

## Water Quality Analysis of Surface Water Sources near Tindivanam Taluk

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The physico synthetic boundaries of surface water in Tindivanam Taluk, Tamil Nadu, India were broke down by APHA measures (2012). The surface water is one of the wellsprings of drinking and family unit use water around there and month to month variety of water quality boundaries, for example, pH, Dissolved oxygen, TDS, Alkalinity, COD just as follow measure of metal fixation were estimated. This had prompted unpredictable activities, including dumping of squanders into the water washing and washing in open surface water bodies. The diagnostic outcomes demonstrated impressive variety among the broke down examples regarding their synthetic creation. The outcome shows that the water nature of Tindivanam city isn't acceptable and there is a dire requirement for the fundamental treatment of water before it is utilized for the drinking reason. Reasonable water advancement in the city is expected to satisfy the interest of water for future.

### Keywords

Surface water; COD; Environmental factor; Drinking; TDS

### Introduction

When all is said in done surface water is favored as a wellspring of drinking water as a result of its helpful accessibility and its steady and great quality. Be that as it may, the source is sullied by a few substances [1-2]. Substances that contaminate the surface water can be partitioned as substances that happen normally and substances created or presented by human exercises [3]. Normally happening substances causing contamination of surface water incorporate for instance the testimony of residue, barometrical procedure of evapotranspiration, by the common draining of natural issue and supplements from soil, by hydrological factors that lead to overflow and by organic procedures inside the sea-going condition

that can modify the physical and synthetic creation of water [4,5]. Subsequently water in indigenous habitat contains many broke up substances and non-integrated particulate issue. The characteristic nature of surface water relies on the physical condition the beginning and development of the water. Water contamination is one of the most genuine ecological issues in Tindivanam Taluk. The surface water characteristics are influenced by different anthropogenic exercises. The surface water contains different contaminants, for example, turbidity, Dissolved oxygen, natural and inorganic polluting influences and pesticides [6-8]. These substances incorporate family unit synthetic concoctions, horticultural synthetic substances some inorganic and natural contaminants. Because of this ecological tirelessness, these toxins can cause tainting of surface water which is the primary water assets of creation of savoring water Tindivanam Taluk; this region surface water turns out to be increasingly more truly contaminated because of removal of local and farming overflow. At present investigation to break down the water quality particularly the nearness of developing contaminants from surface water that is utilized as a wellspring of drinking and in any event, for residential and water system reason [9,10] in Tindivanam Taluk, Tamil Nadu, India.

### Materials and Methods

#### Method of Sampling

Water tests were gathered legitimately from lakes in Thenkalavoyoorani, Tindivanam Taluk, Tamil Nadu. Utilizing clean stoppered polythene bottles and named, it was saved in a cooler. The examination was completed by Water and Wastewater principles [APHA-2012] strategy for different physico-compound boundaries.

#### Materials and methods

All synthetic concoctions and reagents utilized were of investigative evaluation and were bought from E. Merck, India. Twofold refined water was utilized to set up all Calibration Solution. The pH and electrical conductivity were estimated by utilizing advanced pH meter and conductivity meter. Alkalinity was estimated by titrimetric strategy utilizing standard sulphuric corrosive arrangement. Calcium, magnesium, chloride were estimated by EDTA titrimetric technique. Sodium and Potassium was estimated Flame photometer. Sulfate and Nitrate esteems are estimated by UVVisible spectrophotometer. COD investigations were performed by the dichromate shut reflux strategy. Turbidity was estimated by utilizing Nephelometry Turbidity meter [11].

#### Chemical oxygen demand

Chemical oxygen Demand is an important parameter in water pollution control analysis. It is closely related to the organic contamination of water or wastewater sample. A permissible limit of COD in drinking water 10 ppm seasonally variation of COD concentration in surface water varies from 24 to 64 mg/l is shown in Figure 1. The water level is decreased from day by day. Hence the various organic and minerals concentration increased in the surface water. So the concentration of COD values also increased from 1st month to 3rd month.

#### Electrical conductivity of the Surface water

Salination means that the convergence of broke down salts in surface water. The significant Cations Calcium, Magnesium, Sodium, Potassium and the significant anions Carbonates, Sulfate, Chloride are particles answerable for the saltiness and conductivity of the surface water. The degree of saltiness in surface water is essential to oceanic plants and creatures as species can endure just inside certain saltiness ranges. Saltiness is estimated by looking at the broke down solids in a water test with a normalized arrangement. Electrical conductivity quantifies how well the water directs an electric ebb and flow that is relative to the grouping of particles in arrangement. Dissipation of water from the lake and lakes at that

point prompts the centralization of salt inside the framework. In dry period will prompt expanding the saltiness and conductivity esteem.

#### Nitrate fixation

The month to month variety of nitrate fixation in surface water was estimated. In over the top furthest reaches of nitrate, it adds to the methanoglobinemia to newborn children. The ISI adequate breaking point for drinking water is 45 ppm. The surface water saw as in the scope of 6 to 15 ppm. Around there nitrate centralization of surface water doesn't surpasses as far as possible.

#### Saltiness

Saltiness is a significant boundary for water quality. Electrical conductivity and Total hardness esteem builds saltiness of the water increments. The surface water originates from different rural terrains, horticultural waste, tree leaves and street run-off water it expands the saltiness of the water. The water isn't utilized for drinking purposes.

#### Pathogenic small scale living beings

Pathogenic or sickness delivering small scale living beings for the most part start from residential wastewater. These incorporate small scale life forms, which cause illnesses of the intestinal parcel. In an oceanic domain the vanish pace of E-Coli matches that of pathogenic living beings. Hence E-coli has come to be utilized as a marker for pathogenic living beings. E. coli is only of fecal root. Some coliform microscopic organisms are typical occupants of soil and water. Consequences of bacteriological investigation hence might be accounted for as all out coliform and fecal coliforms. The nearness of coliform in a water test is dictated by watching their development in exceptional culture media and making a factual conclusion their number. The outcomes announced as most plausible number (MPN)/100 ml. The surface water sources surpasses the satisfactory furthest reaches of E-Coli.

#### Disintegrated oxygen

The DO level in a surface water body is a significant marker of its wellbeing. The nearness of DO in water is fundamental for keeping up good conditions for development and generation of a typical populace of fish and other oceanic life. The nonappearance of a low degree of DO in surface water shows contamination by natural issue is decayed by anaerobic microorganisms bringing about creation of offensive final results, for example, hydrogen sulfate, alkali and so on.

#### Natural issue

Most surface waters contain natural issue. In the ecological field natural issue is delegated what is biochemically decomposable and that which can't be disintegrated. While BOD test quantifies biochemically decomposable or degradable natural issue, the other two measure absolute organics. It might be called attention to BOD test estimates oxygen equality of natural issue. The surface water contains significant level of natural issue.

#### Conclusion:

Wastewater including dirtied surface water is one of the primary driver of water-borne sicknesses. These incorporate both transferable sickness, non-trans-

mittable infection, (for example, those identified with longterm interminable introduction to poisonous substances) and water borne ailment. The physico-concoction boundaries of surface water tests demonstrate give an exact image of water quality extra water the executives adaptability and advancement of best administration rehearses. Occasionally variety of physico-compound boundaries of water tests was examined. From these report the vast majority of the boundaries didn't meet the Indian water quality boundaries. Especially sulfate, nitrate, chloride fixation surpasses as far as possible. High estimation of COD focus demonstrates the water isn't reasonable for drinking reason with no pretreatment. In any case, the surface water can be utilized as such for water system and household purposes. Mindfulness projects ought to likewise be sorted out to instruct the majority for the preservation and the board of surface water assets and the need to lessen of abuse and wastage of the surface water assets ought to be accentuated. Maintainable water advancement in the city is expected to satisfy the interest of water for future. Normal coagulants are utilized to expel all contaminants from surface