International Journal of Research in Social Sciences
Vol. 6 Issue 11, November 2016,
ISSN: 2249-2496 Impact Factor: 7.081
Journal Homepage: http://www.ijmra.us, Email: editorijmie@gmail.com
Double-Blind Peer Reviewed Refereed Open Access International Journal - Included in the International Serial Directories Indexed & Listed at: Ulrich's Periodicals Directory ©, U.S.A., Open J-Gate as well as in Cabell's Directories of Publishing Opportunities, U.S.A

CONTAMINATION OF GROUND WATER DUE TO DYES EFFLUENT

Dr. Bhavna Chaudhary (Associate Professor)

Department of Chemistry, Smt. Pana Devi Morijawala Govt. Girls College, Kotputli, Rajasthan

Rajasthan state is categorized by high evaporation, extreme temperature and low erratic rainfall. Rainy season usually starts from last week of June and ends in September. Random survey was done to demonstrate the contaminated area along the water bodies at MuhanaRoad, ShikarpuraRoad and TonkRoad are part of the Sanganer. The quality of ground water varies with the depth of water table, composition of the dissolved salt and sub-surface environment.

Desizing, bleaching, dyeing, printing and then screen washing are processes which are carried out by the textile industry of Sanganer region. The grey cloth is processed and bleached to white cloth and dyed in the background and then the pattern is printed. The effluent comes from kiering which contains fat, starch, caustic soda and silicates of soda. Bleaching powder and sulphuric acid are used to bleach the cloth. Dye molecule is an organic molecule which contains chromophore and auxochromes, chromophore provided the color whereas auxochrome intensify and deepens the color. Various parameters were studied which showed adverse effect on health and environment.

Ground water contamination can adversely affect the overall quality of life. Water is considered to be polluted when it contains enough foreign material, unfit for human consumption and recreational use. Industrial pollution is due to improperly treated effluents and bleaching using toxic chemicals that play important role in affecting ground water quality. Overexploitation of ground water resources to meet the growing commercial, agricultural and household demands is also reason. The samples taken from Sanganer and its adjoining area such as Muhana, Shikarapura, Shrirampura, Gwar show following result on physicochemical analysis of water sample which was carried out at the field and in laboratory and was collected from different sources like tube well, handpumps and wells.

The pH of ground water in the study area ranged between 6.98 to 8.8. pH of Muhanawhich was comparatively high which may affect the mucus membrane. The high value may

produce incrustation, sedimentation and difficulties in chlorination of water. Alkalinity is ranged between 300 to 960 mg per liters. It was very high in Shrirampura about 910-960 mg per liters. Electrical conductivity of water sample ranged between 545-650 µs per centimeters. Again, maximum conductivity was found in Shrirampura.

Total dissolved solid is observed in range of 440mg/l-1142 mg/l. The permissible limit is 500mg/l, Shrirampura has greater TDS maybe due to natural reason. The commonly occurring natural salts are comprised mostly of cations like sodium, potassium, calcium, magnesium associated with anions like chloride, sulphate, bicarbonate increasing salinity which may be harmful to the crop and considered unsuitable for irrigation, typical taste and reduce their portability, scaling of boiler and corrosion machinery.

Total hardness found in Muhana was 102 mg/l and highest was 398 mg/l.

Conclusion:

Our focus on the study of environmental impacts due to industries operating along Muhana Road and shikarpura road. Industrial solid waste such as effluent treatment sludge, used packaged material, empty containers, cloth cutting and trimming are generated form the textile and screen-printing units. The disposal practice of sludge is either on land or river bodies affecting the quality of soil. Ground water has also been found contaminated with fluoride not due to textile industries but naturally high. So, this water contamination issue can be sorted out by developing and effective effluent management treatment, management plant and practicing rain water harvesting to recharge the ground water. Pretreatment unit installed at there factory premises as a part of common effluent treatment plant. Industries should take steps to minimize the waste and cleaner protection by awareness of water. Safe and less hazardous dyes and some biological treatment to minimize the effect and should not be allowed to use for irrigation process.

The heavy metals present in the soil can be removed by adopting techniques like phytoremediation. Specific plants absorb or uptake the heavy metals from the field like Indian Mustard, sunflower and plant Emli etc. can be used as safe and cheap agents.

Nalgonda technique and activated alumina are used for deflouridation.Industrial effluent should be collected in a single tank and mixing of coagulant such as lime, alum etc. for absorption

REFERENCES:

1. Kumar D., Jain Mukta, Dhindsa S.S., Devanda H.S., Singh R.V., Indian J.Environ. Sci.,

9(1) 2005,71-74.

2. APHA Standard methods for the examination of water and waste water,New York USA.

3. S. Gupta, A. Kumar, C.K. Ojha, G. Seth, J.Envior. Sci. Engg 46(1)2004,74-78.

4. Guru B. Prasad, Evaluation of water quality in Tadepallimandal of Guntur distt. A. P.;

Nature environ and pollu. Techn,, 2(3) 2003,273-276.

5. S.L. Choubisa Et al, Endemic Fluorosis in Raja.,IJEH,2001,43-117.