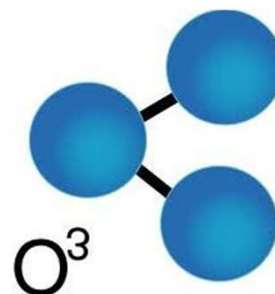


Ozone Generator For Sewage Water Treatment (STP)



Presented by:

Eltech Ozone

(Division of Eltech Engineers Pvt Ltd,
Mumbai)

About Ozone in STP

- In recent years, sophisticated needs for advanced sewage treatment have been increasing for recycling sewage treatment water. Ozonation as part of advanced sewage treatment is assumed to be extremely effective for decolourization, disinfection, deodorization, and reduction of COD because of its strong oxidizing capability.
- Eltech, offers an originally developed ozonation system that achieves low running cost and space saving using a highly efficient ozoniser of completely new concept to meet these needs.

Stages in STP

- Preliminary Treatment
- Primary Treatment
- Secondary Treatment
- Tertiary Treatment
- Ozonation

Preliminary treatment

The suspended solids and floating materials are digested by passing through a screening arrangement. If oil is present in the water, the oil also should be separated at this stage.

Primary Treatment

a. Equilisation Tank

b. Flocculation

c. Primary clarifier

Secondary Treatment

Biological process:

Since the sewage water is having high BOD, it is going through the anaerobic treatment where the BOD and COD are digested by the anaerobic bacteria's. Then the effluent goes to the aerobic treatment where the aerobic bacteria's are further digesting the BOD/COD and then the effluent goes to the clarifier where the liquid is separated and the bacteria's are recycled to the aeration tank.

Tertiary Treatment

The purpose of tertiary treatment is to provide a final treatment stage to raise the effluent quality before it is discharged to the receiving environment (sea, river, lake, ground, etc.). More than one tertiary treatment process may be used at any treatment plant

The effluent is then passed through the sand media filter and activated carbon absorption column. If disinfection is practiced, it is always the final process. It is also called "effluent polishing by ozone."

Ozonation process

- The effluent after the biological process is filtered. This effluent is heavily loaded with micro organisms like E-coli, salmonella and many more bacteria's and odour and trace of colour also will be there in the effluent. Then ozonation is given to kill the micro organisms and to disinfect, discolour, de-odourise the effluent. Ozone is injected on line through a ventury injector in a contact column.
- The final treated effluent can be used for gardening, Toilet flushing and also meets very easily, & exceeds the "Pollution Control Board" norms for the discharge standards.
- With all these benefits, We know that you will definitely be ready to give your environment, the staff a bacteria free & an oxygenated zone with Ozone.

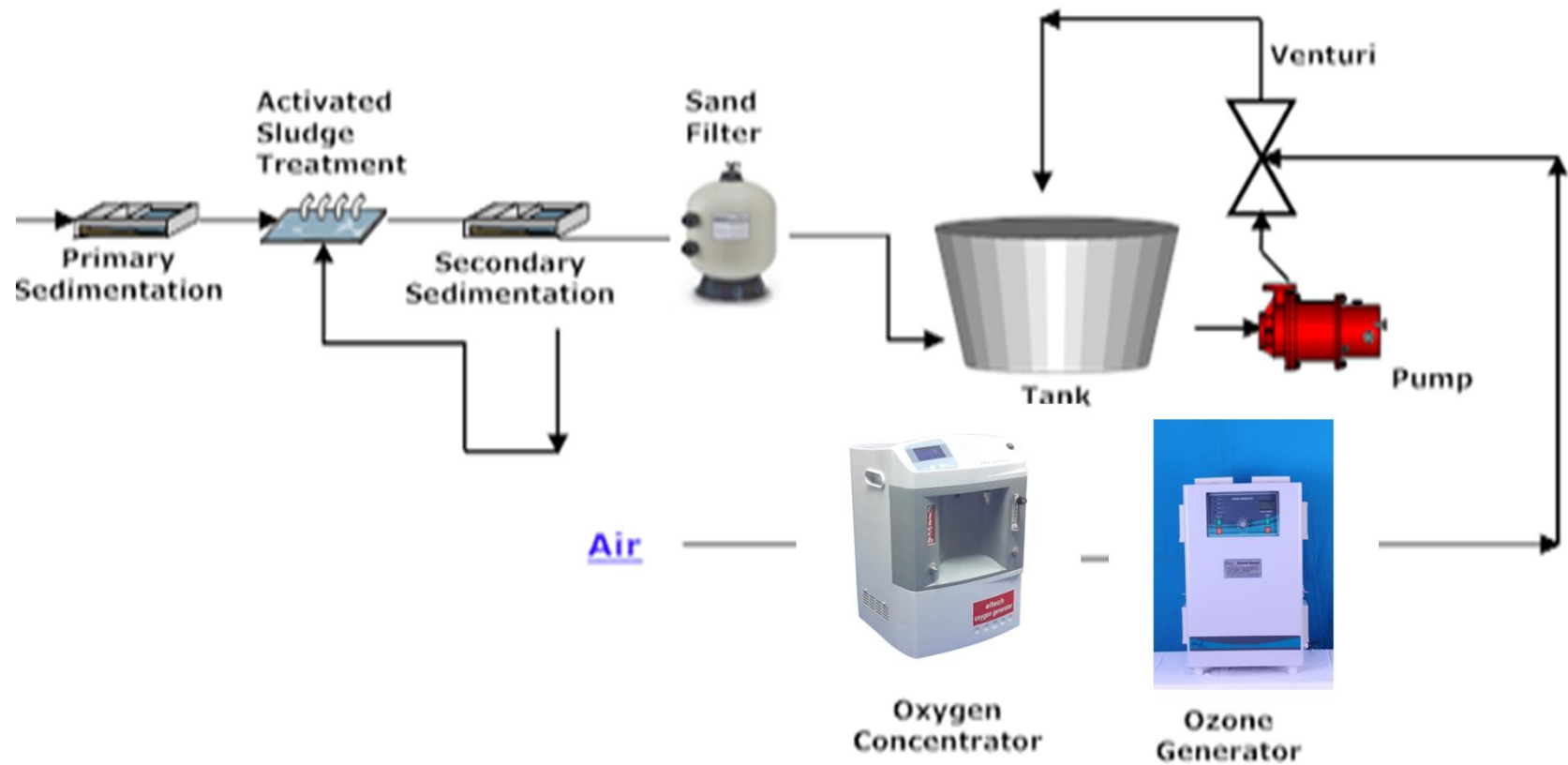
Benefits of Ozone

- Ozone kills the bacteria and viruses safely and effectively.
- Ozone in sufficient concentration will eliminate or greatly reduce the odour and colour in the treated waste water.
- Ozone is generated on premises. (No storage, procurement and transport required).
- Chlorine, when mixed with organic residues will form – Chloramines/ Chloroform/Trihalomethanes, etc that are toxic to the ecosystem. Ozone when reacts with the organic residues will oxidize the organic molecule in to CO_2 and H_2O and there is no toxic byproducts produced.
- Ozone treatment increases the dissolved oxygen in the water which is very good to the ecological system.

Benefits of Ozone

- Ozone is the most active oxidizing agent that can be used safely. It is sometimes called “activated oxygen”, or enriched oxygen.
- The reaction of ozone is immediate and it takes few seconds only to kill the microorganism. Hence complete disinfection is possible by having a short contact time of 2 to 3 minutes. Chlorine needs 4 to 6 hours for same level of disinfection.
- Tests have proven that Ozone is 3000 times more active in the destruction of bacteria and viruses than chlorine in the same concentration. Escherichia (E-coli) is destroyed within 15 seconds by ozone at a concentration of 1mg/liter (1 ppm).
- The waste water treated by ozone can be used for gardening or toilet flushing since ozone removes the bad odour from the waste water.

Process Layout



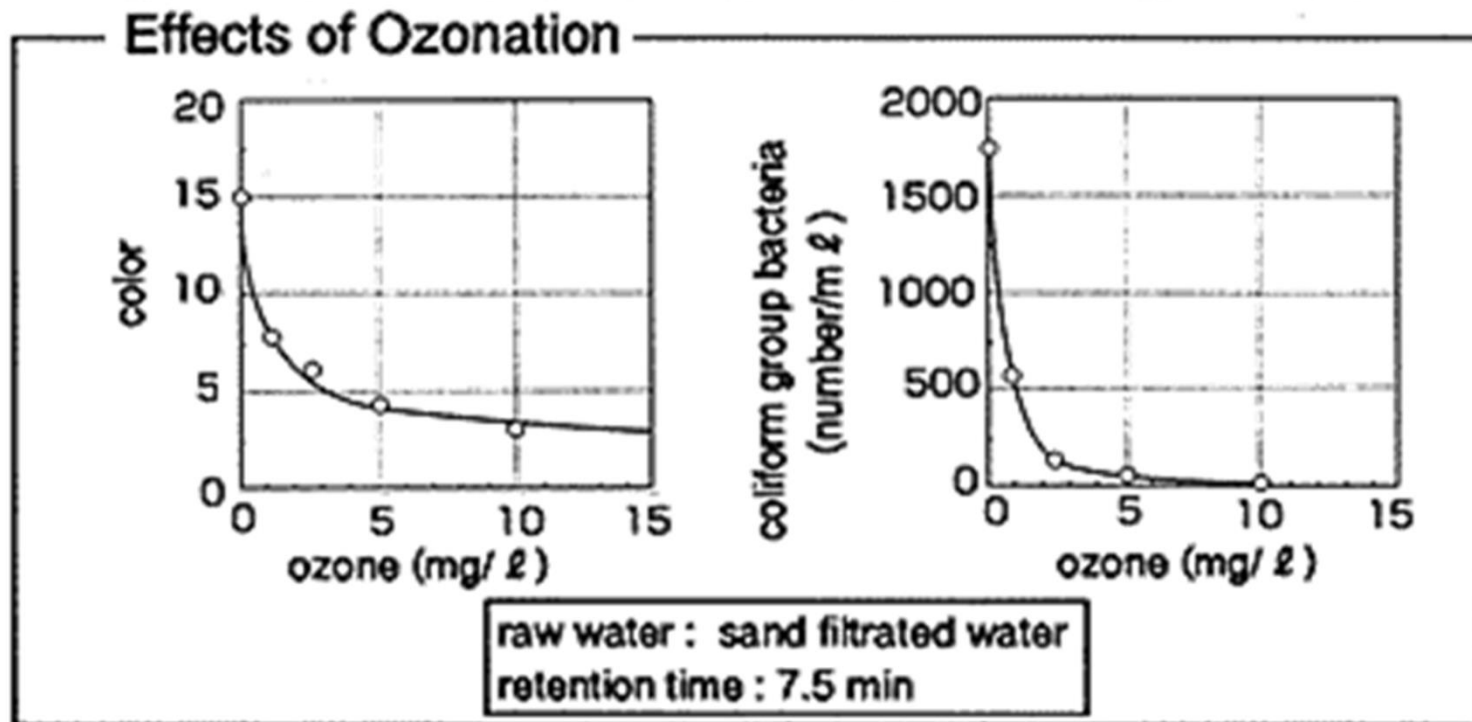
The process

- Untreated sewage from a property flows into the septic tank and the solids are separated from the liquid.
- Solid material is separated depending on their density. Heavier particles settle at the bottom of the tank whereas lighter particles, such as soap scum, will form a layer at the top of the tank.
- Biological (anaerobic) processes are used to help degrade the solid materials.
- The liquid then is pumped into a sand filter.
- From the sand filter the liquid is collected in a tank where it is ozonised to 100 ppm.

The process

- Ozone partially oxidizes organic material: large molecules and refractory materials are broken down into smaller biologically degradable molecules that can be removed by filtration.
- Sewage ozonised in such a manner shows a considerable reduction in COD, BOD, TSS and turbidity
- Unpleasant odour are caused by Hydrogen sulphide, ammonia and phenols, these are removed by ozone.
- Generally organic macro molecules with conjugate carbon-carbon double bonds cause colour ozone cleaves these bonds removing 95% of the colour.
- Then re ozonised on line as a final polishing and disinfection.
- This treated water can be used for flushing, car washing ,gardening cooling tower feed, etc.

Effects of Ozone



Results



Images of Ozone Generators



YouTube Video Links,

1. <https://www.youtube.com/watch?v=nVJlo-W99-o>
2. <https://www.youtube.com/watch?v=FY0wkD-uEvc>
3. <https://www.youtube.com/watch?v=H1A9GiwYoU8>
4. <https://www.youtube.com/watch?v=dBfNf2nyxHg>

Testimonials

We are one of Leading manufacturer and supplier of Ozone Generator in India. We have supplied more than 5000 machine in India and abroad, Our Esteem client list for STP includes following,

- **Ion Exchange, Rabale**
- **WTE, Chakan Pune**
- **Deccan Enviro Pvt Ltd, Pune**
- **Vascon Engineers**
- **Pranjape Scheme**
- **Earth Enviro**
- **Samruddhi Water Works**

Global Presence :

- Dubai
- South Africa
- Tanzania
- North East Africa
- Oman
- Egypt

Certificates (CE and ISO) :



Certificate of Compliance
Application of Council Directive for MDD 2007/47/EC

ELTECH OZONE
A-109, Diamond Industrial Estate, Ketkipada Road, Near Toll Plaza, Off. Western Express Highway, Dahisar-(East), Mumbai – 400068, Maharashtra, India.

Product Descriptions
Ozonator, Ozone Generator, Oxygen Concentrator, Ozone Air Purifier, Ozone Analyser

CE

This certificate of compliance is based on the technical file of above mention products

CERTIFICATE No.	1617/CE/CMXXXIII
ISSUED ON	20/03/2017
1ST SURVEILLANCE DUE	19/03/2018
2ND SURVEILLANCE DUE	19/03/2019
RE-CERTIFICATION DUE (SUBJECT TO THE COMPANY MAINTAINING ITS SYSTEM TO REQUIRED STANDARD)	19/03/2020

ANSI
American National Standards Institute
MEMBER

BMG QMS
CEO
www.bmgqms.com

Quality Approved
CE Registered

- This Certificate is Intellectual Property of BMG and can be maintained through surveillance and renewal audits.
- Certificate should be returned to BMG in case of non compliance of certification procedure.
- Authenticity of this certificate can be verified at www.bmgqms.com



Certificate OF REGISTRATION

This is to Certify that the Quality Management System of

ELTECH OZONE
A-109, DIAMOND INDUSTRIAL ESTATE, KETKIPADA ROAD, NEAR TOLL NAKA, OFF. W. E. HIGHWAY, DAHISAR (EAST), MUMBAI - 400068, MAHARASHTRA, INDIA

has been independently assessed and is compliant with the requirements of

ISO 9001:2015

This Certificate is applicable to the following product or service ranges:
MANUFACTURERS OF OZONATOR, OZONE GENERATOR, OXYGEN CONCENTRATOR, OZONE AIR PURIFIER, OZONE MONITOR AND OZONE ANALYSER

Integral Certification (P) Ltd.
::Certificate No:: IN12699A

Date of initial registration	29 August 2019
Date of this certificate	29 August 2019
Surveillance audit on or before	28 August 2020
Recertification Due/ Certification expiry	28 August 2022

Validity of this Certificate is subject to completion of surveillance audit on or before of due date in case surveillance audit not allowed to be conducted this Certificate shall be suspended/ withdrawn. This certificate is property of ICL Certifications and shall be returned immediately when demanded.

Accreditation

EGAC Accredited
QMS & ISO 9001:2015
CAR # 12381

IAF ACCREDITED
REGISTRATION ASSOCIATION

Paan
Director

For verification and updated information concerning the present certificate visit to www.iclcert.com

This Certificate is the property of Integral Certification Private Limited and shall be returned immediately when demanded

Integral Certification (P) Ltd.
U-40 (3rd Floor), Shakar Pur, Laxmi Nagar, Delhi-110092
E-mail: info@iclcert.com Website : www.iclcert.com
Contact No. : +91-11-33257055

Thank you !!

Achint Chauhan (Head Sales & Marketing)

Eltech Ozone

(Division of Eltech Engineers Pvt. Ltd.)

A-109, Diamond Ind Estate, Ketkipada Road, Near Toll Naka,
Dahisar (East), Mumbai- 400 068, India

Mobile / Whats app :+91-9820488050 Office : 022 28972424/2626

[Email: abd@eltech.in](mailto:abd@eltech.in)

Web : www.eltechozone.com