

# “SUJHAAV

## A solution to clean water,,

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*Project submitted by*  
**Khushi Jain**

### Introduction

- Water is a fundamental human need
- Each person on Earth requires at least 20 to 50 liters of clean, safe water a day for drinking, cooking, and simply keeping themselves clean
- Tens of millions of people are seriously sickened by a host of water-related ailments—many of which are easily preventable
- Sources of water contamination: human and animal wastes, agricultural runoff, industrial chemicals
- Regular monitoring of contaminant levels in water can give a clear indication of water quality
- Online water quality monitoring is essential for quick decisions and alleviating the hazards of contaminated water

## Project Scope and Objectives

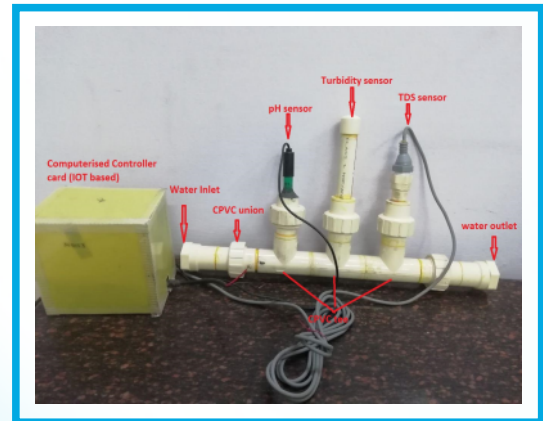
1. Identification of slum locations in Delhi with suspected drinking water quality
2. Online Monitoring of water quality through sensors
3. Installation of water purifiers
4. Assessing the water quality of purifier output
5. Training to economically weak and unemployed persons in water purifier maintenance and service

## Work Done

### ➔ Development of Water quality sensor device

- Can sense and transmit the water quality online through IOT based controllers
- Resulting real-time data can be accessed on the web.
- Compact, inexpensive, easy to use, and can be installed at different types of locations.

### ➔ Parameters selected for water quality monitoring are: pH, Turbidity, and TDS



### ➔ Online data Monitoring

- pH, Turbidity and TDS data sent to cloud and can be accessed by logging on to the following webpage with the given Username and passwords: <http://okayaiot.com/nasaka/>

### ➔ Publication of development work

- Paper Title: Online Water Quality Monitoring through Sensors
- Authors: Khushi Jain, Mandeep Kaur Sukhija, Diya Singhal, Arush Gupta

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- ➔ Installation of WQM sensors at two JJ locations in Udyog Nagar Industrial area
  - C-3/206 , Udyog Nagar, New Delhi-110087
  - T Huts, Block B 804 Udyog Nagar, New Delhi-110087



Water Quality monitoring sensor assembly installed at Location-1



Water Quality monitoring sensor assembly installed at Location-2

## ➔ Collection and Analysis of Data

The screenshot shows the Nasaka mobile dashboard interface. At the top, it displays the status bar with 18% battery and 6:49 pm. The app title is "Nasaka | Dashboard" with the URL "okayaiot.com". Below the logo, the IMEI NO is 862549042368053. A refresh indicator shows "(Refreshing in 5 second)". The main data table is titled "Purifier Data" and contains the following information:

Time	Water TDS	Water PH	Turbidity
09-19 18:49:20	177	07.8	1004
09-19 18:49:04	124	07.8	1004
09-19 18:48:48	174	07.8	1004
09-19 18:48:31	145	07.8	1004
09-19 18:48:15	175	07.8	1004

A "View all data" button is located at the bottom of the table.

The screenshot shows the Nasaka mobile dashboard interface. At the top, it displays the status bar with 94% battery and 9:07 am. The app title is "Nasaka | Dashboard" with the URL "okayaiot.com". Below the logo, the IMEI NO is 862549042368053. A refresh indicator shows "(Refreshing in 8 second)". The main data table is titled "Purifier Data" and contains the following information:

Time	Water TDS	Water PH	Turbidity
09-19 09:07:20	139	07.5	0995
09-19 09:07:03	144	07.6	0995
09-19 09:06:47	093	07.5	0995
09-19 09:06:31	134	07.5	0995
09-19 09:06:14	118	07.5	0995

A "View all data" button is located at the bottom of the table.



Nasaka Xtra Sure installed at the location.

## → Installation of Water Purifiers

- Gravity based water purifier-NASAKA Xtra Sure Direct, which does not require electricity to operate. They have 5 stages of filtration-Sediment, activated carbon, tourmaline balls, steel mesh and Ultrafiltration (UF) membrane. UF membrane filters out all disease causing microbes from water and the output water is safe for drinking.

## → Training

- Training for maintenance and service of the water purifiers given to the persons in the household

## Conclusions

- Multi parameter water quality sensors are low-cost tools for water quality monitoring, which can be employed at various slum clusters. The overall system is cost-effective, portable, and easy to use by even unskilled persons.
- As a part of the Corporate Social Responsibility initiatives, various corporates can employ these sensors and water purifiers at the slum /JJ locations, thus providing safe drinking water to the poor and needy. This will not only help in improving the overall health of these people but will also generate employment in the field of service and maintenance of water purifiers to the economically weaker sections of the society, creating an enormous positive impact on society.
- The installation of such systems at various effluent sites and live data monitoring by the government authorities can instantaneously help in decision making and necessary actions to use water purifiers, which would prevent water borne diseases.