

Small-scale Industrial wastewater Analysis in Gadhinglaj City.

¹Sunil S. Pattanshetti. Sagar M. Gawande²

¹ P.G. Scholar, Anantrao Pawar College Of Engineering & Research Pune Maharashtra, India.

² Professor, Anantrao Pawar College Of Engineering & Research Pune Maharashtra, India.

Abstract - Based on the analysis of industrial waste water & Pollution problems, we have conducted this questionnaire survey in some small-scale industries. During the survey our volunteers asked various questions to the corresponding industries. The information regarding sewage generation, collection, treatment method, water composition, & pollution problems are studied well & important observations are made. Total 50 small scale industries & hotel industries are studied, & various practices of industries regarding water & waste water are recorded. Some corrective measures & recommendations are given in the paper.

Key Words: Key words: Industrial Waste water, Sewage, industrial pollution, Collection, Disposal.

1.0 INTRODUCTION:

Pollution in its broadest sense includes all changes that curtail natural utility and exert deleterious effect on life. The crisis triggered by the rapidly growing population and industrialization with the resultant degradation of the environment causes a grave threat to the quality of life. With the coming of the Industrial Revolution, humans were able to advance further into the 21st century. Technology developed rapidly, science became advanced and the manufacturing age came into view. With all of these one more effect has developed that is industrial pollution. The industries & small factories produces significant amount of waste water such water is most probably mixed up in to the nearby rivers. This kind of pollution is harmful to human as well as aquatic life.

Problems associated with the industrial waste water & real time difficulties to disposal are necessary to find out. The present study reveals the survey report through the questionnaire, which is design to understand the water & waste water practices of some industries;

In this study focus is given to the actual condition at the user end, The total waste water generation, treatment facility, problem associated with treatment, Harmful

content in waste water is identified, which will enable us to provide appropriate suggestions, for their own development enabling them to improve the living condition & to create healthy environment. In Addition to this, it aims to achieve the genuine feedback of current industrial waste water management in the Gadhinglaj city. In this connection, based on the analysis of the industrial waste water management problems we have conducted this questionnaire survey in the city. During the survey we have physically ask these questions in the industries & hotels. Whatever observations made are interpreted in the paper.

2.0 STUDY AREA:

Gadhinglaj lies at (16° 10' N, 74° 20' E; p. 8,546) southwest corner of Maharashtra. It is well known taluka headquarter from Kolhapur district which is governed by municipal council over there. The population is 27,185. & the total area is about 17.97 km²

3.0 METHODOLOGY

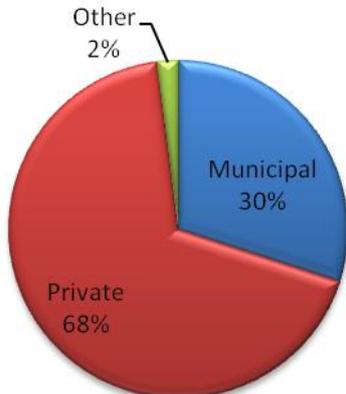
The method to execute this work is based on feedback form (Provided in Annexure-I). During the survey we have physical asked these questions to the people. Total 50 small scale industries & hotel industries are studied, some primary observations are recorded are interpreted in the paper. The interpretation is based on the percentage obtained through total survey forms.

3.0 RESULT & DISCUSSION:

➤ Source of water :

Industrial water use includes water used for fabricating, processing, washing, diluting, cooling, or transporting a product; incorporating water into a product; or for sanitation needs within the manufacturing facility. Some industries that use large amounts of water produce such commodities as food, paper, chemicals, refined petroleum, or primary metals. Among total 50 industries 68% are uses their own source of water such as bore well, wells etc. & about 30% probably small scale industries are dependent on Municipal water supply for their daily consumption.

source of water for daily use



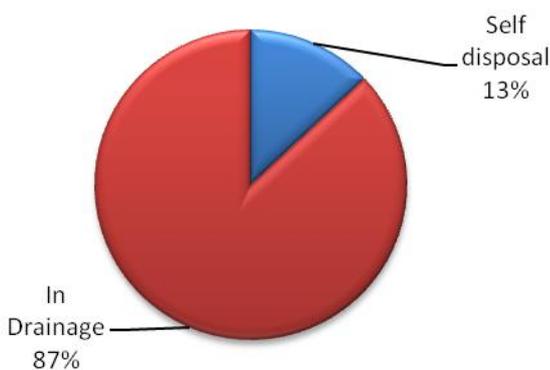
➤ Water consumption:

Water for industrial use may be delivered from a public supplier or be self-supplied. For the most part, industries supply their own water. The consumption of water for various industrial processes is significant. In case of Gadhinglaj there are many small scale industries & commercial shops, hospitals, college; Factories are present in the study area. It is seen that the water consumption of small scale industries is around 1500-2500 liters / day. Also for major industries it comes out to be 5000 to 1000 liters per day. & for hotels it is about 2000 – 5000 liters per day

➤ Method of disposal:

About 87% among industries & hotels dispose their waste water directly in to municipal drainage or gutters & only 13% has their own disposal system. Most commonly the septic tank or settling tank is provided at some industries to dispose the waste water

Method of disposal

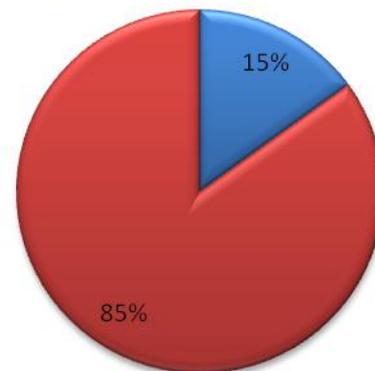


➤ Provision of Primary treatment:

Among total studied industries, the 85% small scale industries, hotels & commercial shop didn't provide facility of primary treatment to their waste water. At present the maximum amount of waste water is directly disposed into the nearby river. So there is need to provide the ablest primary treatment through common cooperation from industries. Generally Primary treatment involves separating a portion of the suspended solids from the wastewater. Screening and sedimentation usually bring about this separation process. The effluent from primary treatment will ordinarily contain considerable organic material and will have a relatively high BOD.

Provision of Primary treatment

■ Available ■ Not Available



➤ Issues With the industrial waste water:

Lack of Policies for Control & prevention: Lack of effective policies and poor enforcement drive allowed many industries to bypass laws made by pollution control board which resulted in mass scale pollution that affected lives of many people

Haphazard Industrial Growth: In most industrial townships, unplanned growth took place in which those companies flouted rules and norms and polluted the environment with both air and water pollution.

Large Number of Small Scale Industries: Many small scale industries and factories that don't have enough investment and rely on government grants to run their day-to-day businesses often escape environment regulations and release large amount of toxic gases in the atmosphere.

➤ Option of CETP:

The concerted approach of joint or common effluent treatment provisions has many advantages. Wastewater of individual industries often contain significant concentration of pollutants; and to reduce them by individual treatment up to the desired concentration, become techno-economically difficult. The combined

treatment provides a better and economical option because of the equalization and neutralization taking place in the CETP. Here If the waste water from all small scale industries in locality is collected & it is treated in CETP then this may be the better option for treatment of waste water. Due to common use the running as well as initial cost is divided in many.

3. CONCLUSIONS

Problems associated with the industrial waste water & real time difficulties to disposal are necessary to find out. Among total 50 industries in the city 68% are uses their own source of water such as bore well, wells etc. & about 30% probably small scale industries are dependent on Municipal water supply for their daily consumption. Factories are present in the study area. It is seen that the water consumption of small scale industries is around 1500-2500 liters / day. Also for major industries it comes out to be 5000 to 1000 liters per day. & for hotels it is about 2000 – 5000 liters per day. About 87% among industries & hotels dispose their waste water directly in to municipal drainage or gutters & only 13% has their own disposal system. 85% small scale industries, hotels & **commercial shop didn't provide facility of primary treatment to their waste water.** At present the maximum amount of waste water is directly disposed into the nearby river. There are several Issues With the industrial waste water such as Lack of Policies for Control & prevention, Haphazard Industrial Growth, Large Number of Small Scale Industries due to which the condition is becoming difficult. Here If the waste water from all small scale industries in locality is collected & it is treated in CETP then this may be the better option for treatment of waste water.

ACKNOWLEDGEMENT

The authors are thankful to Dr. S.B. Thakare for his valuable guidance, Authors are thankful to Dr. A.D. shinde institute of technology for their laboratory facilities.

REFERENCES

[1] General Standards For Discharge Of Environmental Pollutants Part-A : Effluents The Environment (Protection) Rules, 1986, [Schedule – Vi]

[2]Waste water characteristics , Treatment & disposal By Mrcon Von Sperling, Imperial College, Univ. Londaon U.K.

[3] Characterization of Sewage and Design of Sewage Treatment Plant. A Thesis Submitted In Partial Fulfillment of the Requirement for the Degree OF Bachelor of Technology in Civil Engineering by Falguni K.P. Mishraniladri Bihari Mahanty

[4]Waste water production, treatment and use in India R Kaur, AK Singh, and K Lal

[5]Study of Waste Water Characteristics and its pollution for the stretch of Krishna River

[6]Water Pollution Status of Hiranyakeshi River From India By Rajaram S. Sawant,

[7]Water And Wastewater Analysis By S.P.Gautam

[8]Physico-Chemical Characterization Of City Sewage Discharged Into River Ganga At Varanasi, India B.D. Tripathi, M. Sikandar, And Suresh C. Shukla Sachinkumar R. Patil, Ashvin G. Godghate & Shobha D. Jadhav Sangli to Haripur By Wagh C.H, Kamat R.S.

[9] Status of sewage treatment in India By CPCB Nov 2005, Dr. B. Senugupta, P. M. Ansari, NazimUddin.

[10] Municipal Wastewater Management In India J.S. Kamyotra And R.M. Bhardwaj

[11] Guide Manual: Water And Wastewater Analysis By Dr. Reeta Kori, Expert Resource Person, Mrs. Suniti Parashar, SSA, Under The Guidance Of Dr. D.D. Basu, Scientist 'E' & Sh. J.S.Kamyotra, Member Secretary, CPCB. Ms. Sarita Kumari, DEO Assisted In the Typing Of The Manual.

[12]Wastewater treatment manuals, Primary, secondary & tertiary treatment, By Environmental Protection agency, Ardavan, wexford, Ireland.

[13] Skills Challenges in the Water and Wastewater Industry UNESCO-UNEVOC International Centre for Technical and Vocational Education and Training UN Campus

[14] <http://dpcc.delhigovt.nic.in/water-standard.html>

[15] www.cpcb.nic.in

[16] <http://en.wikipedia.org/wiki/Gadhinglaj>

ANEXTURE-I

SURVEY FOR INDUSTRIAL WASTE WATER IN GADHINGLAJ.

Instructions to Respondents –

- Following are some questions which will help us to understand about the waste water generation & facilities of treatment in your industry/commercial centre/hotel /shop etc, so genuine response from your side is expected.
- Respondents has to choose appropriate choice from the given options & write it in the box, if any differences in their choices then they can mention.

- Do you find any difficulties during disposal of sewage
- Any special provision to make safe disposal of your waste water
- Any chemical by products generates by your industrial processes :

-
- Type of Industry / Commercial Centre :
 - Location of industry:

a) Residential b) Commercial c) SEZ d) MIDC

- Sources of water for daily use:
a) Municipal b) Private c) Other (specify)
- Per day water flow out from the industry (lit/day)
- Per day water consumption (lit/day) :
- Do you provide primary treatment to sewage :
(a) Yes (b) No
If No then specify the reason.
- Sewage disposal facility :
(a) Self
(b) In drainage