

**BEFORE THE NATIONAL GREEN TRIBUNAL SOUTHERN ZONE  
AT CHENNAI**

**Appeal No. 77 OF 2022 (SZ)**

M/s. Varalakshmi Starch Industries (P) Ltd.,

...Appellant

AND

Tamil Nadu Pollution Control Board  
And others.

...Respondents

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Dated at Chennai on this the 5<sup>th</sup> Day of November, 2024.



Counsel for Appellant

1

**Subject:** Re: Your Adequacy Report dated 29.05.2023 issued to us - Reg.**From:** CES Anna University <directorcesau@gmail.com>**Date:** 21/03/2024, 17:47**To:** "Office @ Varalakshmi Starch" <office@varalakshmistarch.com>, vsilmd <vsilmd@gmail.com>, "JMD @ Varalakshmi Starch" <jmd@varalakshmistarch.com>**CC:** deedmp@tnpcb.gov.in, amalraj@annauniv.edu, amal raj <amalraj@yahoo.com>, Amal Raj <amaljez@gmail.com>

Dear Sir,

Varalakshmi starch industry approached the Centre for Environmental Studies (CES), Anna University on 19.09.2022 to carry out the consultancy work on the design adequacy of ETP. The work was started by CES on 26.09.2022 and the field visit was conducted on 24.02.2023. Based on the field visit conducted on the ETP, the design adequacy report was released by CES on 29.05.2023. The report was placed on hold from 08.07.2023 due to the scientific clarifications needed in the report about the presence of high TDS and the removal mechanism of TDS in the ETP system. The CES has requested the industry to conduct an online meeting regarding the scientific clarifications needed for the report clearance. The CES scheduled an online meeting with the industry and ETP consultant on 26.02.2024. In this online meeting, CES discussed with their consultant whether the effluent generated in the Varalakshmi starch industry contains organic or inorganic TDS. The findings of the CES team led by Dr. S. Kanmani, Professor and Director along with Dr. S. Amalraj, Professor based on the data furnished by the industry are presented. The stage wise TDS reduction is illustrated in Table 1. As can be seen from this table, there is a tremendous TDS reduction (11050 to 4000 mg/L) during anaerobic process and a substantial TDS reduction (4000 to 1650 mg/L) during aerobic process.

**Table 1. TDS variation in Varalakshmi Starch ETP Results**

S.No	Sample Points	CES Results (mg/L)
1	Collection tank	12150
2	Equalization tank	11050
3	Anaerobic Digester Outlet	4650
4	Anaerobic lagoon 1 outlet	4650
5	Anaerobic lagoon 2 outlet	4000
6	Diffused Aeration 1 Outlet	4600
7	Diffused Aeration 2 Outlet	4450
8	Surface Aeration Outlet	4400
9	Primary Settling Outlet	2750
10	Clarifier Outlet	1650

The ETP consultant explained that the effluent from their industry contains more than 90% organic content which is degraded by a biological effluent treatment plant consisting of Anaerobic Digestors using a Hybrid Upflow Sludge Media Anaerobic Reactor for producing Biogas. The industry said the effluent containing very high organic material including organic TDS showed almost complete biodegradation by anaerobic bacteria to generate Biogas for use in thermal or power generation applications. Also, the industry clarified the TDS Composition using the research paper titled "Naganandhini Srinivasan, Kiruthika Thangavelu, Ashika Sekar and Sivakumar Uthandi (2020), Characteristics of Sago Processing Wastewater Effluents released from different Sago Factories in Salem

and Namakkal District of Tamil Nadu, India, 207(spl):1-6” published by Tamilnadu Agricultural University (Department of Renewable Energy) in the Madras Agricultural Journal. Based on the result of this study, the industry claimed that the TDS content of sago effluent was high due to the presence of soluble glucose during hydrolysis of rich carbohydrates, fibres and dense suspended solids, unextracted starch, cellulose (fibrous residue from pith), cyano glucosides and insoluble fibres.

Based on the online meeting conducted on 26.02.2024, scientific clarifications regarding TDS in Varalakshmi Starch raw effluent are furnished by the ETP consultant and it was vetted by Dr. S. Kanmani, Professor and Director along with Dr. S. Amalraj, Professor and hence CES is approving the design adequacy report for Existing ETP for Industries (P) Ltd, Dharmapuri which is released on 29.05.2023.

Thank you



**ADVANCED ENVIRONMENTAL LABORATORY,  
TAMILNADU POLLUTION CONTROL BOARD,**

SALEM – 636 004.

**ROA No. 644 /TNPCB/AEL – SLM/2024– 25, Dated: 21.10.2024**

1.	Name and address of the sender	The District Environmental Engineer, Tamilnadu Pollution Control Board, Dharmapuri.
2.	Date and time of collection	26.09.2024 at 12:20 PM and 12:30 PM
3.	Date and time of receipt at Lab.	26.09.2024 at 05:30 PM
4.	Condition of seal, fastening and Container	Sealed/Unfastened Condition in Polythene carbuoy 2.5 lits X 2 Nos.
5.	Nature and Number of samples	2 Nos. of Trade effluent Samples.
6.	Date of Analysis	26.09.2024 - 21.10.2024

DEE Code No.	Lab Code No.	Point of Collection	Whether Untreated/ Treated
DEEDMP-240171	1855	MBR Outlet	-
DEEDMP-240172	1856	Outlet of green belt	-

**TEST REPORT**

Sl. No.	Parameters	Unit	Test sample code Nos.		Test Method
			DEEDMP-240171/1855	DEEDMP-240172/1856	
1.	pH at 25°C	Number	8.07	8.16	APHA 23 <sup>rd</sup> Edn 2017 (4500 H+)
2.	Total Suspended Solids at 103°C – at 105°C	mg/l	4	4	APHA 23 <sup>rd</sup> Edn 2017 (2540 -D)
3.	Total Dissolved Solids at 180°C	mg/l	1940	1900	APHA 23 <sup>rd</sup> Edn.2017 (2540 C)
4.	Chloride as Cl	mg/l	630	650	APHA 23 <sup>rd</sup> Edn.2017 (4500 Cl B)
5.	Sulphates as SO <sub>4</sub>	mg/l	31	75	APHA 23 <sup>rd</sup> Edn.2017 (4500 SO <sub>4</sub> -E)
6.	BOD (at 27°C for 3 days)	mg/l	4.6	4.0	IS 3025 (Part-44)
7.	COD	mg/l	60	40	APHA 23 <sup>rd</sup> Edn 2017 (5220 B)
8.	Ammonical Nitrogen as NH <sub>3</sub> -N	mg/l	3.92	1.68	APHA 23 <sup>rd</sup> Edn. 2017 (4500 -NH <sub>3</sub> C)
9.	Total Kjeldahl Nitrogen	mg/l	6.72	3.92	APHA 23 <sup>rd</sup> Edn. 2017 (4500 -N <sub>org</sub> B)
10.	Nitrate Nitrogen as NO <sub>3</sub>	mg/l	7.351	6.054	APHA 23 <sup>rd</sup> Edn 2017 (4500 NO <sub>3</sub> -B)

Sl. No.	Parameters	Unit	Test sample code Nos.		Test Method
			DEEDMP-240171/1855	DEEDMP-240172/1856	
11	Total Hardness as CaCO <sub>3</sub>	mg/l	500	500	APHA 23 <sup>rd</sup> Edn. 2017 (2340 C)
12	Calcium as Ca	mg/l	20	60	APHA 23 <sup>rd</sup> Edn. 2017 (3500 B)
13	Magnesium as Mg	mg/l	109	85	APHA 23 <sup>rd</sup> Edn. 2017 (2340 C)
14	Alkalinity as CaCO <sub>3</sub>	mg/l	48	44	APHA 23 <sup>rd</sup> Edn. 2017 (2320 B)
15	Cyanide	mg/l	<0.008	<0.008	APHA 23 <sup>rd</sup> Edn. 2017 (4500 CN E)

Note: < = Indicates Less than Minimum Detectable Limit.

Checked by

*[Signature]*  
21/10/24

Environmental Scientist

Authorized Signatory

*[Signature]*  
21/10/24

Assistant Director (Lab),  
AEL, TNPCB, Salem.

- End of Test Report -

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**ADVANCED ENVIRONMENTAL LABORATORY,  
TAMILNADU POLLUTION CONTROL BOARD,  
SALEM – 636 004.**

**ROA No. 651 /TNPCB/AEL – SLM/2024– 25, Dated: 21.10.2024**

1.	Name and address of the sender	The District Environmental Engineer, Tamilnadu Pollution Control Board, Dharmapuri.
2.	Date and time of collection	08.10.2024 at 05:10 PM and 05:35 PM
3.	Date and time of receipt at Lab.	09.10.2024 at 10:10 AM
4.	Condition of seal, fastening and Container	Sealed/Unfastened Condition in Polythene carbuoy 2.5 lits X 2 Nos.
5.	Nature and Number of samples	1 No. of Trade effluent Sample & 1 No. of Pond water sample
6.	Date of Analysis	09.10.2024 - 21.10.2024

DEE Code No.	Lab Code No.	Point of Collection	Whether Untreated/ Treated
DEEDMP-240180	1973	Outlet in green belt	-
DEEDMP-240181	1974	Pond water (inside the premises)	-

**TEST REPORT**

Sl. No.	Parameters	Unit	Test sample code Nos.		Test Method
			DEEDMP-240180/1973	DEEDMP-240181/1974	
1.	pH at 25°C	Number	7.99	7.49	APHA 23 <sup>rd</sup> Edn 2017 (4500 H+)
2.	Total Suspended Solids at 103°C – at 105°C	mg/l	16	8	APHA 23 <sup>rd</sup> Edn 2017 (2540 -D)
3.	Total Dissolved Solids at 180°C	mg/l	1950	720	APHA 23 <sup>rd</sup> Edn.2017 (2540 C)
4.	Chloride as Cl	mg/l	860	300	APHA 23 <sup>rd</sup> Edn.2017 (4500 Cl B)
5.	Sulphates as SO <sub>4</sub>	mg/l	31	<5	APHA 23 <sup>rd</sup> Edn.2017 (4500 SO <sub>4</sub> -E)
6.	BOD (at 27°C for 3 days)	mg/l	4.0	3.6	IS 3025 (Part-44)
7.	COD	mg/l	60	40	APHA 23 <sup>rd</sup> Edn 2017 (5220 B)
8.	Ammonical Nitrogen as NH <sub>3</sub> -N	mg/l	1.12	2.80	APHA 23 <sup>rd</sup> Edn. 2017 (4500 -NH <sub>3</sub> C)
9.	Total Kjeldahl Nitrogen	mg/l	4.48	5.04	APHA 23 <sup>rd</sup> Edn. 2017 (4500 -N <sub>org</sub> B)
10.	Nitrate Nitrogen as NO <sub>3</sub>	mg/l	0.789	0.978	APHA 23 <sup>rd</sup> Edn 2017 (4500 NO <sub>3</sub> -B)

Sl. No.	Parameters	Unit	Test sample code Nos.		Test Method
			DEEDMP-240180/1973	DEEDMP-240181/1974	
11	Total Hardness as CaCO <sub>3</sub>	mg/l	850	550	APHA 23 <sup>rd</sup> Edn. 2017 (2340 C)
12	Calcium as Ca	mg/l	140	80	APHA 23 <sup>rd</sup> Edn. 2017 (3500 B)
13	Magnesium as Mg	mg/l	122	85	APHA 23 <sup>rd</sup> Edn. 2017 (2340 C)
14	Alkalinity as CaCO <sub>3</sub>	mg/l	80	80	APHA 23 <sup>rd</sup> Edn. 2017 (2320 B)
15	Cyanide	mg/l	<0.008	<0.008	APHA 23 <sup>rd</sup> Edn. 2017 (4500 CN E)

Note: < = Indicates Less than Minimum Detectable Limit.

Checked by

*A/A*  
21/10/24  
Environmental Scientist

Authorized Signatory

*J.D. BH*  
21/10/24  
Assistant Director (Lab),  
AEL, TNPCB, Salem.

- End of Test Report -

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**BEFORE THE NATIONAL GREEN TRIBUNAL SOUTHERN ZONE  
AT CHENNAI**

**MEMORANDUM OF APPEAL**

(Under Section 14, 16 (c), 18(1) of the National Green Tribunal Act 2010 read  
with Rule.8(1) of the National Green Tribunal Practice and Procedure Rules,  
2011)

Appeal No. 77 of 2022

M/s. Varalakshmi Starch Industries (P) Ltd.,

Rep. by its Director A. Vinoth Kumar

Having its office at:

“Varalakshmi Tower”

No.127/1, 2<sup>nd</sup> floor,

Gandhi Road,

Salem- 636 007.

...Appellant

AND

Tamil Nadu Pollution Control Board

Rep. by its Chairperson

76, Anna Salai, Guindy Industrial Estate,

Guindy,

Chennai – 600032.

And 3 others.

...Respondents

**ANNEXURE – A 83 & 84**

M/s. K.R.NISHANTH (E.No.708/14)  
S.SATCHITHANANTHAM(E.No.7267/21)  
Counsel for Appellant  
98658 23864