Sewage Treatment Plants

SBR

Biogas Plant

Constructed Wetlands

Packaged STP

SBR

SBR

Packaged STP

Nallah Treatment

Bio-pesticides

Biogas Plant

Water Bodies Rejuvenation

Solid Waste Management

Composter

Arsenic Removal Plant

MBBR

MBBR

Composter

Nallah Treatment

STP/ETP Chemicals

Solid Waste Management

Bio-pesticides

Water Bodies Rejuvenation

Arsenic Removal Plant

Ecologique Science Technik (I) Pvt. Ltd.

ESTPL, is ***a scientific enterprise*** under Scientist Entrepreneurship Scheme of Council of Scientific and Industrial Research (CSIR) established by Scientist of CSIR-National Environmental Engineering Research Institute (NEERI) in February 2014

39, Agnelayout, New Khamla Raod, Nagpur 440025, Maharashtra

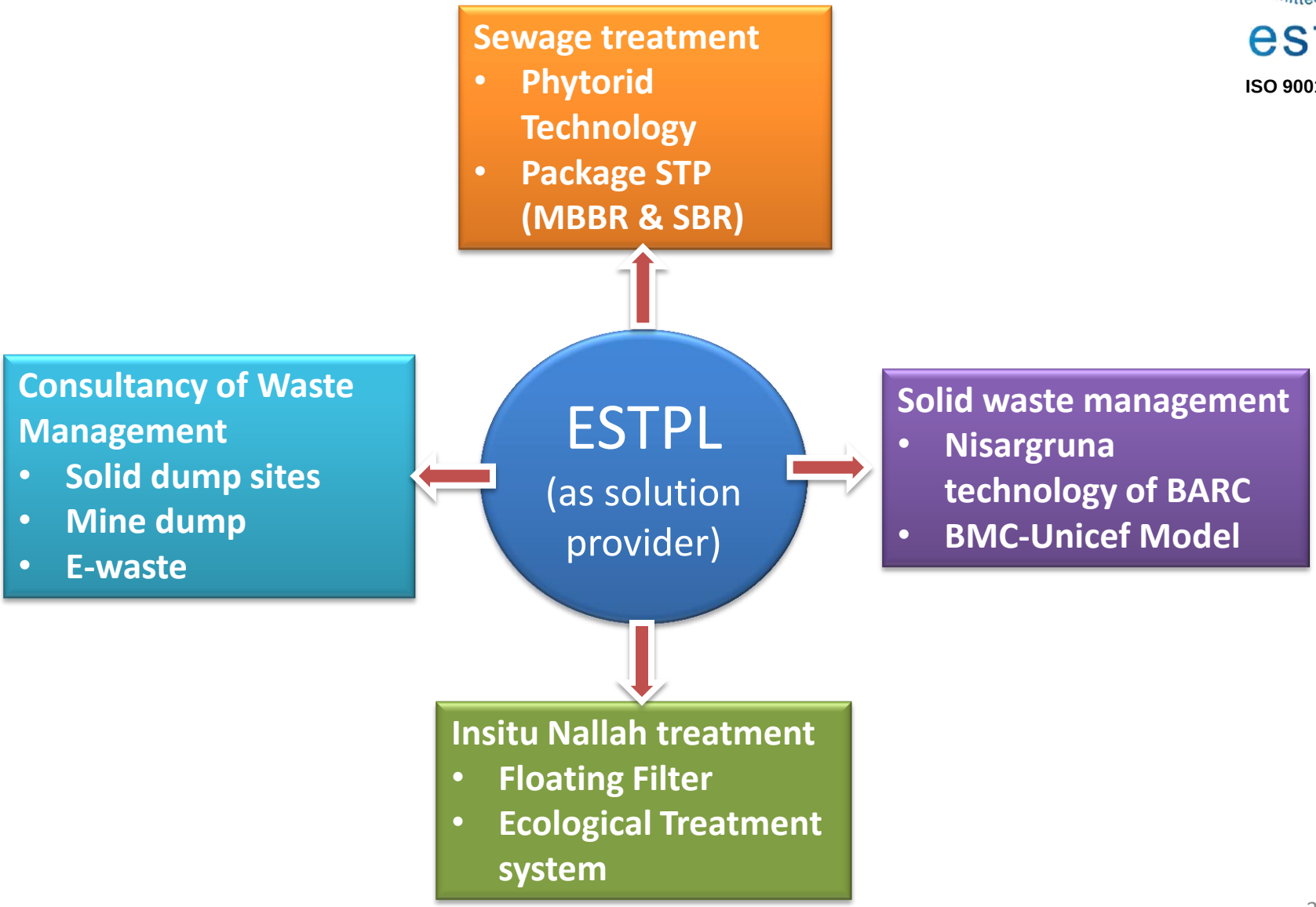
Brief Details

- Private Limited Company working in the field of Environmental Solutions since 2014
- Spin-off company from NEERI and Represent NEERI for Business Development
- Authorised Licensee of CSIR-NEERI for its Patented Phytorid Technology
- Part of Indovation a event by MoDWs in Delhi and have been listed for providing Phytorid Technology in Swatch Bharat Mission and Ganga Cleaning
- An ISO 9001:2015 certified company
- Registration under MSME and NSIC

Management Service
ISO 9001:2015

Solution Provider

Committed to the Planet
estpl
ISO 9001:2015



ESTPL Technology Holding

- Phytorid Technology of CSIR-NEERI
- Engineering Partner to NEERI for Municipal Solid Waste to Biogas
- Arsenic removal from water- IIT Bombay
- NEEM seed based bio pesticides- BARC
- Nisarguna Technology for Bio-gas- BARC
- Bio-gas from household waste in rural areas- Bioenergy Mission Cell (UP Yojana Aayog-UNICEF joint development)

Key Team Members

Committed to the Planet
estpl
ISO 9001:2015

Dr. Rajesh B. Biniwale
M.E. (Roorkee), Ph.D., D.Sc.(Hokkaido University, Japan)
MIIChE, FMASc, FIWA
(Scientist with CSIR-NEERI, 23 years)
Director
Experienced on Technology Development & Implementation

Shri Shriram S. Biniwale
Tax and Accounts Expert for more than 30 years
Director

Key Team Members

Committed to the Planet
estpl
ISO 9001:2015

Dr. Shilpi Karmakar
M.Sc., Ph.D.,
Director
Experienced on Design & Product Development

Shri Mahesh M. Vaidya
In-charge Implementation
Experience of 15 Years in Field Implementation

Team Memebers

Marketing Department (Chemical engineers/MBA) -04 Nos.

Project Department (Chemical & structural Engineers) -04 Nos.

Implementation Department (Civil engineers) -03 Nos.

Research & Environmental Modeling Department -02 Nos.

Experts & Advisers

Shri. P.Y.Ghuse
M.Tech. (Structural), Structural Designer & Consultant

Mrs. Smita Deshpande
LLB, Legal Adviser

Shri. Hrishikesh Deshpande
CA, Financial Adviser

Turnkey Projects: Waste Treatment

SEWAGE TREATMENT PLANT

- Constructed wetland/Phytorid Technology
- MBBR
- CAB (Compact Aerobic Bio-Reactor)
- MBR
- SBR

Solid Waste Treatment

- Rapid Composter for Urban Areas
- Pit composting for rural application
- Organic Waste to biogas plant
- Waste to Energy (Incineration Plant)

Turnkey Projects: Water and Water Bodies Treatment

Water Treatment Plants

- Raw water treatment
- Reverse Osmosis, Ultra-Filters
- Thermal Desalination
- Arsenic and Fluoride Removal Plants

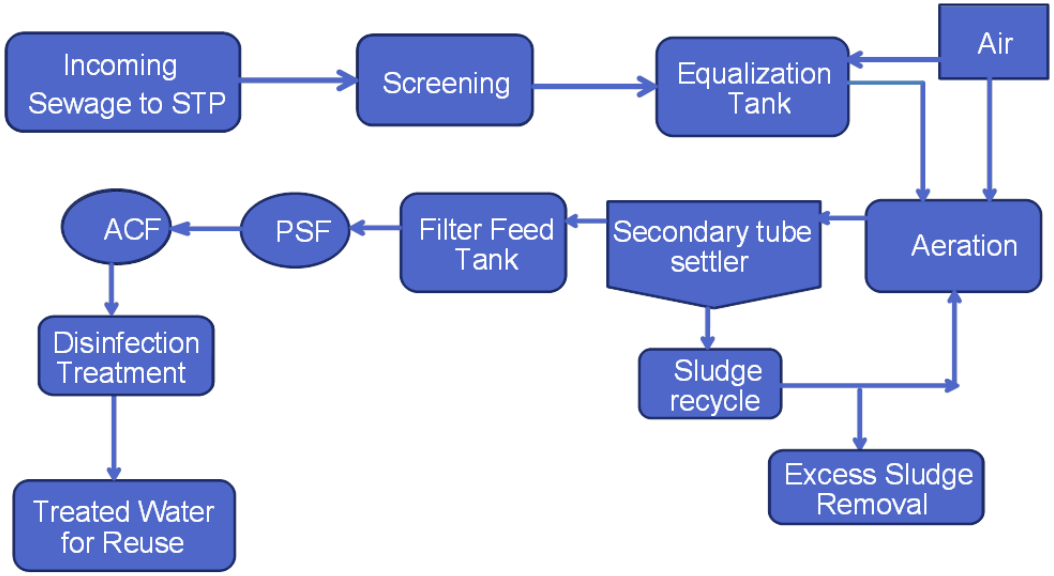
Water Bodies

- Lake Rejuvenation & Restoration
- Lake Landscaping
- Floating Phytoremediation for in-situ treatment of lake & nallah

MBBR and SBR STPs

ESTPL STP:

- Scientifically designed
- Fast Implementation
- Unmatched Low capital costs
- ESTPL takes O&M for 5 to 10 years
- Best after sales support
- Technical support for statutory requirements



MBBR and SBR STPs

Water Quality Inlet(design) and Outlet

Parameter	Inlet	Outlet
pH	6.5-8.5	6-8.5
BOD (mg/L)	<400	<10
COD (mg/L)	<500	<50
TSS (mg/L)	<250	<10
Faecal Coliform (MNP/100 ml)	10^5 to 10^7	<230
O&G (mg/L)	<50	<5

Varied Applications of STP

- Domestic wastewater (Municipal wastewater)
- Colonies, Airports, Commercial complexes, Hotels
- Open drainage, cleaning of nallah water
- Agricultural wastewater
- Dairy waste
- Fish pond discharges
- Pre-treated industrial wastewater
- Several other applications

Salient Features:

- Meets the Discharge and reuse norms for Treated Water
- Very Less Space Requirement
- Plug-n-Play Models of 50-200 kld and modular for more.
- No foul odour
- Low O &M maintenance
- Treated water for various applications such as irrigation and back flushing
- Recovery of water 90-92%
- Tolerates fluctuations in operating conditions
- Sustainable Microbial Growth for best operation

Phytoremediation: Paradigm Shift in STP Technology

- Technology is based on ecological wastewater treatment designed to mimic the cleansing functions of wetlands with a smaller footprint .
- Combination of Physical separation and nature available biological components to treat sewage.
- Designed to effectively work in tropical conditions and properly camouflage in the aesthetics of landscape.

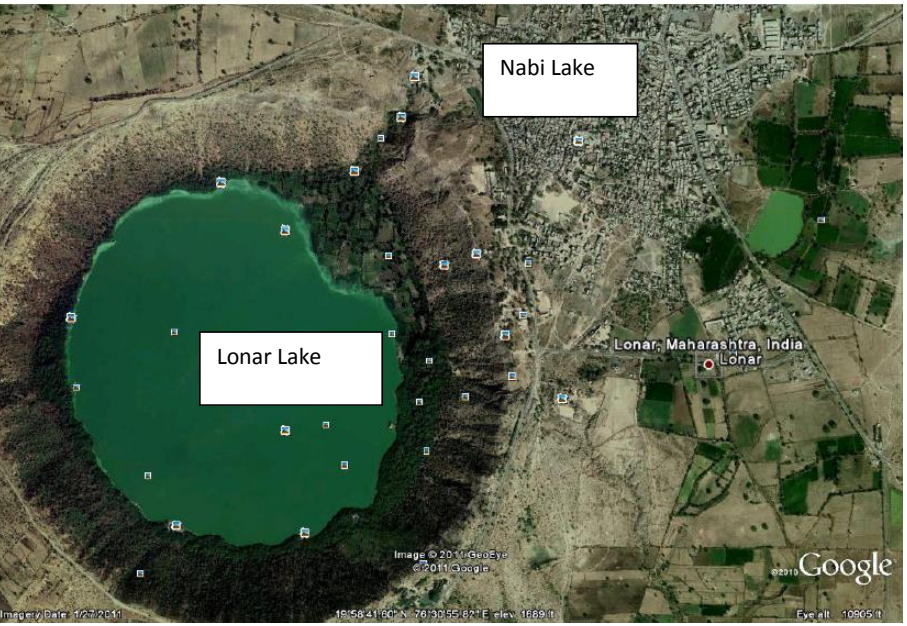
Parameter	Inlet sewage quality	Treated water quality	Standards for inland surface water	Standards Land Irrigation
pH	7.1 to 7.5	7.2	5.5-9.0	5.5-9.0
BoD (mg/L)	80 to 300	<10 to 20	30	100
CoD (mg/L)	130 to 350	< 50 to 100	250	Not Specified
TSS (mg/L)	80 to 90	< 15	100	200
Fecal Coli Farm (MNP/100ml)	10^6 to 10^7	<500	---	---
Nitrogen (mg/L)	10 to 50	4-5	5	Not Specified
Phosphate (mg/L)	10 to 50	1-4	5	Not Specified

Phytoremediation for Treating Nallah Water

Raw sewage
in nallah

Phytorid System

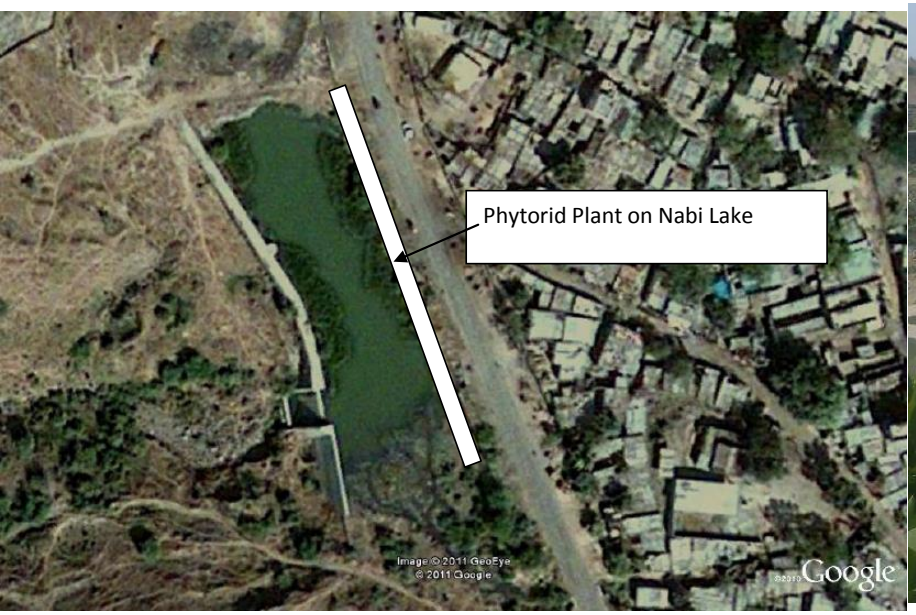
Treated water



Lake Conservation

Lake Area: 3 hector

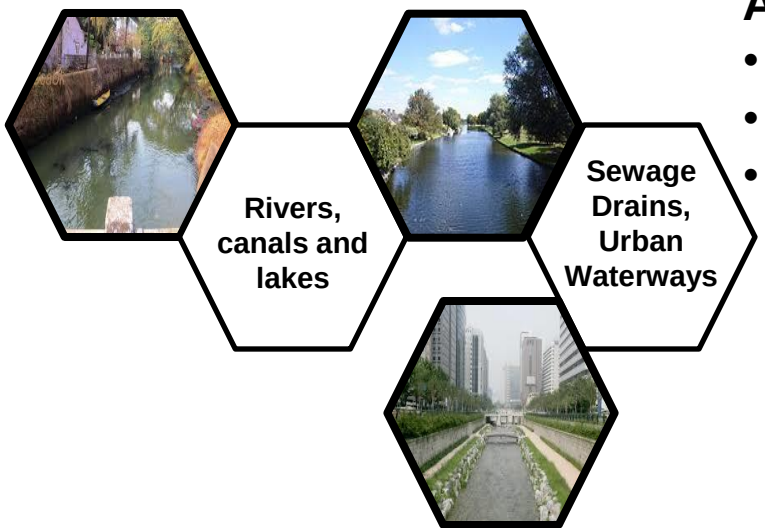
Capacity: 500 KLD



Ecological Treatment system for Insitu drain treatment

Advantages

- Low capital cost and even lower O&M cost
- Suitable for Insitu Nallah treatment
- Improvement in water quality
- Improvement in aquatic biodiversity
- Better water aesthetic and attractive landscape feature



Applications

- Rivers, canals and lakes.
- Sewage open drains.
- Urban waterways and waterfront restoration

Organic Waste Composter

Salient Features:

- Rapid Aerobic Composter is scalable from household to community to small town
- Aeration systems provides no foul smell operation
- No vector nuisance while allowing free aeration
- Accepts almost all biodegradable waste dry or wet
- Specialized microbial culture makes operation rapid thereby reducing footprint
- A very dry, light, and odourless compost excellent as soil conditioner is obtained
- No specific skills are required for operation and maintenance
- Designed and operated in such a way that the variation in the total composting time can be easily adjusted

Organic Waste Composter

Shredder

Dewatering Machine

Curing Box

Functioning of Composter

- Household biodegradable waste is to be fed to the composter in batches at different times
- Feeding is to be continued for 8-10 days and periodically a specialized microbial culture is to be added (the culture shall be supplied by the technology provider)
- At the end of 10 days the composted mass is to be transferred to maturation section. This may not take more than 5-10 minutes
- Once the composter is empty feeding can be started again.
- Compost shall be matured in next 15-18 days and is ready for use.

Organic Waste Composter

Unique Features

- Dewatering Technology reduces the water content of waste in less than 24 hours
- Stable Compost gets ready in 15 days
- The manure produced obtains all Parameters as per FCO
- The electrical consumption is as low as 40 - 50 paisa per tenement per day
- Sturdy and well designed to fit into the surrounding
- Works well in almost all temperature conditions

Compost meets MoEF Norms

Parameter	Stabilized manure from Rapid Aerobic Composter	MoEF Norms
pH	6.5-8.5	5.5-8.5
Moisture	< 25%	<25%
C:N ratio	< 20	20-40
Carbon	< 12-14%	--
Arsenic (mg/kg)	<2.0	10.0
Cadmium (mg/kg)	BDL	5.0
Chromium (mg/kg)	<10.0	50.0
Copper (mg/kg)	<100.0	300.0
Lead (mg/kg)	<10	100.0
Mercury (mg/kg)	<.05	0.15
Nickel (mg/kg)	<10	50.0
Zinc (mg/kg)	<200	1000.0

NISARGRUNA Biogas plant

ESTPL is technology licensee of NISARGRUNA Biogas plant a technology developed by BARC.

Advantages

- Environment friendly recycle of organic waste, which is the need of the hour.
- Generation of biogas that can be used as fuel in the kitchen or for power generation.
- Generation of high quality, weed free manure, which is an excellent soil conditioner.
- Can be installed for handling capacities from 1 to 25 MT biodegradable waste per day.

At present, 160 Nisargruna plants are functional in the country.

Thank You

Dr. Rajesh B. Biniwale
A Scientist Entrepreneur from
CSIR-National Environmental Engineering Research Institute

Contact
39, Agnelayout, New Khamla Road
Nagpur 440025

director@estpl.co.in
rajeshbiniwale@gmail.com

Tel/Fax: +91-712-2233190, +91-712-2295741

Mobile: +91-9822745768, +91-7888017985-88