Present study showed the significant variation of heavy metals concentration in water and dominant algal species collected from Shetrungi River, Sihor tributary and Bor talav. Sihor tributary receive effluent from many places influencing the quality of water. Generally the heavy metals concentration in Shetrungi River, Sihor tributary and Bor talav was high. The concentration of these metals observed in Zn>Cu>Pb>Cd order. The maximum concentration of Zn, Cu, Pb and Cd at Shetrungi River was 6.24, 3.67, 4.71 and 1.25 mg/l respectively. The highest concentration of Zn, Cu, Pb and Cd at Sihor tributary was 6.24, 4.18, 5.24 and 0.73 mg/l respectively. The maximum concentration of Zn, Cu, Pb and Cd at Bor talav was 8.50, 2.51, 4.27 and 0.96 mg/l respectively.

The concentration of Cu, Cd, Pb and Zn accumulated in Oedogonium, Cladophora, Oscillatoria and Spirogyra was well studied at three locations with eight sites of Bhavnagar district. The highest Copper accumulation was observed in Oedogonium of 118.5 µg/g followed by Oscillatoria and Cladophora. were the concentration of copper was 106.56 and 116.56 µg/g respectively. Oedogonium sp shows the maximum level of cadmium 21.10 µg/g, indicating this alga as good bioindicator. Cladophora sp shows the highest Pb accumulation of 156.5 µg/g. The maximum concentration of Zinc was 210.26 µg/g was observed in Oscillatoria sp. The uptake and accumulation of heavy metals by algae from water shows great impact of metallic ions in water on its accumulation in algae. Therefore in an aquatic ecosystem algae had a good tendency to accumulate heavy metals in their cells from water.

Oscillatoria sp showed the significant correlation (p<0.05) with copper i.e 0.944 at station 5 whereas the lowest correlation was seen with Zn (0.178) at station 4. About 60% of the correlation between heavy metal in water and Oscillatoria was positive. The fact
taken in the consideration that highest coefficient of correlation of heavy metals between water and algae are better biomonitoring object. One can say that the *Oscillatoria* is a good bioaccumulator of copper and it can be use as a bioindicator of copper polluted site. *Cladophora* shows positive correlation with Cd and Zn with low level of confidence (p>0.05). *Cladophora* shows 50% of the correlation value positive with the respective metals. *Oedogonium sp* found to be most significantly correlated (p<0.05) with lead indicating good bioindicator. *Spirogyra* shows significant correlation (p<0.05) with zinc and cadmium. From the correlation value it is clear that *Spirogyra* is good bioindicator of Zn and Cd. Cadmium is the only metal which shows the positive correlation with all physicochemical parameter, the highest positive correlation was observed with pH. Copper is the only metal which showed the negative correlation with all the physicochemical parameter. Lead showed the positive correlation with pH, Conductivity and dissolved oxygen. Zinc showed the positive correlation with pH and temperature.

About 69 algal species were reported from three different localities with eight stations. Out of which 41 belongs to chlorophyceae, 10 from cyanophyceae and 18 from bacillariophyceae. According to the number of species chlorophyceae was the dominant group found in this study. The maximum number of chlorophyceae and cyanophyceae was reported from Station 1 of Shetrungi River followed by station 4 of Sihor tributary and Bor talav. Maximum number of bacillariophyceae was recorded from station 2 and 5 of Shetrungi River and Sihor tributary respectively.
Diversity of algal communities is very important and needs to be conserve from variety of water ecosystems. This lead to the discovery of new algal species that could clean polluted environment. Algal flora identified and described may be used as base line data of particular water body including physicochemical characteristic.

The uses of algae for monitoring of heavy metal contaminated water body will possible with the procedure adapted to this study. The given result could be useful for comparing these sites with future data of heavy metal pollution.

Biomonitoring provides the evidence of alteration occurred in the ecosystem to environmental pollution. Hence algae can be used as better biomonitoring object in future. The study generated base line data for heavy metal content in Oscillatoria, Oedogonium, Cladophora, and Spirogyra and could be use for references in monitoring of heavy metals.

Bioindicators or biomonitors including studied algal species are proposed based on their special behavior responses to metal exposures such as high bioaccumulative ability which offers attractive approaches for the bioremediation of aquatic pollution.