Pollution Control in Water by using IC Technology

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Abstract: Now a days water pollution is most dangerous thing that causes disease such as cholera, and other serious illnesses such as guinea worm disease, typhoid and dysentery etc., The water pollution cannot be controlled totally but it can be controlled partially. Our idea is based on controlling water pollution partially and also to safe the people from polluted water by using our idea. The main source for water pollution is releasing the hazardous chemicals from the industry directly mixed with the water content like river, lakes and ocean. Every industry releasing the chemicals in a normal way. Every time chemical industry releasing chemicals if they exceeding the permissible limit is a dangerous thing to our society. Our idea is to control the chemicals if they exceeding their limit. Industry releasing the chemicals in normal way if they exceeding the chemical level is released means the chip identified and it automatically closed the chemical closed door in a particular time. It give a indication to the industry to rectify the exceed level chemicals. If the company ignored the indication means the inside process is automatically collapsed. But some company releasing chemicals in abnormal way that's also identified by using WINS. This idea is an innovative one and it will be implemented by us as soon as possible.

Keywords: Chip, Chemicals, WINS.

I. INTRODUCTION

Water contamination is the blend of water bodies, it because of human bodies. Water bodies, for example, lakes, waterways, seas, springs and ground water. Water contamination results when contaminants are brought into the regular bodies. For example, opening up inadequately treated waste water into natural water bodies can lead to debasement of amphibian environments. Thus, this can prompt general medical issues for individuals living downstream.

They may utilize the equivalent contaminated stream water for drinking or washing or water system. Water contamination is the main overall reason for death and ailment, for example because of water-borne infections. Wellsprings of water contamination are either point sources and non-point sources. Point sources have one recognizable reason for the contamination, for example, a tempest channel, wastewater treatment plant or stream.

Non-point sources are progressively diffuse, for example, horticultural spill over. Contamination is the aftereffect of the aggregate impact after some time. All plants and creatures living in or being presented to dirtied water bodies can be affected. The

impacts can harm singular species and effect the regular natural networks they are a piece of. The reasons for water contamination incorporate a wide scope of synthetic substances and pathogens just as physical parameters.

Fig1:Polluted water is mixed with pure water.

II. CLASSIFICATION

- Point Sources
- Non Point Sources

A. POINT SOURCES

Point source water contamination alludes to contaminants that enter a water route from a solitary, recognizable source, for example, a channel or ditch. Examples of sources right now releases from a sewage treatment plant, a manufacturing plant, or a city storm drain. The CWA meaning of point source was corrected in 1987 to incorporate metropolitan tempest sewer frameworks, just as mechanical tempest water, such as from building destinations.

Fig2: Diagramatic representation for Point Source.

B. NON POINT SOURCES:

Non point source contamination alludes to diffuse pollution that doesnot begin from a solitary discrete source. NPS contamination is frequently the total impact to limited quantities of contaminants assembled from an enormous region. A typical model is the draining out of nitrogen mixes from treated farming and Nutrient run off in storm waterfrom "sheetflow" over an agrarian field or a backwoods territory lsocite das instances of NPS contamination. Sullied storm water washed off of parking garages, street sandhigh ways, called urban overflow, is once in a while included under the classification of NPS contamination. Be that as it may, on the grounds that this run off is ordinarily channel driven into storm channel frameworks and released through funnels to neighborhood surface waters, it turns into a point source.
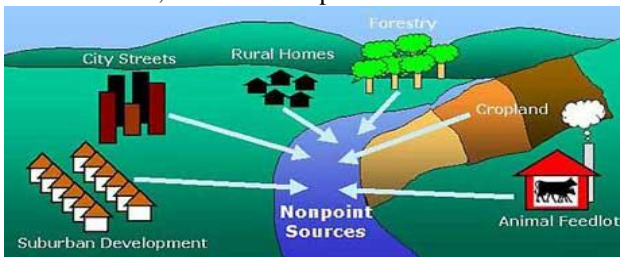

Fig3:Diagramatic representation for Non Point Source.

III. CAUSES OF WATER POLLUTION

A. Sewage and wastewater: No longer of any concern? Surfers will disclose to you that sewage contains a wide range of terrible awfulness, from sterile items, condoms, paper, and plastics, to microorganisms and infections that can make you very sick.

B.Soaps and washing detergents: Phosphates in cleansers can treat waterways and oceans, causing algal blossoms that utilization up oxygen and slaughter fish life.

C. Invasive species: Often hauled far and wide by ships, they out of nowhere show up in streams, lakes, and oceans where they have no predators, rapidly clearing out their regular adversaries.

D. Atmospheric affidavit: This is air contamination that profits to Earth as land and water contamination, including corrosive downpour that falls into seas, streams, and oceans, substance releases from stacks (smokestacks), and fly debris from squander incinerators.

E. Highway and street runoff: Cars clearly wear out as they drive down streets—yet it's more subtle that they wear out and leave poisonous deposits on the streets themselves. Overwhelming tempests wash harmed muck goes romping into encompassing area where it channels into streams or groundwater.

F. Agricultural overflow: Fertilizers, weed executioners, and other ranch synthetic compounds wash into waterways and groundwater, causing algal sprouts and possibly polluting drinking water.

G. Oil generation: Most oil is delivered seaward and moved by ships, so it's nothing unexpected that the oil business is a major polluter. In spite of the enormous media consideration they gain, tanker mishaps represent just around 10 percent of the aggregate sum of oil that enters the seas. Tragically, they regularly make a colossal measure of contamination in one spot, overpowering the neighbourhood biological system.

H. Ship contamination: Several decades after significant universal understandings to stop marine contamination were marked, oil spillage and waste removal from ships (counting journey boats, warships, and tankers) stays a critical reason for sea contamination.

I. Oil dumped: You may think oil tankers make the most oil contamination, however a considerable amount of oil enters water basically by being tipped (or washing) down the channel..

Fig4: Oil mixed with the water.

V. EXISTED METHODS:

METHODS TO DETECT THE POLLUTION LEVEL:
Water contamination might be investigated through a few general classifications of techniques: physical, compound and natural. Most include assortment of tests, trailed by particular diagnostic tests. A few strategies might be led in situ, without examining, for example, temperature. Government offices and research associations have distributed institutionalized, approved scientific test techniques to encourage the similarity of results from divergent testing occasions.

Sampling: Inspecting of water for physical or substance testing should be possible by a few strategies, contingent upon the precision required and the attributes of the contaminant. Numerous pollution occasions are pointedly confined in time, most generally in relationship with downpour occasions. Therefore "snatch" tests are frequently deficient for completely measuring contaminant levels. Researchers assembling this kind of information regularly utilize auto-sampler gadgets that siphon additions of water at either time or release interims. Inspecting for organic testing includes assortment of plants and creatures from the surface water body.

Contingent upon the sort of evaluation, the life forms might be recognized for bio reviews (populace tallies) and came back to the water body, or they might be dismembered for bioassays to decide harmfulness.

A. Physical testing: Normal physical trial of water incorporate temperature, solids focuses (e.g., complete suspended solids (TSS)) and turbidity.

B. Chemical testing: Water tests might be analyzed utilizing the standards of logical science. Many distributed test strategies are accessible for both natural and inorganic mixes.

As often as possible utilized strategies incorporate pH, biochemical oxygen request (BOD),:102 synthetic oxygen request (COD),:104 supplements (nitrate and phosphorus mixes), metals (counting copper, zinc, cadmium, lead and mercury), oil and oil, complete oil hydrocarbons (TPH), and pesticides.

C. Biological testing: Organic testing includes the utilization of plant, creature or microbial markers to screen the wellbeing of an amphibian biological system. They are any natural species or gathering of species whose capacity, populace, or status can uncover what level of biological system or ecological trustworthiness is available .Such life forms can be checked for changes (biochemical, physiological, or conduct) that may demonstrate an issue inside their environment.

Fig5: Statics for water pollution.

VI.CONTROL OF POLLUTION:

A. Municipal wastewater treatment:

In urban territories of created nations, city wastewater (or sewage) is commonly treated by brought together sewage treatment plants. Well-planned and worked frameworks (i.e., with optional treatment steps or further developed treatment) can expel 90 percent or a greater amount of the contamination load in sewage. A few plants have extra frameworks to evacuate supplements and pathogens, however these further developed treatment steps get continuously progressively costly. Nature-based arrangements are additionally being utilized rather than (or in mix with) brought together treatment plants. Urban communities with sterile sewer floods or consolidated sewer floods utilize at least one building ways to deal with decrease releases of untreated sewage, including: using a green foundation way to deal with improve storm water the executives limit all through the framework, and lessen the pressure driven over-burdening of the treatment plant fix and substitution of spilling and breaking down gear expanding by and large pressure driven limit of the sewage assortment framework (frequently an extravagant choice).
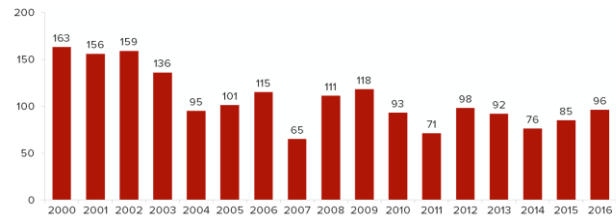

Fig6:Pictorial representation for municipal waste water treatment.

B. On-site sanitation and safely managed sanitation: Family units or organizations not served by a civil treatment plant may have an individual septic tank, which pre-treats the wastewater on location and invades it into the dirt. This can prompt groundwater contamination if not appropriately done. Universally, about 4.5 billion individuals right now (in 2017) don't have securely overseen sanitation, as per a gauge by the Joint Monitoring Program for Water Supply and Sanitation. Absence of access to sanitation regularly prompts water contamination, for example by means of the act of open crap: during precipitation occasions or floods, the human appearances are moved from the beginning they were saved into surface waters. Basic pit restrooms may likewise get overwhelmed during precipitation occasions. The utilization of securely oversaw sanitation administrations would forestall this sort of water contamination.
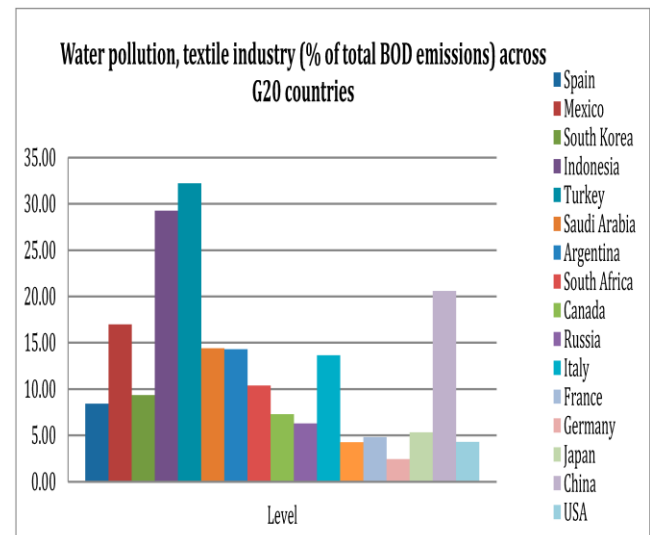

Fig7: Graphical representation for water pollution.

VII. PROPOSED METHODS

Our idea is to reduce the water pollution in easier way. Normally every chemical industry releasing the chemicals waste in water bodies like pond, lake and river.

Chemicals exceeding their limit is dangerous to our society. In every industry has a permissible limit to releasing the chemicals. But only less number of companies followed the permissible limit. Lot of companies releasing the chemicals directly to the water bodies without reduce the permissible level. We have a idea to control the pollution.

Each and every company releasing the chemicals in normal way. At this releasing chemicals in waste releasing gate way. By using the chip control the pollution level from the water. Chip is placed in waste releasing gate way it is used to identify the permissible limit for releasing chemicals. The releasing chemicals exceeding their limit means the chip give a intimation to the factory. If the intimation is received means the factory people must rectify the chemicals in permissible limit. Otherwise the company does not rectify the chemicals in permissible limit means the waste releasing gate way automatically closed. If the chemical does not released means entire factory gets collapsed. The chemical stored in industry means it also dangerous to our society also.

Fig8: Chemicals stored in industry.

But few companies try to releasing the chemicals in abnormal way. In a particular distance they try to disposal the chemicals in abnormal way. Using Wireless Integrated Network Sensors[WINS] identify the abnormal way of releasing chemicals. Normally company releasing the chemical abnormal way is disposing the chemicals from a particular distance from the company. This type chemical releasing also control by our idea. WINS is dipped in the soil and it is hided. We already fed a temperature details to the WINS. If the chemical is disposed in the land means WINS identify the temperature change and it give a information to the National Green Tribunal(NGC).Using this method we control the pollution from the good manner. This idea is implemented in future days by us.
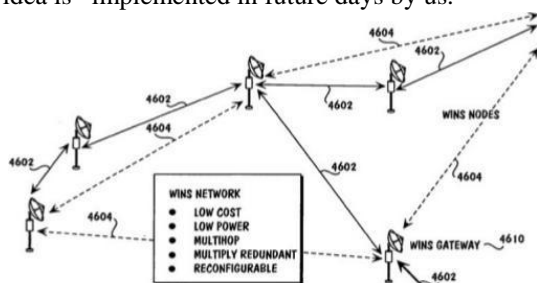

Fig9: WINS diagram

VIII. ADVANTAGES

- Free from pollution
- Efficient
- Economically less
- Reliable one

IX. RESULT

Control of water pollutants requires appropriate infrastructure and management plans. The infrastructure can also encompass waste water treatment plant life. Sewage remedy vegetation and business waste water remedy plant life are usually required to protect water bodies from untreated waste water. Water pollutants, to a bigger quantity, may be managed by means of an expansion of techniques. Rather than freeing sewage waste into water our bodies, it's far better to deal with them before discharge. Working towards this can lessen the preliminary toxicity and the ultimate substances may be degraded and rendered harmless by means of the water frame itself.

X. CONCLUSION

Finally our can be concluded by implementing this idea in industries to control the flow of chemical level in permissible limit. By doing so we can get pollution free water for our usage. This idea is implemented in the industry to reduce water pollution rate to the lowest level.

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