Aurangabad is the fastest growing city of Marathwada region. In Aurangabad, industrialization and urbanization has taken place very rapidly in past 20 years.

Chikalthana is one of the biggest MIDC area of Aurangabad, situated at the east of the city. Chikalthana MIDC is having various kinds of small/medium/large scale industries, for example Pharmaceuticals, Distilleries, Breweries, Automobiles and Chemicals etc.

The sources of groundwater pollution are many and varied. Pollution by disease causing microorganisms occurs when human and animal waste containing viruses, bacterias and parasites encounter groundwater. Chemical pollutants can leach into groundwater from a variety of sources including hazardous waste dumps, municipal solid waste disposal, sewage, land treatment sites, injection wells, indiscriminate solid waste disposal, and percolation of pesticides and fertilizers from agricultural fields and accumulation of untreated effluent of industries on land, which subsequently leads to bring about groundwater pollution.

However, in view of the above fact, the present hydrobiological study of groundwater was carried out from the Chikalthana MIDC area.

The entitled thesis consists of eight chapters viz., (1) Introduction (2) Review of Literature (3) Materials and Methods (4) Results and Discussion (5) Summary (6) Conclusion (7) Suggestions and (8) Bibliography.
Chapter: I. Introduction:

It focused on the general introduction of the water and major focus on groundwater, sources of effluent generation, groundwater problems in India, sources of groundwater contamination, National water policy’s recommendations, Regulatory controls on groundwater and lastly focused on aims and objectives of the research.

Chapter: II. Review of Literature:

A literature survey concerning hydrobiological studies which reviewed critically. The reference work on the groundwater resources, heavy metals toxicity from industries and affects groundwater resources, use of geographical information systems for groundwater availability, sewer contamination, and interaction of microorganisms with groundwater was reviewed.

Chapter: III. Materials and Methods:

During the study period, six sampling stations were selected for sampling;

- **Spot-A**: Dug well sample, located 03 km upward from Wockhardt Company at east side.
- **Spot-B**: Dug well sample, located 3 km at the right to the Spot-A at south side.
- **Spot-C**: Tube well sample, 02 km away from Lupin Company.
- **Spot-D**: Tube well sample, located in the residential zone of Naregaon.
- **Spot ES-I**: Effluent sample of Pharmaceutical industry.
- **Spot ES-II**: Effluent sample of Automobile industry.
The water samples from all these sampling stations were collected every after one-month’s interval.

Physico-chemical and microbiological analysis of groundwater samples and effluent samples were done by using standard methods (APHA, 1985; Trivedi and Goel, 1986; IS-2488). Groundwater and effluent samples were analyzed for physico-chemical parameters such as Colour, Taste, Temperature, TS, TDS, TSS, Turbidity, pH, Chloride, BOD, COD, Alkalinity, Total Hardness, Sulphate and Fluoride.

Heavy metals like Copper, Zinc, Chromium, Arsenic and Nickel (not analyzed from Pharmaceutical Company’s effluent sample).

Microbiological tests were carried out only for groundwater samples. i.e. Qualitative Test and Quantitative Test.

**Chapter: IV. Results and Discussion:**

The results of the physico-chemical parameters are given in tabular forms and represented graphically. The physico-chemical and biological parameters were determined and discussions were confirmed with relevant literature.

The present investigation showed that, the average values of many parameters were found within the permissible limits suggested by WHO and BIS. Presence of traces of heavy metals and presence of microorganisms especially E-Coli indicates the tomorrows seriousness to be taken on today itself.
Chapter: V. Summary and Conclusion:

Chapter deals with the summary of present investigation work and its results. Conclusion elaborated the contamination of groundwater due to the untreated discharge and disposal of solid and liquid wastes from industrial and domestic sector, which contained the high concentrated waste, traces of heavy metals and microbes.

Chapter: VI. Suggestions:

It deals with the urgency of research work, restriction on disposal of industrial and domestic waste, Education and creating awareness among the people for water protection, mandatation of pollution control board’s rules and regulations, mass awareness, reduction of the excessive exploitation of groundwater and its artificial recharge systems.

Chapter: VII. Bibliography:

The chapter deals with the references pertaining to the present work, cited at the end of the thesis.

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