

ISSUED TO:

**M/s.Kerala Enviro Infrastructure Ltd.,
KEIL, TSDF Project, Inside Fact cochin division Campus,
Ambalamedu, Kochi-682303, Kerala.**

Report Number : VLL/VLS/24/25224/01
Issued Date : 14/04/2025
P. Order Ref : 3800001037
P.O. Date : 02.01.2025

Page 1 of 2

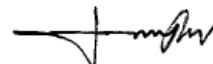
SAMPLE PARTICULARS : Stack Connected to Bio Medical Waste Incinerator

Sampling Date : 19/03/25 Sample Registration Date : 26/03/25
Analysis Starting Date : 28/03/25 Analysis Completion Date : 14/04/25
Test Required : PCCD AND PCDF
Raw Material Used : **Bio Medical Waste**
Monitoring done at : **KEIL, TSDF Project, Inside Fact cochin division Campus, Ambalamedu, Kochi-682303, Kerala.**
Sample collected by Vimta Labs Ltd.

TEST REPORT

Sr. No.	Parameters	UoM	Method of Testing	Results	Limits
1	Total Height of Stack	m	--	30	--
2	Flue gas temperature	°C	-	122	--
3	Diameter of the Stack	m	--	0.4	--
4	Velocity of Flue Gas	m/sec	USEPA Method 3	11.8	--
5	Volumetric Flow Rate	Nm ³ /Hr		3986.2	--
6	Oxygen as O ₂	%	Flue Gas Analyzer	13.7	--
7	Carbondioxide as CO ₂	%	Flue Gas Analyzer	6.2	--
8	Particulate matter	mg/Nm ³	USEPA method -05	20.2	<50
9	Sulphur dioxide	mg/Nm ³	USEPA method -06	58.7	--
10	Oxides of Nitrogen	mg/Nm ³	USEPA method -07	219.8	<400
11	Hydrogen Chloride	mg/Nm ³	USEPA method -13 B	12.8	<50.0
12	Hydrogen Fluoride	mg/Nm ³	USEPA method -26	0.96	<1.0
13	Carbon monoxide	mg/Nm ³	USEPA method -30	403.9	--
14	Mercury as Hg	mg/Nm ³	USEPA method -29	0.004	0.05
15	Cadmium as Cd	mg/Nm ³	USEPA method -29	0.017	--
16	Thallium as Tl	mg/Nm ³	USEPA method -29	<0.001	
17	Chromium as Cr	mg/Nm ³	USEPA method -29	0.013	
18	Manganese as Mn	mg/Nm ³	USEPA method -29	0.016	
19	Arsenic as As	mg/Nm ³	USEPA method -29	<0.001	
20	Antimony as Sb	mg/Nm ³	USEPA method -29	0.017	
21	Lead as Pb	mg/Nm ³	USEPA method -29	0.027	
22	Cobalt as co	mg/Nm ³	USEPA method -29	0.024	
23	Copper as Cu	mg/Nm ³	USEPA method -29	0.026	
24	Nickel as Ni	mg/Nm ³	USEPA method -29	0.014	
25	Vanadium as V	mg/Nm ³	USEPA method -29	0.012	

Instruments used: GC-FID, ICP-MS
Minimum Detectable Limit for Metals – 0.1µg/m³
All the values are represented at 11% O₂


Dr. Subba Reddy Mallampati
Manager-Environment.

Vimta Labs Limited

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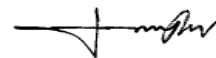
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4	Velocity of Flue Gas	m/sec	USEPA Method 3	11.8	--
5	Volumetric Flow Rate	Nm³/Hr		3986.2	--
6	Oxygen as O ₂	%	Flue Gas Analyzer	13.7	--

Sr. No.	Congeners of Dioxin & Furans	Concentration		
		Concentration (ng)	TEF	TEQ (ng)
7	1,2,3,4,6,7,8-HpCDD	0.0031	0.01	0.00001
8	1,2,3,4,6,7,8-HpCDF	0.0031	0.01	0.00001
9	1,2,3,4,7,8,9-HpCDF	0.0031	0.01	0.00001
10	1,2,3,4,7,8-HxCd	0.0313	0.1	0.00098
11	1,2,3,4,7,8-HxCDF	0.0313	0.1	0.00098
12	1,2,3,6,7,8-HxCDD	0.0313	0.1	0.00098
13	1,2,3,6,7,8-HxCDF	0.0313	0.1	0.00098
14	1,2,3,7,8,9-HxCDD	0.0313	0.1	0.00098
15	1,2,3,7,8,9-HxCDF	0.0313	0.1	0.00098
16	1,2,3,7,8-PeCDD	0.0313	0.5	0.00490
17	1,2,3,7,8-PeCDF	0.0094	0.05	0.00015
18	2,3,4,6,7,8-HxCDF	0.0313	0.1	0.00098
19	2,3,4,7,8-PeCDF	0.0938	0.5	0.01470
20	2,3,7,8-TCDD	0.0625	1	0.01960
21	2,3,4,7,8-TCDF	0.0625	0.1	0.00196
22	OCDD	0.0002	0.001	0.00000
23	OCDF	0.0002	0.001	0.00000
Total (ng TEQ)				0.1537
Vstd (Nm³)				3.189
ng TEQ/Nm³				0.0482
% of O ₂ in Flue Gas				13.7
Total Furans & Dioxins (ng TEQ/Nm³ at 11 % O ₂ Correction)				0.0663
Limits as per As per MoEF& CC				<0.1

Detection Limit: 0.01pg, TEF: Toxicity Equivalence Factor by W.H.O.



Dr. SubbaReddy Mallampati
Manager-Environment.



COCHIN TEST HOUSE

ANALYTICAL SERVICES & TESTING LABORATORY

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Mob.: 9446332556, 9846551014, 9387381780. Tel. : 0484 - 2782672

E-mail: cochintesthouse1@gmail.com, info@cochintesthouse.in. Web : www.cochintesthouse.in

Laboratory Approved by Kerala State Pollution Control Board ('A' Grade)

STACK EMISSION MONITORING REPORT

Page 1 of 1

Report No. : CTH/LR/25/NN/825

Issue Date: December 11, 2025

Name & Address of Customer	M/s. Kerala Enviro Infrastructure Ltd., Inside FACT-CD Campus, Ambalamedu, Kochi – 682 303
Monitored By	Cochin Test House
Lab Identification No.	25/NN/825
Source of monitoring	Stack Emission from Incinerator
Monitoring Date	26.11.2025
Date of Analysis	27.11.2025 – 10.12.2025

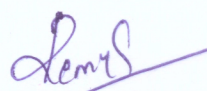
Sl. No.	Parameters	Unit	Method	Result
1	Volume of Emission	Nm ³ /hr	IS : 11255 [Part.03]	7693
2	Particulate Matter	mg/Nm ³	IS : 11255 [Part.01]	25.7
3	Sulphur Dioxide [SO ₂]	mg/Nm ³	IS : 11255 [Part.02]	14.7
4	Oxides of Nitrogen	mg/Nm ³	IS : 11255 [Part.07]	125
5	Oxygen [O ₂]	% V/V	CTH/CH/SOP/465	14.3
6	Carbon Monoxide [CO]	ppm	CTH/CH/SOP/458	768
7	Carbon Dioxide [CO ₂]	% V/V	CTH/CH/SOP/466	8.6
8	Ammonia as NH ₃	mg/Nm ³	IS : 11255 [Part.06]	ND
9	Hydrogen Chloride	mg/Nm ³	USEPA – Method 0050	ND
10	Water Content / Moisture	%	IS : 11255 [Part.03]	6.4

ND – Not Detected.

End of report




Verified By


Authorised Signatory
Chemical
COCHIN TEST HOUSE

NOTE : This test results relate only to the sample submitted for analysis.

The test report shall not be reproduced except in full without the written approval of the laboratory.



KERALA ENVIRO INFRASTRUCTURE LIMITED - LABORATORY

Inside FACT-CD Campus, Ambalamedu, Kochi-682 303

Phone: 0484-2722141, 2722241, 2722341

E-mail: keillab@beil.co.in, keillaboratory@gmail.com CIN: U24129KL2005PLC017973

'A' GRADE LABORATORY APPROVED BY KERALA STATE POLLUTION CONTROL BOARD

CONCENTRATION LIMIT/CRITERIA FOR ACCEPTANCE OF HAZARDOUS WASTE FOR DIRECT DISPOSAL AT SECURED LANDFILL

Report No: KEIL/QA/HW/2025/016

Date: 29.01.2025

Client Name & Address	Sample Code	5036
M/s. KEIL – BIOMEDICAL PLANT	Sample Name	Incineration Ash
	Sample Appearance	Ash coloured powder
	Sample Received on	22.01.2025
	Analysis commenced on	22.01.2025
	Analysis completed on	28.01.2025

Sl. No.	Parameters Tested	Result	Unit	Test Method	Prescribed Limit
1	pH at 23.6 °C	11.92	-	USEPA, M-9041& 9045	4-12
2	PFLT	Pass	-	USEPA, M-9095	Pass
3	Loss on Drying at 105°C	39.75	%/wt.	USEPA, M-1010&1020	-
4	Loss on ignition of the dry residue at 550°C	4.8	%/wt.	USEPA, M-1010&1020	< 20%/wt (non-biodegradable) < 5 %/wt (biodegradable)
5	Ash content of the dry residue at 800°C	91.15	%/wt.	-	-
6	Calorific Value	Nil	kcal/kg	IS:1350	< 2500 kcal/kg
7	Oil & Grease	BLQ	%/wt.	APHA 5520 - E	< 4%/wt.

Leachate Quality Based on Water Leachate Test:

8	Hexavalent Chromium	BLQ	mg/L	APHA:3500 Cr-B	< 0.5 mg/L
9	Nickel	BLQ	mg/L	IS:3025 Part 54	< 3 mg/L
10	Zinc	BLQ	mg/L	IS:3025 Part 49	< 10 mg/L
11	Copper	BLQ	mg/L	IS:3025 Part 42	< 10 mg/L
12	Lead	BLQ	mg/L	IS:3025 Part 47	< 2 mg/L
13	Cadmium	BLQ	mg/L	IS:3025 Part 41	< 0.2 mg/L
14	Manganese	BLQ	mg/L	APHA : 3111B	< 10 mg/L
15	Fluoride	BLQ	mg/L	APHA 4500 F - C	< 50 mg/L
16	Ammoniacal Nitrogen	BLQ	mg/L	APHA 4500 NH ₃ - C	< 1000 mg/L
17	Nitrate	BLQ	mg/L	APHA 4500 NO ₃ - E	< 30 mg/L
18	Phenols	BLQ	mg/L	APHA 5530 - D	< 100 mg/L

Result: Sample is suitable for direct disposal in the secured landfill of KEIL.

Sample submitted by customer BLQ – Below Limit Of Quantitation. mg/L = ppm. Analysis 4,5,6,7 are performed after LOD determination.	The results are related only to the samples submitted for analysis and should not be used for advertisement, evidence or litigation. This certificate shall not be reproduced partially or fully, without the approval of the laboratory.	FOR AND ON BEHALF OF KERALA ENVIRO INFRASTRUCTURE LTD - LABORATORY AUTHORISED SIGNATORY
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KEIL/QA/TR

Issue No: 01, Issue Date: 04.03.2020, Amendment No.:00, Amendment Date: Nil

Dr. Vinu. V. Dev

Manager (Quality Assurance)
Kerala Enviro Infrastructure Ltd.
Ambalamedu - 682 303



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'A' GRADE LABORATORY APPROVED BY KERALA STATE POLLUTION CONTROL BOARD

CBWTF ETP ANALYSIS REPORT

Date	ETP INLET					ETP OUTLET				
	pH	COD (mg/L)	BOD (mg/L)	Oil and Grease (mg/L)	TSS (mg/L)	pH Limit: 6.5-9.0	COD (mg/L) Limit: <250mg/L	BOD (mg/L) Limit: <30mg/L	Oil and Grease Limit: <10mg/L	TSS (mg/L) Limit: <100mg/L
	Method: IS:3025 (Part 11) - 2022	Method: IS:3025 (Part- 58) - 2023	Method: IS:3025 (Part- 44) - 2023	Method: APHA 5520 B	Method: IS:3025 (Part-17)- 2022	Method: IS:3025 (Part 11) - 2022	Method: IS:3025 (Part- 58) - 2023	Method: IS:3025 (Part- 44) - 2023	Method: APHA 5520 B	Method: IS:3025 (Part-17) -2022
		(LOQ = 5mg/L)	(LOQ = 2mg/L)	(LOQ = 10mg/L)	(LOQ = 10mg/L)		(LOQ = 5mg/L)	(LOQ = 2mg/L)	(LOQ = 10mg/L)	(LOQ = 10mg/L)
06.05.2025	9.68	70.4	BLQ	BLQ	BLQ	7.79	60.8	BLQ	BLQ	BLQ
03.06.2025	8.75	67.4	BLQ	BLQ	BLQ	8.72	60.07	BLQ	BLQ	BLQ
01.07.2025	8.55	72.3	BLQ	BLQ	BLQ	7.56	60.27	BLQ	BLQ	BLQ
05.08.2025	8.88	85.8	BLQ	BLQ	BLQ	7.41	61.7	BLQ	BLQ	BLQ
09.09.2025	7.34	75.38	BLQ	BLQ	BLQ	7.44	63.8	BLQ	BLQ	BLQ
03.10.2025	8.84	74.64	BLQ	BLQ	BLQ	7.02	57.42	BLQ	BLQ	BLQ
04.11.2025	8.94	69.7	BLQ	BLQ	BLQ	8.04	60.65	BLQ	BLQ	BLQ

.....End of the Report ...

Sample is drawn by KEIL-Laboratory As per IS 17614 (Part 1) :2025 BLQ – Below Limit of Quantitation mg/L = ppm LOQ – Limit of Quantitation	Test results relates only to the sample tested. This certificate shall not be reproduced except in full, without the written approval of the laboratory	FOR AND ON BEHALF OF KERALA ENVIRO INFRASTRUCTURE LIMITED - LABORATORY  AUTHORISED SIGNATORY
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