

**Study of ground water around Nimrana Region,****Alwar (Rajasthan)**

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**ABSTRACT:** Ten samples of ground water were collected from open wells & hand-pumps of Nimrana Region & analyzed for various chemical & physical parameters. About 70% samples were found to have high level of chemicals as compared to the W.H.O. & ISI standards. It was also noted that samples drawn from the industrial areas had higher amount of chemicals such as fluoride, nitrate, T.D.S., etc. as compared to the samples drawn from the town & surrounding areas. This is obviously due to the industrial effluents, which are discharged in the surroundings water sources.

**INTRODUCTION:**

Modern techniques has made it possible for people to live longer in more comfort and with greater leisure. But the undesirable by products of our technological developments are everywhere in evidence and present us with problems that will become increasingly complex as time goes by, of late waste of raw materials and other industrial effluents have been realized to be significant pollutants and needs to be investigated thoroughly with respect to its effect on water quality of underground water. Owing to this fact the author conducted a study of water parameters of various hand pumps and wells of Nimrana industrial area. Ten samples were collected & examined for some important parameters. Almost all the samples were found to have permissible values of fluoride & high values of nitrate, chloride, TDS. The water is unfit for use without any further treatment.

**MATERIALS AND METHODS:**

The samples were collected during first week of July in clean polythene bottles and the following parameters were determined by standard methods (1, 2). Samples were collected from various hand-pumps and wells near the Nimrana industrial areas. The standard values for different parameters are shown in Table No.1 (4).

**RESULTS AND DISCUSSION:**

From the results obtained, it is clear that water bodies have become a dumping station for sewage material and industrial effluents. The various parameters should be present in desirable amounts if present in excessive amount it tends to cause various ill effects and degrade the Ecosystems, from the Table No.2 the values of fluoride, nitrate, chloride are found to be

more than the desirable amount (2).

The nitrate concentration varied from 20 ppm to 180 ppm so 30% samples were found to have high nitrate concentration, high nitrate concentration leads to Methaeglobenemia (Blue baby disease) (5). 50% samples had high chloride concentration high concentration of chloride changes the odour and taste of water. 90% samples showed high T.D.S. values, this increases the hardness of water which not only affect, its domestic utility but also affect the pipe lines of water supply. All the samples had permissible fluoride concentration (6, 7, 8).

**CONCLUSION:**

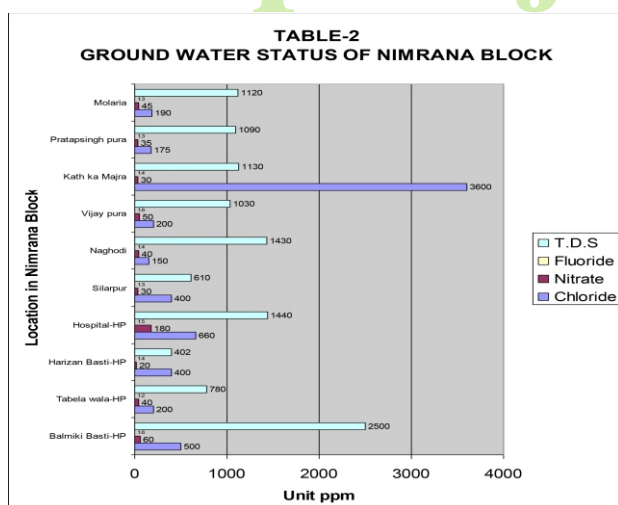
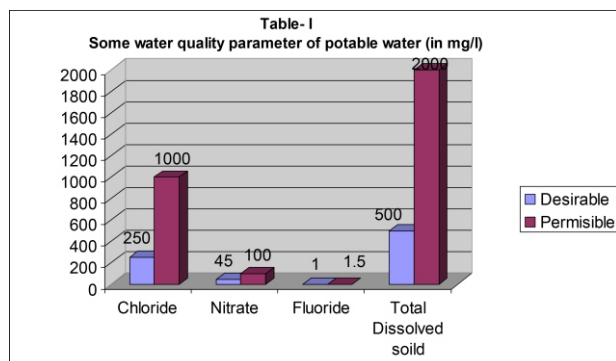
On comparing the physico-chemical parameters of collected water samples with the standard values, the water of the some hand-pumps are not suitable for domestic and other purposes without treatment.

**Table-I: Some water quality parameter of potable water (in mg/l)**

Parameter	Desirable	Permissible
Chloride	250	1000
Nitrate	45	100
Fluoride	10	1.5
Total dissolved solid (T.D.S.)	500	2000

**Table-2: Ground water status of Nimrana block**

S.No.	Location Nimrana block	pH	Water quality parameter (ppm)			
			Cl <sup>-</sup>	NO <sub>3</sub> <sup>-</sup>	T.D.S.	F <sup>-</sup>
1.	Balmik basti-H.P.	7.9	500	60	2500	1.6
2.	Tabela wala-H.P.	7.6	200	40	780	1.2
3.	Harizan basti-H.P.	7.7	400	20	402	1.4
4.	Hospital-H.P.	7.4	660	180	1440	1.5
5.	Silarpur	7.6	400	30	610	1.3
6.	Naghodi	7.5	150	40	1430	1.4
7.	Vijayapura	7.8	200	50	1030	1.6
8.	Kathka majra	7.4	300	30	1130	1.4
9.	Pratapsingh pura	7.5	175	35	1090	1.3
10.	Molaria	7.5	190	45	1120	1.3



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