

# **STUDY OF POTABLE WATER QUALITY IN VARIOUS GOVERNMENT SCHOOLS OF ELURU MUNICIPAL CORPORATION, WEST GODAVARI DISTRICT, A.P**

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**Abstract:** Our drinking water today, far from being pure, contains some two hundred deadly commercial chemicals and is unsuitable for human consumption. This study on Potable water analysis is to ensure safe drinking water available at government schools, identify problems and bring responsibility towards water resources and to learn the water quality technologies. Water samples were assessed in ones in a week for a period of two months on chemical parameters like pH, EC, Turbidity, TDS, Alkalinity, Hardness, Calcium, Magnesium, Sulphate, Iron, DO and COD by using standard methods.

**Keywords:** Water Quality, Physico- Chemical Parameters.

**Introduction:** Two thirds of the earth's surface is covered by water and the human body consisting of 75 percent of it. It is evidently clear that water is one of the prime elements responsible for life on earth. Water circulates through the land just at it does through the human body transporting, dissolving, replenishing nutrients and organic matter, while carrying away waste material, further in the body(4). It regulates the activities of fluids, tissues, cells, lymph, blood and glandular secretions an average adult body contain 42 liters of water and with just a small loss of 2.7 liters, he or she can suffer from dehydration, displaying symptoms of irritability, fatigue, nervousness, dizziness, weakness, headaches and consequently reach state of pathology. We should not worry about this global alarm awareness and action lies entirely upon us, as we need to become our own educators, physicians and innovators. As children are the future of our nation the present work attempts to examine quality of potable water in selected government schools of Eluru, west Godavari district.

**Methodology:** Water samples were collected from different government schools of Eluru municipality, ones in a week for a period of two months and assessed in the zoology lab for physico- chemical parameters like pH, EC, Turbidity, TDS, Alkalinity, Hardness, Calcium, Magnesium, Sulphate, Iron, DO and COD by using standard methods.

**Sampling Method:** The drinking water tap opened fully to allow the water flow. Water collected in the sterilized water bottles of 250 ml. The lid is firmly closed and kept the container in cool bin, then transferred to the lab, water sampling containers were analyzed with in 24 hrs in the laboratory of zoology department.

**Table 1:** List of Schools and Their Latitudes and Longitudes

S.No	School Name	Latitude	Longitude
1	CSI ALEXDER HS (G),30 TH DIVISION	16.96	81.3322
2	ASHOKAVARDAN MPS,28 TH DIVISION	16.771	81.255
3	GANDHI NAGAR MPL HS ,44TH DIVISION	16.975	81.2094
4	MUNCIPAL GIRLS MPL PS,7 TH DIVISION	16.859	81.3569
5	MPL HS, EASTREN STREET 6 TH DIVISION	16.841	81.2841
6	GIRLS HIGH SCHOOL ,16TH DIVISION	16.791	81.1663
7	ST XAVIERS HS ,24 TH DIVISON	16.877	81.11
8	ICM PS ,22 TH DIVISION	16.831	81.2597
9	SMT KKVM PS	16.727	81.2552
10	LOKNANDA SPL MPL PS,18 TH DIVISION	16.805	81.333

**Table 2:** All Physico-Chemical Parameters of Ground Water Sample Were Determined by Adopting Standard Analytical Methods Which Are Listed Below

S.No	Parameters	Standard Analytical Methods
1	PH	Eutech- 2700 pH meter
2	EC	Systronics-304 EC meter
3	TDS	Eco tester TDS low meter
4	Turbidity, sulphate	Nepheloturbidity-132
5	Alkalinity	Volumetrically byH <sub>2</sub> SO <sub>4</sub>
6	TH,Ca+2,Mg+2	Complexometrically by EDTA
9	Iron	Visible spectrophotometer
10	DO,BOD,COD	Standard methods (winklers method)

**Table 3:** Physico-Chemical Analysis of Schools

Sample No	pH	EC	Turbidity	TDS	Alkalinity	Hardness	Ca	Mg	So4	Fe	DO	COD
1	7.86	600	0	260	190	200	32	79.11	25	0	5.12	64
2	7.66	1900	0	1060	436	480	65.7	208.3	55	0	3.84	96
3	7.87	1500	1	840	496	420	44.8	208.3	42	0	2.24	96
4	7.71	2400	1	1410	692	340	43.2	152.96	160	0	1.92	64
5	7.33	2500	0	1480	636	440	68.9	176.69	168	0	2.88	64
6	7.67	600	0	270	180	192	16	100.21	60	0	3.52	16
7	7.76	1500	0	850	390	404	49.6	180.6	35	0	2.88	64
8	7.57	2000	0	1240	704	380	54.5	160.87	142	0	2.24	96
9	7.62	1500	0	830	516	452	57.7	131.86	145	0	2.56	96
10	7.52	1900	0	1080	608	460	52.9	216.25	160	0	1.92	96

**Results:**

**Analysis:** Having safe drinking water and basic sanitation is a human need and right for every man, woman and child. People need clean water and sanitation to maintain their health and dignity. Having better water and sanitation is essential in breaking the cycle of poverty, since it improves people's health, strength to work, and ability go to school. With consideration of the above thought, the present study results were highlighting the importance of potable water quality in Government Schools. The pH values of the all the schools are in between the desirable and permissible limits (1). WHO Standard for pH is 6.5-8.0. Turbidity values of all the samples are zero. Except sample no3, 4 values are 1 NTU. WHO Standard for turbidity is 1-5 NTU. TDS values changed from sample to sample. The range of TDS is in between 260-1480 PPM. WHO Standard for TDS is 500-1000 PPM. Alkalinity values ranged from 190-704 PPM. WHO Standard for Alkalinity is 300-600 PPM. Hardness values ranged from 192-480 PPM. WHO Standard for Hardness is 300-600 PPM. Calcium, Magnesium, Sulphate and Iron values are within the permissible limits (5,6).

**Conclusion:** In India, investments in community water supply and sanitation projects have increased steadily from the 1st plan to the 10th plan. However, the health benefits in terms of reduction in

waterborne disease have not been commensurate with the investments made. Though health sector is bearing the burden of water and sanitation related infectious diseases, presently it does not have adequate institution or expertise for monitoring and surveillance of community water supply programmes in the country (2). However, awareness, surveillance, monitoring and testing, mitigation measures, availability of alternate water sources and adoption of hygienic practices continues to remain roadblocks. There is a need to promote sanitary inspection along with the community based water quality monitoring and surveillance at the grass root level as a mechanism to identify problems and to take corrective measures. Drinking water is too fundamental and serious issue to be left to one institution alone. It needs the combined initiative and action of all, if at all we are serious in socioeconomic development.

**Supporting Awareness Drives:** One of the major challenges is to make people aware on the need to consume safe water. There are examples where despite being provided potable water by the government, people drink water from contaminates surface sources. An integrated campaign can result in wide spread information.

**Testing and Remedial Action:** There is an urgent need to enhance the monitoring network by establishing monitoring stations across all regions and seasonal assessments of all water sources. community participation is training of people.

**School Water Supply Programme:** India has one of the largest numbers of school going children, especially in with about 6.3 lakh rural schools. As per National Family Health Survey 75 percent of the children in the age group of 6-14 years are attending schools(3).

The Government of India has launched school water supply, sanitation and hygiene education programme (SSHE) through the Ministry of Rural Development under the Accelerated Rural Water Supply, Swachabharat Programmes, Sarva Shiksha Abhiyaan of the Ministry of Human Resource Development which has provisions for setting up schools with facilities for effective water supply and sanitation.

As the, students are our future citizens of our nation, we all should address the problems of Safe drinking water to be supplied to the school going children. This will not only provide a hygienic environment in schools, the children will also convey the message back home.

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