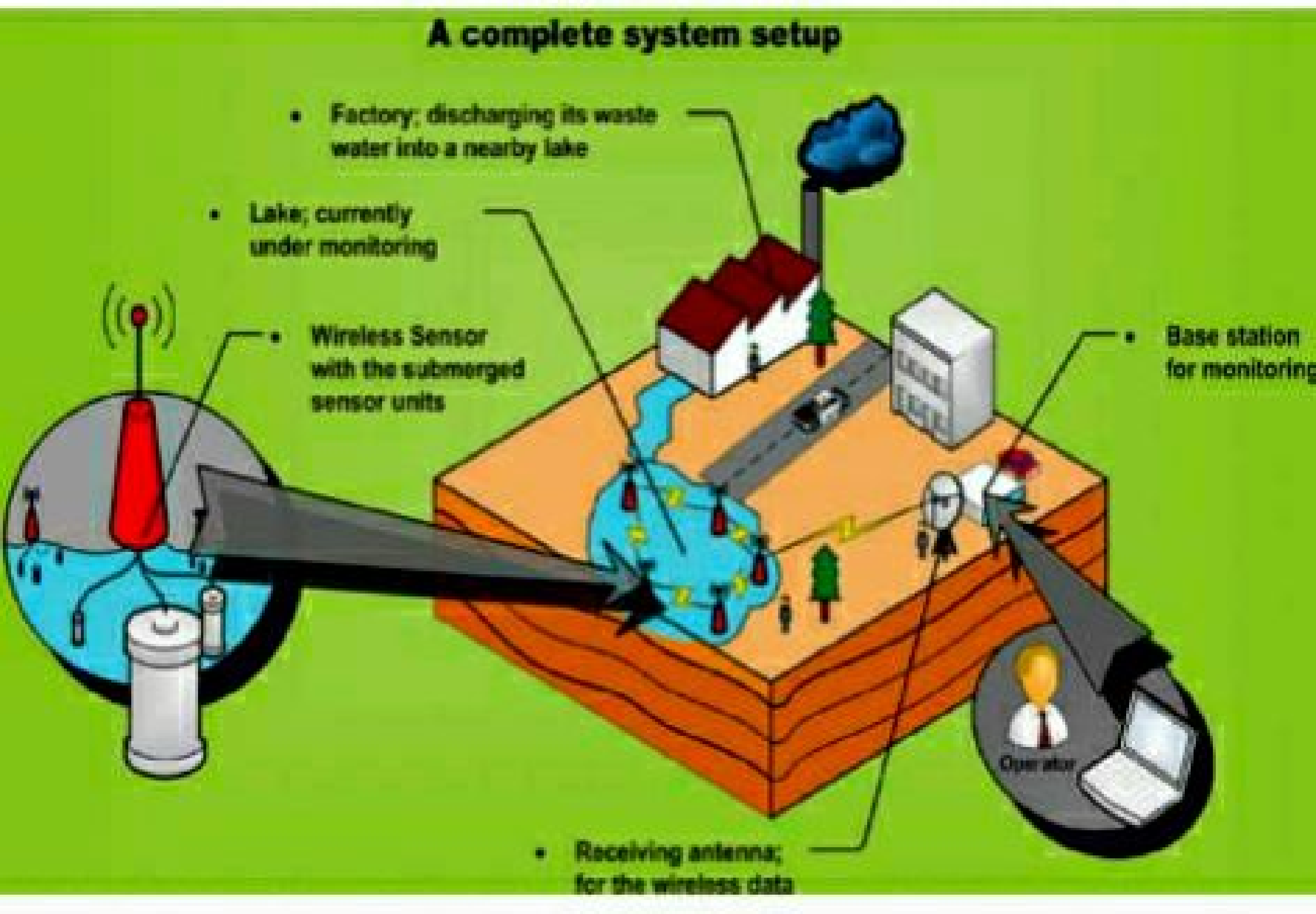
Internet of Things (IOT) Use Cases

1. IOT based Safety Gadget for Child Safety Monitoring & Notification
2. Hazardous Area Monitoring for Industrial Plant Powered by IOT
3. IOT based Smart Crop Protection System For Agriculture
4. Real-time River Water Quality Monitoring and Control System
5. Smart farmer - IOT Enabled Smart Farming Application
6. Smart Waste Management System for Metropolitan Cities
7. Personal Assistance for Seniors Who are Self-reliant
8. Signs with Smart Connectivity For Better Road Safety
9. Smart Solutions For Railways
10. Industry-specific Intelligent Fire Management System

A complete system setup



```
//include libraries
#include <SoftwareSerial.h>
#include <LiquidCrystal.h>

//for bluetooth - create an object called
BTserial, with RX pin at 3 and TX pin at
2
SoftwareSerial BTserial(3,2); // RX | TX

//decraration of all our variables

float reads;
int pin = A0;

float vOut = 0 ;//voltage drop across 2
points
float vIn = 5;
float R1 = 1000;
float R2 = 0;
float buffer = 0;
float TDS;

float R = 0;//resistance between the 2
wires
float r = 0;//resistivity
float L = 0.06;//distance between the
wires in m
double A = 0.000154;//area of cross
section of wire in m^2

float C = 0;//conductivity in S/m
float Cm = 0;//conductivity in mS/cm

int rPin = 9;
int bPin = 5;
int gPin = 6;
int rVal = 255;
int bVal = 255;
int gVal = 255;
```

TABLE I. SUMMARIZED RESULTS

Source	Readings			
	Temperature	pH	ORP	Conductivity
Rewa River	20-30 °C	7.7-8.2 pH	190-220 mV	70-80 uS/cm
Central Tap water	20-30 °C	7.7-8.1 pH	300-600 mV	55-70 uS/cm
Sigatoka coast	20-30 °C	7.7-7.9 pH	100-150 mV	50-60 mS/cm
Nabukula u Creek	20-30 C	7.7-7.9 pH	0 to -3mV	42-45 mS/cm