

# TECHNICAL AUDIT REPORT

## Water Audit

*Submitted to*

**MANNAR THIRUMALAI NAICKER COLLEGE(AUTONOMOUS)  
MADURAI - 625 004, TAMIL NADU**

*Date of Audit: 24.08.2022*

*Submitted by*



**NATURE SCIENCE FOUNDATION**

**(A Unique Research and Development Centre for Society Improvement)**

**[ISO Certified and Ministry of MSME Registered Organization]**

**No. 2669, LIG-II, Gandhi Managar, Peelamedu**

**Coimbatore 641 004, Tamil Nadu, India**

**Phone: 0422 2510006, Mobile: 9566777255, 9566777258**

**Email: [director@nsfonline.org.in](mailto:director@nsfonline.org.in)**

# TECHNICAL AUDIT REPORT

## Water Audit

*Submitted to*

**MANNAR THIRUMALAI NAICKER COLLEGE**  
(AUTONOMOUS) MADURAI - 625 004,  
TAMIL NADU

*Date of Audit: 24.08.2022*



*Submitted by*

**NATURE SCIENCE FOUNDATION**  
(A Unique Research and Development Centre for Society  
Improvement) [ISO Certified and Ministry of MSME  
Registered Organization]  
No. 2669, LIG-II, Gandhi Managar,  
Peelamedu, Coimbatore 641 004,  
TamilNadu, India  
Phone: 0422 2510006, Mobile: 9566777255, 9566777258  
Email: [director@nsfonline.org.in](mailto:director@nsfonline.org.in)

## CONTENTS

<b>S.No.</b>	<b>Details of Reports</b>	<b>Page No</b>
1.1.1	<b>Role of Higher Educational Institutions with Respect to Water Conservation</b>	4
1.1.2	<b>Auditing for Water Management in the Campus</b>	4
1.1.3	<b>Water Management Activities</b>	4
1.1.4	<b>Physical Appearance and Overall Ambience on Water Conservation</b>	5
1.1.5	<b>Water Quality</b>	6
1.1.6	<b>Physico-Chemical Parameters of Water Quality</b>	7
1.1.7	<b>Water Consumption Rate</b>	10
1.1.8	<b>Estimation of Water Requirements for Drinking and Domestic Use</b>	11
1.2	<b>Rainwater Harvesting System and Percolation Pond</b>	13

**TABLE CONTENTS**

<b>S.NO</b>	<b>TABLE</b>	<b>PAGE NO.</b>
<b>1</b>	<b>Physico-Chemical Properties of Various Water Sources</b>	<b>8</b>
<b>2</b>	<b>2. Water Consumption for Various Purposes</b>	<b>11</b>
<b>3</b>	<b>Water Requirements Calculation</b>	<b>12</b>
<b>4</b>	<b>Per capita fire Demand Calculation</b>	<b>12</b>



## **Rainwater Harvesting Units in Mannar Thirumalai Naicker College, Madurai**

### **1.1.1 Role of Higher Educational Institutions with Respect to Water Conservation**

Periodical monitoring of existing water management systems in the campus with participation and transparency. Development of a detailed guideline for conserving water within the campus is compulsorily adopted. Generate case studies on best water conservation practices adopted in the campus which will serve as models for other institutions and villages to adopt.

The team that would be involved in all aspects of water management (exploring, surveying, fact-finding, recording, planning, taking action and monitoring) will also include all relevant stakeholders' viz., citizens, student teams, their teachers, village leaders apart from administrative officials concerned in both campus and villages. A couple of environmentally concerned inclined faculty members or village community leaders may be given the responsibility to lead the water conservation movement in the respective realms. Water Conservation Initiative can be successful only if the Head of the Institution ignites the spirit of everybody in the organization. She/he needs to direct the departments, pay attention to the findings of student teams and ensure that their valuable suggestions are followed in letter and spirit by all students, faculty members as well as administrative, non-teaching and support staff. A motivated leader can bring a sea-change in the system and therefore she/he is the cornerstone of this campaign. An advisory committee may be constituted to guide the initiative on water conservation.

### **1.1.2 Auditing for Water Management in the Campus**

Water is a natural resource which is an essential element for all living organisms. It has been reported that on earth only 3% is of freshwater and two-thirds of the same is locked up as ice caps and glaciers. Out of the remaining one per cent, a fifth is available at remote areas and much seasonal rainfall and floods cannot easily be used. At present only about 0.08 per cent of all the world's freshwater is exploited by mankind (in terms of sanitation, drinking, manufacturing, leisure and agriculture). Water management is important since it helps to determine future irrigation expectations. Water is an abundant natural resource and becoming a more valuable commodity due to droughts and over exploitation. While freely available in many natural environments, in human settlements potable (drinkable) water is less readily available. At this juncture, it is time to use water wisely to ensure that drinkable water is available to all, at present and in the future.

### **1.1.3 Water Management Activities**

In order to conserve water resources, it is essential that any environmentally responsible institution should examine its water use practices.

Water auditing is conducted for the appraisal of facilities of raw water intake and determining the facilities for water treatment and reuse. Auditor concerned investigates the

relevant method that can be adopted and implemented to balance the demand and supply of water. The Organization is taking enough attempts to manage wastewater that are coming out from various Department laboratories, hostels and canteens. In general, water management activities are very important in terms of conserving water and its resources for future generations which in turn are useful to reduce the land contamination

#### **1.1.4 Physical Appearance and Overall Ambience on Water Conservation**

Water conservation strategies broadly rely on a) adequacy of water, b) elaborate plumbing facilities with adequate, suitable water taps and sanitary fixtures, c) establishing water use efficient toilets with two levels of flushing facilities, d) well organized water usage, e) dedicated staff for water management including inspection, periodic service/repairs/corrective measure of leaks in taps and pipes, g) improved sanitization for cleanliness, h) use of carbonated water, i) planting and maintenance of indigenous variety of plants and less water consuming plants and j) organizing water conservation workshops to the faculty and students and conducting awareness programme for the benefit of public.

#### **Renovation of Traditional and Other Water bodies/Tanks**

Renovation of tanks and water bodies include a) groundwater recharge and maintenance of water balance, b) reuse and recharge structures and preservation of existing water bodies, c) watershed development and biomass management and finally d) Adopting land and water management protocols.

#### **Leakages**

Leakage accounts for a largest share of wastage of available water resources as well as unauthorized water use. Each source meter required to be tested for its accuracy, either by reviewing available meter test results or retesting the meter. System valves are mandatorily reviewed periodically to detect malfunction. For instance, altitude control valves on storage tanks might be damaged or installed improperly, allowing the tank to overflow. These valves need periodic inspection, more so when there is observed leakage or overflow. Pressure relief valves set too low might cause spill when pressures reach the high range. These pressure relief valves need to be calibrated accordingly. When leakage problems are discovered during routine inspections, possible water losses need to be estimated and corrective action can be taken up immediately.

#### **Other Interventions**

Other interferences are given attention on priority basis that include i) technological and sociological interventions, ii) planning, preparing and reporting mechanisms, iii) appropriate display, publicity and sharing of knowledge, iv) treating personnel/concerned staff with respect and considering their welfare, v) adhering to reporting mechanisms and vi) more importantly, monitoring and taking corrective measures with respect to water management by the enthusiastic designated staff. It has been observed that the audited organization adopted all the above said practices in advance and meticulously.

Rainwater harvesting system has been well planned and implemented in the campus. Rainwater harvesting pits are well connected with roof-top through proper pipe lines. At the time of the audit nowhere leakage in the water supply system was observed. For drinking water facility RO purifying system was installed by the management.





## **R. O. Drinking Units in Mannar Thirumalai Naicker College, Madurai**

### **1.1.5. Water Quality**

After air, water is the second most critical element for life to exist. As a result, the scientific literature has numerous descriptions of water quality. "It is the physical, chemical and biological characteristics of water," is the most frequently used definition of water quality. Water quality is a measurement of the state of water in relation to the needs of one or more biotic species and/or to any human need or purpose.

### **1.1.6. Physico-Chemical Parameters of Water Quality**

- One of the most crucial aspects of water quality is pH. It is described as the hydrogen ion concentration's negative logarithm. It is an arbitrary number that expresses how acidic or basic a solution is. Actually, water's pH is a gauge of how acidic or basic it is. Both basic and acidic water have more hydrogen (H<sup>+</sup>) and hydroxyl (OH) ions than usual.
- Total dissolved solids are referred to as TDS. It calculates the overall concentration of soluble salts and minerals in water. One mg/L of dissolved minerals, for instance, means that the water pitcher contains one mg/L of TDS.
- The salinity of a body of water, commonly known as saline water (also see soil salinity), is the degree to which salt is present. It is often measured in grams per litre (g/L).
- Water that is cloudy is referred to as turbid. It gauges how well light can travel through water. It is brought on by particulate matter suspended in water, including clay, silt, organic matter, plankton and other particles.
- One of the most crucial indicators of the water quality in streams, rivers and lakes is dissolved oxygen (DO) which is regarded as one of the factors. It's an important indicator of water pollution. The water quality improves as the dissolved oxygen concentration does.

### Standards for Physico-Chemical Properties of Water

According to the Bureau of Indian Standards (BIS), the upper limit of TDS levels in water is 500 ppm. Long term exposure to high levels of salinity and turbidity could lead to bone issues in adults and also the fertilisation of nearby farm fields or sanitation facilities located too close to the well. In most cases, these compounds aren't a serious health risk. They are harmful to infants, however, causing blue baby syndrome, which can have lethal effects.

The water samples collected from various sources, i.e., RO water, tap water, bore well water, wastewater and treated water samples were subjected to analysis for its physicochemical parameters. The results showed that all the parameters were found to be appreciable and no harmful effect was recorded. These parameters were observed to be within the limit of Indian Standards of drinking water quality. Hence the direct consumption of these waters is recommended for drinking, irrigation and domestic usage purposes. If any water samples exceed the limit of ISI standards, it could be reduced significantly by adopting reverse osmosis technology. The observed pH values were found to be 6.5 - 8.5 ranges. Similarly, observed TDS and salinity were 0 - 900 mg/L and 300 - 380 mg/L, respectively. Turbidity and dissolved oxygen were 4.5 – 5.5 NTU and 6.5 - 8.0 mg/L, respectively, which are in compliance with ISI standards.

**Table 1. Physico-Chemical Properties of Various Water Sources**

S.No.	Water source	pH	TDS (mg/L)	Salinity (mg/L)	Turbidity (NTU)	Dissolved Oxygen (mg/L)
1.	RO water	7.3± 0.1	72±1.0	319±2.0	4.2±0.2	6.2±0.2
2.	Tap water	7.6±0.1	128.7±1.5	309±3.0	4.3±0.2	6.8±0.2
3.	Bore well water	7.1±0.1	236.3±2.5	320.7±2.5	4.6±0.1	7.3±0.1
4.	Artificial pond water	7.8±0.1	256.3±2.1	325±2.0	4.5±0.4	7.7±0.2
5.	Waste water	8.2±0.1	271.0±3.6	338±2.6	5.3±0.2	8.2±0.1
6.	Treated water	7.9±0.1	357.3±3.5	346±3.0	5.3±0.2	8.5±0.1
Mean		7.76	247.67	328.38	4.75	7.64
SE mean ±		0.09	1.91	2.11	0.17	0.08
CD at P = 0.05:		0.15	3.40	3.76	0.30	0.15



## Standards for Comparison

### Acceptable Range of pH of Different Waters

Types of water	pH level
Tap water	Varies; typically, about 7.5
Distilled/Reverse osmosis water	5.0 to 7.0
Common bottled water	6.5 to 7.5
Bottled waters labeled as alkaline	8.0 to 9.0
Ocean water	About 8.0
Acid rain	5.0 to 5.5

Source: <https://www.healthline.com/health/ph-of-drinking-water#acceptable-ph-levels>

### Acceptable Range of Total Dissolved Solids (TDS)

TDS Level (mg/L)	Remarks
Less than 50	Unacceptable as it lacks essential minerals
50-150	Acceptable for drinking.
150-350	Good. The water is ideal for people with cardiovascular disease
350-500	Fairly acceptable
500-900	Less acceptable
900-1200	Least acceptable. Avoid drinking water that has a TDS of 900
1200-2000	Water is not acceptable for drinking.
Above 2000	Unacceptable
Less than 50	Unacceptable as it lacks essential minerals

Source: <https://www.kent.co.in/blog/what-are-total-dissolved-solids-tds-how-to-reduce-them/>

### Acceptable Range of Salinity Level in Water

Salinity of water (mg/L)	Quality
0-600	Good
600-900	Fair
900-1200	Poor
>1200	Unacceptable (unpalatable)

Source: [https://www.researchgate.net/figure/The-range-of-salinity-according-to-Australian-Drinking-Water-Guidelines\\_tbl2\\_334786145](https://www.researchgate.net/figure/The-range-of-salinity-according-to-Australian-Drinking-Water-Guidelines_tbl2_334786145)

### Acceptable Range of Turbidity in Water

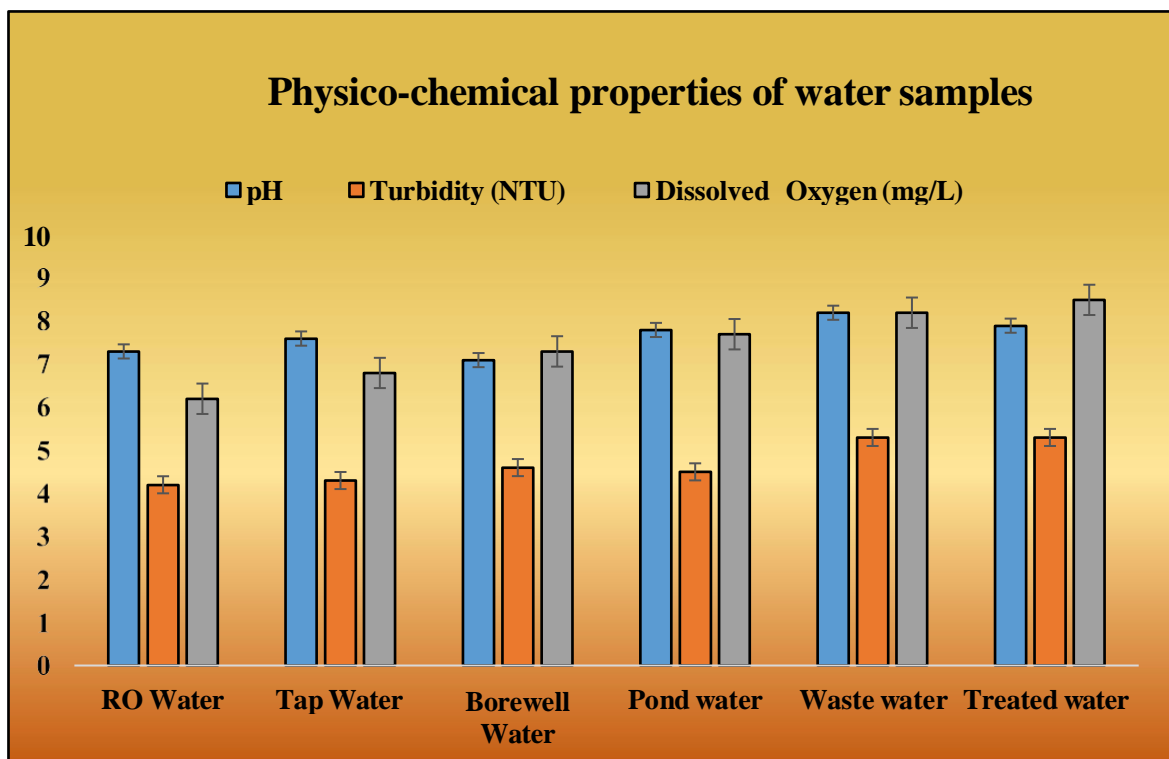
Water source	Turbidity level (NTU)
Water bodies with sparse plant and animal life	0
Drinking water	<0.5
Typical groundwater	< 1.0
Water bodies with moderate plant and animal life	1.0- 8.0
Water bodies with large plumes of planktonic life	10.0 - 30.0
Muddy water or winter storm flows in rivers	20.0 - 50.0

Source: <https://www.slideserve.com/oakes/turbidity>

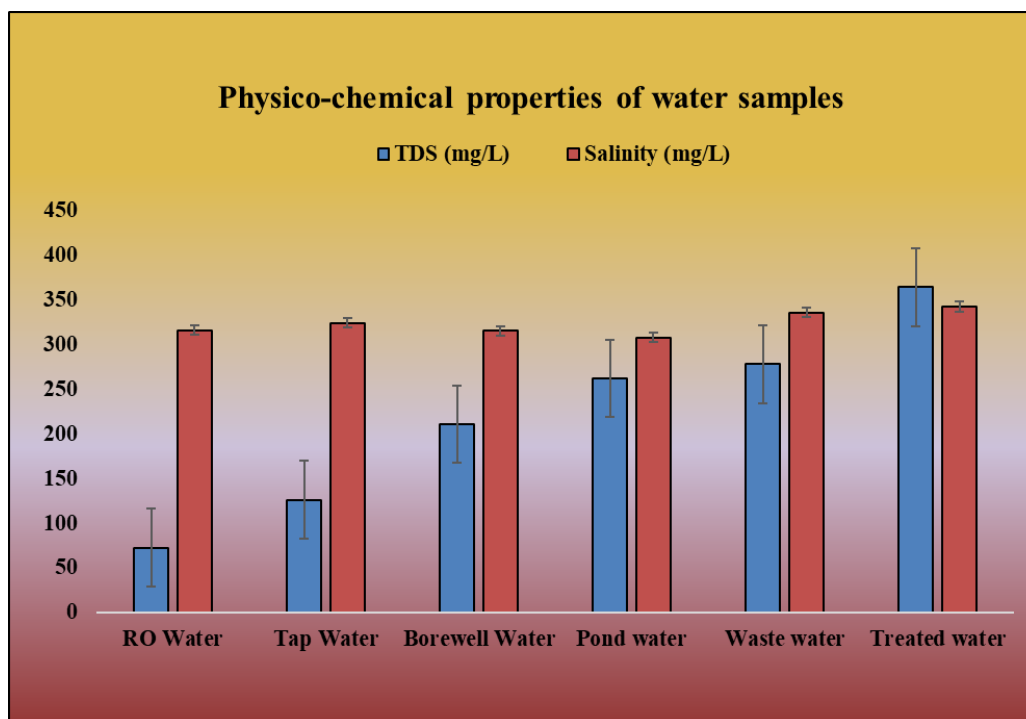
## Acceptable Range of Dissolved Oxygen in water

Water Source	Dissolved Oxygen level (mg/L)
Not Acceptable	2-4
Moderately Acceptable	4-6
Acceptable	6-8

Source: [https://www.researchgate.net/figure/Figure-2-1-Dissolved-oxygen-level-and-the-response-of-aquatic-life-forms-adapted-from\\_fig1\\_268030344](https://www.researchgate.net/figure/Figure-2-1-Dissolved-oxygen-level-and-the-response-of-aquatic-life-forms-adapted-from_fig1_268030344)



**Figure 1. Physico-Chemical Properties of Water Samples**



### 1.1.7. Water Consumption Rate

Since several variables influence water consumption by various stakeholders of an organization; it is hard enough to precisely assess the water quantity demanded by the public. Water required by various set-ups, which a city may have, is listed here.

**Table 2. Water Consumption for Various Purposes**

S. No.	Types of consumption	Normal range (L/capita/day)	Average
1.	Per capita domestic consumption at hostel and canteen	75 - 135	95
2.	Industrial and commercial demand at laboratories	40 - 65	45
3.	Public uses including fire demand, transport washes	15 - 40	20
4.	Losses and waste as routine consumption	5 - 30	20
5.	Daily use (day-to-day use)	75 - 185	135

Water is an immense requirement of any living organism. Though it is a natural resource, we are exploiting water for various purposes in day-to-day activities. As an educational institution, water requirements for various activities may differ. Per capita Domestic Consumption in Hostels combined with Canteen ranges between 90 – 125 litres. Industrial or laboratory demand for water is estimated to range between 100 - 300 litres. Losses as leakages and routine consumption accounts approximately 30 - 50 litres (per capita) and other daily usage uses accounts another 50 litres.

### 1.1.8. Estimation of Water Requirements for Drinking and Domestic Use (Source: National Building Code 2016 BIS)

As a general rule, the following rates per capita per day may be considered for domestic and non-domestic needs. For communities with population 20,000 to 1,00,000 together with flushing the per capita per day rates may be considered for domestic and non-domestic ranges ~40 to 230 lphd, respectively.

**Table 3. Water Requirements Calculation**

S. No	Educational Institutions water requirements	Domestic use (lphd)	Flushing (lphd)	Total use (lphd)
1.	Without boarding facility	35	20	55
2.	With boarding facility	90	55	145

#### 1.1.8.1. Firefighting Demand

The per capita fire protection demand is very less on an average basis but the quantum of water required is very huge. The rate of fire demand is sometimes treated as a function of population and is worked out from following empirical formulae.

**Table 4. Per capita fire Demand Calculation**

S. No	Authority	Formulae (P in thousand)	Q for 1 lakh Population)
1.	American Insurance Association	$Q \text{ (L/min)} = 4637 \sqrt{P (1-0.01 \sqrt{P})}$	41760
2.	Kuchling's Formula: per capita fire demand	$Q \text{ (L/min)} = 3182 \sqrt{P}$	31800
3.	Freeman's Formula: per capita fire demand	$Q \text{ (L/min)} = 1136.5(P/5+10)$	35050
4.	Ministry of Urban Development Manual Formula	$Q \text{ (kilo litres/d)} = 100 \sqrt{P}$ for $P > 50000$	31623

#### 1.1.8.2. Factors Affecting per Capita Demand of Water Consumption

As stated earlier, so many factors affect the precise calculation of per capita demand of water consumption which include, a) size of the city: per capita demand for big cities is generally huge when compared to that of smaller towns where big cities have skewed houses. b) Existence of a number of industries. c) Prevailing environmental conditions. d) Habits of people and their economic status. e) Quality of water plays an important role in water consumption rate. If water is aesthetically and medically safe, the consumption will increase as people will not resort to private wells, etc. f) Pressure in the distribution system. g) Efficiency of water works administration: Leaks in water mains and services and unauthorized use of water can be kept to a minimum by surveys. h) Cost of water and i) Policy of metering and charging method: Water tax is charged in two

different ways: on the basis of meter reading and on the basis of a certain fixed monthly rate. The above ethics are applicable to a campus of educational institutions as well.

### **1.1.8.3. Fluctuations in Rate of Demand/Consumption of Water**

- Average Daily per Capita Demand = Quantity required in 12 Months/(365 x Population); If this average demand is supplied at all the times, it will not be sufficient to meet the fluctuations.
- Seasonal variation: The demand peaks during summer. Firebreak outs are generally more in summer which increases the demand.
- Daily variation in water demand depends on human activities. People draw out more water on Sundays and Festival days, thus increasing demand on these days.
- Hourly variations in water demand are widely varied. During active household working hours i.e., from six to ten in the morning and four to eight in the evening, the bulk of the daily requirement is taken. During other hours the requirement is negligible.
- Adequate quantity of water must be available to meet the peak demand. To resolve all the fluctuation issues, the supply pipes, service reservoirs and distribution pipes must be properly proportioned. The water is supplied by pumping directly and the pumps and distribution system must be designed to meet the peak demand. Effect of monthly variation impacts the design of storage reservoirs and hourly variations influences the design of pumps and service reservoirs. It may be noted that as the population decreases, the fluctuation rate increases.

## **1.2. Rainwater Harvesting System and Percolation Pond**

Rainwater harvesting system is a traditional old practice not only in drought prone areas and also in areas having seasonal rainfall. The Indian traditional rainwater harvesting is being practiced in various parts of the country to improve the ground water status. Now the threatening features of the lower ground level of water has created a revamp of newly featured rainwater harvesting systems. Indian traditional rainwater harvesting systems are constructed based on three modes either direct pumped, indirect pumped or by both modes. In addition, lakes, ponds, water channels and any other water reservoir methods are considered as the rainwater harvesting system. The green campus should have adopted any of the above said modes of rainwater harvesting or any new methods that has the benefit of conserving the water resource as well. A small square shaped pit containing gravels and sands was constructed near the building for rainwater harvesting and connected with pipes from the rooftops of the building to the pit. During the audit it has been observed that the organization has a well-developed and maintained rain water harvesting system. Rainwater harvesting structures have been commissioned at different locations of the audited organization's campus.

QUALITY MANAGEMENT SYSTEM

# Certificate of Registration



This is to Certify That The Quality Management System of



**NATURE SCIENCE FOUNDATION**

LIG II, GANDHIMAA NAGAR, PEELAMEDU, COIMBATORE - 641004, TAMILNADU, INDIA.

has been assessed and found to conform to the requirements of

## ISO 9001:2015

for the following scope :

PROVIDING ENVIRONMENT, ENERGY, GREEN AND HYGIENE AUDITS  
TO ACADEMIC INSTITUTIONS AND ORGANISATIONS  
AS PER THE OWN CHECKLIST AND AWARDS TO  
MERITORIOUS CANDIDATES.

Certificate No	20DQHY90	Issuance Date	: 08/01/2021
Initial Registration Date	: 08/01/2021	2nd Surve. Due	: 08/12/2022
Date of Expiry*	: 07/01/2024		
1st Surve. Due	: 08/12/2021		

**DIRECTOR**

**ROHS Certification Pvt. Ltd.**

408, Madhuban Building, 55, Nehru Place, New Delhi - 110 019, India  
phone : +91.11.41525522 | e-mail : info@rohs-certification.co.in | website : www.rohs-certification.co.in  
The Registration is not a Product Quality Certificate, \*Subject to successful completion of surveillance audits, Visit for verification on www.rohs-certification.co.in  
Certificate is the property of ROHS and return when demanded



مركز الإمارات العالمي للاعتماد  
Emirates International Accreditation Centre  
035-CB-QMS

## Certificate of Registration



This is to Certify That The Environmental Management System of



## NATURE SCIENCE FOUNDATION

LIG II, GANDHIMAA NAGAR, PEELAMEDU, COIMBATORE - 641 004,  
TAMILNADU, INDIA.

has been assessed and found to conform to the requirements of

# ISO 14001:2015

for the following scope :

PROVIDING CONSULTANCY SERVICES FOR ENVIRONMENT, ENERGY, GREEN, HYGIENE, SOIL AND WATER, WASTE MANAGEMENT, BIOMEDICAL WASTE MANAGEMENT, E-WASTE MANAGEMENT, PLASTIC WASTE MANAGEMENT AND ACADEMIC AND ADMINISTRATIVE AUDITS TO EDUCATIONAL INSTITUTIONS AND INDUSTRIAL SECTORS AS PER THE OWN CHECKLISTS, START UP THE INTERNATIONAL ECO CLUB STUDENTS CHAPTER, OFFERING LEAD AUDITOR COURSE ON ENERGY AND ENVIRONMENT, AWARDS TO MERITORIOUS CANDIDATES.

Certificate No	22DEJI67	Issuance Date	: 21/05/2022
Initial Registration Date	: 21/05/2022	Date of Expiry*	: 20/05/2025
1st Surve. Due	: 21/04/2023	2nd Surve. Due	: 21/04/2024



*Colta*  
DIRECTOR

ROHS Certification Pvt. Ltd.

B-3, 1st Floor, Sector-2 Model, Greater Kailash, New Delhi, India  
E-mail: info@rohs-certification.com | website: www.rohs-certification.com  
The Registration is not a Product Quality Certificate. \*Subject to successful completion of surveillance audits. Valid for registration across India and other countries as per the terms of ISO 14001 and scope when declared.





**QCS** MANAGEMENT PVT. LTD.

MANAGEMENT SYSTEMS CERTIFICATION

## *Certificate of Registration*

**ISO 45001:2018 (Occupational Health & Safety Management System)**

**NATURE SCIENCE FOUNDATION**

ADDRESS: NO. 2669, LIG-II, GANDHI MANAGAR PEELAMEDU COIMBATORE - 641 004 TAMIL NADU, INDIA.

### Scope of Certification:

PROVIDING TRAINING AND AUDITING SERVICES IN THE FIELD OF GREEN CAMPUS, ENVIRONMENT, ENERGY, OCCUPATIONAL HEALTH AND SAFETY, HYGIENE AND WASTE MANAGEMENT AT EDUCATIONAL INSTITUTES AND INDUSTRIAL SECTOR.

Certificate Number : QCS/EUAS/OHS/002

Issue Date	: 03/08/2022	1 <sup>ST</sup> Surveillance Audit Within	: 02/07/2023
Expiration Date	: 02/08/2023	2 <sup>nd</sup> Surveillance Audit Within	: 02/07/2024
		Re-certification Due Date	: 02/08/2025



Partha Bagchi  
(Managing Director)

Validity of this Certificate is subject to Surveillance Audits to be conducted before scheduled due dates of surveillance audits as mentioned on the certificate, failing which the certificate will stand to be withdrawn and need to be treated as an initial certification process to reactivate its continuity on the register of EUAS and QCS. This Certificate is valid when confirmed by data listed on the (Euro Universal Accreditation Systems) EUAS™ [www.euas-ac.org](http://www.euas-ac.org). The authenticity & validity of this certificate may be re-affirmed by referring to our company website - [www.qcspl.com](http://www.qcspl.com). Lack of fulfillment of conditions as set out on the 'Certification Contract' (Annex 13) may render this certificate invalid. Any alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of law. This certificate remains the property of QCS and to be returned on request.

REGISTERED OFFICE: 37E/1(310) 2<sup>ND</sup> STREET, MODERN PARK, GREENAGE APARTMENT - 2<sup>ND</sup> FLOOR,  
SANTOSH PUR, KOLKATA - 700075, WEST BENGAL, INDIA.

Email: [info@qcspl.com](mailto:info@qcspl.com). Call: +91 8697724963, +91 8902447427. Website: [www.qcspl.com](http://www.qcspl.com)





## Certificate of Registration

This is to certify that

### NATURE SCIENCE FOUNDATION

LIG II, GANDHIMAA NAGAR, PEELAMEDU, COIMBATORE - 641 004,  
TAMILNADU, INDIA.

has been independently assessed by QRO  
and is compliant with the requirement of:

**ISO 50001:2018**

### Energy Management Systems

For the following scope of activities:

PROVIDING CONSULTANCY SERVICES FOR ENVIRONMENT, ENERGY, GREEN, HYGIENE, SOIL AND WATER, WASTE MANAGEMENT, BIOMEDICAL WASTE MANAGEMENT, E-WASTE MANAGEMENT, PLASTIC WASTE MANAGEMENT AND ACADEMIC AND ADMINISTRATIVE AUDITS TO EDUCATIONAL INSTITUTIONS AND INDUSTRIAL SECTORS AS PER THE OWN CHECKLISTS, START UP THE INTERNATIONAL ECO CLUB STUDENTS CHAPTER, OFFERING LEAD AUDITOR COURSE ON ENERGY AND ENVIRONMENT, AWARDS TO MERITORIOUS CANDIDATES.

Date of Certification: 9th August 2022

2<sup>nd</sup> Surveillance Audit Due: 8th August 2024

1<sup>st</sup> Surveillance Audit Due: 8th August 2023

Certificate Expiry: 8th August 2025

**Certificate Number: 305022080903EN**



Head of Certification

Validity of this certificate is subject to annual surveillance audits to be done successfully on or before 365 days from date of the audit.  
(In case surveillance audit is not allowed to be conducted; this certificate shall be suspended / withdrawn).

**The Validity of this certificate can be verified at [www.qrocet.org](http://www.qrocet.org)**

This certificate of registration remains the property of QRO Certification LLP, and shall be returned immediately upon request.

India Office : QRO Certification LLP

142, IInd Floor, Avtar Enclave, Near Paschim Vihar West Metro Station, Delhi-110063, (INDIA)

Website : [www.qrocet.org](http://www.qrocet.org), E-mail : [info@qrocet.org](mailto:info@qrocet.org)



भारत सरकार  
Government of India  
सूक्ष्म, लघु एवं मध्यम उद्यम मंत्रालय  
Ministry of Micro, Small and Medium Enterprises



## UDYAM REGISTRATION CERTIFICATE



<b>UDYAM REGISTRATION NUMBER</b>	UDYAM-TN-03-0073706																							
<b>NAME OF ENTERPRISE</b>	M/S NATURE SCIENCE FOUNDATION																							
<b>TYPE OF ENTERPRISE *</b>	MICRO																							
<b>MAJOR ACTIVITY</b>	SERVICES																							
<b>SOCIAL CATEGORY OF ENTREPRENEUR</b>	GENERAL																							
<b>NAME OF UNIT(S)</b>	<table border="1"> <thead> <tr> <th>S.No.</th> <th colspan="3">Name of Unit(s)</th> </tr> </thead> <tbody> <tr> <td>1</td> <td colspan="3">Green Campus, Energy and Environment Management Audits</td> </tr> </tbody> </table>				S.No.	Name of Unit(s)			1	Green Campus, Energy and Environment Management Audits														
S.No.	Name of Unit(s)																							
1	Green Campus, Energy and Environment Management Audits																							
<b>OFFICIAL ADDRESS OF ENTERPRISE</b>	<table border="1"> <thead> <tr> <th>Flat/Door/Block No.</th> <th>LIG-IL2669</th> <th>Name of Premises/ Building</th> <th>GANDHIMAA NAGAR</th> </tr> </thead> <tbody> <tr> <td>Village/Town</td> <td>Gandhimaanagar S.O</td> <td>Block</td> <td>LIG-II</td> </tr> <tr> <td>Road/Street/Lane</td> <td>Peelamedu</td> <td>City</td> <td>Coimbatore South</td> </tr> <tr> <td>State</td> <td>TAMIL NADU</td> <td>District</td> <td>COIMBATORE , Pin 641004</td> </tr> <tr> <td>Mobile</td> <td>956677255</td> <td>Email:</td> <td>chairmansf@gmail.com</td> </tr> </tbody> </table>	Flat/Door/Block No.	LIG-IL2669	Name of Premises/ Building	GANDHIMAA NAGAR	Village/Town	Gandhimaanagar S.O	Block	LIG-II	Road/Street/Lane	Peelamedu	City	Coimbatore South	State	TAMIL NADU	District	COIMBATORE , Pin 641004	Mobile	956677255	Email:	chairmansf@gmail.com			
Flat/Door/Block No.	LIG-IL2669	Name of Premises/ Building	GANDHIMAA NAGAR																					
Village/Town	Gandhimaanagar S.O	Block	LIG-II																					
Road/Street/Lane	Peelamedu	City	Coimbatore South																					
State	TAMIL NADU	District	COIMBATORE , Pin 641004																					
Mobile	956677255	Email:	chairmansf@gmail.com																					
<b>DATE OF INCORPORATION / REGISTRATION OF ENTERPRISE</b>	28/11/2017																							
<b>DATE OF COMMENCEMENT OF PRODUCTION/BUSINESS</b>	12/03/2020																							
<b>NATIONAL INDUSTRY CLASSIFICATION CODE(S)</b>	<table border="1"> <thead> <tr> <th>S.No.</th> <th>NIC 2 Digit</th> <th>NIC 4 Digit</th> <th>NIC 5 Digit</th> <th>Activity</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>69 - Legal and accounting activities</td> <td>6920 - Accounting, bookkeeping and auditing activities; tax consultancy</td> <td>69201 - Accounting, bookkeeping and auditing activities</td> <td>Services</td> </tr> <tr> <td>2</td> <td>85 - Education</td> <td>8542 - Cultural education</td> <td>85420 - Cultural education</td> <td>Services</td> </tr> <tr> <td>3</td> <td>85 - Education</td> <td>8549 - Other education n.e.c.</td> <td>85499 - Other educational services n.e.c.</td> <td>Services</td> </tr> </tbody> </table>				S.No.	NIC 2 Digit	NIC 4 Digit	NIC 5 Digit	Activity	1	69 - Legal and accounting activities	6920 - Accounting, bookkeeping and auditing activities; tax consultancy	69201 - Accounting, bookkeeping and auditing activities	Services	2	85 - Education	8542 - Cultural education	85420 - Cultural education	Services	3	85 - Education	8549 - Other education n.e.c.	85499 - Other educational services n.e.c.	Services
S.No.	NIC 2 Digit	NIC 4 Digit	NIC 5 Digit	Activity																				
1	69 - Legal and accounting activities	6920 - Accounting, bookkeeping and auditing activities; tax consultancy	69201 - Accounting, bookkeeping and auditing activities	Services																				
2	85 - Education	8542 - Cultural education	85420 - Cultural education	Services																				
3	85 - Education	8549 - Other education n.e.c.	85499 - Other educational services n.e.c.	Services																				
<b>DATE OF UDYAM REGISTRATION</b>	26/02/2022																							

\* In case of graduation (upward/reverse) of status of an enterprise, the benefit of the Government Schemes will be availed as per the provisions of Notification No. S.O. 2119(E) dated 26.06.2020 issued by the Mo MSME.

Disclaimer: This is computer generated statement, no signature required. Printed from <https://udyamregistration.gov.in> & Date of printing:- 26/02/2022

For any assistance, you may contact:

1. District Industries Centre: COIMBATORE (TAMIL NADU)
2. MSME-DI: CHENNAI (TAMIL NADU)

Visit : [www.msme.gov.in](http://www.msme.gov.in) ; [www.dcmsme.gov.in](http://www.dcmsme.gov.in) ; [www.champions.gov.in](http://www.champions.gov.in)

Follow us @minmsme & @msmechampions



**BE A  
CHAMPION**  
with the  
Ministry of  
**MSME**

## **Certificates of Lead Auditors**

1. Bureau of Energy Efficiency (BEE), LEED AP and GRIHA Certificates of Er. D. Dineshkumar, Energy and Environment Auditor of NSF.
2. Indian Green Building Council (IGBC AP) Accredited Professional of Dr. B. Mythili Gnanamangai, Vice-Chairman of NSF.
3. Tamil Nadu Fire and Rescue Service Certificate of Er. S. Srinivash, Energy Auditors of NSF.
4. Energy Management System ISO 50001:2018 Certificate of Dr. D. Vinoth Kumar, Joint Director of NSF.
5. ISO 17020:2012 certificate of Ms. V. Sri Santhya, Assistant Director of NSF.



## BUREAU OF ENERGY EFFICIENCY



Examination Registration No. : **EA-14056** Serial Number **9176**

Certificate Registration No. : **9176**

*[Handwritten Signature]*

### Certificate For Certified Energy Manager

This is to certify that Mr./Mrs./Ms. **Dinesh Kumar D**  
Son/Daughter of Mr./Mrs. **R M Dhanasekaran** who has passed the National Examination for certification of energy manager held in the month of **October 2011** is qualified as certified energy manager subject to the provisions of Bureau of Energy Efficiency (Certification Procedures for Energy Managers) Regulations, 2010.

This certificate shall be valid for five years with effect from the date of award of this certificate and shall be renewable subject to attending the prescribed refresher training course once in every five years.

His /Her name has been entered in the Register of certified energy manager at Serial Number **9176** being maintained by the Bureau of Energy Efficiency under the aforesaid regulations.

Mr./Mrs./Ms. **Dinesh Kumar D** is deemed to have qualified for appointment or designation as energy manager under clause (f) of Section 14 of the Energy Conservation Act, 2001 (Act No.52 of 2001).

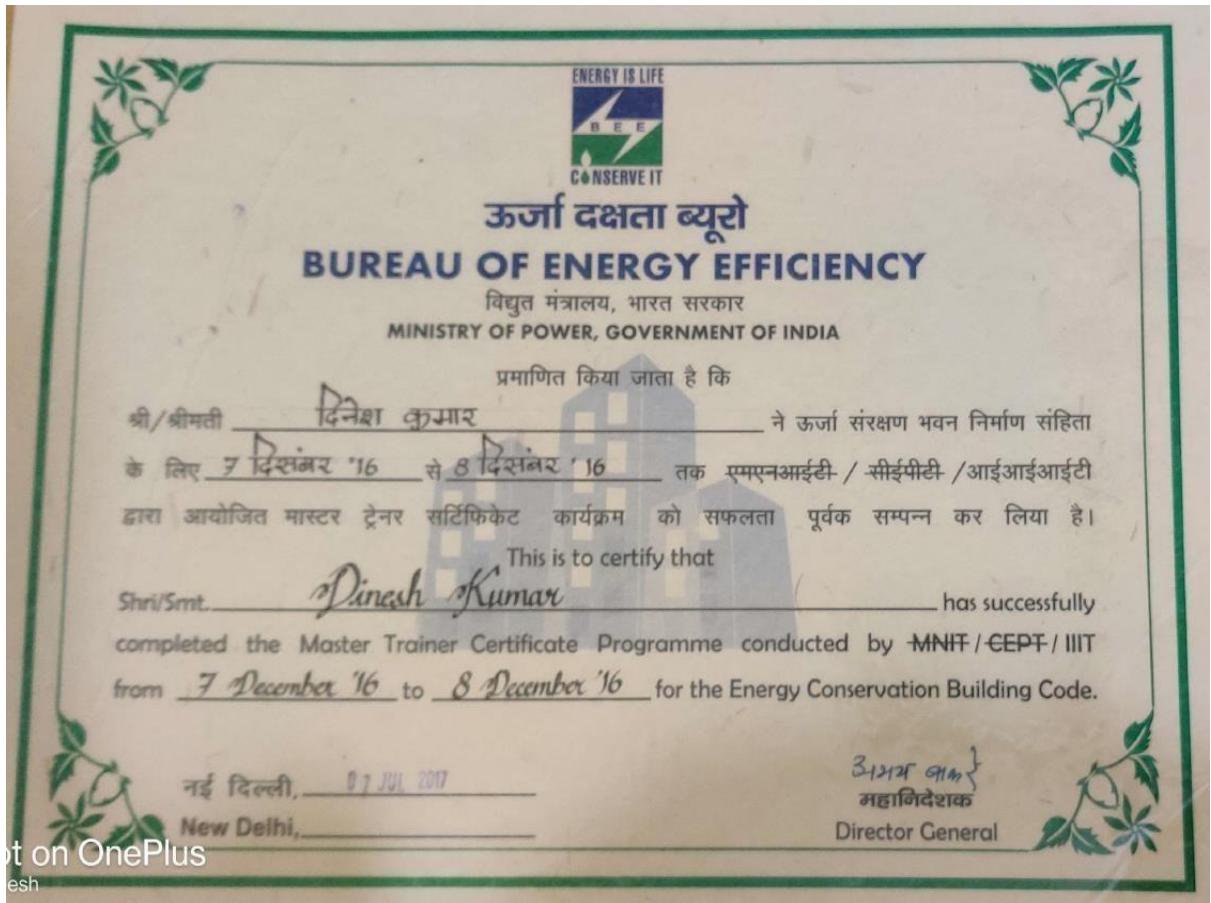
Given under the seal of the Bureau of Energy Efficiency, this **7<sup>th</sup>** day of **February, 2013**

*[Handwritten Signature]*

Digitally Signed: RAKESH KUMAR RAI  
Sun Mar 01 10:58:55 IST 2020  
Secretary, BEE New Delhi

Secretary  
Bureau of Energy Efficiency  
New Delhi

Dates of attending the refresher course	Secretary's Signature	Dates of attending the refresher course	Secretary's Signature
<b>22.12.2019</b>	<i>[Handwritten Signature]</i>		







**TAMILNADU FIRE & RESCUE SERVICES**  
**THIRUVALLUR DISTRICT**  
**THIRUVALLUR**

**CERTIFICATE**

This is to certify that Mrs. / Mr. S. SRINIVASH s/o B. SWAMIYAPPAN  
A/ESS. ST. XAVIER'S STREET, PANDUR, THIRUVALLUR DISTRICT.....has under gone  
the "Basic Fire Fighting & Rescue Operation" Training course conducted from 11.08.2016..... to  
26.08.2016..... by Tamil Nadu Fire & Rescue Services Department at Thiruvallur District, Thiruvallur  
as per G.O.M.S. No.713, dated 17.08.2005 Home (Police XVII) Department, Government of Tamil Nadu.

Station: Thiruvallur.  
Date: 20.9.16

V. Muthusignee  
District Officer, 20.9.16  
Fire & Rescue Services  
Thiruvallur District  
Thiruvallur



## GREEN RATING FOR INTEGRATED HABITAT ASSESSMENT

### GRIHA CERTIFIED PROFESSIONAL CERTIFICATE

This is to certify that

*Dinesh Kumar Dhanasekaran*

has qualified as a **GRIHA** Certified Professional For V. 2015

Date of issue: 19th June 2020

Note : This certification is valid only for GRIHA version 2015.

Chief Executive Officer  
GRIHA Council



GREEN BUSINESS CERTIFICATION INC. CERTIFIES THAT

## DINESH KUMAR D

HAS ATTAINED THE DESIGNATION OF

### LEED AP<sup>®</sup> Building Design + Construction

by demonstrating the knowledge and understanding of  
green building practices and principles needed to  
support the use of the LEED<sup>®</sup> green building program.

10531234-AP-BD+C

CREDENTIAL ID

26 DEC 2016

ISSUED

25 DEC 2022

VALID THROUGH

MAHESH RAMAMURTHY  
PRESIDENT & CEO, U.S. GREEN BUILDING COUNCIL  
PRESIDENT & CEO, GREEN BUSINESS CERTIFICATION INC.





The CPD Accreditation Office

## Certificate of Successful Attainment

*This is to certify that*

**DR. D. VINOTH KUMAR**

HAS SUCCESSFULLY COMPLETED THE FIVE DAYS (40 HOURS)

**LEAD AUDITOR COURSE**

BY PASSING THE WRITTEN EXAMINATION BASED ON

**ISO 50001:2018**

**ENERGY MANAGEMENT SYSTEMS**

Examination Date: 15/07/2022

Certificate issue Date: 22/07/2022

Certificate registration number: QCS/TR/C/0056

Total Course duration: 40 hours CPD Credits Earned: 32

Remarks: Roughly one hour of study time equals to 1 CPD Credit.

This certificate can be validated online from the industry wide Global Professional Register at [www.qcspl.com](http://www.qcspl.com).



**Partha Bagchi**  
(Managing Director)

**QCS MANAGEMENT PVT LTD**

Accredited by "CPD Accreditation Office UK"

H.O: 37E/1(310) 2<sup>ND</sup> STREET, MODERN PARK, SANTOSH PUR,  
KOLKATA-700075, WEST BENGAL, INDIA

BRANCHES: INDONESIA, BANGLADESH, QATAR, SAUDI ARABIA,  
TURKEY, UAE

WHATS APP: +918697724963/+918902447427,

EMAIL:info@qcspl.com, WEB: [www.qcspl.com](http://www.qcspl.com)



