

**EXECUTIVE SUMMARY OF MINOR RESEARCH PROJECT ENTITLED**  
**“ENVIRONMENTAL IMPACT OF AURANGABAD TOWNSHIP WITH**  
**EMPHASIS ON SPM, GROUNDWATER AND NOISE POLLUTION”**

**Principal Investigator: Dr. S. M. Deshpande**

Dept. of Geology

Govt. Institute of Science, Aurangabad

UGC MRP Sanction Reference No. File No. 47-1510/10(WRO)

The present research work was carried out in Aurangabad township with special reference to suspended particulate matter, groundwater quality and noise level data. The data base has been prepared, interpreted and a recommendation has given for mitigating purpose.

The present area of study i.e. Aurangabad townships is also the fast growing urban area after being derived as a municipal corporation in 1985. Its rate of growth has increased manifold, out of proportion to the growth of civic amenities the development of Aurangabad townships is not even in all the directions. The townships are growing along the pre-existing major road in east west Chikalhana to Chawani and Waluj in the beginning stage. In later stage township develops western parts i.e. Kanchanwadi, Satara area as well as in eastern parts Nandanwan colony and Makbara. This is causing more congestion on the inadequate facilities resulting in pollution. Considering these aspects the present study was to assess the suspended particulate matter (SPM) levels, ground water qualities and noise level in the Aurangabad city.

**Objectives of the project**

The broad objectives of the present study were

1. To study the suspended particulate matter in different parts of township, along the arterial roads and main areas to investigate variation in SPM levels .
2. To study the groundwater qualities from different bore-well, dug-well samples, to assess the variation in the groundwater quality parameters.

3. To study the noise levels along different locations on arterial roads and residential areas and investigate variation in noise level.

4. Recommend, if possible measures to mitigate these problems.

### **Research Methodology**

In the present study the data has been collected on vehicular population for one year and suspended particulate matter (SPM) for two years period. The groundwater samples were collected for pre monsoon season and post-monsoon season. The noise level data was collected for November 2010 and November 2011.

### **Conclusion :**

In the areas like ,Railway station Baba petrol pump, Paithan Gate, Gulmandi, Mondhanaka and Cidco bus stand where traffic congestion is quite common SPM is of dark gray color indicating presence of uncompleted hydrocarbon coming from the vehicular exhaust. In the area like Bus stand, Collector office , TV. Centre Chowk, and Kranti Chowk The dust is of brownish gray color which is a mixture of road dust and exhausts of heavy vehicular traffic.

In the groundwater quality studies, geochemical behavior of different elements were discussed. Groundwater is generally used for domestic (drinking) purposes. Therefore, the quality of groundwater has been assessed in terms of its suitability for drinking purposes only. The main findings of the study are that the values of the parameters like TDS (22.22%), Total Hardness (30.58%), Calcium (12.94%) and Magnesium (3.53%) of the wells exceeding maximum permissible limit in the groundwater of the study area during both pre and post-monsoon season. Overall the Physico-chemical characteristics of the groundwater indicate that Groundwater is polluted by anthropogenic activity.

The average noise level in Aurangabad township range from 42.33 dB to 99.7 dB. It is seen that the main source of noise in the Aurangabad township is the auto rickshaws plying on the road. Overall, Aurangabad townships are on environmental threshold and there is urgent need to reduce all pollution levels before it deteriorates and becomes unmanageable.