



INTERNSHIP REPORT

INTERNSHIP REPORT ON AQUA ENGINEERS AND CONSULTANTS INDIA PVT LTD

**FROM
24TH JANUARY 2022 TO 4TH FEBRUARY 2022**

**BY
MANIKANDAN D
40910014**



Aqua Engineers and Consultants India Pvt Ltd
(An ISO 9001 : 2015 Certified Company)
Innovative Technologies For Sustainable Solutions...

09-02-2022

CERTIFICATE

This is to certify that **Mr.Manikandan.D (40910014)**,
a student of **M.Sc.Chemistry**, Department of Chemistry, Sathyabhama
Institute of Science and Technology, Chennai has carried out his work
entitled **“Recycling of Industrial Effluent from Automobile
Industry through Ultra filtration & Reverse Osmosis”** as a part of
summer internship Project for the Degree of **M.Sc. Chemistry**. The
work was done at **Aqua Engineers and Consultants India Private
Ltd** under my supervision from **24th January 2022 to 4th February
2022.**

For Aqua Engineers and Consultants India Pvt Ltd

K.JAYARAM

Managing Director



Corporate Office :
Chennai
No.5 LGP Complex,
First Floor, Near Porur Tollplaza
Off 200 Feet By-Pass Road, Vanagaram,
Chennai - 600 095. Tamil Nadu, India.
Phone : +91-44-66 444 000

Branch Office
Bangalore
No.882, 4th Floor, Ganga Dreams,
MES Ring Road, Mythala Nagar,
Bangalore - 560 054.
Karnataka, India

Branch Office
Kochi
No.33/199, Arkakadavu Road,
Alinchuvadu, Vennala,
Kochi - 682 028.
Kerala, India.



ABOUT THE COMPANY:

Aqua Engineers and Consultants India Pvt Ltd company-based catering to water, waste- water treatment and air pollution control. They working product innovations in the forefront for water and waste water treatment and recycling technologies.

Aqua engineers company specializations with recycling plants like Ultra filtration with reverse osmosis. They also specialised with water treatment plants, sewage and effluent treatment plants, recycling plants and zero discharge plants.

RECYCLING OF WATER IN AUTOMOBILE INDUSTRY

About 148000 litres of water used to make a car and 7600 litres of water to make its tires. Water gets contaminated from oil, grease and metals.

REVERSE OSMOSIS

Reverse Osmosis (RO) is the water purification process that uses a semi permeable membrane to remove ions the unwanted molecules and larger particles from drinking water. In Reverse Osmosis, an applied pressure is used to overcome osmotic pressure. It removes many types of dissolved and suspended solids from water and used for industrial processes and production of potable water. Reverse Osmosis filtration is one of most popular and best water filtration methods available.

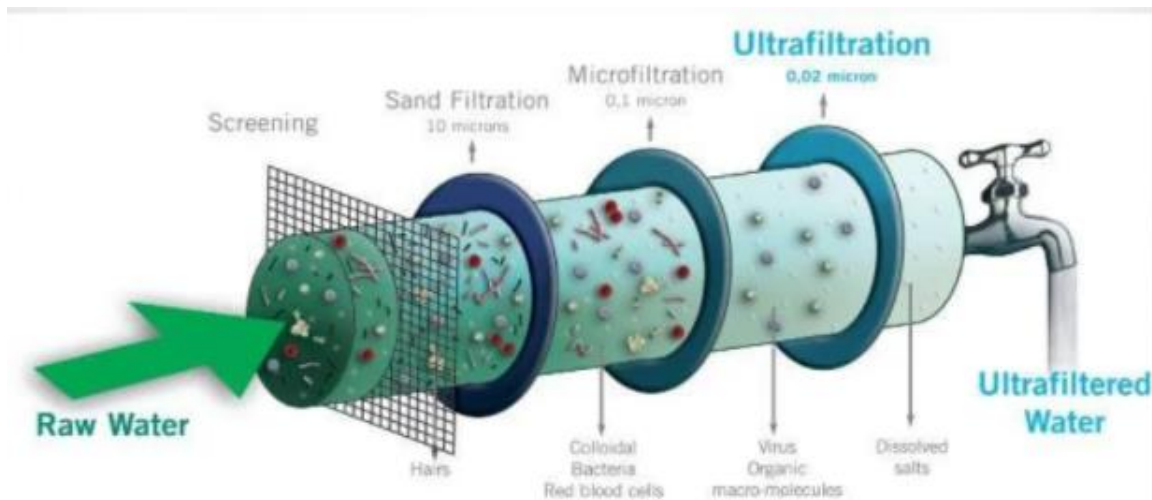
The membrane is used to remove the ions, unwanted molecules. Reverse osmosis membrane is commonly use in drinking water purification. Membrane filters can remove virtually all particles of 0.01 microns. The filtered water can use for domestic purpose, drinking purpose.



- * Membrane with pores of less than 1nm
- *Used to separate salts, ions and small organic molecules from feed water
- *Requires high pressure to function it (80 bar)

ULTRA FILTRATION

Ultra-filtration (UF) is a separation process using membranes with pore size in the range of 0.1 to 0.001 micron. UF is variety of membrane filtration in which hydrostatic pressure forces a liquid against a semipermeable membrane. Ultra-filtration is used to separate large molecules from solvents, separate large molecules from smaller molecules, separate large molecules from one another.



To remove particulator and macromolecules from water in waste water. Membranes have a pore size between 100 to 2nm and 1 to 10 bar pressure to operate.

The water enters the tubes and its filtered against the wall surface; slit, sediment, turbidity as well as microorganisms are retained inside the membrane wall as they cannot pass the fine tube walls.

Filtered water is collected on the exterior wall of the fibers and exists the permeate port.

Ultrafiltration system operation and maintenance is similar to that of reverse osmosis systems.

CONCLUSION

The internship program is useful experience. Through this training I gained a new knowledge, skills of water and wastewater treatment. I honestly spent time during the internship. I had a lot of experience also beyond my subject too.