



Original Article

Analysis of Well Water Quality from Pombhurna, Chandrapur, Maharashtra

Vitthal N. Gowardipe

Department of Chemistry, Janata Mahavidyalaya Chandrapur (M. S.)

Manuscript ID:
IJAAR-140126

ISSN: 2347-7075
Impact Factor – 8.26

Volume – 14
Issue – 1
September- October 2026
Pp. 210 - 212

Submitted: 26 Sept 2026
Revised: 08 Oct 2026
Accepted: 15 Oct 2026
Published: 25 Oct 2026

Corresponding Author:
Vitthal N. Gowardipe

Quick Response Code:



Website: <https://ijaar.co.in/>



DOI:
10.5281/zenodo.23588318

DOI Link:
<https://doi.org/10.5281/zenodo.23588318>



Creative Commons



Abstract:

Water is a vital component of survival. It is the main source for supplying home, agricultural, and commercial water needs. In the studied area, due to excessive use of ground water due to insufficient filling Ground water quality has deteriorated. The overall health and life expectancy of the public in many developing nations are being negatively compressed by the lack of access to safe drinking water. Because of the increased exploitation by humans, the quality of the world's water supplies is declining. The lithological and geochemical makeup of the rocks, as well as different hydrodynamic parameters, all affect the natural groundwater quality. The World Health Organization (WHO) and Bureau of Indian Requirements' (BIS) drinking water standards were compared to the well water physicochemical properties such as colour, odour, taste, turbidity, calcium, chloride, fluoride, magnesium, nitrate, pH, TDS, total alkalinity and total hardness in the research region to determine if the water was suitable for human use (BIS)

Keywords: Well water Samples, TDS, PH and Chloride.

Creative Commons (CC BY-NC-SA 4.0)

This is an open access journal, and articles are distributed under the terms of the Creative Commons Attribution-NonCommercial-ShareAlike 4.0 International License (CC BY-NC-SA 4.0), which permits others to remix, adapt, and build upon the work non-commercially, provided that appropriate credit is given and that any new creations are licensed under identical terms.

How to cite this article:

Vitthal N. Gowardipe (2026). Analysis of Well Water Quality from Pombhurna, Chandrapur, Maharashtra. International Journal of Advance and Applied Research, 14(1), 210 – 212. <https://doi.org/10.5281/zenodo.23588318>

Introduction:

Drinking water is essential for many necessary actions and is a factor that all living organisms require. Groundwater is very important for the existence of human society

and industrial sector from times immemorial. It should be unrestricted and free-flowing. Along with historical civilization, it underwent a significant metamorphosis¹. It had been considered a dependable source of unpolluted



water. Well water crisis is not the result of natural factors. It has been caused by human actions. Much of ill health which affects human health, especially in the developing countries can be traced to lack of safe water supply. Well water constitutes a critical source of potable water for rural communities in Pombhurna, Chandrapur district. This has turned water pollution into an urgent issue, particularly in the fast-growing cities. The Indian Central Pollution Control Board (CPCB) has established water quality standards along with classification frameworks to safeguard water resources.

Materials and Methods:

The well water samples were collected from different area in pombhurna, Chandrapur district. The well water sample collected in clean, air dried one liter polyethelene bottle. All well water samples were labeled as sample 1, 2, 3, 4 and 5. It was then brought into laboratory for physicochemical analysis. All well water samples was analyzed for physicochemical analysis using standard procedure recommended by IS specification.

Result and Discussion:

The physicochemical parameters of all well water samples and their analytical values comply with WHO and BIS standard are summarized in **Table 1**. The quality of water is influenced by various factors. The well water quality result in terms of physicochemical analysis is discussed as follow.

Table 1: Physico-Chemical Analysis of Well Water Samples

Sr. No.	Parameters (Unit)	Some areas of Pombhurna, Chandrapur district				
		1	2	3	4	5
1	Color	clear	clear	clear	clear	clear
2	Odor	odorless	odorless	odorless	odorless	odorless
3	Taste	agreeable	agreeable	agreeable	agreeable	agreeable
4	PH	7.2	7.2	7.9	7.3	7.6
5	EC (μ S/cm)	725	780	1668	640	790
6	Turbidity (NTU)	1.1	1.3	1.2	1.0	1.8
7	TDS mg/l	1108	468	506	1084	416
8	Total Alkalinity	220	92	100	216	84
9	Chloride (mg/l)	166	70	74	162	62
10	Fluoride (mg/l)	0.82	0.94	0.96	0.84	0.46
11	Nitrate	10	14	4	12	2
12	Sulphate (mg/l)	30	26	52	6	31
13	TH (mg/l)	276	116	124	268	104
14	Calcium (mg/l)	88	36.8	40	86.4	32
15	Magnesium (mg/l)	46.68	20.41	20.41	44.13	17.50
16	Iron	0.01	0.01	0.02	0.07	0.02



All the samples are clear, odorless and agreeable. All the physicochemical parameters of well water samples are in desirable limit

Conclusion:

The supply of clean and appropriate drinking water to safeguard human health and a fundamental human right is one of the most important challenges for water authorities. Groundwater is the primary source of demand has the most important environment in the world today one of the problems is water pollution. In the environment of water due to human activities that release toxins Quality may be adversely affected or May worsen². Specific to groundwater nature causing high concentrations of elements processes also have an impact on it. The well water is soft in almost all the samples. As there is no considerable increase in chloride and sulphate, it shows that there is no possible contamination of groundwater due to percolation of polluted

surface water³. The all well water samples are used for drinking purposes. Therefore rapid and suitable preventive measures are essential for keeping good water quality and health of human beings⁴.

References:

1. Parashar, Charu, Neelam Verma, Savita Dixit, and Rajneesh Shrivastava; "Multivariate analysis of drinking water quality parameters in Bhopal, India." Environmental monitoring and assessment 140, no. 1 (2008): 119-122.
2. Manjula et.al.; Renewable and Nonrenewable Energy 2(1) 2023, 01-10
3. Shivaprasad H et al; Int. Journal of Engineering Research and Applications ISSN: 2248- 9622, Vol. 4, Issue 7(Version 1), July 2014, pp.112-123
4. Vikas D. Umare; Int. Interdis. Res.J., ISSN 2249-9598, Volume-07, July 2017.