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POLLUTION OF RIVER GODAVARI DUE TO IRON FROM M.I.D.C. EFFLUENTS AT NANDED, MAHARASHTRA STATE, INDIA

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ABSTRACT
The Study deals with Godavari River water pollution in Nanded, Maharashtra State, India, due to M.I.D.C. effluents disposal in Godavari River without any treatment. Many industries like textile, Dairy, Fertilizer, Godavari drug, Sipta Comet etc are located in MIDC area and they are generating large quantity of harmful effluents Water collected and analyzed from three sampling stations for several physic-chemical parameters. All parameters except DO are in higher concentration. Most of them are above permissible limit and are responsible for Godavari river water pollution. Due to presence of heavy metal like iron in water is not suitable for drinking free iron is toxic because it can chemically catalyze the oxidation of lipids and other biomolecules. It is often tastes unpalatable due to presence of precipitated ferric oxide.

KEYWORDS: Effluents, Godavari River, Heavy Metal, Iron, Oxidation of Lipids, Water Pollution, Water Quality.

INTRODUCTION
Godavari river water plays an important role in the life of peoples and animals on the bank of river. It is widely used as source of water for drinking purpose. The industrial effluents affect the river water quality, which is not useful-for drinking and agricultural purpose. The presence of Iron in drinking water supplies is objectionable for a number of reasons under the high pH conditions drinking water supply ferrous sulphate is unstable and precipitates as insoluble ferric hydroxide, which settles out as rust coloured silt. Such water often tastes unpalatable even at low concentration (0.3 mg/lit), and stains laundry and plumbing fixtures. The iron that settles out in the distribution system gradually reduces the flow of water. The physiological functioning of iron involves controlled oxidation reduction reaction. Free iron is toxic because it can chemically catalyze the oxidation of lipids and other biomolecules Specific binding proteins control, extracellular transport and intracellular storage. Three quarters of the typical 4 gms of body content of iron in Hb and myoglobin and iron containing enzymes virtually all of the rest is in storage and transport proteins.

MATERIALS AND METHODS
Nanded is District place in Maharashtra state; India, many textile, Drug, fertilizer and Spite comet (tin industry) are located in MIDC area of Nanded. The Godavari river water is collected from three sampling stations. Station - A is present before entering Godavari river in Nanded city, at water filtration tank dankin Station - B is situated near old bridge 8 km from station - A . Station - C is present near Wadgaon Station B and C receiving industrial effluents by major nalas. Samples were collected during the year 2006-2007 and 2007-2008 monthly in morning at 8 AM on specific date. The samples were collected and analyzed by using standard method suggested by APHA (1985)

RESULTS AND DISCUSSION
In the present investigation the values of iron during the year 2006-07 are as follows At station - A 0.80 to 5.74 mg /lit, at station-B 2.0to 6.05 Mg/lit and at station- C 2.02 to 6.28 mg/lit During the year 2007-2008 the values are at station - A 1.02 to 5.00 ing/Lit at station- B 1.88 to 6.02 mg/lit and station- C 1.55 to 6.40 mg/lit. The monthly mean values or iron are more than permissible level which affects life . The monthly mean values are given in the table 1 and 2. In the present investigation during both the years the values of iron are higher during summer in month of May and lower during winter in the month of January. The long term exposure to heavy metal responsible for health problems. Among the vital physiological functions which are affected by heavy metal are blood production and liver function. Ingestion of traces of heavy metals by way of water can lead to more complex situations like metal poisoning for which appro-priate medical care is required. Singh *et al.,* (1989) observed the iron concentration 0.975 ppm to 1.575 ppm in the river Subernrekha at Ghatshila Pallah *et al.,* (1991), studied the trace metal content in ground water and reported that maximum and minimum concentration of iron was 6.697 mg / lit and 0.150 mg/lit respectively. The iron concentration of this water should be well above the permissible limit.

Table 1. Monthly Mean Values of Iron (mg/lit) from Godavari river Water Samples during the Year 2006-2007

Month	Station- A	Station-B	Station-C
February	3.06	4.00	5.40
March	3.95	4.02	5.65
April	3.28	4.95	5.74
May	5.74	6.05	6.28
June	3.28	4.00	5.05
July	1.13	2.25	3.04
August	1.32	2.50	3.25
September	1.35	3.20	3.68
October	1.60	3.40	3.80
November	1.35	3.05	3.00
December	1.37	3.09	3.48
January	0.80	2.00	2.02

Table 2. Monthly Mean Values of Iron (mg/lit) from Godavari river Water Samples during the Year 2007-2008

Month	Station- A	Station-B	Station-C
February	3.20	4.02	5.60
March	3.80	4.10	5.80
April	3.35	4.98	6.00
May	5.00	6.02	6.40
June	3.00	4.05	5.25
July	1.02	2.50	3.28
August	1.15	3.40	3.35
September	1.30	3.55	3.90
October	1.50	3.20	3.96
November	1.45	3.10	3.15
December	1.40	3.25	3.50
January	1.55	1.88	1.55

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