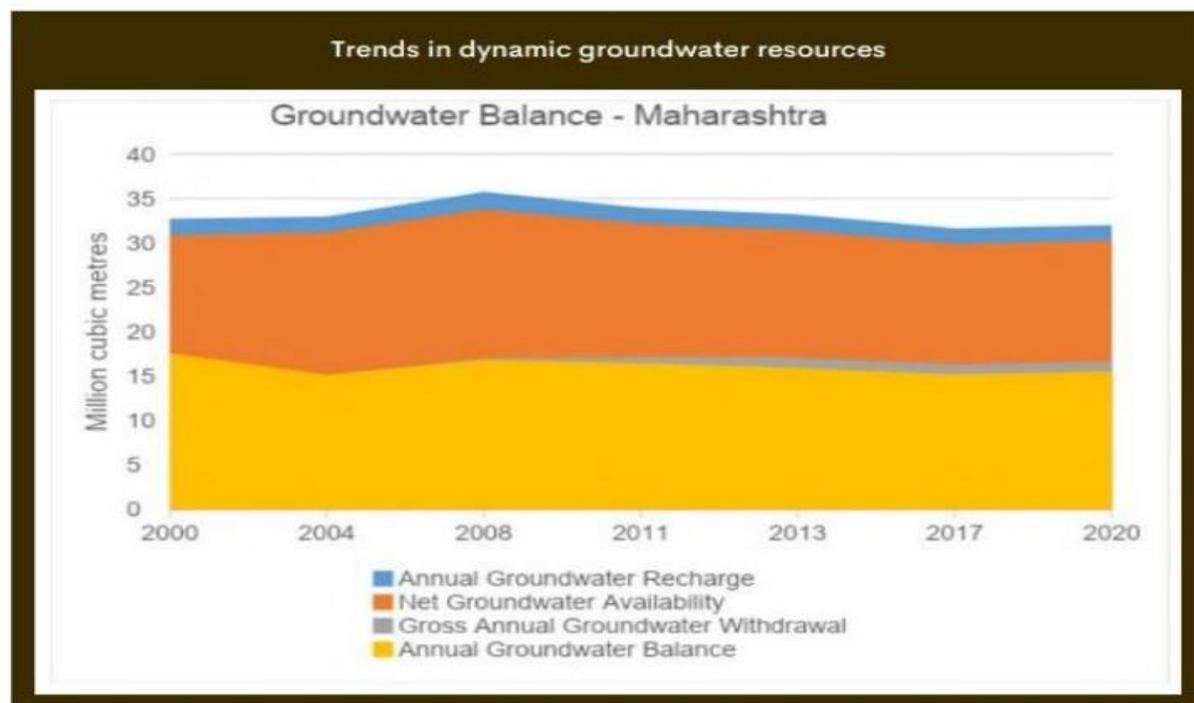
## Rainfall and Recharge

Monthly rainfall data of Pune city from 2017 to 2022 were analysed as per the details available in the CRIS Hydromet Division.





Year	Rainfall (mm)
2017	1458
2018	1066.5
2019	2053.1
2020	1481.1
2021	1200.8
2022	1121.3
<b>Total</b>	<b>8380.8</b>





### Baseline scenario

The baseline scenario is the situation where, in the absence of the project activity, unutilized water flows uncollected into drains and is not conserved/harvested into storage systems within the project boundary and remains unutilized. Baseline scenario, if not directly measurable, is calculated by using

Harvested water or Volume of water utilized (m<sup>3</sup>) = Area of Catchment/Roof/Collection Zone (m<sup>2</sup>) X Amount of rainfall (mm) X Runoff coefficient \*Uncertainty Factor (1-0.21 = 0.79).

Different Surfaces	Runoff Coefficient (K)
Roof inclined (Sloping)	0.95

The baseline scenario is the situation where, in the absence of the project activity, the PP would have utilized water from multiple bore wells within the project boundary which would have depleted the local groundwater resources (aquifers) and/or diverted existing safe drinking water resources from the surrounding residential area.

**Hence the baseline scenario, is:**

“the net quantity of rainwater runoff harvested and stored per year”

### Level of Assurance:

The verification report is based on onsite audit, information collected through interviews, supporting documents provided during the verification, Project Concept Note - Monitoring Report (PCNMR) submitted to SQAC. The verification opinion is assured provided the credibility of all the above.

### Verification Methodology:

Review of the following documentation was done by SQAC Verifiers, Mr. Santosh Nair and Ms. Sheetal Wader, who are experienced in such projects.

- Project Concept Note / Monitoring Report (PCNMR)
- Commissioning Certificate
- Water Lab Test Report
- Master Plan Layout

### Sampling:

Not applicable



**Persons interviewed:**

1. Mr. Santosh Arankalle : Sr. General Manager, M/s Serum Institute of India Pvt Ltd.
2. Mr. Baban Chaudhari : Sr. Manager – Engineering, M/s Serum Institute of India Pvt Ltd
3. Mr. Saurabh Sainger : Sr. Project Manager, M/s. Egis India Consulting Engineers Pvt Ltd.



Dt- 20/03/2017

To,  
M/S SEZ Biotech Service Pvt. Ltd,  
Poonawalla Biotech Park, SEZ,  
At Manjari BK Taluka:-Haveli,  
Dist Pune ,  
India .

**Project:** -Proposed Construction Of Storm Water Tank & Terrace Water Collection Tank At Manjari Sez.

**Subject:** - Completion & handing Proposed construction of storm water tank & terrace water collection tank AT MANJARI SEZ

Respected Sir,

With respect to above subject, we would like to inform you that we have completed above mentioned project on 15<sup>th</sup> March 2017 with all activities up to your satisfaction as mentioned in tender documents as well as instructed by you on site time to time.

We are herewith handing over above-mentioned project for your further installation works, further we will not be responsible for the damages done by other agencies.

always Thanking you and assuring you best service all times.



**Commissioning of two (2) rainwater storage tanks in 2017**



*M/s. A. S. Ropalekar*  
Engineers & Contractors  
Project Management Consultants

T1, 'Arvind Endave', Sr.No. 24, Plot No.42,43,44,  
Near Mizol College, Opp. Avogon Hospital,  
Balewadi, Pune - 411045.  
Mob. : 9754927221 / 9158985741  
E-mail : aaropalekar@gmail.com  
aarw@psccm.com

Date :- 21/05/2021

To,  
M/S SEZ Biotech Services Pvt. Ltd.  
Poonawalla Biotech Park, SEZ,  
At Manjari BK Toluca:- Haveli,  
Dist Pune,  
India.

**Project :-** Proposed Construction of Rain Water Collection Tank At MANJARI SEZ.

**Subject:-** Completion & handing Proposed Construction of Rain Water Collection Tank At MANJARI SEZ.

Kind Attn -> Mr. Rohit Shinde Sir,

Respected Sir,

With Respect to above subject, we would like to inform you that we have completed above mentioned project on 15 May 2021 with all activities upto your satisfaction as mentioned in tender documents as well as instructed by you on site time to time.

We are herewith handing over above mentioned project for your further installation works, Further we will not responsible for the damages done by other agencies.

**Work Order No. :-** Ref No.:-SBSPL/MANJARI/CIVIL/21

**Work Order Date :-** 10th June, 2020    **Work Start Date :-** 1 July 2020

**Work End Date :-** 15 May 2021    **Work Period :-** 10 Months, 15 Days.

Thanking you & assuring you best service at all time.

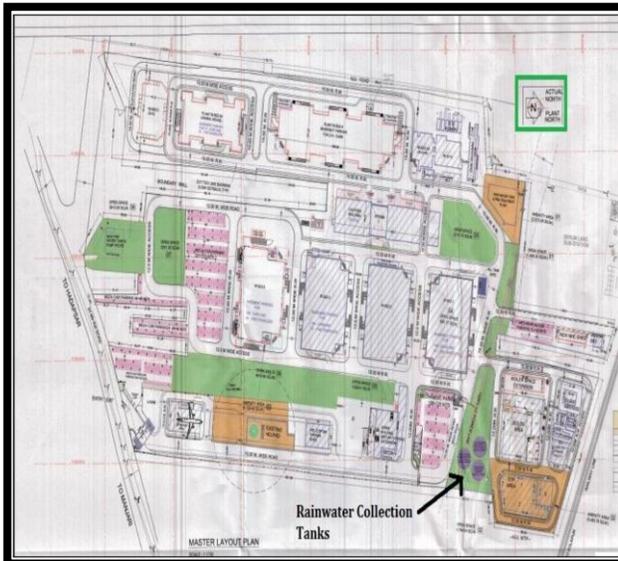
Yours truly,

For M/s A. S. Ropalekar



Authorized Signatory

**Commissioning of one (1) rainwater storage tank in 2021**



FLOOR SPACE INDEX (FSI) CALCULATIONS	PROCESSING & NON-PROCESSING AREA	
Permissible FSI	1	
Maximum Permissible Built Up Area	2,24,226.00	SQ.MTR.
Built Up Area (Newly Proposed)	24,747.59	SQ.MTR.
*Excess Exemption under 18.6.11 added to B/up	Nil	
Total Built Up Area (Sanctioned+Proposed)	2,21,861.37	
FSI Consumption	0.989	(<1)
GROUND COVERAGE (GC) AREA CALCULATIONS		
Permissible GC	50%	
Maximum Permissible GC Area	1,12,113.00	SQ.MTR.
GC Area (Existing)	58,826.08	SQ.MTR.
GC Area (Proposed)	7,742.37	SQ.MTR.
Net Total Ground Coverage	66,568.45	SQ.MTR.
GC Consumption	59.38%	(<50%)



### Corrective Action Requests (CARs)

Not applicable as no non-conformities has been evidenced.

### Applied methodologies:

Verification criteria is as per the requirements of UCR RoU program for the scope – 2.

### Applicability of double counting emission reductions

Currently not applicable for water credits.

### Issuance Period: (05 years, 09 months) – 15/03/2017 to 31/12/2022

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**
- ❖ **Collect unutilized water or rainwater and preserve it for future use**
- ❖ **Conserve and store excess water for future use**

Harvested water or Volume of water utilized (m<sup>3</sup>) = Area of Catchment/Roof/Collection Zone (m<sup>2</sup>) X Amount of rainfall (mm) X Runoff coefficient \*Uncertainty Factor (1-0.21 = 0.79).

Different Surfaces	Runoff Coefficient (K)
Roof inclined (Sloping)	0.95

### Annual RoU calculation:

Year	Catchment Area	Runoff Coefficient (K)	Uncertainty Factor	(RoUs)
	A	B	C	(A*B*C)/1000
2017	310575.4326	0.95	0.79	245354
2018	227180.1776	0.95	0.79	179472
2019	437340.4806	0.95	0.79	345498
2020	315496.0722	0.95	0.79	249241
2021	255788.0518	0.95	0.79	202072
2022	238853.3831	0.95	0.79	188694
			<b>Total</b>	<b>14,10,331</b>



## **Conclusions:**

Based on the audit conducted on the basis of UCR Protocol, which draws reference from UCR RoU program, the documents submitted during the verification including the data, Project Concept Note (PCNMR), SQAC is able to certify that the Water Credits from the project -: Rainwater Harvesting Project by SIPL, Pune, India, (UCR ID – 346) for the period 15/03/2017 to 31/12/2022 amounts to **14,10,331 RoUs**

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Santosh Nair  
Lead Verifier  
(Signature)



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Sheetal Wader  
Verifier  
(Signature)

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Praful Shinganapurkar  
Senior Internal Reviewer  
(Signature)

Date: 28/08/2023