IS / ISO 9001 BIS QMS | IS / ISO 14001 BIS EMS | IS / ISO 45001 BIS OHSMS | IS / ISO 50001 BIS EnMS

Chettinad cement

Chettinad Cement, KW/Cement Plant /Environmental Statement / 2023-24/EHS-234
28th Sep, 2024

The Member Secretary
Tamil Nadu Pollution Control Board
76, Mount Salai, Guindy
Chennai – 600 032

Respected Sir,

Sub : Submission of " **Environmental Statement - Form V** " for the year **2023-24** under Environment (Protection) Rules,1986 for our **Cement Plant** – Reg.

****

We hereby enclose the "Environmental Statement - Form V" for the year 2023–24 In accordance with the Environment (Protection) Rules, 1986 for our 4.5 MTPA cement production capacity of Cement Plant, which is situated at Karikkali and Dholipatti villages, Guziliamparai Taluk of Dindigul District, Tamil Nadu – 624703.

Kindly acknowledge for receipt of the same please

Thanking you,

Yours faithfully,
for CHETTINAD CEMENT CORPORATION PRIVATE LIMITED,

V.KRISHNAN
JOINT PRESIDENT [WORKS]

CHETTINAD CEMENT CORPN PVT. LTD. KARIKKALI 624703

Copy to :

1. The Regional Director, CPCB, Chennai
2. The Director, Regional Office, MoEF & CC, Chennai
3. The Joint Chief Environmental Engineer (M), TNPCB, Madurai
4. The District Environmental Engineer, TNPCB, Dindigul

Chettinad Cement Corporation Private Limited.
Rani Meyyammai Nagar, Karikkali (Po), Guziliamparai (Tk),
Dindigul Dist - 624 703, Tamilnadu, India.
T +9788857974
E karikkali@chettinadcement.com
www.chettinad.com

Regd. Office :
Chettinad Towers,
603, Anna Salai, Chennai - 600 006,
Tamilnadu, India.
T +91 44 28292727, 42951800
F +91 44 28291558

Corporate Office :
Sigapi Achi Building
18/3, Rukumani Lakshmipathy Road,
Egmore, Chennai - 600 008
Tamilnadu, India.
T +91 44 43691000

FORM - V

(Rule 14 of Environment (Protection) Rules, 1986)

Environmental Statement for the Financial Year ending the 31st March 2024

PART – A

(i)	Name and address of the owner / occupier of the industry operation or process.	:	**V.KRISHNAN,** **Joint President [Works]** Cement Plant Chettinad Cement Corporation Pvt Ltd Rani Meyyammai Nagar, karikkali Post, Guziliamparai Taluk, Dindigul District Tamilnadu, Pin code -624703
(ii)	Industry category		
	Primary (STC Code)	:	Red Large
	Secondary (SIC Code)	:	1026- Cement
(iii)	Production Capacity	:	4.5 million tons of Cement per annum
(iv)	Year of Establishment	:	2001
(v)	Date of Last Environment statement submitted	:	22nd Sep, 2023

PART – B

Water and Raw Material Consumption

(i) Water Consumption - m^3/day

Process	:	89
Cooling	:	762
Domestic	:	79

Name of the Product	Process water consumption (m^3) per unit (metric ton) of Product (Cement) output	
	During the Previous Financial year 2022 – 2023	During the Current Financial year 2023 - 2024
Cement	0.0117	0.0100

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(ii) Raw Material / Fuel Consumption:

Name of the Raw Materials		Name of the Products	Consumption of Raw Material / Fuel (metric ton) per unit (metric ton) of Product (cement) output	
			During the Previous Financial Year 2022-2023	During the Current Financial Year 2023-2024
(1)	Lime Stone	Cement (OPC, PPC, PSC)	1.056	1.065
(2)	Laterite		0.037	0.036
(3)	Iron Ore		0.013	0.010
(4)	Imported coal		0.042	0.038
	Indian Coal		0.029	0.000
	Indigenous Petcock		0.033	0.035
	AFR		**0.008**	**0.011**
	Total Fuel		**0.112**	**0.084**
(5)	Gypsum		0.027	0.022
(6)	Fly ash		0.337	0.334
(7)	Slag		1.256	2.807
(8)	PI - Limestone		0..013	0.014

Alternative Fuels & Raw materials (AFR)

Name the Wastes		UOM	During the Previous Financial Year2022-2023	During the Current Financial Year 2023-2024
(1)	ETP Sludge (HW Cat. 35.3)	% per ton of Raw Meal	0.1	0.1
(2)	Alternative Fuels	TSR% (Thermal substitution ratio)	6.27	**8.10**

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PART – C

Pollution Discharged to Environment / unit of output
(Parameter as specified in the consent issued)

Pollution	Quantity of Pollutants discharged (kg/day)	Concentrations of pollutants in discharges (Mass /Volume)	Percentage of variation from prescribed standards with reasons
(a) Water - Treated Sewage Water – 71.4 m^3/day (Permitted quantity 150 m^3/day)			
pH	Not Applicable	7.24	Maintained with in norm 5.5 – 9.0
TDS	48.1	674	68% lesser compare with norm 2100 mg/l
TSS	0.5	6.9	77% lesser compare with norm 30mg/l
BOD	0.9	12.7	36% lesser compare with norm 20mg/l
COD	4.0	55.8	78% lesser compare with norm 250mg/l
(b) Air – stack emission			
PM	135	23.62	21% lesser compare with norm 30mg/Nm3
SO_2	-	10.6	89% lesser compare with norm 100mg/Nm3
NOx	-	397	50% lesser compare with norm 800mg/Nm3
Load Based Emission (Particulate Matter)	0.085 (kg / ton of clinker production)	-	32% lesser compare with norm 0.125kg /ton of clinker production

PART – D

HAZARDOUS WASTES
(As specified under [Hazardous & Other Wastes (Management, Handling and Transboundry Movement) Rules, 2016]

Sl. No	Hazardous Wastes	Total Quantity Generated in KL	
		During the Previous Financial Year 2022-2023	During the Current Financial Year2023-2024
(a)	From Process Used Oil (Category No.5.1)	11.500	10.320
(b)	From Pollution Control Facilities	NIL	NIL

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PART – E

SOLID WASTES

Solid Wastes		Total Quantity (Kg)	
		During the Previous Financial Year 2022-2023	During the Current Financial Year 2023-2024
(a)	From Process - None	NIL	NIL
(b)	From Pollution Control Facilities - STP Sludge Generated	317	314
(c)	1. Quantity recycled or re-utilized within the unit (STP Sludge)	317	314
	2. Sold (STP Sludge)	NIL	NIL
	3. Disposed (STP Sludge)	NIL	NIL

PART – F

Please specify the characterizations (in terms of composition of quantum) of hazardous as well as solid wastes and indicate disposal practice adopted for both these categories of wastes

Sl. No	Name of the Hazardous and Other Wastes	Quantity in tons /Annum				Characteristics	Disposal Practice Adopted
		Opening Balance as on 01.04.23	Receipt For the year 2023-24	Disposed / Co-processed for the year23-24	Closing Stock as on 31.03.24		
A. Hazardous Waste							
(1)	Used / Spent Oil (HW Category No.5.1) Qty in KL	0.000	10.500 (Cement Plant- 10.32 + CPP- 0.180)	10.500 (Cement Plant : 10.320 + Power plant : 0.180)	0.000	Liquid(Oily) Cd+Cr+Ni <5ppm Density : 0.85-0.98g/cc	Sent to TNPCB authorized agency (M/s.Sri Balaji Industries, Coimbatore.
(2)	Wastes containing oil (HW Category No.5.2)	29.688	3024.540	2925.811	128.417	Solid GCV: 2500-4500kcal/Kg Ash: <2% Moisture : 2 - 20% Cd+cr+Ni : <0.1%	Used as Alternative fuel in Cement Kiln
(3)	Phosphate sludge (HW Category no.12.5)	45.143	97.960	143.103	0.000	Solid GCV: 2000-2500kcal/Kg pH : 9 -10 Ash : <40% Moisture : 20-40% Cd+cr+Ni+Zn : 0.5%	Used as Alternative fuel in Cement Kiln

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Sl. No	Name of the Hazardous and Other Wastes	Quantity in tons /Annum				Characteristics	Disposal Practice Adopted
		Opening Balance as on 01.04.23	Receipt For the year 2023-24	Disposed / Co-processed for the year23-24	Closing Stock as on 31.03.24		
(4)	Solvent (HW Category no.20.2)	4.460	39.500	43.960	0.000	Liquid GCV:5000-6000 kcal/Kg pH : 6-7 Ash :NIL Moisture : >10% Cd+cr+Ni+Zn : 0.5%	Used as Alternative fuel in our Cement Kiln
(5)	Distillation Residues, (HW category no.20.3)	1.505	9.570	11.075	0.000	Solid GCV:3000-3500 kcal/Kg Ash : <10% Moisture : 10-20% Cd+cr+Ni+Zn : 0.5%	Used as Alternative fuel in our Cement Kiln
(6)	Paint Sludge (HW Category No.21.1)	42.261	3927.88	3970.141	0.000	Solid GCV:4500-5000 kcal/Kg pH : 6-8 Ash : <5% Moisture : 20-32% Cd+cr+Ni+Zn : <2%	Used as Alternative fuel in Cement Kiln
(7)	Process Residues (HW Category No.22.2)	9.264	294.390	303.654	0.000	Solid GCV:3000-3500 kcal/Kg Ash : <10% Moisture : 10-20% Cd+cr+Ni+Zn : 0.5%	Used as Alternative fuel in Cement Kiln
(8)	Wastes & Residues (HW Category No.23.1)	23.022	6384.580	6273.955	133.647	Solid GCV : 3000-3500kcal/Kg pH : 6-7 Ash : <5% Moisture : 2-5% Cd+cr+Ni+Zn : 0.5%	Used as Alternative fuel in Cement Kiln
(9)	Spent Solvent (HW Category No.28.1)	6.075	495.570	501.645	0.000	Solid GCV : 3000-3500kcal/Kg pH : 6-7 Ash : <5% Moisture : 2-5% Cd+cr+Ni+Zn : 0.5%	Used as Alternative fuel in Cement Kiln
(10)	Spent Carbon (HW Category no.28.3)	17.868	103.390	121.258	0.000	Solid GCV:3500-3500kcal/Kg pH :7 -9 Ash : <20% Moisture : 10-20% Cd+cr+Ni+Zn : 0.5%	Used as Alternative fuel in Cement Kiln
(11)	Contaminated Cotton rags (HW Category No.33.2)	3.910	136.590	140.500	0.000	Solid GCV:3500-4000kcal/Kg pH : 7-9 Ash : <20% Moisture : <10% Cd+cr+Ni+Zn : <0.1%	Used as Alternative fuel in Cement Kiln

Sl. No	Name of the Hazardous and Other Wastes	Quantity in tons /Annum				Characteristics	Disposal Practice Adopted
		Opening Balance as on 01.04.23	Receipt For the year 2023-24	Disposed / Co-processed for the year23-24	Closing Stock as on 31.03.24		
(12)	Cleaning gas residues (HW Category No.35.1)	31.420	1977.290	1924.430	84.280	Solid GCV:3500-4000kcal/Kg pH : 6-8 Ash : <20% Moisture : <10% Cd+cr+Ni+Zn : 0.5%	Used as Alternative fuel in Cement Kiln
(13)	ETP sludge (HW Category No.35.3)	4.252	3074.560	3020.778	58.034	Solid CaO : 25 - 35% Sio2 : 10 -20% Chloride : 20-30% Moisture : 30 -50 % Fe : 1-5% Mn : <2%	Co-Processing in Cement Kiln
(14)	Distillation residues (HW Category No.36.1)	36.890	89.150	126.040	0.000	Solid GCV:2500-3000kcal/Kg pH : 6-9 Ash : <40% Moisture :<20% Cd+cr+Ni+Zn : 0.5%	Used as Alternative fuel in Cement Kiln
(15)	Filter Medium (HW Category no.36.2)	12.360	36.620	48.980	0.000	Solid GCV:3000-3500kcal/kg Moisture : 9.08% Ash : <25%	Used as Alternative fuel in Cement Kiln
(16)	GEPIL Solid Waste Mix, (HW category.37.3)	0.410	118.860	119.270	0.000	olid GCV:2500-2800kcal/kg Moisture : 10-20% Ash : 20 - 50%	Used as Alternative fuel in Cement Kiln
	Total (Hazardous waste)	**268.528**	**19810.450**	**19674.600**	**404.378**	-	-
B. Other Wastes (Non –Hazardous wastes)							
(1)	**Solid Waste** STP Sludge	0.000	0.314	0.314	0.000	Solid Dark granular, Soluble in water, pH : 6.8 -7.8. Nitrogen : 2 - 8%, Phosphorus : 0.3-1%, Potassium : 0.3-1%	Dried sludge used as manure for Green Belt Development
(2)	**Plastic Waste & Municipal Bio mining Waste**	116.156	7029.440	6687.885	457.711	Solid - Light Brownish colour GCV:2500 3000kcal/kg Sio_2: 25-35%, Fe_2O_3: 2-3% LOI : 10-15% K_2O+Na_2O : <1%	Used as Alternative fuel in Cement Kiln

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Sl. No	Name of the Hazardous and Other Wastes	Quantity in tons /Annum				Characteristics	Disposal Practice Adopted
		Opening Balance as on 01.04.23	Receipt For the year 2023-24	Disposed / Co-processed for the year23-24	Closing Stock as on 31.03.24		
(3)	Other Wastes (FRB Waste, Cotton Waste, Husk Waste, RDF, Emery sheet, Saw dust, Footwear waste)	350.045	14456.160	14428.606	377.599	Solid Which is received from Solid waste generated form Foot ware manufacturing units (Lotus Foot Wares) and other wastes received from various industries located form TN	Used as Alternative fuel in Cement Kiln
Total (Non Hazardous waste)		466.201	21485.914	21116.805	835.310	-	-

PART – G

Impact of the pollution abatement measures taken on conservation of natural resources and on the cost of production

Impact on Natural resources by implementation of Environmental conservation measures:

- **Alternative Fuel:** 37721 tons of Alternative Fuel (Hazardous and Other wastes) were consumed for the year 2023-24 which was 8.1% of total fossil fuel consumption. Last year was 6.3%
- **ETP Sludge:** 3020 tons of ETP sludge was consumed for the year 2023-2024 which was received from Karur & Thiruppur CETP which is 0.1% of Rawmeal consumption.
- **Waste water Management:** Generated Tread Sewage water 26050 m3 were effectively 100% used for gardening development within the plant premises.
- **Alternative Raw Materials:** 33.4% of the Fly ash consumed for PPC Cement Production and 2.807 of waste slag consumed for PSC cement Production the year 2023-24 which were directly conserved the Limestone recourses. Last year was 33.7% and 1.256% respectively.
- **Water Management**: 100% harvested rainwater only is used for entire plant and Mines operation including domestic consumption and our colonies. 5.54 lac m3 of rain water collected and stored in mines pits for the year 2023-24.
- **Water Positive Index**: 1.12 of water positive index was achieved for the year 2023-24.
- 8700 kgs of canteen food wastes and 18200 kgs of cow dung were converted into Bio gas energy from Bio gas plant for the year 2023-24 by which we were conserved 495 kgs of LPG.

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PART – H

Additional measures / investment proposal for environmental protection including abatement of pollution, prevention of pollution

Investment Proposal for the year 2024-25

- Rs. 156 Lakhs for Air Pollution Control Measures which will include replacement of Bag Filters, ESP maintenance, dust suppression system etc.,
- Rs .18.0 lakhs for Water Pollution Control Measures
- Rs 17.0 lakhs for other Environmental Protection Measures like plantation of saplings, providing additional rainwater harvesting structures, Environment awareness etc.,

PART – I

Any other particulars for improving the quality of environment

- Alternative Fuel preprocessing facilities was commissioned on 02.07.2022. 10% TSR has been achieving since 24.09.2022 and we wish to inform you that RCO condition (Ref RCO no.2108237091918 under Air Act) of TSR-10% achievement was compiled.
- Proper maintenance of Pollution Control Equipment including ETP and STP ensured for effective and efficient operation of the same. Maintenance Cost of Pollution Control Equipment during 2023-24 was Rs. 124 Lakhs.
- Environmental Monitoring are being ensured to assess the effectiveness of Pollution Control Measures to initiate the effective action, if any required. Environmental Monitoring Cost during 2023-24 was Rs.25.1 Lakhs
- Green Belt Development area covered 34.24% of total plant area, So far, the total number of tree planted 53243 nos its coved 22.2 hectares @ 2398 trees / hectares and over all plant survival rate was 90%.
- Quality Management System as per IS/ISO 9001:2015, Environmental Management System as per IS/ISO14001:2015, Occupational Health & Safety Management System as per IS/ISO 45001:2018 and Energy Management System as per IS/ISO 50001:2018 are in place to ensure that all operation are carried out in compliance with international standards and all applicable environmental regulations.

Place : Karikkali

Date : 28th Sep, 2023

(Signature of the Authorized Person)
Name : **V.KRISHNAN**
Designation : **JOINT PRESIDENT [WORKS]**

CHETTINAD CEMENT CORPN. PVT. LTD. KARIKKALI 624703