Title of the Research Project

"Estimation The Physicochemical Parameters of ground water and Waste Water of different areas of Jaipur city and adjacent localities to Amanishah Nalla"

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SUMMARY

Water is a prime natural resource, a basic human need and a precious national asset. Groundwater is an important renewable resource having several inherent advantages over surface water .The dependence in ground water is increasing in many regions because of limited surface water as perennial rivers and frequent failure of man soon .It leads to overexploitation of the resource and thus the aquifer are heavily stressed. Quality of water is of immense importance because poor quality of both surface and ground water is not only a limiting factor in crop production but also its constant and indiscriminate use cause secondary salinization. Groundwater samples were collected and analyzed for domestic purposes in the adjacent locations of Amanishah nalla of Jaipur city. Ground water samples were collected in sterilized screw –capped polythene bottle of one liter capacity, labeled properly. The instruments were used in the limit of precise accuracy, chemical were used of analytical grade, double distilled water used for preparing solution for analysis. Various physical parameters like pH, EC and TDS were determined at the site with help of digital portable water analyzer kit. The

samples collected were analyzed as per standard procedure of APHA. Determination of major cations and anions(Cl^-, CO_3^{2-}, HCO_3^- ,SO_4^{2-} ,F^- NO_3^-, Ca^{2+} ,Na^+, Mg^{2+}&K^+) were made in the laboratory using various analytical methods

Estimation of Various Physico - Chemical Parameters by Different Methods

S. no.	**Parameters**	**Method used**
1.	Chloride (as Cl^- in mg/L)	Argentometric Titration
2.	Carbonate (as CO_3^{2-}in mg/L)	Titrimetry
3.	Bicarbonate (as HCO_3^- in mg/L)	Titrimetry
4.	Magnesium (as Mg^{2+} in mg/L)	EDTA Titration
5.	Calcium (as Ca^{2+} in mg/l)	EDTA Titration
6.	Sodium (as Na^+ in mg/L)	Flame photometric method
7.	Potassium (as K^+ in mg/l)	Flame photometric method
8.	Sulphate (as SO_4^{2-} in mg/L)	Spectro-photometric method
9.	Nitrate (as NO_3^- in mg/L)	Spectro-photometric method
10	Fluoride (as F^- in mg/L)	Spectro- photometric method

Interpretation of hydro chemical analysis reveals that the ground and waste water of study areas of jaipur city is not good for drinking and other purpose. Based on the analytical results, chemical indices like Na% and SAR were calculated which show that most of samples are good for irrigation. It's observed that the value of pH, EC, TDS, SO_4^{2-} and NO_3^- are within permissible standard limits of WHO but

20% ground water samples were high value in Ca^{2+}, Cl^{-} which suggest that these samples have water quality on critical limit. Most of the parameters were found within the permissible range but some amount of contaminations with reference to TDS, fluoride, TH, EC, BOD and COD in wastewater have been investigated in the study area. Stringent monitoring and control measurement in the region of low ground water quality are necessary to ensure sustainable safe of the resource.