G. M. VEDAK INSTITUTE OF TECHNOLOGY, TALA, RAIGAD

Educational-Industrial Site Visit At

C.E.T.P. ROHA

Visit Date : 5th April 2019

All the students of Third Year Civil Engineering of G. M. Vedak Institute of Technology Tala, Raigad, were very much thankful to our Principle Dr. D. N. Jaiswal & H.O.D. Of Civil Engineering Department & Subject Teacher Prof. Ajeet Kumar respectively to support an Educational-Industrial Visit at CETP Roha, Raigad.

Visit at CEPT, Roha On 5th April 2019 At 11:30 A.M. Along HOD of Civil Engineering & Subject In-Charge Prof. Ajeet Kumar, Prof. D. P. Hipparkar & Students of Third Year Civil Engineering of G.M.V.I.T. Tala Raigad.

SHRI. GOPINATH MAHADEO VEDAK PRATISHTHAN'S
G. M. VEDAK INSTITUTE OF TECHNOLOGY
APPROVED BY AICTE, RECOGNIZED BY GOVT. OF MAHARASHTRA & AFFILIATED TO
UNIVERSITY OF MUMBAI.
INSTITUTE CODE : EN 3447
AT POST &TALUKA : TALA, DIST.-RAIGAD, OFF INDAPUR ON MUMBAI-GOA HIGHWAY (NH-17),
MAHARASHTRA-402 111
E-MAIL :gmvedakit@gmail.com Web : www.gmvit.com

Date: 03/04/2019

NOTICE

All TE Civil student here by inform that, the site visit held on 05 April 2019 at Roha RIRC under the subject of Environmental Engineering-II. It's compulsory to all TE Civil student to present for visit.

Boarding time 11:30 am at GMVIT, Tala.

Subject Coordinator

HOD
(Civil Department)

Vedak Institute of Technology
Tala
Raigad

OBJECTIVE OF VISIT

Technical Exposure of Common Effluent Treatment Plant & other engineering aspects of Subject – (CE-C604) Environmental Engineering, Subject as per University of Mumbai Syllabus.

WHAT HAPPEN WHEN WE REACH AT CONSTRUCTION SITE?

First A Technical Explanation by Admin & Manager Mr. B. B. Sapre & Chemical Engineer Mr. Nandgaokar. First, they explained us regarding the General Knowledge-Base things & After All Information about Effluents in Brief. They also shared some Experience of their Working Journey regarding Industrial Exposure.

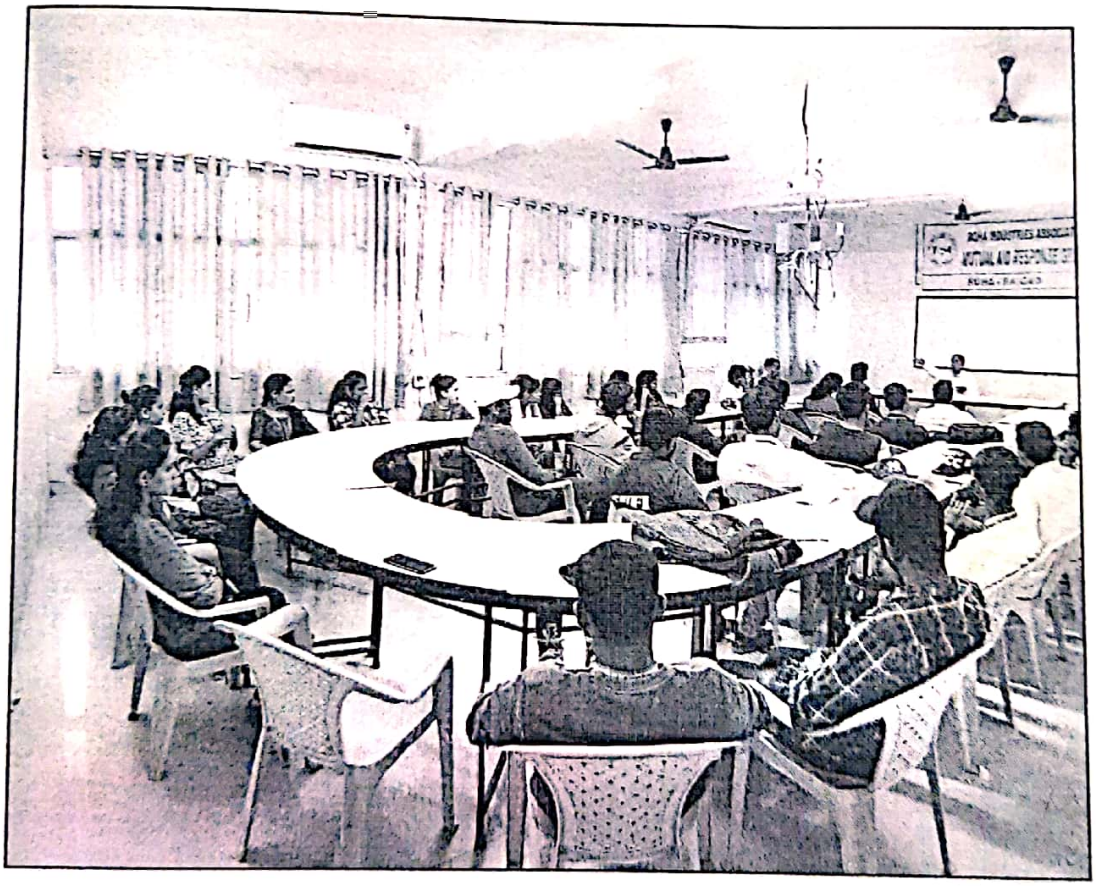


Photo : At Conference Hall of CETP Roha

CONCEPT OF CETP

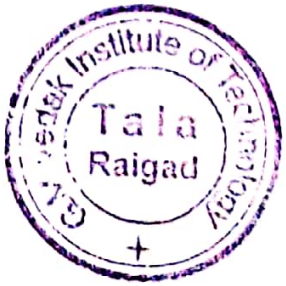
The concept of effluent treatment, by means, of a collective effort, has assumed reasonable gravity by being especially purposeful for cluster of small scale industrial units. Common effluent treatment plant (CETP) not only helps the industries in easier control of pollution, but also act as a step towards cleaner environment and service to the society at large. Small scale industries, by their very nature of job cannot benefit much from economies of scale and therefore the burden of installing pollution- control equipment, falls heavy on them. Realizing this practical problem, under the policy statement for abatement of pollution the Govt. felt to extend the scheme for promoting combined facilities for treatment of effluent and management of solid waste for clusters of small scale industrial units and also to provide technical support to them.

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.

Other important issues for the merit of common treatment include scarcity of land at the industry's level and a comparatively easier availability of professional and trained staff for the operation of CETP, which can otherwise be difficult, at the individual industry level. For the regulatory authorities also, common treatment facility offers a comparatively easier means of ensuring compliance of stipulated norms. The handling and disposal of solid- waste also becomes increasingly easier as the infrastructure is created in the project itself. The concept of common treatment, based on feasibility, should be part of the new industrial estates as essential component of infrastructure, In fact, the location of industries should always be such that units with compatible nature of activity are located in a cluster which in-turn can facilitate in providing common treatment.

NEED OF ETP

. To clean industry effluent and recycle it for further use.
. To reduce the usage of fresh/potable water in Industries.
To cut expenditure on water procurement
To meet the Standards for emission or discharge of environmental pollutants from various Industries set by the Government and avoid hefty penalties.
To safe guard environment against pollution and contribute in-sustainable development.



TREATMENTS

Treatment Process in CETP is as follows

1. Preliminary
2. Primary
3. Secondary
4. Tertiary (Advanced)

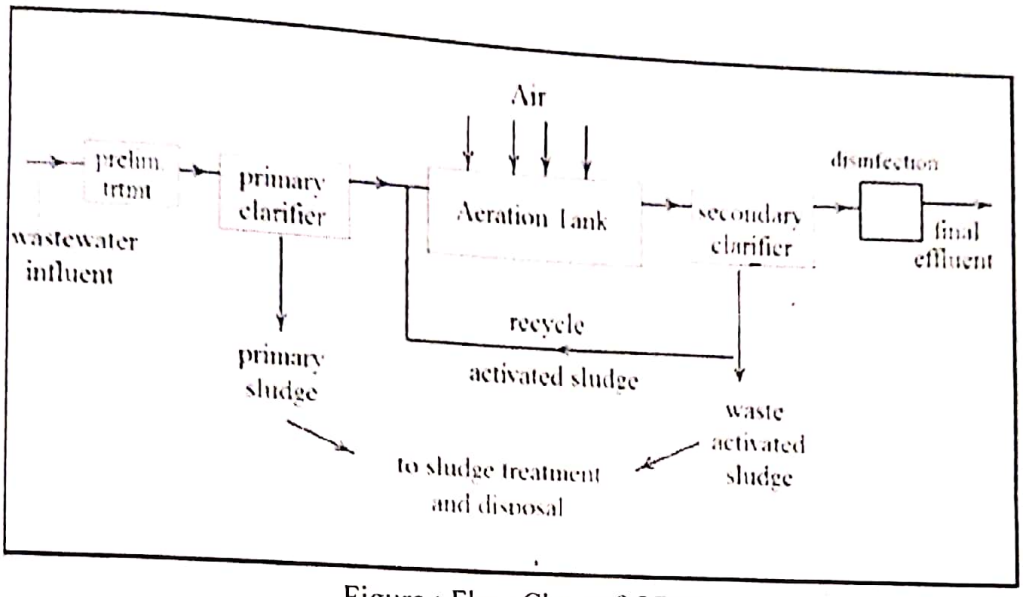


Figure : Flow Chart of CETP

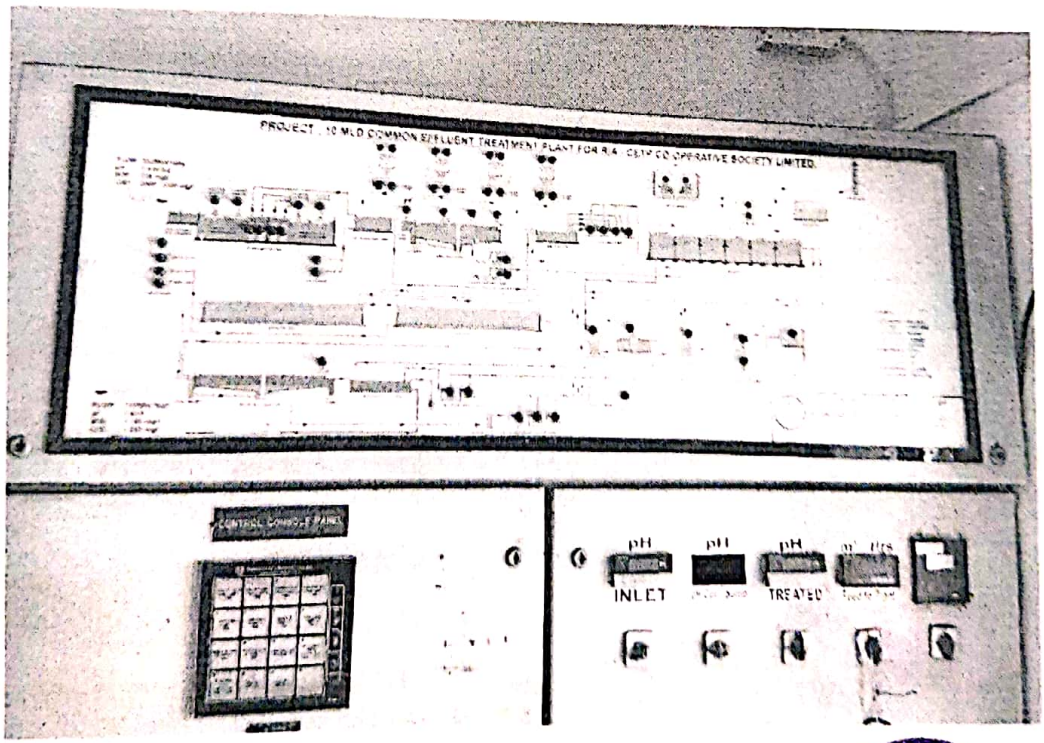


Photo : Control Unit of CETP Roha

1. PRELIMINARY TREATMENT

Purpose: Physical separation of big sized impurities like cloth, plastics, wood logs, paper, etc.
Common physical unit operation sat Preliminary level are:

➢ Screening

A screen with openings of uniform size is used to remove large solids such as plastics, cloth etc.
Generally maximum 10 mm is used.

➢ Sedimentation

Physical water treatment process using gravity to remove suspended solids from water.

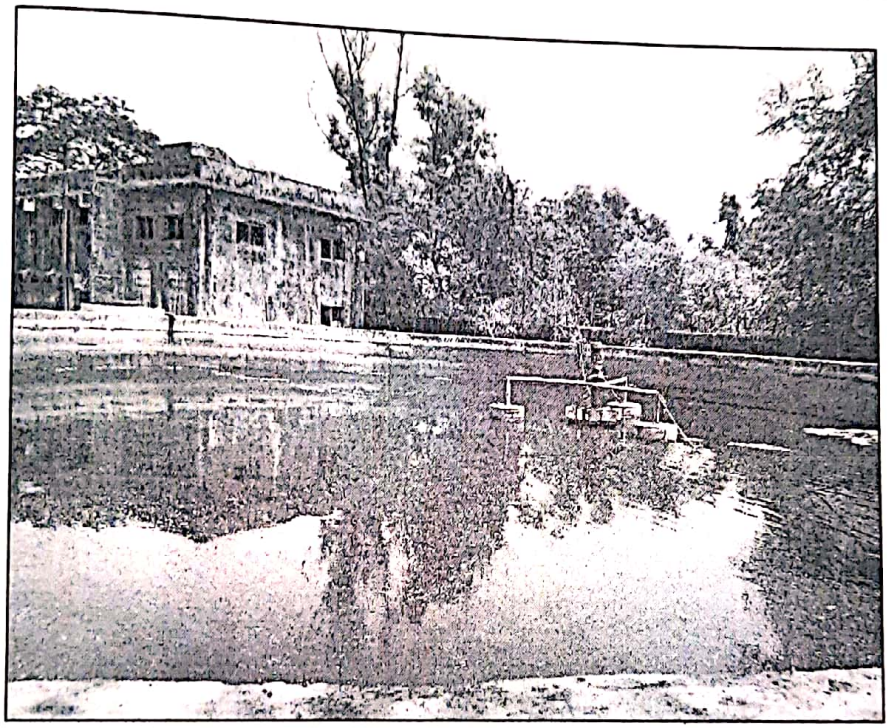


Photo : Low COD Tanks

➢ Clarification

Used for separation of solids from fluids

➢ Equalization

Equalization makes the waste water homogenous.
Retention time depends upon the capacity of treatment plant. (Generally 8-16 hours)

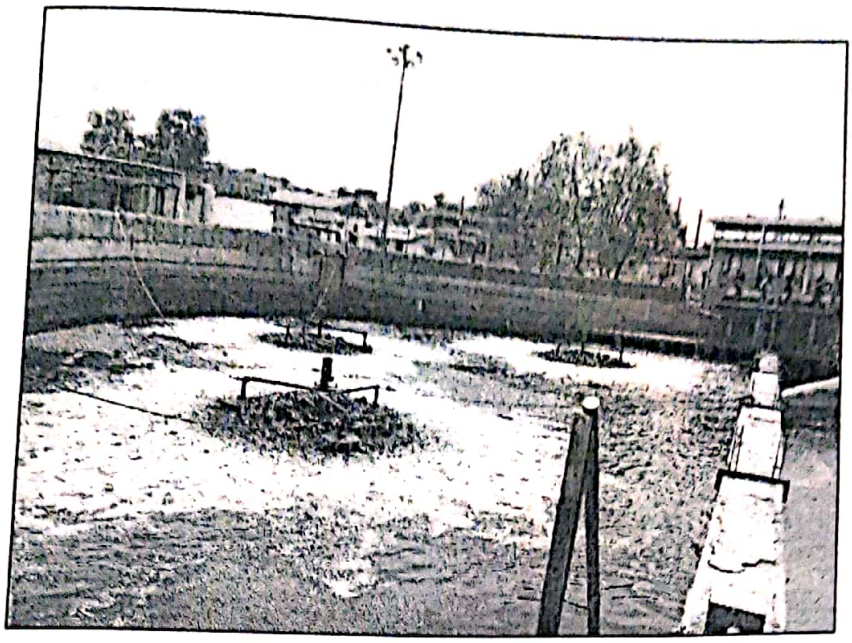


Photo : Equalisation Tank

2. PRIMARY TREATMENT

Purpose: Removal of floating and settle-able materials such as suspended solids and organic matter.

➢ Methods

Both physical and chemical methods are used in this treatment level.

pH Control:

To adjust the pH in the treatment process to make wastewater pH neutral.
For Acidic Wastes (Low pH): NaOH, Na2CO3, CaCO3 or Ca(OH)2.
For Alkali Wastes (High pH): H2SO4, HCl.

Chemical coagulation and Flocculation:

- Coagulation refers to collecting the minute solid particles dispersed in a liquid into a larger mass.
- Chemical coagulants like Al2(SO4)3 {also called alum} or Fe2(SO4)3 are added to wastewater to improve the attraction among fine particles so that they come together and form larger particles called flocs.
- A chemical flocculent (usually a polyelectrolyte) enhances the flocculation process by bringing together particles to form larger flocs, which settle out more quickly.
- Flocculation is aided by gentle mixing which causes the particles to collide.

➢ Aeration

Function of aeration is oxidation by blowing air.
Aerobic bacteria are used to stabilize and remove organic material presents in waste.

Photo : Aeration Tank

3. SECONADRY TREATMENT

Methods

Biological and chemical processes are involved in this level.

➢ Biological Unit Process

To remove, or reduce the concentration of organic and inorganic compounds.

Biological treatment process can take many forms but all are based around micro-organisms, mainly bacteria.

➢ Aerobic Processes

Aerobic treatment processes take place in the presence of air (oxygen).

Utilizes those micro-organisms (aerobes), which use molecular/free oxygen to assimilate organic impurities i.e. convert them into carbon dioxide, water and biomass.

➢ Anaerobic Processes

Theanaerobictreatmentprocessestakeplaceintheabsenceofair(oxygen).

Utilizes micro-organisms (anaerobes) which do not require air (molecular/free oxygen) to assimilate organic impurities.

The final products are methane and biomass.

Activated Sludge Process

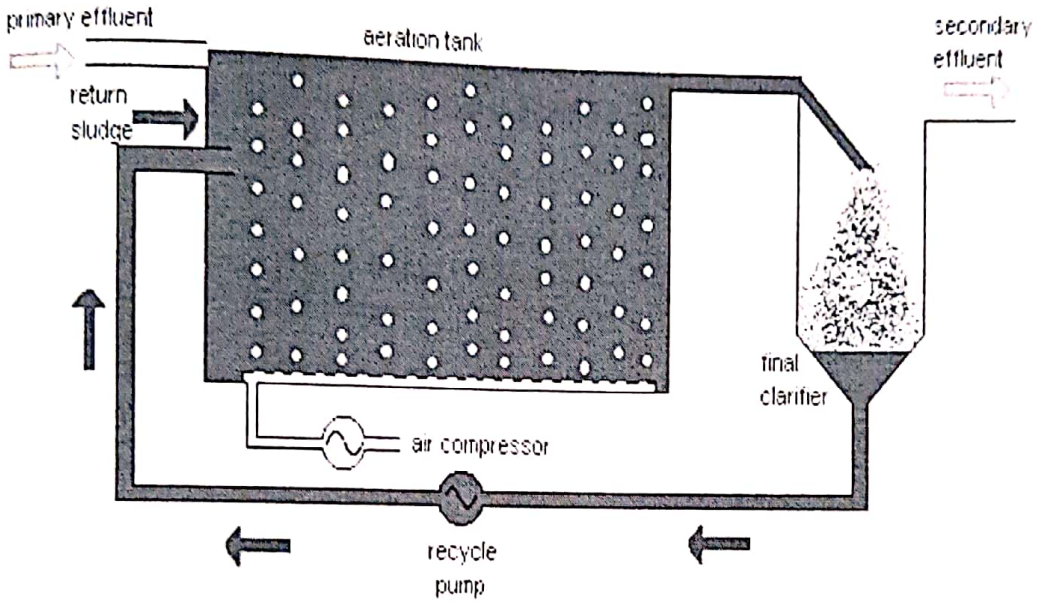


Figure : Activated Sludge Process

4. TERIARY TREATMENT (ADVANCED TREATMENT)

Purpose

Final cleaning process that improves waste water quality before it is reused, recycled or discharged to the environment.

Mechanism

Removes remaining inorganic compounds, and substances, such as the nitrogen and phosphorus. Bacteria, viruses and parasites, which are harmful to public health, are also removed at this stage.

Methods:

i. **Alum:** Used to help remove additional phosphorus particles and group the remaining solids together for easy removal in the filters.

ii. **Chlorine:** contact tank disinfects the tertiary treated waste water by removing microorganisms in treated waste water including bacteria, viruses and parasites.

iii. **Remaining Chlorine:** is removed by adding sodium bisulphate just before it's discharged.

PERMISSIBLE STANDARDS IN INDIA

Sr. No.	Parameter	Permissible Limit (disposal to land surface water)
1	pH	5.5 to 9
2	Total Suspended Solids	< 100 mg/lit
3	Oil & Grease	< 10 mg/lit
4	BOD	< 30 mg/lit
5	COD	< 250 mg/lit

GROUP PHOTO

CONCLUSION

Students have learned how actual working of the Effluent Treatment Plant. The process of Treatment of Effluent along with proper method & technique is properly get to know after Visiting this Site. Which types of work is done in CETP Industry is also get to know; with this kind of Educational-Industrial Visit we gain much more knowledge on Common Effluent Treatment Plant aside from theoretical aspect learned from classroom in subject Environmental Engineering-II as per University of Mumbai Syllabus.

Shri. GopinathMahadeoVedakPratishthan's

G. M.Vedak Institute of Technology, Tala

Approved by AICTE, Recognized by Govt. of Maharashtra & Affiliated to University of Mumbai.
Institute code : EN 3447

E-mail :gmvedakit@gmail.com

Web : www.gmvit.com

(Department of Civil Engineering)
Academic Year 2018-19 (First Half)

ATTENDENCE OF VISIT AT CETP Roha.

1) Arbab Akshay Vasant	Arbab
2) Bagwe Ninad Dnyaneshwar	Bagwe
3) Somvanshi D. Bamane	Bamane
4) Barde Asad. Riyaz	Barde
5) Pankaj Prakash Belose.	Belose.
6) Sumaali Sagay Berde	Berde
7) Iliyas Khan	
8) Basid Jogilkar	
9) Vijendra Bogireddy	Bogireddy
10) Viraj A. Bhusane	Viraj.
11) Avinash kisan Borkar	Borkar
12) Manoj Prakash Dhumal	Dhumal
13) Rahul R.. Manelavkar	Manelavkar
14) Roshan P. Chalke	Rchalke
15) nehal gaikar.	Nehal Gaikar
16) mathai Gomes	Mathai
17) omkar ghosalkar.	Omkar
18) Aniket Kadam.	Kadam.
19) Kashal Khandagle.	
20) Jay V. Durge	
21) Akash S. Mhatre	
22) Sumit Gothankar	
23) ~~Akash Jadhav~~	
24) Mansi Bulla	Mansi.
Akash Jadhav	AJ
Ashitosh magar	
prasad mohite	
karan mhatre	
Jitendra J. Mendadkar	
Amol P. Gaikar	
Saurabh D. Kadam	
Rashmi S. Kudekar	Rashmi
51) Akshay Sanjay Thakur	A.S.Thakur.
Dhanshree Bhaskar Tapkir	
Shreyas MukundPrasad Thakur	

G.M. Vedak Institute of Technology Tala Raigad

Kirti Yogesh pawar	kpawar
Shashank Sanjay shinde	
pranali Rajendra Shelke	
Akash gautam mote	
mayur O. vishwakarma	
pranali k. yesare	
sakshi V. Parange	
Jeevan G. Patil	
simran S. more.	
Aishwarya S. Parange	
Sumit A. Thakur.	
Adarsh R. Thakur	
Paresh. Patil	