

Table 1. General: 0471- 2312910, 2318153, 2318154, 2318155 Chairman: 2318150 Member Secretary: 2318151 E-mail: ms.kspcb@gov.in FAX: 0471 – 2318134, 2318152 web: www.keralapcb.nic.in

KERALA STATE POLLUTION CONTROL BOARD കേരള സംസ്ഥാന മലിനീകരണ നിയന്ത്രണ ബോർഡ്

Pattom P.O., Thiruvananthapuram — 695 004 പട്ടം പി.ഒ., തിരുവനന്തപുരം - 695 004

PCB/HO/SWM/AR/18/2019

Date: 23/07/2019

From

Member Secretary

To

The Chairman Central State Pollution Control Board Parivesh Bhavan East Arjun Nagar New Delhi- 110032 Kind attention Dr. S.K Nigam Addl. Director & I/c UPC-II

Sub:- Annual Report on Implementation of Solid Management Rules, 2016- reg:-

Ref:- Letter of even No.PCB/HO/MSW/AR/13/2016-18 dated. 26/09/2018.

Sir,

As per provision 24(3) of the Solid Waste Management (SWM) Rules, 2016, the Annual Report for the year 2018-19 is submitted herewith.

Yours faithfully,

MEMBER SECRETARY

Form - V

[see rule 24(3)]

Format of annual report to be submitted by the state pollution control board or pollution control committee committees to the central pollution control board

PART A

To,

The Chairman

Central Pollution Control Board

Partvesh Bhawan, East Arjun Nagar

DELHI- 110 0032

1.	ZIMIVAL REP	ORT 2018-2019
1.	Name of the State/Union erritory	KERALA
2.	Number of least let I	KERALA STATE POLLUTION CONTROL BOARD, PLAMOOD, PATTOMCP. O THIRUVANANTHAPURAM, KERALA-G9500
	Number of local bodies responsible for management of solid waste in the State/Union territory under these rules	93
4.	No. of authorisation application Received :	23
5.	A Summary Statement on progress made by local body: in respect of solid waste management	Please attach as Annexure-I Attached annexure-I
5.	A Summary Statement on progress made by local bodies: in respect of waste collection, segregation, transportation and disposal	Please attach as Annexure-II Attached annexure - 2
7.	A summary statement on progress made by local bodies: in respect of implementation of Schedule II	Please attach as Annexure-III Attached annexure - 3

	23-07-2019 THIRUVANANT	•		the Member Secretary on Control Board/				
riacc.	.11.17.0.9211.9/11 4 1	MPORAIN		ntrol Committee				
			PART B					
	Towns/cities							
	Total number of tow	ns/cities	_ 93					
	Total number of UL	Bs	- 93					
	Number of class I &	class II cities/towns	Most orth	e facilities are decentralised namely with capacity	Hacilities			
	Authorisation statu	is (names/number)	1	mandy roth carrie	FEDD			
	Number of applicati	ons received	- 23	June apolity	-5170-			
	Number of authorisa	ations granted	- 5					
	Authorisations unde	r scrutiny	81-					
	SOLID WASTE G		7049	107- 0 1 0				
		on in the state (TPD)	5403.	023 TPD (Based on Pa	pulation)			
194	collected		- 172.	23TPD .				
	treated		431:	14 TPD				
	Compliance to Schedule I of SW Rules (Number/names of towns/capacity)							
	Good practices in ci	The state of the s						
	House-to-house coll	ection Yla	terial Collect	confacilities, Resource to Aerobic Composting Mosting Coetails at	keovery Uni			
	Segregation	> Bu	na hanta	Assolute C	in Ola			
	Storage		gas paras,	receil composting	units,			
	Covered transportati	ion) Wo	ndrew Con	mosting (Details at	tached).			
	Processing of SW (Number/names of towns/	(capacity)	of Jeograms at	macha)			
	Solid Waste process	ing facilities setup:	mounity les	d				
SI. No.	Composting	Vermi-composting		RDF/Pelletization				
1.	721	16	216	0				
	Processing facility of	operational:						
Sl. No.	Composting	Vermi-composting	Biogas	RDF/Pelletization				
St. 140.	Composting	vernu-composinig	Diogas	KDF/FellettZatioti				
1.	721	16	216	0				
	Processing facility to	under installation/planned:						
SI. No.	Composting	Vermi-composting	Biogas	RDF/Pelletisation				

	0	Hanter	(Number	loames	of	towns/capacity)
\$ \$1 4 - 4 a	L'agrant P	dants.	UNHIHITE.	A PROPERTY.	1	ec

		Annexale-1				
Sl. No.	Plant Location	Status of operation	Power generation (MW)	Remarks		
		NIL				

Disposal of solid waste (number/names of tow	ns/capacity):
Landfill sites identified	
<u> </u>	Employing the solution while steel a solution date in a
Landfill under construction	engaj kalandari
Landfill in operation	9 () () () () () () () () () (
Landfill exhausted	and the second second
Landfilled capped \longrightarrow 2	
Solid Waste Dumpsites (number/names of to	wns/capacity):
Total number of existing dumpsites ->	52
	tes
Track of the second of the sec	A Carried March
Name of Ambient air Groun	ndwater Leachate quality Compost quality
	andfill constructed andfill under construction andfill in operation Landfill exhausted Landfilled capped Solid Waste Dumpsites (number/names of to Total number of existing dumpsites Dumpsites reclaimed/capped Dumpsites converted to sanitary landfill Monitoring at Waste processing/Landfills si

Sl. No.	Name of facilities	Ambient air	Groundwater	Leachate quality	Compost quality	VOCs
1.						2.33
2.	4	- 3295	NIL	>		- does
3.		and a second				

Status of Action Plan prepared by Municipalities

Total number of municipalities:

Number of Action Plan submitted:

Form - VI

[see rule 25]

Accident Reporting

1.	Date and time of accident		22-02-2019 at Brahmapwam, Ernakulan
2.	Sequence of events leading to accident	-	
3.	The waste involved in accident		

4.	Assessment of the effects of the accidents on human hea and the environment	Ith:	
5.	Emergency measures taken	-	11/1
6.	Steps taken to alleviate the effects of accidents	-	. Same of medical section (1) the section (1) and the section (1)
7.	Steps taken to prevent the recurrence of such an accident	-	To decide a mentioner de berichen.
Date:	25/7/2019	Sig	gnature: Alub
Place:	Thismvanathaptram	De	esignation: Member Levelous

[F. No. 18-3/2004-HSMD] BISHWANATH SINHA, Jt. Secy.

Kerala State Pollution Control Board

Annexure 1

SUMMARY STATEMENT ON PROGRESS MADE BY LOCALBODY IN RERSPECT OF SOLID WASTE MANAGEMENT

The Government of Kerala has taken efforts to implement the Solid Waste Management Rules, 2016 in the State. There are 6 Corporations, 87 Municipalities and 941 GPs in the State. The Kerala State Pollution Control Board (KPSCB) issued repeated directions to all local bodies to ensure compliance of the Solid Waste Management Rules, 2016. 3903 TPD of solid waste is generated from the cities and towns. The status of the present facilities is attached.

The Government of Kerala constituted a State Level Advisory Committee on Waste Management chaired by the Chief Secretary; this Committee has conducted 27 meetings, till date, for monitoring solid waste management on monthly basis. **The** Government has accorded sanction for establishing Waste to Energy plants in 8 cites having 1 Lakh or more population and in three local bodies having population below lakh. The progress is given below:

A. Progress in establishing Waste to Energy plants in eight cities having population above 1 lakh

SI. No	Corporation/ Municipality	Identified site	Area in acre	Status	Completion date
a)	Kollam	Kureepuzha (Govt land)	7.05	 Retendered the waste to energy project through etender portal on 6-6-2019. Tender advertisement was published in all India editions of Times of India, Indian Express, New Indian Express and the Hindu newspaper. Pre bid meeting held on 21-6-2019 and the representatives from 15 firms attended the meeting. Details of successful bidders in other WtE plants were collected and the tender documents 	2 years from the date of obtaining environmental clearance

				 were forwarded to each of them. Further follow-ups were being done to evince their interest in the project. SLAC directed to clear the site and to do the bio mining. 	
b)	Ernakulam	Brahmapuram (Govt land)	20	Work awarded to M/s G.J Eco Power Pvt. Ltd. Public hearing held on 10-6-2019. Draft EIA report is modified based on the minutes of the public hearing and will be submitted to SEIAA soon. KSREC has accorded sanction and the power purchase agreement between G.J. Eco Power Pvt Ltd and KSEB was executed on 19-6-2019.	2 years from the date of obtaining environmental clearance
c)	Palakkad	Kanjikode (Land taken over form Kerala StateElectricity Borad Ltd. in advance possession)	15	 Retendered the waste to energy project through etender portal on 6-6-2019. Tender advertisement was published in all India editions of Times of India, Indian Express, New Indian Express and the Hindu newspaper. Prebid meeting held on 21-6-2019 and the representatives from 15 firms attended the meeting. Details of successful bidders in other WtE plants were collected and the tender documents were forwarded to each of them. Further follow-ups were being done to evince their interest in the project 	2 years from the date of obtaining environmental clearance
d)	Kozhikode	Njaliyanparambu (Govt. land)	12.67	 After the completion of tendering process, the work awarded to Zonta Infratech Private Limited. Letter of intent issued to Zonta Infratech Pvt Limited 	2 years from the date of obtaining environmental clearance

e)	Kannur	Chelora (Govt. Land)	9.7	on 27-5-2019 as per the tender procedure detailed in the RFP. • M/s. Zonta Infratech Pvt Limited communicated the acceptance of LOI vide their letter dated 10-6-2019. • M/s.Zonta Infratech Pvt Limited filed documents before Registrar of Companies(RoC) and the RoC allotted the name "Zonta Malabar Waste Management Pvt Limited" to the SPV, which is a fully owned subsidiary of the lead bidder, Zonta Infratech Pvt Limited with an initial share capital of Rs. 10 crores and it is expected that SPV could be incorporated before 10-7-2019. • Retendered the waste to energy project through etender portal on 6-6-2019. • Tender advertisement was published in all India editions of Times of India, Indian Express, New Indian Express, New Indian Express and the Hindu newspaper. • Prebid meeting held on 21-6-2019 and representatives from 15 firms attended the meeting. • Details of successful bidders in other WtE plants were collected and the tender documents were forwarded to each of them. • Further follow-ups were being done to evince their interest in the project.	
f)	Thiruvananthapuram	Peringamala (Govt. Land)	15	them. • Further follow-ups were	2 years from the date of obtaining
			1		i

g)	Thrissur	Laloor (Govt. Land)	15	Stakeholder meetings have been conducted. Further action to tender the work will be initiated soon.	2 years from the date of obtaining environmental clearance
h)	Malappuram	Panakkad (Land in possession with Kerala State Industrial Development Corporation)	10	Further action is being taken	2 years from the date of obtaining environmental clearance

B. Progress in establishing Waste to Energy plants in eight cities having population below 1 lakh

Local Body	Nature of Plant	Status/Time of completion
SulthanBathery Municipality in	5 TPD modern	Construction of plant is going on. Expected to be
Wayanad District	bio gas plant	commissioned by August 2019.
Munnar and Devikulam Grama Panchayat in Idukki District	Modern Waste to Energy Plant	 Decided to award the work to M/s AG Dauters Waste Processing Pvt. Ltd. Decision taken by State Level Advisory Committee to issue final notice to M/s AG Dauters Waste Processing Pvt. Ltd to take action as per the agreement executed and to submit applications with sufficient details to the concerned departments and also if they fails to adher to directions and statutory provisions within thirty days,actin is to be taken to terminate concession agreement and tender the project to find a private partner for setting up processing plant. Sanction was given to Munnar Grama Panchayath to clear the legacy waste from the site.
Perinthalmanna Municipality.	Modern Waste to Energy bio gas plant of two tone/day capacity.	Work awarded to GPS Renewables, Bangalore.Expected to be completed within 12 monthsfrom April, 2019.

The Government of Kerala vide G.O. (Rt.) No. 45/2019/Envt. dated 31-5-2019 selected three model cities, three model towns and 42 model villages (3 each in 14 districts) in the State. The model cities are Thiruvananthapuram, Thrissur and Kozhikode and three model towns are Attingal, Punalur and Kunnamkulam. The order is enclosed.

A workshop was convened on 1st June 2019 by the Kerala State Pollution Control Board in association with Suchitwa Mission and Clean Kerala Company for giving training to President /Secretary/ Health officer/ Health Standing Committee of Model city to make the local bodies fully complied with environmental norms. The presentations were made on the orders of the Hon'ble NGT and on environmental rules.155 representatives participated in the workshop. Statutory requirement on authorization and annual report, specific action to be taken on solid and liquid waste management, and action plan submission have been brought to their notice. The minutes of the workshop is enclosed.

A	nnexur	e 2								T	NVENTO	DV OF	SOLID W	ACTE	N/I A NI A	CEME	NT IN I	ZED A	T A			
No	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
Sl. No.	Districts	Local body	Туре	Population as per 2011		Quantity of Waste generated (TPD)	Door to door collection	Covered vehicle	Institutional level SWM Plants	Community Level SWM Plants	Household Level SWM Plants	Centralized	Non-Bio Degradable Waste Management	Site identified for Sanitary land fill	Dump sites identified	Quantity of waste collected	Quantity of waste processed	Authoriza tion applied	Authoriz ation obtained	(Form	Action plan submitte d	Remarks
1		Thiruv ananth apuram		958000	996204	498.1	100% Covered	Nil	Biobin 109		Pipe compost- 87000 Nos., Kitchen Bin- 7000, Biocomposter- 15833 Biogas plant-1749 Nos.	300TPD with	Material Collection Facility in 35 locations Resource Recovery Unit - 4 numbers Plastic Shredding Units - 2 Nos Bailing Unit - 1 Number	No	30000 m ³	As per the report 175TPD of solid waste is collected.	As per the report 175TPD of solid waste is treated.	Yes	Under processin g	Submitte		100% Man ual sweeping.
		Kollam		397000			42 wards covered, 56204 Houses and 2520 Non residential.	1 Tipping		Aerobic composting (Thumboor muzhi model) - 24 bins at three locations.	Vermi composting 13 Nos. Biogas plant-	at Kureepuzha.			17000m ³	Nil	Nil	Granted	Yes (Upto 06-08- 2021)	Submitte	Nil	

_									1	T	-		ı						1		,		
																	It is reported	It is					
																	that 230 TPD	reported					
																	solid waste is	that					
																	collected.	130TPD					
													All the					solid waste					
																		is treated.					
													municipalities					is treated.					
													(Kalamassery,										
													Aluva,										
													Angamaly,,										
													Thrikkakara,										
													Thripunithura)e										
													xcept Maradu										
													is treating is										
													treating their										
								l . .					Biodegradable										
								74 wards					waste in										
								covered,	24				dumping yard										
								89469	Tipping				ot										
								Houses and				D' 1	D 1							TT1			
													Brahmapuram	D1						Under .	Submitte		
	. _						251.0	17937 Non				Compost pits-		Plastic	2711					*		N T * 1	
	3 Eri	nakulam	Kochi	C	677000	703999	351.9	residential.	rs	Nil				Shredding Unit	Nil				Submitted	g	d	Nil	
											Organic Waste		15 Acre Govt.				It is reported	It is					
											Converter-2		Land is				that 37TPD	reported					
									3		Nos of 4 and		Identified at				solid waste is	that 37TPD					
									Tractors,		8TPD		lalur.				collected.	solid waste					
									1 Non		Piggeries and							is treated.					
								1,6500			agrifarms- 15												
								16500	Tipping		TPD												
								houses and	truck,4	01000081000010	Biogas plant- 9			Matarial									
								3000 Non-	Tipping	U	Diogas piant- 9			Material									
								biodegradab	1 2 2 2	6.71TPD		.		collection									
									l	Non-		Biogas plant-		facility-7									1000/
								le.(51		biodegradable-		632; Compost		Resource						Under			100%
			Thrissu					wards		0.75TPD		pit- 20118		recovery facility-						processin	Submitte		Manual
C	cc Th	rissur	r	C	317526	330189	177	covered)	JCB.					3		100,000m ³			Submitted	g	d	Nil	sweeping.

It is reported	It is		1			
that 75 TPD	reported					
solid waste is						
Tractors Biogas-261 collected.	solid waste					
	is treated.					
13 Pipe compost- Windrow Material						
Dumper 10250 Composting collection						
placers, 1 Biogas plant at with leachate facility-1,						
JCB, 2 public utility treatment Plastic						90%
Kozhik Refuse Place-4Nos facility shredding and				Submitte		Mechanica
5 Kozhikode ode C 550000 571934 285.97 Nil collectors. Aerobins-28 Bailing.		Granted			l	1 sweeping.
Biomethanation Kitchen bin-102			+	-	111	r sweeping.
1090 Trenching Biogas - 50						
l I I I I Material I I I I I I I I I I I I I I I I I I I						
Long Collection Long Collection						
facility-3						
D2D Plastic						
collection shredding unit			1	Submitte	Submitte	
6 Kannur Kannur C 356000 370197 185.09 Nil at Chelora-1		Granted	<u></u>	d	d	
Biogas Biogas Plant Resource Yes 13,000m ³ It is reported		Granted	Valid up			
Plant(Dheenaban 214 Nos - 0.5 Recovery that 14 TPD			to 29-10-			
dhu) 6 Nos with m ³ Facility - SWM solid waste is			2021			
capacity of 1TPD Plant, collected and						
Biogas plant Chudukadu treated.						
(Portable) 5 Nos Biogas Plant 4						
with capacity of Nos - 3.25 TPD Plastic						
107.5 kg/day Shredding						
Vermi Windrow Machine -SWM						
Houses and Compost 1 No Compost 1 Plant,						
The separate of the separate o				C.,1,		
				Submitte	N7'1	
7 hapuram 1 M 37648 39150 16 residential Yes TPD	<u>.</u>			d	Nil	
It is reported	It is					
that 5 TPD	reported					
solid waste is	0.35 TPD					
collected.	waste is					
	treated.					
Discussion 05			1			100%
Thiruvanant Neyyat Biogas plant-95 Aerobins-10 Compost pit-		Not		Submitte		
		Not	1	A Submitte		
		applied	1	u	u	sweeping.
MRF, Plastic Yes It is reported	It is		1			
Shredding unit that 10 TPD	reported					
solid waste is						
Asper annual collected.	TPD Waste					
39 wards	is treated.					
Gents of land						
covered, Aerobins-10 is available						
				1		
Ring compost - Biogas plant- Windrow						
Houses and Ring compost - Biogas plant- Windrow composting is						100%
Ring compost - Biogas plant- Windrow		Not		Submitte		100% Manual

Г	<u> </u>		Ī		<u> </u>	I		 		<u> </u>	Aerobic	Biogas Plant -	Windrow	Plastic	Yes	6000m ³	One dumpsite	Yes	Under	1		
											Compost	200 Nos	Compost 1 No	Shredding			converted to		processin			
											(Thumboormuz hi Model) - 33		at 1 location with the	Machine -1 (under			sanitary landfill(under		g			
											bins at 33			construction);			construction).					
								2570			locations with		5TPD (not	Material			It is reported					
								houses and			capacity of 33 Cubicles		working)	Collection Centre, MRF			that 1 TPD solid waste is					
								450 non residential			Biogas Plant -			Centre, MKF			collected and					
								building			1 No - 100Kg						0.75TPD					
								having									waste is					
								door to									treated.					
	Th	iruvanant						door												Submitte		
	0 ha	puram	a	M	40048	41646	18.076	collection	Yes										(d		
											Compost pit, Vermicomposti			Resource recovery facility-		3000m ³		Not applied				
											ng.			1				аррпса				
										2.9TPD of												
								1000		biodegradable												
								houses are		waste is managed 0.3 TPD of non-												
								having		biodegradable		Biogas plant-21										
			Karung					D2D		waste is managed		Compost pit-								Submitte	Submitte	
	1 K	ollam	apalli	M	47483	49377	15.6	collection	Nil			8521						NI	(d	d	
								Collecting										Not applied				
								plastic										арриос				
			Paravo					from			8 biogas	Pipe compost-										
			or(Sout					individual			plant, Aerobins	162									Submitte	
_1	2 K	ollam	h)	M	36798	38266	19.74	house.	Nil	10 biogas plant		Biogas plant-121				5000m ³					d	
											Aerobic		Windrow	Material		7000m ³		Not				
											Compost (Thumboormuz			Collection Facility - 233sq				applied				
											hi Model) - 2		location with 5	ft -233 locations								
											bins at 2		TPD capacity (- Small								
											locations with capacity of 12		Non operational)	collection facilities)								
											Cubicles		operational)	Tacinues)								
			Punalu			-0-6	20													Submitte		
\perp	3 K	ollam	r	M	48648	50589	20	Yes	Nil	Biogas Plant - 1	Biogas Plant 1	Biogas Plant -	Windrow	Resource		coop 3		Not		a		
										No - Taluk	No - Market,		Compost 1 No			6000m ³		applied				
										Hospital	Chandamukku	Ring compost-	with capacity 6	Facility - SWM								
										Diame Die		250	TPD	Plant,								
										Biogas Plant (Portable) - 1 No				Ugrankunnu								
										- Boys HSS												
										Total -16 biogas											C1-	
	4 V		Kottara kara	M	31256	32503	13	Nil	Nil	plants											Submitte	
L	→ \\ \(\)	maiii	Kara	101	31230	32303	13	1411	1411				I	1	1	1	1	ı	1		u	

						T	T			•							_					
										Aerobic		Biogas Plant -		Material		It is reported	It is	Not				
										Compost	Compost	1964 Nos.		Collection		that 126.4TPD	reported	applied				
														Facility (2750		solid waste is	that 24.71	1 **				
										Model) - 36		Dina commost				collected.	TPD waste					
												Pipe compost-		sqft)- 11		conected.						
										bins at 4		1263 Nos.		locations			is treated.					
										location with	locations with											
										capacity of 216	capacity of			Resource								
										topucity of 210	1274 toppo/score											
										tonne/year	1374 tonne/year			Recovery								
														Facility(650sqft)								
														- 1 number								
														Plastic								
														Shredding								
			Alappu											Machine - 1						Submitte	Submitte	
15	A 10+	nnuzho		M	174000	180939	79.866	Nil						number						d	d	
15	Ala	ppuzha	zha	IVI	174000	180939	79.800	INII												u	u	
											Aerobic			Plastic				Not				l
											Compost			Shredding				applied				l
											(Thumboormuz			Machine - 1				1				
											hi Model) - 12			Number								
														Number								
			CI								bins at 1									Submitte		
			Cheng	l_							location									Subliffice		
16	Alap	ppuzha	annur	M	23456	24392	10.179	Nil												d		
											Aerobic	Composting				It is reported	It is	Not				
												units-90		1		that 1TPD	reported	applied				
																		ирриса				
											(I numboormuz	Biogas plant-200				solid waste is	that 1 TPD					85%
									Tipping		hi Model) - 26					collected.	waste is					Street
									Tipping		bins at 2	850					treated.			G 1		
			Cherth						truck 1,	0.06TPD is	locations									Submitte	Submitte	sweeping
17	Alaı	ppuzha	ala	M	45827	47655	19.06	Nil	Hand cart.	managed	locations									d	d	covered.
	1	11									Biogas Plant -				+ + + + + + + + + + + + + + + + + + + +				+			
											1 bin-											
											Slaughter											
											house, Aerobic											
											compost			Material								
											(Thumboormuz			Collection								
											hi Model 4 bin)			Facility - 1								
											Location with			location								
											capacity of 24			1								
												Composting		Resource								
												unit-1431		Recovery					L			
												Biogas plant-102		Facility - 1					Under			
			Kayam							0.06 TPD is		Compost pits-		location					processin	Submitte	Submitte	l
18	Alar	ppuzha	kulam	М	71376	74223	29.69	Nil	1	managed		4450						Submitted	g	d	d	l
<u> </u>		r r			, 13, 10	223		1,11	1		Aerobic			Collection	 		+	Not	0	_		
											Compost			Facility 1				applied				
											(Thumboormuz			location								
											hi Model) - 12			1								
			l								bins at 1			Resource					1			
											location with			Recovery								
I											capacity of			Facility -1								
											10kg/day			location								
] """			1								
														Dlastic								
			l											Plastic					1			
														Shredding						[
			Maveli											Machine - 1						Submitte	Submitte	l
19	Alar		kkara		26421	27475	11.466	Nil						location						d	d	l
1 -	, 11al	rruzna	minui u	171	20721	21713	11.400	1 111	1	l			I	1.0000000000000000000000000000000000000			1	1	1	I۳	'	

Г				$\overline{}$	<u> </u>			ī		I		ı		Plastic	 	1	1	Not				
											Aerobic			Shredding				applied				
			l .								Compost			Machine - 1								
			l								(Thumboormuz			Number								
			ļ									units-783										
			II.							2.02TPD of		Biogas plants-87								Submitte	Submitte	
	$\left \mathbf{A} \right $	Mappuzha	Haripa d	M	15588	16210	8.3	Nil		biodegradable waste is managed		Compost pits- 1579								d	d	
-	A A	парригна	u	IVI	13300	10210	0.3	INII		waste is managed		1379	 	+		It is reported	It is		-	u	u	
			l									1.15TPD of				that 1 TPD	reported					
			ļ					2 Wards		1.427TPD of		biodegradable				solid waste is	that 0.8					
			ļ					covered, 65		biodegradable		waste is				collected.	TPD waste					100%
	Pa	athanamthi	ļ					Nonresident	Tipping	waste is managed			Windrow				is treated.	Not		Submitte	Submitte	Manual
	tta	a	Adoor	M	29171	30335	12.478	ial.	truck.				Compost Plant					applied		d	d	sweeping.
											Biogas Plant -		5 Hectres of			It is reported	It is					
											2 Nos. Five		land available			that 1.5 TPD	reported					
			1								Thumboormuzh		for waste			solid waste is	that 1 TPD					
										0.92TPDof	i model aerobic		processing.			collected.	waste is					
										biodegradable	bin.						treated.					
			ļ							waste is												
			1							managed and 0.35TPD of non-		Biogas plant -										
			Pathan							biodegradable		400							Under			10%
	Pa	athanamthi							Tipping	waste is managed		Compost pits-								Submitte	Submitte	Manual
	22 tta			M	38002	39518	15.81	Nil	truck 1.			520						Submitted	g	d		sweeping
												Biogas Plant -		Plastic		It is reported	It is					
		ľ	1																			
		1	i	1 1								303Nos		Shredding Unit.		that 3.5 TPD	reported					
											capacity of 350			Shredding Unit.		solid waste is	that 3.5					
											capacity of 350 kg	Pipe Compost -		Shredding Unit.		I	that 3.5 TPD waste					
											capacity of 350 kg			Shredding Unit.		solid waste is	that 3.5					
											capacity of 350 kg Biogas Plant -	Pipe Compost -		Shredding Unit.		solid waste is	that 3.5 TPD waste					
											capacity of 350 kg Biogas Plant - 1 with capacity	Pipe Compost -		Shredding Unit.		solid waste is	that 3.5 TPD waste					1000/
											capacity of 350 kg Biogas Plant -	Pipe Compost -		Shredding Unit.		solid waste is	that 3.5 TPD waste					100%
										√ 70TDD of	capacity of 350 kg Biogas Plant - 1 with capacity	Pipe Compost -		Shredding Unit.		solid waste is	that 3.5 TPD waste					Manual
										4.79TPD of	capacity of 350 kg Biogas Plant - 1 with capacity	Pipe Compost -		Shredding Unit.		solid waste is	that 3.5 TPD waste					
										biodegradable	capacity of 350 kg Biogas Plant - 1 with capacity	Pipe Compost -		Shredding Unit.		solid waste is	that 3.5 TPD waste					Manual sweeping. 47
											capacity of 350 kg Biogas Plant - 1 with capacity	Pipe Compost -		Shredding Unit.		solid waste is	that 3.5 TPD waste					Manual sweeping. 47 workers
								20 W1		biodegradable waste is	capacity of 350 kg Biogas Plant - 1 with capacity	Pipe Compost -		Shredding Unit.		solid waste is	that 3.5 TPD waste					Manual sweeping. 47 workers engaged
								39 Wards		biodegradable waste is managed. 1.5 TPDF pof non	capacity of 350 kg Biogas Plant - 1 with capacity	Pipe Compost -		Shredding Unit.		solid waste is	that 3.5 TPD waste					Manual sweeping. 47 workers engaged for street
								covered,	Tipping	biodegradable waste is managed. 1.5 TPDF pof non biodegradable	capacity of 350 kg Biogas Plant - 1 with capacity	Pipe Compost -		Shredding Unit.		solid waste is	that 3.5 TPD waste		Under .	Subscript		Manual sweeping. 47 workers engaged for street sweeping
		'athanamthi		M	52002		27 202	covered, 12000	Tipping truck is	biodegradable waste is managed. 1.5 TPDF pof non biodegradable waste is	capacity of 350 kg Biogas Plant - 1 with capacity	Pipe Compost -		Shredding Unit.		solid waste is	that 3.5 TPD waste	Cool and the		Submitte	Submitte	Manual sweeping. 47 workers engaged for street sweeping and drain
	Pa tta			M	52883	54992	27.393	covered,	Tipping	biodegradable waste is managed. 1.5 TPDF pof non biodegradable	capacity of 350 kg Biogas Plant - 1 with capacity	Pipe Compost - 4000 Nos		Shredding Unit.		solid waste is collected.	that 3.5 TPD waste is treated.	Submitted		Submitte d	Submitte	Manual sweeping. 47 workers engaged for street sweeping
				М	52883	54992	27.393	covered, 12000	Tipping truck is	biodegradable waste is managed. 1.5 TPDF pof non biodegradable waste is	capacity of 350 kg Biogas Plant - 1 with capacity of 750Kg	Pipe Compost - 4000 Nos	25 cent land is	Shredding Unit.		solid waste is collected. It is reported	that 3.5 TPD waste is treated.	Submitted		Submitte d	Submitte	Manual sweeping. 47 workers engaged for street sweeping and drain
				М	52883	54992	27.393	covered, 12000	Tipping truck is used.	biodegradable waste is managed. 1.5 TPDF pof non biodegradable waste is	capacity of 350 kg Biogas Plant - 1 with capacity of 750Kg	Pipe Compost - 4000 Nos	25 cent land is available for	Shredding Unit.		It is reported that 2 TPD	that 3.5 TPD waste is treated. It is reported	Submitted		Submitte d	Submitte	Manual sweeping. 47 workers engaged for street sweeping and drain
				M	52883	54992	27.393	covered, 12000	Tipping truck is used.	biodegradable waste is managed. 1.5 TPDF pof non biodegradable waste is	capacity of 350 kg Biogas Plant - 1 with capacity of 750Kg	Pipe Compost - 4000 Nos	25 cent land is available for waste	Shredding Unit.		It is reported that 2 TPD solid waste is	It is reported that 2 TPD	Submitted		Submitte d	Submitte	Manual sweeping. 47 workers engaged for street sweeping and drain
				М	52883	54992	27.393	covered, 12000	Tipping truck is used. Non tipping	biodegradable waste is managed. 1.5 TPDF pof non biodegradable waste is managed.	capacity of 350 kg Biogas Plant - 1 with capacity of 750Kg	Pipe Compost - 4000 Nos	25 cent land is available for	Shredding Unit.		It is reported that 2 TPD	that 3.5 TPD waste is treated. It is reported	Submitted		Submitte d	Submitte d	Manual sweeping. 47 workers engaged for street sweeping and drain clearing.
	23 tta	a	alla	М	52883	54992	27.393	covered, 12000 Houses .	Tipping truck is used. Non tipping truck 1,	biodegradable waste is managed. 1.5 TPDF pof non biodegradable waste is managed. 0.89TPD of	capacity of 350 kg Biogas Plant - 1 with capacity of 750Kg	Pipe Compost - 4000 Nos	25 cent land is available for waste	Shredding Unit.		It is reported that 2 TPD solid waste is	It is reported that 2 TPD waste is		processin g	d	Submitte d	Manual sweeping. 47 workers engaged for street sweeping and drain clearing.
	23 tta	a 'athanamthi	alla Pandal	M	52883	54992		covered, 12000 Houses .	Tipping truck is used. Non tipping truck 1, Tipping	biodegradable waste is managed. 1.5 TPDF pof non biodegradable waste is managed.	capacity of 350 kg Biogas Plant - 1 with capacity of 750Kg	Pipe Compost - 4000 Nos	25 cent land is available for waste	Shredding Unit.		It is reported that 2 TPD solid waste is	It is reported that 2 TPD waste is	Submitted Not applied	processin g	d Submitte	Submitte d	Manual sweeping. 47 workers engaged for street sweeping and drain clearing.

										Biogas Plant - 1 Tonne Vermi compost - 7 bin at 1 location	Biogas Plant - 30 Nos - 1 m3		Resource Recovery Facility (300s ft)- 1 No Three MRFs started, Plastic shredding unit.	that soli	t 4 TPD id waste is lected.	It is reported that 4 TPD waste is treated.					90 ov
		odu					Houses and 4306 Non	Tractors 1, Tipping									Not	Sui		submitte	80 % Manual sweeping, Waste to energy Technolog
5 Idukki	puz	zha M	52	.045	54121	26.959	34 Wards covered,750 0 residences	1	2.23TPD of biodegradable waste is managed 0.4TPD of non-	[Composting unit-1505			that TPI was	t 3.63 D solid ste is	It is reported that 1.40 TPD waste is treated.	applied	d		d	y 900 TPD
	Kat	ttap					and 1500 Non	1	biodegradle waste is managed		Biogas plants- 345	I	Plastic				Not	Su	omitte	Submitte	100% Manual
5 Idukki	Ch	ang		.646	44347	18.5708	residential.	truck.		Aerobic Compost(Thum boormuzhi model) 3 bins at 3 locations with capacity of 4 Cubicle(1) and 8 cubicle(2) Vermi Compost - 1 bin with capacity 1 TPD (Non operational) Aerobin (4			shredding unit. Resource Recovery Facility - 1 No. (under construction)				applied				sweeping.
Kottaya		asser M	I 127	987	133091	53.23	Nil			units) 2 TPD		I					Not applied	Sub	mitte	Submitte d	
										capacity of 500kg	450 Nos Bucket		Plastic Shredding Machine - 1 Number					Sur	hmitta	Submitte	
Kottaya		uma r M	I 26	423	27477	11.457	Nil				Compost- 150 Nos	I					Not applied	d	minue i	d	

				I							Aerobic		Plastic	T					
											composting (Thumboormuz		Shredding Machine- 1 No						
											hi mode) - 25		Triacinine 1100						
			Erattup								bins at 1 location						Not	Submitte	,
29	Kott	tayam	etta	M	29675	30859	12.878	Nil									applied	d	
												Biogas plant - 1400 Nos	Resource Recovery		It is reported that 2.5 TPD	It is			
											(Thumboormuz	1400 1403	Facility		solid waste is	that 0.65			
												Pipe Compost-	(2000sqft)- 1		collected.	TPD solid			
											bins at 6 locations	2300 Nos	Number			waste is treated.			
													Plastic						
											Biogas Plant at locations with		Shredding Machine - 1						
											capacity 10.5		Number						
											m ³								
									2 Lorry,				Baling Machine - 1 number					0.1	G 1 344
30	Kott		Kottay am	M	136812	142268	60.881	Nil	Tipping truck 2.				- 1 number				Not applied	Submitte	Submitte
30	Kou	ayam	ann	171	130012	142200	00.001	1411	truck 2.		Aerobic	Biobin - 43 Nos	Resource		1		аррпса	u	u
												Vermi Compost	Recovery						
											(Thumboormuz hi Model) -6	- 26 Nos Biodigester Pot -	Facility - 1 No Plastic						
												4 Nos	Shredding						
												Ring Compost -	Machine - 1 No						
											1 * *	59 Nos Bucket							
												Compost - 170							
												Nos							
											1 location with capacity 100	Pipe Compost - 3253 Nos							
											Kg	220 1105							
																	Not	Submitte	Submitte
31	Kott	tayam	Pala	M	123000	127906	56.924	Nil									applied	d	d
										Aerobic composting	Aerobic composting								
										(Thumboormuzhi	(Thumboormuz								
										at 2 locations	bins at 1 location								
			Vaiko							Biogas Plant - 1							Not	Submitte	Submitte
32	Kott	tayam	m	M	23234	24161	10.083	Nil		bin at 1 location							applied	d	d
22	E	110	A 1	, l	24110	25072	1.4	NI:1									Not	Submitte	
33	Erna	akulam	Aiuva	IVI	24110	25072	14	Nil				Biogas - 504		-	1		applied	a	
												Nos	DDE 2 Nov.						
												Pipe compost -	RRF-2 Nos; MCF-1;						
												979	Biodigester bins-						
			Angem								Rioges plent		300Nos SWAP shop-1				Not	Submitte	,
34	Erna	akulam	Angam aly	M	33465	34800	15.104	Nil		Aerobins-2	Biogas plant - 1No		No.				applied	d	

	ı	1	1			Г		1			n. r.	l. m=	_					-	
										Aerobic Compost	Biogas Plant - 310 Nos	MRF							
										(Thumboormuz	310 1103								
											Biodigester Pot -								
										bins at 4	350 Nos								
									Hotels, TCC	locations with									
									Canteen	capacity 1TPD									
																	G 1 '44		
	_ _	1 1	F1		21.460	22722	10.657	N7'1							Not		Submitte		
3	5 Er	nakulam	Eloor	M	31468	32723	13.657	Nil							applied		a		
											0.4TPD of								
											biodegradable								
											waste is managed								
											0.402TPD of								
											non								
										Biogas Plant -1	biodegradable								
			Kootha							No with	waste is								
			ttukula					2010		capacity 150kg	managed				Not		Submitte	Submitte	
3	6 Er	nakulam	m	M	17942	18658	7.46	residences							applied		d	d	
										2.3TPD of									
								10000		biodegrabable	Biogas plant-9	Plastic				Under	g 1	Q 1	
	_ _		Kalam		71020	72071	20.54	18000			Compost pit-800	shredding unit			0.1.		Submitte	_	
3	/ Er	nakulam	assery	M	71038	73871	29.54	residences		managed					Submitte	d g	d	d	
												N 1							
												Material collection							
										0.124TPD of		facility-1							
										non		Plastic							
			Kotha								Biogas plant-150	shredding							
			mangal					2997			Compost pit-	machine and			Not		Submitte	Submitte	
3	8 Er	nakulam	am	M	114574	119144	50.985	residences			2303	bailing machine			applied		d	d	
										Composting - 5		Dagayer							
										bins at 1		Resource Recovery							
										location (not working)		Facility - 807 sq							
										working)		ft							
												Plastic							
												shredding unit-1							
												Material							
												collection							
												facility							
												Co como octi e e							
												Seggregation Place - 1935 sq							
			Muvatt									ft			Not		Submitte		
3	9 Er	nakulam			30397	31610	13.192	Nil							applied		d		
\Box	/ Lil.	nakulani	upuzna	141	30337	51010	13.174	1411		l	l	l			applied		I ^u		

										Aerobic	Biogas Plant -	Biogas Plant -	Windrow	Material									
										composting			Compost - bin	Collection									
										(Thumboormuzhi				Facility - 1									
										model) -1 bin at			Capacity										
										1 location with		2500 Nos		Plasting									
												2300 NOS											
										capacity 4 Cubic				Shredding									
										(Not Operating)	Compost - 1			Machine at 1									
											bin with			location									
											capacity 1 TPD												
			North																				
			paravu																Not	ĮS	Submitte		
4	10 Er	nakulam	r	M	31503	32760	13.672	Nil											applied	d	1		
												Biogas Plant -		Material					111				
												166 Nos		Collection									
												100 1103											
												<i></i>		Facility - 30 m2									
												Biodigester Pot -		Plastic									
								1	1			215 Nos		Shredding		- 1		1					
								1	1					Machine -1 No		- 1		1					
								1	1			Bucket				- 1		1					
								1	1			Compost - 2330		Baling Machine		- 1		1					
												Nos		- 1 No									
												1108		- 1 NO									
								1	1			D' C				- 1		1					
												Pipe Compost -											
			Marad									940 Nos							Not	ls	Submitte		
				.,	4.470.4	46407	10 401	NT"1											Not		1		
Ľ	I Er	nakulam	u	M	44704	46487	19.401	Nil											applied	C	1		
												Biogas Plant -		Resource									
											aerobic	161 Nos		Recovery									
											compost, MRF			Facility - 2000									
												Biodigester Pot -		sq ft									
										0.75TPD of		1500 Nos		54 10									
												1300 1108											
										biodegradable													
										waste is managed		Ring Compost -											
										0.75 TPD of non		1000 Nos											
										biodegradable		Pot compost-894											
			Perum					4401		waste is managed									Not	S	Submitte	Submitte	
4	2 Er	nakulam	bavoor	M	28110	29231	12.99	Houses											applied	d	1	d	
			Pirava																Not		Submitte		
	12			M	27220	20215	11 017	Nil												١	1		
Ľ	S EI			IVI	27229	28315	11.817	INII											applied	0	1		
			Thrikk																Not	S	Submitte		
4	14 Er	nakulam	akara	M	77319	80403	40.05	Nil										1	applied	d	1		
						İ				Aerobic		Biogas Plant -		Material		I	t is reported	It is					
								1	1	composting		300 Nos		Collection			hat 4 TPD	reported					
								1		(Thumboormuzhi		2 3 0 1 1 0 0		Facility - 1 No			solid waste is	that 4 TPD					
								1	1	model) - 2 bins	1 (2)	Diadiaaster Det		1 7				1					
								1	1	· · · · · · · · · · · · · · · · · · ·		Biodigester Pot -		(Non Operation)		ľ	collected.	waste is					
								1		at 2 locations	biodegradable	125 Nos		<u></u>		- 1		treated.					
								1			waste is			Plastic		- 1		1					
								1	1	unit & 8 unit		Bucket		Shredding		- 1		1					
								1	1		0.124 non	Compost - 2400		Machine - 1 No		- 1		1					
								1	1	Biogas Plant - 1		Nos				- 1		1					
								1	1	No with 100 kg	waste is			Baling Machine		- 1		1					
								1				Pine Compost		- 1 No		- 1		1					
								1	1	capacity		Pipe Compost -		- 1 100		- 1		1					
								1	1		111111111111111111111111111111111111111	10000 Nos				- 1		1					
								1	1		muzhi model at					- 1		1					
								1	1		Anapparambu -					- 1		1					
								1	Tractor 2,		41 ward					- 1		1					100%
			Thripu					1	Tipping							- 1		1	Not	ls.	Submitte	Submitte	Manual
	₁₅ _{5.}		nithura	M	92522	96212	47.526	5626 houses								- 1		1	applied	l d	_		
Ľ	EI	nakulalli	munula	141	94344	70212	77.320	3020 Houses	uuck 2.										applied		1	u l	sweeping.

4	7 Th	nrissur	Chava kkad	M	39098	40658	17.647	started		Biogas	Vermi composting 1.5TPD	Biogas Plant - 614 Nos Pot Compost - 548 Nos Biogas Plant-	Shredding machine 1 number	One Land Fill in Operation (1.5-2.5 TPD)	It is reported that 3TPD solid waste is collected.	It is reported that 1 TPD waste is treated.	Submitted	Submitte d		sweeping.
4	8 Th	nrissur	Guruva yoor	M	70012	72805	29.12	4317 Houses	3 Tractors.	Plant(3.5tpd)	Bio organic management		Shredding-1 and bailing Machine MRF-2		that 4.5 TPD solid waste is collected .	reported that 3.75 TPD solid waste is treated.	Not applied	Submitte d		100% Manual sweeping.3
4	9 Th	nrissur	Irinjala kuda	M	62532	65026	26.721	Nil		SWM plt-2 (600KG)	SWM-2(600kg)	Biogas Plant - 382 Nos Composting units-2577 Compost pits- 5702	Material Collection Facility (550sqft) - 1 Number Plastic Shredding Machine - 1 Number Baling Machine - 1 Number Trenching Ground - 1 location				Not applied	Submitte d	Submitte d	

50	Thrissur	Kodun gallur	М	94883	98667	49.149	Nil		Aerobic Compost (Thumboormuzhi Model) - 6 bins at 3 locations with capacity of 10 kg/day	Aerobic composting	Biogas Plant - 650 Nos Pipe Compost - 2600 Nos Compost pits- 4840 Composting units-455	Windrow Compost -1No- with capacity of 4TPD	Non bio degradable waste segragated at source level and collected and handed over to Clean Kerala Company and other private agencies for recycling	5,000m ³			Not applied		Submitte	Submitte d	
51	Thrissur	Kunna mkula m	M	54071	56228	20.569	25% Motorized vehicle	2 Tractors	Aerobic compost (Thumboor Mozhi model)	1.889 TPD Biodegradable waste managed, 0.81 TPD Non biodegradable waste managed.	Bio bin - 1628 Nos Biogas-73, Compost pits-	5 Acres of land is available with the llocal bodies for waste processing. Windrow composting.	Plastic Shredding Machine		It is reported that 3 TPD solid waste is collected.	It is reported that 3 TPD solid waste is treated.	Submitted	1	Submitte d	Submitte	28 workers for sweeping.
52	Thrissur	Vadak kanche ry	М	15674	16300	20.385	490 Houses		1.93TPD waste managed(Bio&N onbiodegradable)		Compost units- 1918, Biogas- 100,Compost pits-4471 Pipe Compost -		Pacovary		It is reported	It is	Not applied		Submitte d		
53	Palakkad	Cherup		30730	31956	13.336	33 Wards covered 7603 Houses,120 0 Non residential.		0.482 TPD biodegradable waste managed, 0.427 TPD Non biodegradable waste managed.	1.43 TPD Nonbiodegrada ble waste managed.	1000 Nos Biogas Plant - 200 Nos Composting units-1050		Recovery Facility - 1 number under construction Plastic Shredding Machine - 1 number under construction Baling Machine - number under construction		that 2 TPD solid waste is collected.	reported that 1 TPD solid waste is treated.	Not applied		Submitte d	Submitte	100% Manual sweeping.
54	Palakkad	Chittur - Thatta mangal am		33000	34317	14.017	29 Wards covered, 6450 Houses and 155 Non residential.	Tractors 2, Tipper 2.	Biogas Plant - 5 bins at 5 locations	Aerobic bin (Thumboormuz hi) - 8 bins at location with capacity 50kg/day/bin	55 Nos Bucket Compost - 1168 Nos Ring Compost - 239 Nos	Composting Plant -1 bin with capacity 3 Tons/day, Windrow composting. 50 cents of land available for	Plastic		It is reported that 4.5 TPD solid waste is collected.	It is reported that 3 TPD solid waste is treated.	Not applied		Submitte d	Submitte	100%

55	Pal		Manna rkadu	M	39463	41037	17.126	Nil	Nil						It is reported that 1.4TPD solid waste is		Not applied		Submitte 1	100% Manual sweeping 0 worker for street sweeping	g.1 rs
56	Pala	akkad	Ottapal am	M	53792	55938	27.864	Nil	Tractor1, Tipping truck 1.		Biogas 112, Pipe compost 4312.					waste is treated.	Not applied	5	Submitte	100% Manual sweeping	g.
57	Pal		Palakk ad	M	131000	136225		Houses and	Dumper			15 Acres of land is available at Kanjikode for setting up solid waste processing plant. Tendering process is going on. Asper annual report 2.1 Hectre of land is available. Windrow composting is in operation.		,	that 12TPD solid waste is	It is reported that 12TPD solid waste is treated.	Not applied		Submitte 1	179 sanitation workers engaged sweeping 100%).	on I in
58	Pala	akkad	Pattam bi	М	28632	29774	12.426	Nil	Tractor 1.	Open composting in trench				1	that 1 TPD solid waste is collected.	It is reported that 1 TPD solid waste is treated.	Not applied		Submitte 1	100% Manual sweeping	
59	Pala	akkad	Shornu r	M	43533	45270	18.893	33 Wards covered, 10407 Houses.	Tipper 1.	Biobin							Not applied		Submitte 1		

April														Ι		<u> </u>			Nil					
Majepter Nortace Nor									40 wards									that 0.10 TPD solid waste is						
Madappeara Roman																								
Multipper North																								
Managapura Man																							1	1.000%
Mailappan Nataba Campon Mailappan Mail		М	alappura	Kondot										1						Not	Sı	ubmitte		
Malapur Mala	6					28794	29943	12.496		Nil											d			
Second Composition Compo													Ring Compost -	Incinerator.										
25% 25%													Biobin-2000	AP SHOP,					that 1 TPD					
Acrobic bin compact 10 hims Malapura Kotak Malapura Kotak Malapura Malap											250kg/day (not			BIOBIN, Ring	Feaility - 3									
Plastic Shreeding Machine Composition Malappura Malapp															number				is treated.					
Malappura Malapp															Plastic									
Malappura Mala																								
Saling Machine Composing Saling Machine Composing Saling Machine Composing Saling Machine Composing Composin																								
Malappura Mala																								
Malappura Kottak Malappura Kottak Malappura Kottak Malappura Kottak Malappura Kottak Malappura Kottak Malappura Walap Malappura Malappura Walap ura Walap Malappura Walappura Walap Malappura Walappura Wa															Baling Machine									
Malappura Malapp																								
Malappura Kottak Al M 44382 46152 19.261 Nil Tipper I. Malappura Malap Manjer Balapura																								
Malappura Kortak kal M 44382 46152 19.261 Nil Tipper I.																							1	100%
32 wards covered, 15489 Malappura Malap pura M puram M 101000 105028 44.945 Malappura M 101000 105028 44.945 Malappura M Malappura M majer Malappura M Malappura M majer Majer Malappura M majer M m jer M								40.04	.,,,						industries) -1						Sı	ubmitte		
Malappura Malap uram Mala uram Malap uram Malap uram Malap uram Malap uram Malap uram Mala uram Malap uram Malap uram Malap uram Malap uram Malap uram Mal	6	1 m		kal	M	44382	46152	19.261	Nıl	Tipper 1.					unit			It is reported	It is	applied	d		S	sweeping.
Malappura Malap malappura Malap malappura Mala									32 wards									that 2.5 TPD	reported					
Malappura Malap malappura																		1						
Malappura Malap pura Malappura puram M 101000 105028 44.945 residential and JCB Composting processing Biogas-1 1712 Non rrucks composting processing processing processing processing Bailing 4000m ³ lit is reported that 3 TPD solid waste is collected. Submitte applied d d lit is reported that 3 TPD solid waste is treated. Submitte applied d d lit is reported that 3 TPD solid waste is treated.														1 Hectre land				conected.						
Pipe Compost Pipe		.,	. 1	N 1					Houses and	1 Tipping									treated.	NT .		uhmitta		
Aerobic Compost 3800 Nos Compost—Trenching Ground-1 ton Aerobic Compost 3800 Nos Compost—Trenching Ground-1 ton Aerobic Compost—Show Solid waste is treated. Biogas Plant at ward 14 Vermi Compost—Trenching Ground-500kg Malappura Manjer Manjer Mindrow Compost—Windrow Compost—Trenching Ground-1 ton It is reported that 3 TPD solid waste is collected. It is reported that 3 TPD solid waste is treated. Under processin Submitte Manual	6				M	101000	105028	44.945				Composting					4000m ³				d			
Malappura Manjer				1								Aerobic		Windrow										
hi model)- 8 bins at ward 33 Biogas Plant at ward 14 Vermi Compost- Trenching Ground- 500kg Malappura Manjer Malappura Manjer												*	3800 Nos						reported					
Biogas Plant at ward 14 Vermi Compost- Trenching Ground- 500kg Malappura Manjer																								
Ward 14 Vermi Compost- Trenching Ground- 500kg Malappura Manjer												bins at ward 33							is treated.					
Ward 14 Vermi Compost- Trenching Ground- 500kg Malappura Manjer												Biogas Plant at												
Compost- Trenching Ground- 500kg Malappura Manjer Biogas-1 Compost- Trenching Ground- 500kg Biogas-1																								
Compost- Trenching Ground- 500kg Malappura Manjer Biogas-1 Compost- Trenching Ground- 500kg Biogas-1												Vermi												
Trenching Ground- 500kg Malappura Manjer Biogas-1 Trenching Ground- 500kg Under processin Submitte Submitte Manual																								
Malappura Manjer Biogas-1 Biogas-1												Trenching												
											n	Ground- 500kg									Under	,h.,;44 - 1		
105 HI	6	3 M m			M	97104	100977	50.299	Nil								5000m ³			Submitted	1.	uoiiiitte S		wanuai sweeping.

															It is reported	It is	I	<u> </u>			
															that 2 TPD	reported				7	5%
								33 wards							solid waste is	that 1.5					Ianual
															collected.	TPD solid					
								covered								waste is					weeping,
								5146			Biogas Plant -					treated.				1	
								Houses and			70 Nos. Pipe										orkers
	M	alappura	Nilamb					42 Non			composting						Not		Submitte	fe	or
6	64 m		ur	M	46366	48216	20.122	residential	2 Tractors								applied		d	S	weeping
								12 wards													
								covered													
								1500			Biogas Plant -										
											200 Nos									1	000/
			Parapp					Houses and										Under	a		00%
			ananga					70 Non	Tipping		Biodigester Pot -								Submitte		I anual
6	6 5 m		di	M	35243	36649	15.295	residential	truck.		300 Nos						Submitted	g	d	S	weeping.
													Material		It is reported	It is					
												Compost - 1	Recovery		that 12 TPD	reported					
											Bio bin - 1000	No	Facility - 1 No		solid waste is	that 12 TPD					
											Nos				collected.	solid waste					
											1103		Plastic			is treated.					
											Biogas Plant -		Shredding								
											480 Nos		Machne - 1 No								
								34 wards			100 1105										
								covered,369			Biodigester Pot -		Baling Machne -								
								8 Houses	Tipping		1189 Nos		1 No								
			Perinth					and 1163	truck, 2											1	00%
	M		almann					Non	Tipping		Pipe Compost -						Not		Submitte	N	I anual
6	66 m			M	49723	51706	21.579	residential	truck		700 Nos						applied		d	S	weeping.
															It is reported	It is	11				1 0
																reported					
															solid waste is	that 8 TPD					
								In 51							collected.	solid waste					
								Wards								is treated.				1	0
												One (Private									
								covered,				parties				1			G 1		ermanent
		alappura			[_	4 - 0 - :	17000				property used			1		Not		Submitte		orkers
6	6 7 m		1	M	90491	94100	46.874	Houses.				for landfilling)			1		applied		d	iı	rvolved.
										Biogas Plant in						It is					
								_		4 locations					that 0.3 TPD	reported					
								In 44							solid waste is	that 0.3					
								Wards							collected.	TPD solid					
								covered,			Pina Compact				1	waste is					
								8000			Pipe Compost - 200 Nos					treated.					
								Houses and			200 INUS				1					1	00%
	1.1	alappura						950 Non			ODF Latrine -				1		Not		Submitte		Ianual
4	68 m		Tanur	M	44973	46767	21.6	residential.			400 Nos		MCF		1		applied		d		weeping.
F	70 111		1 allul	141	77713	40/0/	21.0	residential.			700 1103		14101		It is reported		applica	\vdash	u	8	weeping.
															It is reported that 2 TPD						
															solid waste is						
															collected.						
								39 wards			Pipe Compost -	86 Cents of			conected.					1	00%
	$ _{M}$	alappura	Thirura					7450	Tipping			land is	Plastic			1	Not		Submitte		I anual
6	69 m		ngadi	M	56632	58891	29.335	Houses	truck.				shredding unit.		1	Nil	applied		d		weeping.
Ц,	• • • • • • • • • • • • • • • • • • • •		-5		2 3 3 2 2	20071	_>.555	1100000				1		ļ		1				5	

																	1					
																	It is					
																that 1 TPD	reported					
																solid waste is	that 0.75					
																collected.	TPD solid					
								5 wards					Windrow				waste is					
								covered,					composting,	Thumboormuzhi			treated.					
	Mala	ppura						1460					One Acre land	Plastic				Not	Sul	mitte		
70	m		Tirur	M	56058	58294	29.038	Houses.					is available	shredding unit				applied	d			
	111		11101	111	20020	30271	27.030	Trouses.					is available	binedding dint		It is reported	It is	иррпец	 		Waste	$\overline{}$
																that 0.3 TPD	1					
																	reported				treatn	
																solid waste is	that 0.3TPD				done	
																collected.	solid waste				throu	.gh
								33 wards		Bio Gas Plant 14				MCF - 1			is treated.				agenc	_
								1													100%	
								covered												.		
		ppura \	Valach					1106										Not	Su	mitte	Manu	
71	m	€	erry	M	35795	37223	15.535	Houses										applied	d		sweep	ping.
																It is reported	It is					
																that 4.5 TPD	reported					
	1							38 wards								solid waste is	that 4.5					1
								covered,								collected.	TPD solid					
								11017								conceicu.	waste is					
								1	N												1000/	,
								Houses and	Non								treated.				100%	
								4000 Non	tipping			Pipe compost						Not	Su	mitte	Manu	ıal
72	Kozh	ikode I	Faroke	M	32122	33403	13.94	residential	truck 1.		Composting 1	1000						applied	d		sweep	ping.
																It is reported	It is					
								20wards								that 0.6 TPD	reported					
								covered,180								solid waste is	that 0.6TPD					
																collected.	solid waste					
								0 House								Conceteu.	is treated.					
								and 410									15 treated.		Under			
		1	Koduv					Non											processin Su	mitte		
73	Kozh			M	48678	50620	21.126	residential										Submitted				
			J								1. Thumboor	1. portable		1. Material		1	1					
												biogas 250 nos		Collection								
												2. pipe, ring and		Facility - 1								
	1											vermi compost -		2. MRF - 1								1
	1																					1
											2. biogas plant -	1 1108		3. plastic								
											500 kg per day			shredding								
														mechine - 2								
].												4. Bailing				, .	G1	i		
			Koyila				27.22	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \						Mechine -1				Not		mitte		1
74	Kozh		-	M	71873	74740	37.23	Nil										applied	l d			
	1	1	Mukka									Kitchen bin 301						Not	Sul	mitte		1
75	Kozh	ikode l	m	M	40670	42292	17.65	Nil										applied	d			- 1
			Payyol													1		Not	Sul	mitte		$\neg \neg$
76	Kozh	ikode		M	23576	24517	10.231	Nil									1	applied				
/0	KOZII	IKUUE I	ı	171	23370	24317	10.231	1411				Ring Compost -						аррпец	l lu			
		,	Raman									320 Nos						Not	Sui	mitte		
	V o1-	ikode a		м	35937	37371	15 506	Nil				320 INUS							ا ا	,,,,,,,,,		
77		IKOGE 12	ашката	IVI	3393/	3/3/1	15.596	INII				1	I	1	1	I	I	applied	ı ja			

		1	ı	ı					_			Г	l		1	T				
											Pipe Compost -		MCF-1, Plastic							
											3728 Nos, Ring		shredding -1,							
											compost-615,		Bailing-1							
											Biogas- 100,									
										Biogas - 1 No	Bucket compost-									
										with capacity	450,Biobin-150									
										with capacity										
		,	X7 1 1						Thumboormuzhi-	or 250 kg/day							NT .	Submitte	Submitta	
			Vadak		7.20.5	50300	20.002	27.1	1, Ring compost-								Not	Sublifitte	3ubilitte	
/8	S Ko	zhikode	ara		75295	78298	39.002	Nil	1								applied	a	a	
										1.3 TPD										
									0.508 TPD		0.4 TPD									
											Biodegradable									
									Biodegradable											
									waste		waste managed,	0 4 21 1								
									managed,0.561			8 Acres of land								
					1						Nonbiodegradab						_	0.1.	C1-	
			Kalpett						biodegradable			Vellaram			,		Not	Submitte	Submitte	
79	Wa	ayanad	a	M	31580	32840	13.705	Nil	waste managed.	managed.	managed	kunnu Kalpetta.			8000m ³		applied	d	d	
					1						Vermi									
											composting 317									
			Manan						1.7401 TPD		Biogas 217									
		1	thavad						Biodegradable		Pipe compost						Not	Submitte	Submitte	
80) Wa	iyanad		M	34663	36046	15.043	Nil	waste Managed.		4100				1000m^3		applied	d	d	
																	111			
												0.5 Acres of								
												land is								
												available in								
												Sulthan								
			Sultha									bathery								
		ľ	5ulula 5									construction of								
			II D : 41:															Submitte		
0.1	1 337		Bather		22222	24264	10.106	27.1				the plant is			9000m ³					
8	ı wa	nyanad	У	M	23333	24264	10.126	Nil				going on.	N		9000m		Granted	d		
					1				Aerobic		Biogas Plant -		Material				Not			
									Compost		55 Nos		Collection				applied			
					1				(Thumboormuzhi		Ring Compost -		Facility -							
					1				Model) - 6		3033 Nos		(40m2) - 1 No;							
1	1								units at 3				Plastic							
	1								locations with				Shredding							
									capacity of 2000				Machine - 1 No;							
									kg/bin;				Baling Machine							
					1				Biogas Plant - 1				- 1 No;							
									unit with				Reuse							
									capacity				strategy(SWAP							
1	1								40kg/day				Shop, Repair							
					1				TORE/ day				shop etc.)-Swap							
					1								shop -10 m ²							
			Anthoo															Submitte		
82	2 Kai			M	36290	37738	15.749	1811Houses										d		
	+			+				1									Not	Submitte		
- [1	nnur	Panoor	м	356000	370197	17.68	Nil									applied	a		
	1/-																			

8′	7 Ka	ınnur	Payyan ur	M	72111	74987	29.99	Nil			Windrow composting	Plastic shredding and windrow composting		Not applied	Submitte d	Submitte d	
		unnur	ur Sreeka ntapura						Vermi Compost - bir with capacity - 1 TPD (Not working since 2007)			Road side locked bins for collecting non biodegradable waste - 20 locations		Not applied	Submitte	d	
	Ka Ka		Thalas	M M	17630 92558	96250		Nil Nil	Biogas Plant - 3 bins at 3 locations with capacity of 1 Ton	Biogas Plant - 1021 Nos Pipe Compost - 5200 Nos		Shredding Machine - 1 Number Baling Machine - 1 number		Submitted	Under processin Submitte	Submitte	
) Ka		Thalip arambu		72465		37.536	Nil			Windrow Composting	MRF/Trenching Ground			Under processin Submitte	Submitte d	

	1		1	 		1		1	A 1-: -	A 1- : -	D: 2220	0.5 11	Matarial	ı	 3		1	1			Ī	1
				1						Aerobic		0.5 Hectre land is	Material Collection		7500m ³							
				1						Compost	Ring compost-		1									
				1					(Thumboormuzhi			avaiilable.	Facility -									
				1							Bin-17400, Pipe		(1000sqft)- 1 No									
				1						20 bins at 3	compost-3222.											
				1					locations with	locations with			Resource									
				1					capacity of 1000	capacity of			Recovery									
				1					kg/bin	1000 kg/bin			Facility -									
				1									1000sqft - 1 No									
				1																		
				1									Plastic									
				1									Shredding									
				1									Machine - 1 No									
				1									Baling Machine									
				1									- 1 No									
				1																		
				1									Reuse									
				1									strategy(Swap									
				1									Shop, Repair									
				1									shop etc.) - 2									
				1									Nos						Under			
		17 1		1															Under .	Submitte		By law
01	V	Kanha		72526	76460	27.001	NI:1											C1:444	processin	Juonnice		
91	Kasargoo	ngad	M	73536	76469	37.991	Nil									T. 1	T. *	Submitted	g	a		exist
				1												It is reported	It is					
				1				Non								that 3 TPD	reported					
				1				tipping			Diag assument					solid waste is	that 3 TPD					85%
				1				truck 1,		Thumbur	Pipe compost-		Plastic			collected.	solid waste		Under			Street
		17		1				Dumper			800, Biogas-						is treated.			Submitte		sweeping
0.0	17	Kasarg		121000	126225	50.205	NT:1	_		muzhi model	13, Ring		shredding unit-		12,500m ³			C 1	processin	3uommue		
92	Kasargoo	od	M	131000	136225	58.295	Nil	placer 1.		composting.	compost- 8244		1, MCF-1		12,500m		1	Submitted	g	a		covered.
									Biogas-44,	Aerobic	Biogas-2840											
				1						compost (21bin												
									(4 unit having 2		2840 Nos, Ring								Under			
		Nilesh							bins), (1 unit	1 unit, 40m 1unit, 3bin 2		80 Cents land								Submitte	Submitte	
93	Kasargoo			40802	42430	28.379	Nil			unit)	Biobin-3350	is available.	MCF &MRF		2000m ³			Submitted	o Processin	d	d	
75	Trasargo	Total	171	8337862		3903.0228	1 411		maving + oms)	GIIII.)	D100111 3330	is available.	WICE CONTROL		2000111		+	Submitted	5	-	-	
		Lutai	I	0557002	00/050/	3703.0220			I	I	1	I	1	I	I		1	1	I	I I		

Kerala State Pollution Control Board

Annexure 3

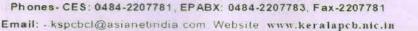
SUMMARY STATEMENT ON PROGRESS MADE BY LOCALBODY IN RERSPECT OF IMPLEMENTATION OF SCEHDULE II

Kochi Corporation is having Windrow composting plant at Brahmapuram. The Corporation is collecting waste from nearby municipalities namely Angamaly, Thrikkakara, Kalamassery, Aluva, Thripunithura, and two panchayaths. The quality of the compost and leachate from the plant was analyzed by the Board and it is found unsuitable for use in food crops. Leachate collection provision has been established by Kochi Corporation.



KERALA STATE POLLUTION CONTROL BOARD CENTRAL LABORATORY, GANDHI NAGAR, KOCHI- 682020

കേരള സംസ്ഥാന മലിന്വകരണ നിയന്ത്രണ ബോർഡ് കേന്ദ്ര പരീക്ഷണശാല, ഗാന്ധി നഗർ. കൊച്ചി - 682020



(An NABL accredited laboratory as per ISO 17025;2005).



Ref PCB/CL/AR/2009

Date: 18/03/2019

From

Chief Environmental Scientist (I/C)

To.

The Environmental Engineer, KSPCB, DO, Perumbayoor

Sub: Analysis Report of Water Samples

Sir,

I am enclosing here with the analysis report of the samples received from that office. The bill for the analysis charge is also enclosed herewith. The details are given below

SI	AR NO	That Office Reference	Source Name	No of Samples
1	866/18-19	PCB/PBR/LAB/1/2013 dated 16.01.2019	Bhrahmapuram solid waste treatment facility o Kochi Corporation	2

AENAS 21/3/19

> erala State Pollution Control Board Dist. Office (Ernakulam-II)

> > 1 9 MAR 2019

M. C. Road Perumbayoor - 583542

Yours faithfully

CHIEF ENVIRONMENTAL SCIENTIST (I/C)



KERALA STATE POLLUTION CONTROL BOARD CENTRAL LABORATORY, GANDHI NAGAR, KOCHI- 682020

കേരള സംസ്ഥാന മലിനീകരണ നിയന്ത്രണ ബോർഡ് കേന്ദ്ര പരീക്ഷണശാല, ഗാന്ധി നഗർ, കൊച്ചി - 682020 Phones- CES: 0484-2207781, EPABX: 0484-2207783, Fax-2207781



Email: - kspcbcl@asianetindia com. Website. www.keralapcb.nic.in (An NABL accredited laboratory as per ISO 17025:2005)

ANALYSIS REPORT

A Luis Deport No	PCB/CL/866/18-19	Date	18 Mar 2019	Doc.No. PCB/CL/CH/F-7
Analysis Report No.	PCB/PBR/LAB/1/2013 dated 16.01.2019	Date (Of Collection	14 Jan 2019
Ref.No.	D O Perumbavoor	Date	Of Receipt	16 Jan 2019
Received From	D.O.Ferdinbayoo.		d Of Analysis	16 Jan 2019 - 18 Mar 2019
No. Of Sample	Z		ntist-in-charge	JOSEMIN
Source	Bhrahmapuram solid waste treatment facility of Kochi Corporation			Waste Water
Sample Condition	Fit for analysis	Samp	ole Type	
Sample collected by	EE, D O Perumbavoor		ple volume & ainer type	2L plastic can
Sample preservation	As per APHA/ IS :3025(Part-1)	Туре	of test	CHEMICAL

SI.No	ID : PVR 32 Parameters	Unit	Value	Test Method	Detection Limit
_1	рН		7.5	APHA, 4500-H+B, 22nd Ed., 2012	0.1
	I O P.L.	mg/l	2883.0	APHA,2540-D	10 mg/l
2	Suspended Solids	mg/l	21733.0	APHA, 2540-C 22nd Ed 2012	10mg/l
4	Total Dissolved Solids Chloride	mg/l	4999.0	APHA, 4500-CI/B ,22nd Ed., 2012	1.0mg/l
		mg/l	0.16	APHA, 4500-F C,22nd Ed., 2012	0.01 mg/l
6	Ammonia as Nitrogen	mg/l	5588.0	APHA, 4500-NH3 F,22nd Ed.,2012	0.02mg/l
	= 1/00D)	mg/l	10752.0	IS 3025 part 44 1993	1mg/l
7	Biochemical Oxygen Demand (BOD)	mg/l	12480.0	APHA, 5220-B, 22nd Ed., 2012	3.2 mg/l
9	Chemical Oxygen Demand (COD) Total Kjeldahl Nitrogen	mg/l	6256.0	APHA, 4500-N-Org B,22nd Ed,2012	0.2mg/l
		mg/l	7.3	APHA 5530-C,22nd Edition	0.001mg/
10	Phenolic compounds	mg/l	BDL	APHA, 3111-B, 22nd Ed., 2012	0.02 mg/
11	Cadmium	mg/l	0.07	APHA, 3111-B, 22nd Ed., 2012	0.03mg/l
12	Chromium Total		0.19	APHA, 3111-B,22nd Ed., 2012	0.02mg/
13	Copper	mg/l	0.16	APHA, 3111-B. 22nd Ed., 2012	0.05mg/
14	Nickel	mg/l	BDL	APHA, 3111-B 22nd Ed., 2012	0.05mg/

Doc.No: PCB/CL/CH/F-7

Analysis Report No.: PCB/CL/866/18-19

		- /			
		mg/l	0.43	APHA, 3111-B, 22nd Ed., 2012	0.02mg/l
16 Zin	C		BDL	APHA, 3114-B,22nd Ed.,2012	0.01mg/l
17 Ars	senic	mg/l	20,7000	APHA, 3112-B, 22nd Ed., 2012	0.01mg/l
18 Me	ercury	mg/l	0.14	APHA, 3112-B, 2210 Cd., 2012	

ID : PCB 344 Parameters	Unit Value		Test Method	Detection Limit
рН		7.6	APHA, 4500-H+B, 22nd Ed., 2012	0.1
	mg/l	823.0	APHA,2540-D	10 mg/l
		20251.0	APHA, 2540-C 22nd Ed 2012	10mg/l
Total Dissolved Solids Chloride	mg/l	4299.0	APHA, 4500-CI/B ,22nd Ed., 2012	1.0mg/l
	ma/l	0.20	APHA, 4500-F C,22nd Ed., 2012	0.01 mg/l
Ammonia as Nitrogen	mg/l	4736.0	APHA, 4500-NH3 F,22nd Ed.,2012	0.02mg/l
T (POD)	mg/l	9600.0	IS 3025 part 44 1993	1mg/l
		11680.0	APHA, 5220-B, 22nd Ed., 2012	3.2 mg/
Total Kjeldahl Nitrogen	mg/l	5079.0	APHA, 4500-N-Org B,22nd Ed,2012	0.2mg/l
	ma/l	BDL	APHA 5530-C,22nd Edition	0.001mg
Phenolic compounds		BDL	APHA, 3111-B, 22nd Ed., 2012	0.02 mg
		0.07	APHA, 3111-B, 22nd Ed., 2012	0.03mg
Chromium Total				0.02mg
Copper				0.05mg
Nickel				0.05mg
Lead				0.02mg
Zinc				0.01m
Arsenic			APHA, 3112-B, 22nd Ed., 2012	0.01m
	Parameters pH Suspended Solids Total Dissolved Solids Chloride Fluoride Ammonia as Nitrogen Biochemical Oxygen Demand (BOD) Chemical Oxygen Demand (COD) Total Kjeldahl Nitrogen Phenolic compounds Cadmium Chromium Total Copper Nickel Lead Zinc	Parameters DH Suspended Solids Total Dissolved Solids Chloride Fluoride Fluoride Ammonia as Nitrogen Biochemical Oxygen Demand (BOD) Chemical Oxygen Demand (COD) Total Kjeldahl Nitrogen Phenolic compounds Cadmium Chromium Total Copper Nickel Lead Zinc Mg/I Arsenic mg/I Unit Imag/I Parameters Unit Value pH 7.6 7.6 Suspended Solids mg/l 823.0 Total Dissolved Solids mg/l 20251.0 Chloride mg/l 4299.0 Fluoride mg/l 0.20 Ammonia as Nitrogen mg/l 4736.0 Biochemical Oxygen Demand (BOD) mg/l 9600.0 Chemical Oxygen Demand (COD) mg/l 11680.0 Total Kjeldahl Nitrogen mg/l 5079.0 Phenolic compounds mg/l BDL Cadmium mg/l BDL Chromium Total mg/l 0.07 Copper mg/l 0.19 Nickel mg/l BDL Lead mg/l 0.71 BDL mg/l 0.71	Parameters Unit Value Test Method pH 7.6 APHA, 4500-H+B, 22nd Ed., 2012 Suspended Solids mg/l 823.0 APHA, 2540-D Total Dissolved Solids mg/l 20251.0 APHA, 2540-C 22nd Ed 2012 Chloride mg/l 4299.0 APHA, 4500-Cl/B, 22nd Ed., 2012 Fluoride mg/l 0.20 APHA, 4500-F C, 22nd Ed., 2012 Ammonia as Nitrogen mg/l 4736.0 APHA, 4500-NH3 F, 22nd Ed., 2012 Biochemical Oxygen Demand (BOD) mg/l 9600.0 IS 3025 part 44 1993 Chemical Oxygen Demand (COD) mg/l 11680.0 APHA, 5220-B, 22nd Ed., 2012 Total Kjeldahl Nitrogen mg/l 5079.0 APHA, 4500-N-Org B,22nd Ed., 2012 Phenolic compounds mg/l BDL APHA, 5530-C,22nd Edition APHA, 3111-B, 22nd Ed., 2012 APHA, 3111-B, 22nd Ed., 2012 Chromium Total mg/l 0.07 APHA, 3111-B, 22nd Ed., 2012 Nickel mg/l 0.17 APHA, 3111-B, 22nd Ed., 2012 I cad mg/l 0.71 APHA, 3111-B, 22nd Ed., 2012	

- End of Report --

Dr. JOSEMIN

Authorised by

Checked by

Assistant Environmental Scientist

Note: The test results relate only to the sample submitted for analysis and it shouldn't be reproduced except in full without the written permission of the authorised signatory of the lab.

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കേരള സംസ്ഥാന മലിനീകരണ നിയന്ത്രണ ബോർഡ് സെൻട്രൽ ലാബാട്ടറി, ഗാന്ധി നഗർ, കൊച്ചി- 682 020 www.keralapcb.nic.in

ANALYSIS REPORT

Analysis Report No.	PCB/CL/866/18-19	Date	18.03.2019	
Ref. No.	PCB/PBR/LAB/1/2013 dated 16.01.2019	Date of Collection		14.01.2019
Received From	D O Perumbayoor	Date of Receipt		16.01.2019
No. of Sample	2	Period of Analysis		16.01.2019 - 18.03.2019
Source	Bhrahmapuram Solid waste Treatmen facility of Kochi Corporation	Scientist-in-charge		Dr. Josemin
Sample Condition	Fit for analysis	Sample Type		Waste Water
Sample collected by	EE, D O Perumbavoor	Sample volume & container type		2 L Plastic Can
Sample preservation	As per APHA/IS:3025 (Part-1)	Type of test		CHEMICAL

Sample ID: PVR 32

Sl. No.	Parameters	Unit	Value	Test Method	Detection Limit
1	Cyanide	mg/L 9.	9.45	APHA, 3111-B	0.01

Sample ID: PCB 344

Sl. No.	Parameters	Unit	Value	Test Method	Detection Limit
1	Cyanide	mg/L	11.4	APHA, 3111-B	0.01

-- End of Report-

Checked By

Dr. JOSEMIN Assistant Environmental Scientist

Authorised By

V.T. SAJIMON
Chief Environmental Scientist (I/C)