

CENTRAL POLLUTION CONTROL BOARD ZONAL OFFICE (SOUTH) BENGALURU

Monitoring Report of M/s Kinfra Small Industries Park (KSIP), Common Effluent Treatment Plant, Nellad, Kerala

1.	Name/ address of CETP/ co	ompany	M/s Kinfra Small Industries Park Common Effluent Treatment Plant		
			Nellad - 686712		
			Kerala		
2.	Area occupied by CETP (p	lot area)	40 Cent		
3.	Total no. of staff (including	g operational & skilled	3 nos.		
	persons)				
4.	Contact person		Sh. Mathew George		
	(Name, Designation, and C	ontact No, FAX, e mail)	Project Manager		
			0484 - 2767849		
5.	Operating agency		M/s Envirochem Laboratories (P)		
			Kalamassery, Cochin 683 104		
6.	Status of CETP		Operational (only secondary		
			Treatment)		
7.	Consent & Authorization		Applied on 28.06.2012.		
8.	Industrial area/estate (s) con	nnected to CETP	KINFRA small Industries Park.		
			Nellad		
9.	Type of industries in the co				
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	Industrial area/estate	Type of industries	Number of industries		
	KSIP	Food	22		
		Non Food	28		
	Number of member industr	ies of CETP	23 nos.		
10.	Method of collection of eff	luent (pipeline/tanker)	Pipeline		
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11.	Details of flow meters		No flow meters		
12.	Treatment capacity		400 m ³ /day		
			3		
13.	Wastewater treated		100 m ³ /day		
14.	Wastewater if bypassed in	CETP from treatment:	No		

15.	Treatment units and dimensions							
	Name of the unit	Numbers	s D	imension	Capacity, m ³			
	Screen Chamber	1	1.5m x 0.5n	n x 1.5m LD +	1.125			
			0.3m FB					
	Equalization tank	1	8.0m x 8.0n	n x 3.0 m LD +	224.00			
			0.5m FB					
	Aeration tank	1	8.0m x 7.0n	n x 4.0 m LD +	252.00			
		1	0.5m FB	0 000	50.00			
	Clarifier	1	5.0m Ø x 3.	$0m SWD \ge 0.3m$	59.00			
	Clardes Callestian tents	1	FB	0 CWD 0.2	( )9			
	Sludge Collection tank	1	2.0m Ø X 2.	0 m S w D x 0.3 m	0.28			
	Tracted water Topk	1	$\frac{\Gamma D}{5.0m \times 5.0m}$	n v 25 m I D +	62.5			
		1	0.3m FB	II X 2.3 III LD $+$	02.3			
	Pressure sand filter	1			20.0 cu.m/hr			
	Activated carbon filter	1			20.0 cu.m/hr			
16.	Details of chemicals used	1	Only Biological	l treatment. No chem	icals used			
17.	Excess Biological Sludge Management System			Nil. The unit has one filter press.				
18.	Conveyance system for d	eated	Pipeline					
	wastewater							
19.	Method of Treated wastewater disposal			Land				
20.	Capital cost			Rs.93.91 lakhs				
21.	Operational cost			Rs.45,000.00( Operational monthly				
	1		AMC charges)+ Avg. monthly					
				Electricity charges(Rs.50,000.00)				
22.	Inspection Team			Sh. R. Rajkumar, Sc C				
	Sh			Sh. Deepesh V, SSA				
		Sh. S. Seenivel Raj,						
23.	Date of Inspection			20/08/2014				

## **Observations:**

- The CETP is commissioned in an Industrial park developed by KINFRA. The Industrial Park has 22 nos. food and 28 nos. non-food industries in which 23 (22 food and 1 non-food) units are member of CETP.
- The CETP has only secondary treatment of installed capacity 400 m³/day in which about 100 m³/day of effluent is being received. The member units of CETP are not having primary treatment facility.
- The treatment system in the CETP has only biological treatment (Fig. 1). The CETP consists of equilisation tank, aeration tank, clarifier, sand & carbon filter and filter press.



The samples were collected at different stages of the treatment unit. The characteristics of the effluent are shown below.

Parameters	Designed inlet	Equalization	After Clarifier	Final	Standards
	norms	tank	(Collection Tank)	Outlet	
pН	6-8	6.5	7.3	7.2	6.5 - 8.5
TSS	600	160	38	16	100
TDS	-	510	428	1434	2100
BOD	250 - 275	137	02	60	30
COD	-	333	54	74	250
0 & G	-		-	0.4	10
Aeration Tank		MLSS	9970		

* All values are in mg/l except pH

- The treated effluent quality in case of TDS & BOD is not meeting the stipulated norms and discharged on land for gardening.
- The operation & maintenance of CETP is not satisfactory. The mixing aerator in equilisation tank and effluent pumping pump to aeration tank was found not working at time of inspection. So no flow was observed in the treatment units.



**Equilisation Tank** 

• It was informed that sludge is not produced so for, which is practically not possible and the analysis result of MLSS shows that the excess sludge from aeration tank is also not being removed periodically.



**Aeration Tank** 

- It was informed that the member units are not having primary treatment facilities so the inlet load to CETP is more than the designed. Since the generation quantity is less than the design, the treatment is carried out by flow rate adjustment to CETP.
- The analysis result shows less load at inlet because the sample was collected from the top of the equilisation tank due to non-availability of the sampling arrangement and non-working of pump.
- No flow meters were installed at inlet and outlet of CETP.
- No proper access was available to the treatment unit due to plant growth, which is not removed and shows the poor maintenance.



View of Treatment units

## **Recommendations:**

- Treated effluent quality should meet the stipulated parameter norm within the limit before discharge.
- Operation & Maintenance of CETP needs to be improved to have proper treatment and to have stand by pumps & mixing aerators for regular continuous operation.
- Primary treatment facility needs to be commissioned in CETP as per the inlet pollution load or KSPCB shall be directed to issue the notice to the member units to install primary treatment facility.
- Flow meters shall be installed at inlet and outlet of CETP.
- Treated effluent shall be reused/ recycled to achieve Zero Liquid Discharge.
- Regular cleaning/maintenance should be carried out all over the plant for proper safe access to treatment units.

(R. Rajkumar) Scientist C