
# 6.3 Water usage and care

| Metric | Parameter |
|---|---|
| 6.3.4 | Water Conscious Building Standards |

## MITS- MATERIAL AND QUALITY TESTING LABORATORY

### DEPARTMENT OF CIVIL ENGINEERING

## TEST REPORT

TR No: MITS-MQTL/TR/23/10/152
TR Date: 06/10/2023

| | | |
|---|---|---|
| 1. | Name and address of the customer | Site office, MITS - Madanapalle, |
| 2. | Job card no | MITS –MQTL/2023/09/152 |
| 3. | Sampling method & Date of sampling | NA |
| 4. | Material identification | Ro Water |
| 5. | Date of sample receipt | 21/09/2023 |
| 6. | Date of sample testing | 24/09/2023 |
| 7. | Location & Test done by | MITS – MQTL , Mrs Lipsa M and Veeresh B |
| 8. | Method of test (IS code) | Water portability assessment as per IS 10500:2012 |
| 9. | Condition of sample when received | Good |
| 10. | Environmental conditions : | |
| | a. Room temperature : | 27 $^0$Celsius |
| | b. Relative humidity : | 73 % |

**Name of the test:** Water portability assessment as per IS 10500:2012

| S. No | Description | Unit | Limit | Result | | | |
|---|---|---|---|---|---|---|---|
| | | | | WB | EB | SB | Canteen |
| 1. | pH | | 6.5-8.5 | 6.8 | 6.7 | 6.5 | 6.6 |
| 2. | Total Dissolved Salts (TDS) | mg/L | 500 | 30 | 34 | 31 | 32 |
| 3. | Total Suspended solids (TSS) | mg/L | 500 | NIL | NIL | NIL | NIL |
| 4. | Biological Oxygen Demand (BOD) | mg/L | 2 | 3.8 | 3.4 | 3.3 | 3.5 |
| 5. | Chemical Oxygen Demand (COD) | mg/L | <250 | 11 | 13 | 10 | 12 |
| 6. | Turbidity (NTU ) | NTU | 1 | NIL | NIL | NIL | NIL |
| 7. | Total Hardness | mg/L | 200 | 80 | 85 | 84 | 82 |

(Note: - Reported value approximately at 95% confidence level with coverage factor k = 2)

~~~~~~~~~~~~~~~~~~~~~~~~~~ End of test report ~~~~~~~~~~~~~~~~~~~~~~~~~~

Note:

1. WB: west block; EB: East Block; SB: South Block
2. This report can neither be used as an evidence in the court of law, nor it can be produced in part or full in any media without prior permission.
3. The result listed refer only to the tested sample and applicable parameters.
4. Perishable samples are destroyed after testing; requested samples are returned back to the customer.
5. Sample(s) not drawn by us, unless otherwise mentioned.

Reviewed by
Dr. Sudheerkumar Y
(Technical Manager)

Authorized by
Dr. Dipankar Roy
(HOD - Civil)

Head of the Department
Civil Engineering
Madanapalle Institute of Technology & Science
MADANAPALLE - 517 325




AN ENGINEERING COLLEGE SPONSORED BY: RATAKONDA RANGA REDDY EDUCATION ACADEMY

P.B. No. 14, Angallu, MADANAPALLE - 517325, Annamayya Dist., Andhra Pradesh, India.

Phone : 08571 - 280255, 280706 Fax : 08571 - 280433
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DATE: -31.08.2023

# Certificate on availability of Potable Water Supply in M.I.TS

This is to certify that the water from Four Bore wells that are bearing used in the premises of Madanapalle Institute of Technology & Science, Madanapalle, Annamayya District, Andhra Pradesh is potable and Fit for drinking useful for drinking purpose.

5/9/2023
AEE/EWSM/CSBe

5/9/23
Dy. Executive Engineer
RWS & S Sub Division
Thamballapalle

# GOVERNMENT OF ANDHRAPRADESH AMARAVATHI

## WQM DIVISIONAL LABORATORY :: RWS&S DIVISION MADANAPALLE (Drinking water chemical analysis report)

| S.No | Date of collection | Name&Address | Bottle No | Location | Source | Drinking water testing parameters & permissible limit ( mg/L) as per BIS:10500-2012 | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | PH( 6.5-8.5) | Electrical conductivity | TDS (500-2000) | Alkalinity (As CaCo3)200-600 | TotalHardness (AsCaCo3)300-600 | Calcium (As Ca)75-200 | Magnesium (As Mg) 30-100 | Chloride (As Cl) 250-1000 | Fluoride(As F) 1.0-1.5 | Nitrate (As NO3)45- No relaxation | Sulphate(As SO4)200-400 | Iron (As Fe)0.3-1.0 | Remarks |
| 1 | 02.09.2023 | MADANAPALLE INSTITUTE OF TECHNOLOGY&SCIENCE , P.B No 14,Angallu, Madanapalle-517325, Chittoor District | 1 | Near Office | Bore well | 6.64 | 886 | 567 | 300 | 270 | 60 | 29 | 70 | 1.34 | 3.9 | – | 0.02 | Chemically satisfactory |
| 2 | 02.09.2023 | | 2 | Near Center gate | Bore well | 6.83 | 1028 | 658 | 340 | 310 | 88 | 22 | 119 | 1.31 | 5.3 | – | 0.04 | Chemically satisfactory |
| 3 | 02.09.2023 | | 3 | Near ATM | Bore well | 6.95 | 776 | 496 | 290 | 240 | 52 | 26 | 70 | 1.32 | 2.6 | – | 0.05 | Chemically satisfactory |
| 4 | 02.09.2023 | | 4 | compound Near Main road | Bore well | 6.75 | 861 | 551 | 320 | 280 | 72 | 24 | 91 | 1.35 | 4.4 | – | 0.03 | Chemically satisfactory |

S.P. Obaiah
DEE/RWS&S-Madanapalle
Lab. Incharge

MDL 5/9/23
ASST. CHEMIST
W.Q.M.LAB,RWS & S DIVISION
MADANAPALLE

# MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE

| REVERSE OSMOSIS DETAILS | | | | |
|---|---|---|---|---|
| **S.no** | **Location** | **Units** | **Specifications- LPH-Liter per hour** | |
| 1 | Western Building | 1 | 500 LPH RO System -Full Auto system | 3000 Liters used per day |
| 2 | Southern Building | 1 | 1000 LPH RO System -Full Auto system | 5000 Liters used per day |
| 3 | Eastern Building | 1 | 1000 LPH RO System -Full Auto system | 5000 Liters used per day |
| 4 | Circular Building | 1 | 150 LPH RO System -Manual system | 2000 Liters used per day |
| 5 | Eastern Canteen | 1 | 250 LPH RO System -Manual system | 2000 Liters used per day |
| | Total | 5 | | |

# REVERSE OSMOSIS WATER DETAILS



Latitude: 13.629918
Longitude: 78.478101
Elevation: 699.15m
Accuracy: 18.8m
Time: 03-24-2021 14:32
Note: RO Plant Western Block-500LPH


VECTUS
TRIPLE 3 LAYER
Latitude: 13.629706
Longitude: 78.47818
Elevation: 698.95m
Accuracy: 23.8m
Time: 03-24-2021 17:07
Note: RO Plant Circular Block -150LPH


Latitude: 13.629837
Longitude: 78.479768
Elevation: 687.26m
Accuracy: 46.3m
Time: 03-24-2021 17:03
Note: RO Plant Eastern Canteen -150LPH


Madanapalle Institute of Technology & Science
Department Mechanical Engineering
R.O. WATER
Latitude: 13.629913
Longitude: 78.478016
Elevation: 694.75m
Accuracy: 11.5m
Time: 03-24-2021 14:26
Note: RO Water Western Block


MHRD
MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE
ANTI - RAGGING CELL
Department of Police
MITS-NSS
R.O. WATER
Latitude: 13.629944
Longitude: 78.479278
Elevation: 691.06m
Accuracy: 11.5m
Time: 03-25-2021 15:07
Note: RO Water Eastern Block


Latitude: 13.630091
Longitude: 78.47817
Elevation: 699.25m
Accuracy: 22.8m
Time: 03-24-2021 17:10
Note: RO Water Circular Block


Second Floor
RAGGING
IELTS
Latitude: 13.629447
Longitude: 78.478659
Elevation: 699.65m
Accuracy: 11.5m
Time: 03-24-2021 14:40
Note: RO Water Southern Block

# MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE

## DETAILS OF BOREWELL'S

| S.no | LOCATION | DEPTH | CAPACITY | PIPES( 50 mm dia) |
|---|---|---|---|---|
| 1 | Inside Compound Wall Near Eastern building opposite side | 220 feet | 7.5 hp motor | 9 |
| 2 | Outside compound wall Near Eastern building opposite side | 675 feet | 12.5 hp motor | 30 |
| 3 | ATM Side near Main road | 720 feet | 12.5 hp motor | 35 |
| 4 | Outside compound wall Near Main road | 850 feet | 15 hp motor | 35 |

Shiva Shankar
SITE ENGINEER
M. I. T. S.
MADANAPALLE

KAVITHA SHETTY
B.Arch
Registered Architect
BCC/BL-3.6/A-1662/2007-08
COA REGN NO CA/90/13296

PRINCIPAL
Madanapalle Institute of Technology & Science
PO Box NO 14, Kadiri Road, Angallu
MADANAPALLE 517 325 A P

# MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE

(UGC-AUTONOMOUS INSTITUTION)

www.mits.ac.in

Affiliated to JNTUA, Ananthapuramu & Approved by AICTE, New Delhi
NAAC Accredited with A+ Grade, NIRF India Rankings 2022 - Band: 251 - 300 (Engg.)
NBA Accredited - B.Tech. (CIVIL, CSE, ECE, EEE, MECH), MBA & MCA


TOTAL LAND-26.17 Acres (or) 105906.23 Sqm

# DETAILS OF VARIOUS FACILITIES:-

- Sewage Treatment Plant
- Water Harvesting Pits
- RO Facility
- Waste Management

# SEWAGE TREATMENT PLANT:-

*Sewage treatment plant is a facility that removes contaminants from waste water to make it safe for reuse or discharge into the environment.

*STP’S are essential because they Protect the environment and Public health.

*Treated water using for garden and trees.

*20,000 to 30,000 litres per day water is being used for garden after treatment.

*Periodical services are being done.

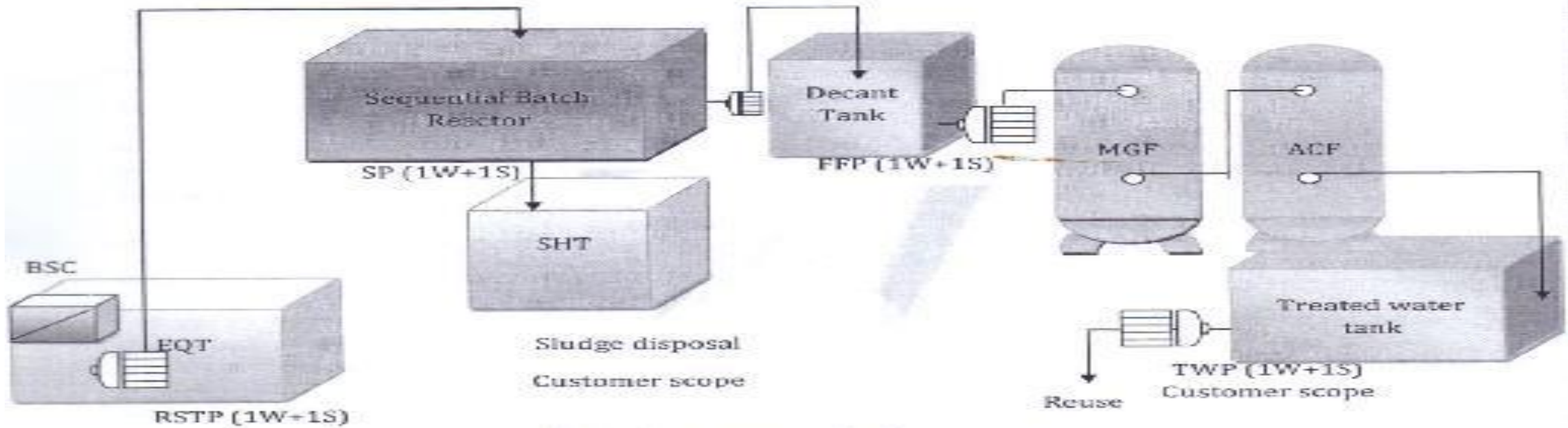
# SEWAGE TREATMENT PLANT:-


## SPECIFICATIONS:-

- Design Capacity :50KLD per day.
- Built up Area : 54.56 sqm
- Plant Started : 02.02.2018
- Operating Hours : 10
- Expenditure : Rs.8,09,500/-
- **Use of treated Water:**
- To treat the water for utilizes to garden.

# SEWAGE TREATMENT PLANT

## PROCESS FLOW BLOCK DIAGRAM






**Legend:**

- Civil Works

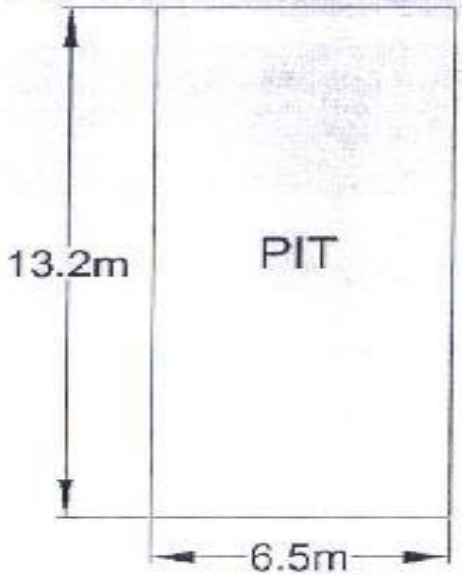
| | |
|---|---|
| BSC | - Bar screen chamber |
| EQT | – Equalization tank |
| SBR | - Sequential Batch reactor |
| SHT | - Sludge Holding tank |
| MGF | - Multi grade sand filter |
| ACF | - Activated carbon filter |
| RSTP | - Raw sewage transfer pump |
| SP | - Sludge pump |
| FFP | - Filter feed pump |
| TWP | - Treated water pump |

# WATER HARVESTING PITS:-

*The use of Pits is made to store the water  subsequently recharge to ground water through specially constructed recharge wells to avoid deflection of water table.

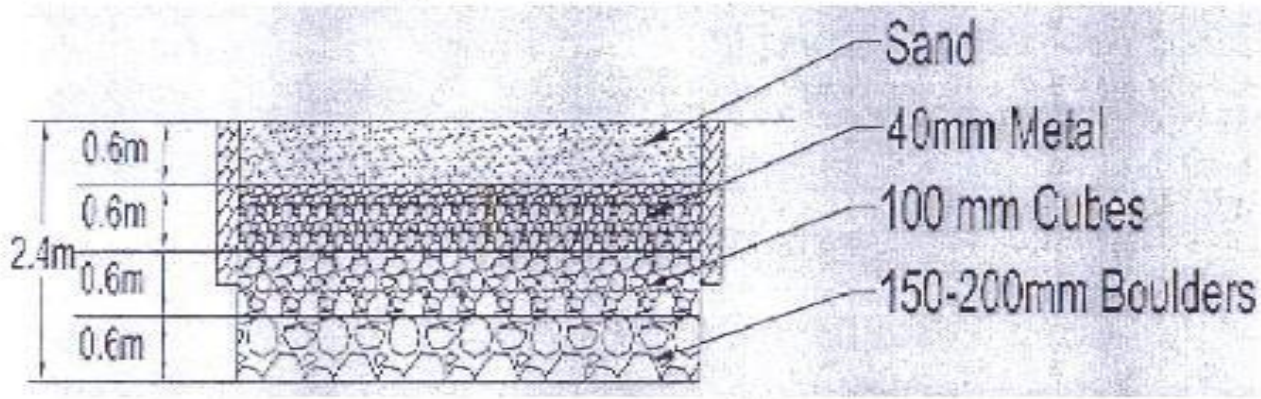
*There are two Rain water harvesting pits in campus with a capacity of 4 Lakh liters.

# MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE
## (UGC-AUTONOMOUS)
### Rainwater Harvesting Pit No-1



Plan

Specifications: Catchment Area - 51450 $m^2$
Length - 13.2 m
Width - 6.5 m
Depth - 2.4 m



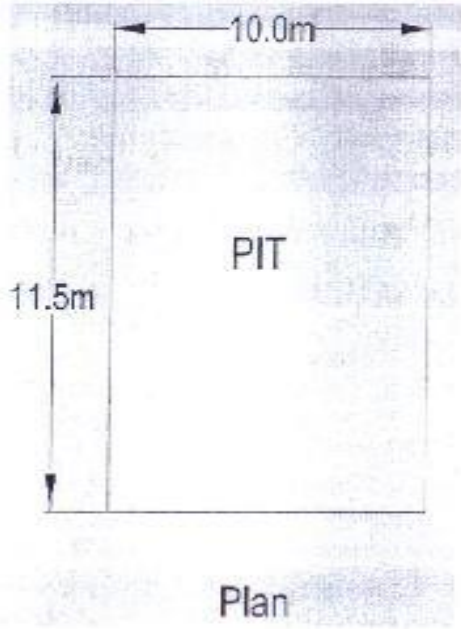
Cross Section

& Science
Site Engineer

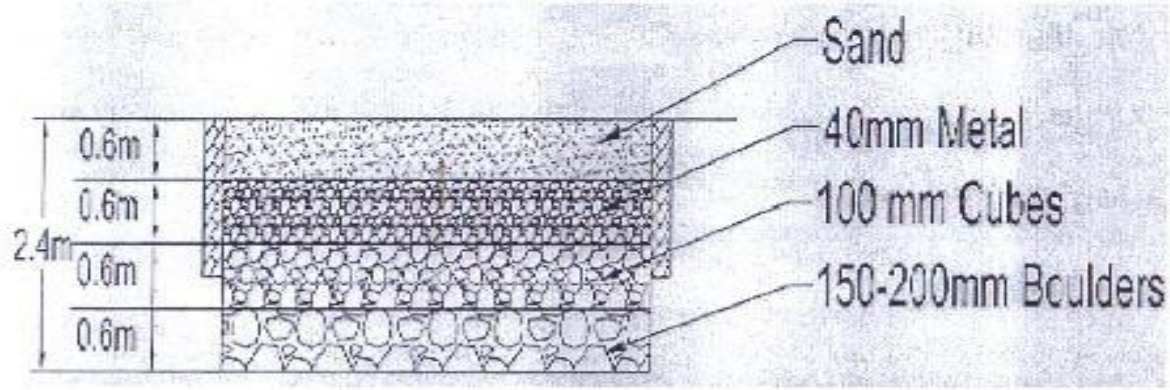
Principal
Madanapalle Institute of
Technology & Science
MADANAPALLE

# MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE
(UGC-AUTONOMOUS)

## Rainwater Harvesting Pit No-2




Specifications: Catchment Area - 13300 $m^2$
Length - 11.5 m
Width - 10.0 m
Depth - 2.4 m




**Cross Section**

For Madanapalle Institute of Technology & Science

Site Engineer

Principal
Madanapalle Institute of Technology

# REVERSE OSMOSIS PLANT:-

*A Reverse Osmosis (RO) Plant’s purpose is to purify or desalinate water using a process that forces water through a semipermeable membrane. The Membrane separate pollutants from the water, producing ultra pure water.

* RO Plant’s are often used to purify drinking water from ground water.

*It can remove many contaminants ,including trihalomethanes,some pesticides, solvents and other volatile organic compounds.

*There are 6 no’s RO Plant in Campus.

*Periodical service of the RO Plant's are being done.

# REVERSE OSMOSIS WATER DETAILS:-





# LOCATION AND SPECIFICATION DETAILS

| S.no | Location | Units | Specifications- LPH-Litter per hour | |
|---|---|---|---|---|
| 1 | Western Building | 1 | 500 LPH RO System -Full Auto system | 3000 Liters used per day |
| 2 | Southern Building | 1 | 1000 LPH RO System -Full Auto system | 5000 Liters used per day |
| 3 | Eastern Building | 1 | 1000 LPH RO System -Full Auto system | 5000 Liters used per day |
| 4 | Circular Building | 1 | 150 LPH RO System -Full Auto system | 2000 Liters used per day |
| 5 | Eastern Canteen | 1 | 1000 LPH RO System -Full Auto system | 5000 Liters used per day |
| 6 | Hostel | 1 | 500 LPH RO System -Full Auto system | 3000 Liters used per day |
| | **Total** | **6** | | |

# WASTE MANGEMENT:-

*Waste management is the collection,transport,processing,recycling or disposal ,monitoring of waste material.

*There are four types of waste management:-

Landfills, Recycling ,Incineration, Composting

*Approximately 5 to 6 tons of solid waste is accumulated per year in the campus.

*The beneficial use of solid waste keeps materials out of landfills and reduces amount of raw materials used in construction.

*Various steps are being taken for disposal of used papers, books and e-wastage. Whereever certificates are required and obtained.


Compost Pits
Materials use : waste leaves and Cow dung


Process of manufacturing the Natural fertilizers in MITS
Cow Dung
Water
waste leaves

# SITE OFFICE:-

*Site office is established in the campus with qualified faculty members for monitoring daily various engineering activities in the campus.

*Site office is responsible for campus cleaning ,sanitation ,gardening ,plumbing,waterlines,electrical and carpentry works.

*Construction and execution of new buildings as per approved plans.

*Monitoring of various periodical service contracts of elevators,RO Plant,STP unit etc.,

*Maintenance of stocks of various items related to Construction works.